

Springer Proceedings in Complexity

Şefika Şule Erçetin · Nihan Potas *Editors*

Chaos, Complexity and Leadership 2017

Explorations of Chaos and Complexity
Theory

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Şefika Şule Erçetin • Nihan Potas
Editors

Chaos, Complexity and Leadership 2017

Explorations of Chaos and Complexity Theory

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Editors

Şefika Şule Erçetin
International Science Association-
Ankara, Turkey
Hacettepe University
Ankara, Turkey

Nihan Potas
International Science Association-
Ankara, Turkey
Gazi University
Ankara, Turkey

ISSN 2213-8684

ISSN 2213-8692 (electronic)

Springer Proceedings in Complexity

ISBN 978-3-319-89874-2

ISBN 978-3-319-89875-9 (eBook)

<https://doi.org/10.1007/978-3-319-89875-9>

Library of Congress Control Number: 2018948822

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In memories of my lovely mother Mübeccel...
Şefika Şule Erçetin

In memories of my grandfather Yusuf Kenan...
Nihan Potas

Preface

Leadership is one of the earliest concepts that experienced in the world in humankind in all senses, and also chaos and complexity have taken its place in the new world order. Not only physicists but scientists from all fields to present their explanations and discussions on the topic with a facilitating effect to adapt to the new world order are primarily a valuable service for science and humanity. The research in question should be continuous in tandem with the changing nature of chaos and complexity and the face of the world. This is why this latest edition of the book *Chaos, Complexity and Leadership 2017* is simply a delayed matter already. This unique book is a need to continue the academic journey because the realities keep shifting goal posts and as such research and academic works cannot afford complacency lest management and leadership will lose direction in the near future.

Exploring chaos and complexity on a regular basis, therefore, offers management, leadership, education, and academia a beacon of hope to prevail over chaotic and complex systems abound. Particular focus is reserved for an exploration of nonlinearity as well as data modeling and simulation in order to open up new approaches and perspectives to discussion of key phenomena. This ultimately spells the entry point of the latest edition of the book *Chaos, Complexity and Leadership 2017*.

This book opens up to all fields and branches of knowledge unlike many which are highly specific; the book is also customized to various levels of knowledge pursuit making it viable to both undergraduate and graduate students while fitting other random readers. This is premised on the view that the language used thereof is simplified and tailor-made to suit a diversity prevalent within academic readership.

This book includes exploration of management and leadership from a nonlinearity perspective, contains a practical application of theoretical concepts to management and leadership, and features a layman's language usage to dissect chaos and complexity phenomena. Furthermore, this book contains an analysis of chaotic and complex systems from scientific, quasi-scientific, and social science fields. While it explores chaotic and complex systems from all fields of knowledge in order to stake

a claim of prevalence of compatibility between knowledge fields. Recent developments in research, management, and leadership are also explored in this book.

The proceedings from the 2017 symposium on chaos, complexity, and leadership will illuminate current research results and academic work from all branches of science, mathematics, physics, education, economics, management sciences, and social sciences. We would like to thank all the participants, guests, and members associated with ICCLS 2017, to make the symposium successful.

We hope you will enjoy the new version of this unique book series.

Ankara, Turkey

Şefika Şule Erçetin
Nihan Potas

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Contributors

- Şuay Nilhan Açıkalın** Middle East Technical University, Ankara, Turkey
- Sait Akbaşlı** Hacettepe University, Ankara, Turkey
- Gülşah İmamoğlu Akman** Ministry of National Education, Ankara, Turkey
- K. Gediz Akdeniz** Non-Linear Science Working Group, İstanbul, Turkey
- Yener Akman** Ministry of National Education, Ankara, Turkey
- Shadi Albanna** Hacettepe University, Ankara, Turkey
- Akbar Rahimi Alishah** İstanbul Aydın University, İstanbul, Turkey
- Erbil Can Artun** Yeditepe University, İstanbul, Turkey
- Cemal Atakan** Ankara University, Department of Statistics, Ankara, Turkey
- Emel Terzioğlu Barış** Karabük University, Karabük, Turkey
- Ercan Baysülen** Ministry of National Education, Ankara, Turkey
- Filiz Bilge** Hacettepe University, Ankara, Turkey
- Ümit Binbir** Hacettepe University, Ankara, Turkey
- Ssali Muhammadi Bisaso** Islamic University, Mbale, Uganda
- Faruk Bozdağ** İstanbul University, İstanbul, Turkey
- Merve Bulut** Nevşehir Hacı Bektaş Veli University, Nevşehir, Turkey
- Ramazan Cansoy** Karabük University, Karabük, Turkey
- İhsan Çapcıoğlu** Ankara University, Ankara, Turkey
- Mehmet Sabir Çevik** Hacettepe University, Ankara, Turkey

- Rukiye Dağalp** Ankara University, Department of Statistics, Ankara, Turkey
- Murat Demirel** Nevşehir Hacı Bektaş Veli University, Nevşehir, Turkey
- Anıl Kadir Eranıl** Nevşehir Provincial Directorate of National Education, Nevşehir, Turkey
- Şefika Şule Erçetin** International Science Association-Ankara, Turkey, Hacettepe University, Ankara, Turkey
- Niyazi Erdoğan** Ufuk University, Ankara, Turkey
- Barış Eriçok** Nevşehir Hacı Bektaş Veli University, Nevşehir, Turkey
- Miıro Farooq** Islamic University in Uganda, Mbale, Uganda
- Tuncer Fidan** Mehmet Akif Ersoy University, Burdur, Turkey
- İnci Öztürk Fidan** Ankara University, Ankara, Turkey
- Deniz Görgülü** Hacettepe University, Ankara, Turkey
- Gözde Sezen-Gültekin** Sakarya University, Sakarya, Turkey
- Recep Gür** Erzincan University, Erzincan, Turkey
- A. Hıdır Eligüzel** Political Scientist and Independent Researcher, Dokuz Eylül University, İzmir, Turkey
- Mohd Bruhan Ibrahim** International Islamic University in Malaysia, Kuala Lumpur, Malaysia
- Fethi Kayalar** Erzincan University, Erzincan, Turkey
- Güner Koç Aytakin** Ufuk University, Ankara, Turkey
- Elife Doğan Kılıç** İstanbul University, İstanbul, Turkey
- Nayil Kiliç** İstanbul University, İstanbul, Turkey
- Hatice Kılıçkaya** İstanbul University, İstanbul, Turkey
- Melek Körükcü** Niğde Ömer Halisdemir University, Niğde, Turkey
- Fatma Köseoğlu** Doluca Elementary School, Erciş Van, Turkey
- Sevda Kubilay** Niğde Ömer Halisdemir University, Niğde, Turkey
- Mehmet Küçükçene** Hacettepe University, Ankara, Turkey
- İlknur Maya** Çanakkale 18 Mart University, Çanakkale, Turkey
- Ayşe Öcal** Hacettepe University, Ankara, Turkey
- Daniels Aide Okun** Nesibe Aydın Educational Institutions Language Skills and Theory of knowledge Instructor, Ankara, Turkey

- Mehmet Özbaş** Erzincan University, Erzincan, Turkey
- Fatih Mutlu Özbilen** Belma Barut Primary School, İstanbul, Turkey
- Elif Gamze Özcan** Muzaffer Çil Anatolian High School, Eskişehir, Turkey
- Mehmet Özcan** Nevşehir Hacı Bektaş Veli University, Nevşehir, Turkey
- Rengin Özesmi** Poet, İzmir, Turkey
- Mustafa Özmusul** Harran University, Şanlıurfa, Turkey
- Fikri Öztürk** Ankara University, Modelling and Simulation Lab, Ankara, Turkey
- Nidhi Phutela** Symbiosis International University, Noida, India
- Mahmut Polatcan** Karabük University, Karabük, Turkey
- Nihan Potas** International Science Association-Ankara, Turkey, Gazi University, Ankara, Turkey
- Nilanjan Ray** Adamas University, Kolkata, West Bengal, India
- Debojyoti Roy** Adamas University, Kolkata, West Bengal, India
- Mehmet Cem Şahin** Ankara University, Ankara, Turkey
- Aynur Saran** Hacettepe University, Ankara, Turkey
- Gökhan Savaş** Faculty of Education, Hacettepe University, Ankara, Turkey
- Hüseyin Serin** İstanbul University, İstanbul, Turkey
- Hatice Özgan Sucu** Nevşehir Hacı Bektaş Veli University, Nevşehir, Turkey
- Hazal Takmak** Hacettepe University, Ankara, Turkey
- Yağız Alp Tangün** Pamukkale University, Denizli, Turkey
- Meysam Tayebipour** Lancaster University, Lancaster, UK
- Luis Tomé** Autónoma University of Lisbon, Lisbon, Portugal
- Hakan Topaloğlu** 19 Mayıs University, Samsun, Turkey
- Belgin Tura** Hacettepe University, Ankara, Turkey
- Necla Turanlı** Hacettepe University, Ankara, Turkey
- Rezzan Uçar** Van Yüzüncü Yıl University, Van, Turkey
- Hakan Ulum** Çukurova University, Adana, Turkey
- Ömer Gökhan Ulum** Adana Science and Technology University, Adana, Turkey
- Derviş Fikret Ünal** Turkish Ministry of Foreign Affairs, Ankara, Turkey
- Kamil Demirberk Ünlü** Ankara University, Ankara, Turkey

Lütfi Üredi Mersin University, Mersin, Turkey

Turgut Uslu Erzincan University, Erzincan, Turkey

Mücella Savaş Yalçın Atatürk University, Erzurum, Turkey

Sinan Yalçın Erzincan University, Erzincan, Turkey

Nursel Yardibi Hacettepe University, Ankara, Turkey

Mehmet Yılmaz Ankara University, Ankara, Turkey

Chapter 1

Complexity Theory as a New Lens in IR: System and Change



Luis Tomé and Şuay Nilhan Açıkalm

Abstract Discussions over shifting from linearity to nonlinearity in natural sciences have led to unexpected reflections in social sciences. Nonlinear theories have gained a new momentum in our understanding of complex and complicated social events. Similarly, the changing patterns of international relations (IR) encourage us to reconsider the dimensions of international systems and discuss the concept of change and order. This paper seeks to explain the contribution of complexity theory to the understanding of the international system and its change. Firstly, it justifies the need for a new approach in IR theorization in the light of the limits of conventional IR theories as well as of the changing patterns from linearity to nonlinearity. Then, it demonstrates the usefulness of complexity theory's core assumptions to define the international system, the idea of change and the agent-structure debate.

1.1 Introduction

Theories of international relations (IR) have always had the problem of bridging the gap between reality and its theorizing. This is mainly because the international reality is much more complex and unpredictable in its evolution than those aspects that are in keeping with cognitive structures and 'natural expectations' of conventional IR theories. This dilemma is all the more evident in the characterization of the international system and the explanations for both its change and its impacts on the international actors.

Regardless of how discussions around the international system evolve, most scholars of IR are rethinking their approach under more complex, multifactor-structured, interdependent and nonlinear assumptions. Furthermore, events such as the end of the Cold War, globalization, 9/11, the Arab Spring or the global rise of the so-called Islamic State have had a significant impact within the scope of IR theories

L. Tomé (✉)
Autónoma University of Lisbon, Lisbon, Portugal

Ş. N. Açıkalm
Middle East Technical University, Ankara, Turkey

on the encouragement of rethinking that our world naturally and inherently possesses unpredictability. That is why IR theory needs to be revisited in accordance with the dynamics of nonlinearity.

This need can be complemented by complexity theory. In order to understand it and its effects on social sciences and especially on IR, setting an ontological ground from linearity to nonlinearity is essential. Complexity theory and its application to the social sciences have been a rising phenomenon for the last 15 years, although there are few scholars who work on complexity theory and IR.

This article intends to contribute by explaining how complexity theory can be an added value in the theorizing of IR, in particular in our understanding of the international system and its change. Firstly, it justifies the need for a new approach in IR theorization in the light of the limits of conventional IR theories as well as for changing patterns from linearity to nonlinearity. Then, it demonstrates the usefulness of complexity theory's core assumptions to define the international system, the idea of change and the agent-structure debate.

1.1.1 The Need for a New Approach to IR Theory

Ontology is not something that most IR scholars spend much time thinking about. However, in order to explain how the international system works, it is crucial to make metaphysical assumptions about what it is made of and how it is structured. On the basis of several conceptions and explanations, there are cognitive structures that take the theoretical frameworks and thinkers to perceive and to emphasize different aspects – usually, scholars in IR refer to these structures as theories or paradigms. The problem lies in the fact that, by conditioning our perceptions, ontologies inevitably influence the content of substantive theories. In the end, as Tony Smith put it, ‘each paradigm is monotheistic, praying to a jealous God’ (1994: 350).

Basic ontologies and cognitive structures indicate what aspects are considered important and explainable, the concepts and methods to be employed and which parameters are used to draw conclusions. Similarly, traditional or conventional IR theories tend to select aspects of international life in accordance with their respective ‘natural expectations’, omitting some variables that can be absolutely crucial to understand and explain a highly diverse and complex reality. On the other hand, since conventional theories are inflexible in their ontological postulates, they transpose conceptions into new contexts that might, nevertheless, be already outdated and/or in need of reformulation. As such, some theorizing can lose validity when faced with new developments or different realities. These kinds of deficiencies and limitations of IR theories are potentially more pronounced when analysing and explaining non-Western behaviour and interaction, because mainstream IR theories are based on Western history, political philosophy and worldviews, as we have explained in another work (Tomé 2016).

Ontological assumptions are also particularly important, as noted by Alexander Wendt, because no one can ‘see’ the international system:

International politics does not present itself directly to the senses, and theories of international politics often are contested on the basis of ontology and epistemology, i.e., what the theorist “sees”. In the long run, empirical work may help us decide which conceptualization is best, but the “observation” of unobservables is always theory-laden, involving an inherent gap between theory and reality (the “underdetermination of theory by data”). (Wendt 1999: 5)

It is worth mentioning that neither theory follows directly from its ontology, but ontologies contribute significantly to their differences. Also, IR theories or paradigms are not monolithic, since there are many forms and variations of realism, liberalism, constructivism and so on. Still, routed in their respective cognitive structures and assumptions, each theory chooses units and levels of analysis or agents and the structures in which they are embedded. The discipline of IR requires that these choices have some kind of international dimension, but beyond that, it does not dictate units or levels of analysis. However, most mainstream IR theories reflect one set of choices within a broader field of possibilities: its units are mostly states, and the level of analysis on which it tries to explain the behaviour of these units is the international system.

The state-centrism of IR means that IR theories do not say much about other important international players. However, in the last decades, we have seen the empowering of international actors other than states, from individuals to transnational social movements, international/regional organizations, NGOs, transnational organized crime networks and terrorist groups or multinational corporations. Especially, globalization has triggered opportunities for non-state actors to be more effective in the international system and in decision-making processes. Hence, causality relations between international players have become more complex. Despite this reality, mainstream IR theories generally focus on the national level or the alleged systemic level, suggesting a very limited role for international players other than states. However, state-centred IR theory covers only partial aspects of a larger progressive agenda in IR. No doubt, states are no longer the sole international actors, and the conventional theories emphasizing state-centrism do not work anymore.

Two other main aspects identify the deficits of conventional IR theories: the highly complex social realities and globalization. The consciousness of individuals reduces the possibility of making accurate predictions, and diverse international players can have the ability to learn and adapt, which makes social systems more complex naturally. Furthermore, globalization has fostered the density of social and political complexity in terms of degree and actors of interaction. Hence, the conceptual toolkit of contemporary IR proves itself inefficient both at explanatory and action levels, confirming the inadequacy of the theoretical framework as a premise for action in an increasingly complex social reality (Cindea 2006).

Of course, the aforementioned deficits of conventional IR theories also hinder the possibility to analyse the international system meaningfully. Although assuming the state as the almost exclusive actor in IR, conventional IR theories consider that states are rarely found in complete isolation from each other. Hence, mainstream IR theories are interested in the structure and effects of state (or international) systems,

developing a systems theory and conceptual frameworks that might be considered systemic. Systemic theories explain IR by reference to a structure (of the international system), while reductionist theories explain international politics by referring to the properties and interactions of units (states).

The notion of a system has been one of the focus points in IR theories, with various meanings – either as a regularly interacting or interdependent group of units forming a unified whole or as a form of social, economic or political organization. Its meaning depends on the context, and this is the reason why the notion of system has also had different reflections in IR. At the same time, the concept of the international system has been evolving in parallel to the political atmosphere, and its definition is a reflection of the debates around IR theories. Between World Wars I and II, the first wave of IR scholars, who were generally realists and idealists (liberals), defined the international system from an anarchic perspective, but they had different positions on how states should behave within that structure. Then the definitions associated with the distribution of world power, the economic interdependence, the creation and impact of international regimes/institutions or the nature of the capitalist/imperialist structure appeared more vigorously. More recently, the critical theories of IR and, above all, constructivism defined the international system as an intersubjective social construction and emphasized the actors' and the system's identity evolution. While these conceptions of the international system have been evolving, there have also been other discussions debating the related notions of international society and the world system (see Wallerstein 2004).

Still, the international system is a hard case for IR theories due both to the materialist and individualist ontologies and to the social construction perspectives. IR scholars and students tend to turn first to material forces, defined by power and interest. This approach is clearest in neorealism, but neoliberalism seems to be based on it as well. On the social side, while norms and laws govern most domestic politics, self-interest and coercion seem to rule IR. International law and institutions exist, but the ability of this superstructure to counter the material base of power and interest seems limited. On the construction side, while the dependence of individuals on society makes the claim that their identities are constructed by society, the states (always primary actors in mainstream IR theories) are much more autonomous from the social international system in which they are embedded. This suggests an intuitive support for individualism (assuming states are 'individuals') in the international system. Mainstream IR academia still largely accepts these individualist and materialist conclusions about the international system. In sum, neorealists see it as a distribution of material capabilities in a permanent competitive power game between great powers; neoliberals see it as capabilities and institutions with rational actors who may tend to cooperate rather than conflict; and constructivists see it as a distribution of ideas in a context of social construction (Wendt 1999).

Yet, events such as the end of the Cold War, globalization, 9/11, the Arab Spring or the rise of the so-called Islamic State have caught IR scholars on all sides off guard: conventional IR theories simply failed to predict the unleashing of these sudden events and their multiple effects, and they cannot truly explain them. In fact, IR theories always have difficulty in explaining change more generally, especially

because a large number of variables as well as the notion of change do not fit in their respective ontological postulates. This has contributed significantly to reinforcing a more holistic view of the international system and its change. On the other hand, that kind of failure of IR theories is also associated with another problem: their typically linear perspective. As, for example, John (2003) stated, 9/11 showed the limitation of the linear approach in IR.

Linearity basically suggests that all physical phenomena are assumed to be based on a few core laws and thus difficult to change. In other words, the linear approach is mainly based on high levels of order and predictability, as well as on a cause-and-effect nexus (an antecedent condition X generates an effect Y) or constitutive relationships (X is what it is due to its relation to Y). However, the assumption of the whole as the simple sum of the parts and that evolution and change always follow a linear route, both in natural sciences and social sciences, is not valid anymore. It can also be said that the philosophy of changing to nonlinearity follows the history of shifting from linearity to nonlinearity. Especially, the main paradigm shift happened at a meso/macro level, when researchers started to gain interest in the ‘family of systems’, each having numerous components that interact with each other to influence the whole system, also known as nonlinear or dissipative systems. There was a flow of scientific development in the sense of nonlinearity, led by mathematicians and physicists, who were soon followed by meteorologists, chemists, geneticists and economists (Geyer 2003). Also, researchers became increasingly interested in the notions of ‘systems of systems’ or ‘a complex of systems’ (Tomé 2010, 2016), each involving various components/units that interact with each other to influence the various systems and the system of systems as a whole in a manner that could not be discerned by observing only the elements/units by themselves or the system as the simple sum of the parts/units.

Conversely, uncertainty and unpredictability became an essential part of modern life, which has implications on social sciences too: social scientists noticed that human-driven events cannot solely be reduced to predictions or to an order-centred approach. In parallel, events such as those aforementioned (the end of the Cold War, globalization, 9/11, the Arab Spring or the rise of Islamic State) have had a significant impact within the scope of IR on rethinking that our world naturally and inherently possesses unpredictability. That is why IR theory needs to be revisited in accordance with the dynamics of nonlinearity.

1.1.2 Complexity Theory and Complex Systems

Complexity theory is one of the nonlinear paradigms, also relevant because of its complex systems approach. Most scholars work on chaos and complexity theories together. The two main sources of complex systems are iteration and interaction. Iteration means generating the system many times. Fractals and chaos result from repetition of simple operations. These generating rules produce complex phenomena (Bossomaier and Green 2000). In contrast to the limited diversity of chaos theory,

complexity theory contains a number of parts (agents) that interact with and adapt to each other endlessly. Then, interaction as another source becomes influential in different independent and adaptive actors, as well as in the system as a whole and the universe of the system of systems.

Five fundamental notions compete for a better understanding of complex systems: system, pattern, network, scale and nonlinearity. Firstly, the system can be briefly defined as an outlined part of a broader universe where a particular construction with functional, structural and behavioural aspects takes place, resulting in a specific network of interactions between units, between units and the system and between the system and the broader universe, in different scales and dimensions.

Secondly, the pattern essentially corresponds to the idea of repetition of structures, ideas, behaviours and interactions and the characteristics of the identified systems. Thirdly, the network is the sum of the connections, which allows interactions and influences among units and subsystems of the system and between these and the universe of systems. Fourthly, scale refers to the size and magnitude of the study object and the scope of influence of the units, networks, standards and systems and the influence of the universe of systems itself. Finally, nonlinearity refuses a simple cause-and-effect nexus: on the one hand, there is not a unique way to define what a linear relationship is in terms of its outcome; on the other hand, even taking into account a wide variety of linear relations, it does not allow the full characterization of a system and even less of complex systems because causes and effects are not easily relatable or there are other nonlinear nexuses that interfere. It is essential to also contemplate nonlinear relationships and, of course, extend the possible range of causalities and dependencies, since the parts and systems are interdependent (Tomé 2016).

In addition to this, perhaps one of the most important features of complex systems, which is a key differentiator when comparing with chaotic systems, is the concept of *emergence*. Emergence ‘breaks’ the notion of determinism and linearity because it means that the outcome of these interactions is *naturally* unpredictable. In large systems, macro features often emerge in ways that cannot be traced back to any particular event or agent. Therefore, complexity theory is based on interaction, emergence and iterations.

This theory sustains that the universe is full of systems like weather systems, immune systems and surely social systems, which are complex and constantly adapting to their environments and referred to as complex adaptive systems (CAS). The features of CAS that are formulated reflect the following: (i) a large number of similar, independent and interdependent agents; (ii) constant responses from these agents to other agents; (iii) self-organization, in the order by which the system forms spontaneously; and (iv) coevolution (Valle 2000).

Firstly, complex systems contain diverse, similar, independent and also interdependent agents. It is one of the reasons why social events are complex – they naturally include many individual agents. Also, diversity of agents is one of the main pillars of the unpredictability features of complex systems because each agent has its own dynamics in the system and any minor change would result in a new emergence of other agents and then the whole system. Even incremental changes of

actors would cause instability where negative feedback would not work and the system could always be in a deadlock situation. As Klijn (2008) stresses, the cumulative effects of various small steps could, at some point, reach the point where the system would just be about to lose its stability (or its seemingly stable position).

The second feature is the constant responses between agents. As aforementioned, responses of agents that create interaction networks are a source of complex systems composed of constant responses of different and independent actors. This relationship is nonlinear where the output is unexpected, depending on input. Nonlinearity relations of different and interdependent agents increase unpredictability.

The third characteristic of complex systems is self-organization, an inherent operation of living systems, meaning that complex adaptive systems can evolve into a higher level of complexity (Erçetin et al. 2012b). Self-organizing can occur many times through responses to actors in a given condition, repeated in the system. All actors in the system have the capacity to adapt to novel situations in order to survive. Based on the first and second characteristics, complex systems are open to involvement. Minute changes in any agent would lead to the re-emergence of the whole system, and because of this, each actor has a natural capacity to adapt themselves into new systems. In this regard, the adaptation is the consequence of self-organizing, which can be considered the interpretation of iteration and a key source of complex systems. So, self-organizing works as a vehicle for the emergence of a new order or renovated system.

The last feature is coevolution, which Mitleton-Kelly (2003) defined as the evolution of one domain or entity that is partially dependent on the evolution of other related domains or entities or one domain or entity that changes in the context of the other(s). It can be interpreted mainly in a multi-actor environment in which coevolution reveals that all independent actors actually depend to a great extent on each other and, due to this, unpredictability is inevitable. Additionally, each unit in the system also represents a subsystem, and these subsystems are also a part of the whole system, so when agents self-organize, all these subsystems and agents also adapt to other agents, to self-organizing and to the patterns of the whole system.

The international system, like most complex ecosystems, such as the nervous system or a rain forest, yields to the rules of complexity (Root 2013). From this perspective, the use of complexity theory in IR can be categorized in three ways: epistemological and ontological, case study and quantitative methodology.

1.1.3 The Complex Adaptive International System: A 'Change' Centred Approach

As mentioned earlier, the international system has been the scope of traditional IR theories. Dynamics within the system, international players and especially the issue of order and change have been redefined by various scholars from mainstream IR

theories. Albeit the deficits of classical IR theories in theorizing the international system and its change, it should be noted that complexity theory shares some common foundations with some mainstream IR theories. However, it brings established sets of concepts from natural science, which include new methodology and ontological and epistemological discussions (Bosquet and Curtis 2011). Complex systems theories also emphasize the ideas of unpredictability and adaptation, thus contradicting the notion of linearity because it means the outcome of interactions would be naturally unpredictable and constantly adapting to their environments.

It is important to recall that the complex adaptive systems (CAS) have a number of main characteristics, which are as follows: (i) numerous independent and interdependent actors, (ii) infinite interactions-feedback system within actors, (iii) emergence, (iv) self-organization and (v) coevolution and coadaptation (Erkoçak and Açıkalin 2015). Each of these characteristics of the CAS involves its change and perceptions. Namely, change is embedded within the CAS itself. In simple words, change and order are the two sides of the same coin. Change can emerge spontaneously, and actors can self-organize to learn to coevolve. Thus, the complex adaptive international system should be understood with regard to these change and order approaches.

Firstly, as previously mentioned, the international system includes numerous independent and interdependent actors, from sovereign states to individuals, transnational social movements, international/regional organizations, NGOs, transnational organized crime networks, transnational terrorist groups or multinational corporations. And it is easily verifiable that the number of non-state actors and their importance became more effective in the twenty-first century. Those multiple and diverse international players other than the state represent a part of societies at all levels (from local to global) with their demands and interactions, so they can be effective also at the system level. In the case of the role of individuals and their unexpected power, the Arab Spring can be a perfect epitome. It is worth remembering that it was triggered by Bouazizi burning himself, and then the following events occurred in an unpredictable fashion. In fact, the complex nature of the dynamics and relationships between individuals, unleashed events and effects on the system is clearly observed in the Arab Spring demonstrations (Açıkalin and Bölücek 2014). There is no doubt that it changed the fate of many Middle Eastern and North African people and countries, as well as of the entire region, and its implications have also shaped the whole world. This means that the international system is no longer a game of classical actors (states and great powers) but one of millions of individuals who have powerfully transformed the international system unexpectedly. Likewise, the rise of the self-proclaimed Islamic State is a result of the crossroads of diverse actions, and their impact on international security and geostrategic dynamics in the Middle East (Tomé 2015) not only escaped the linear approaches of mainstream IR theories but also reveals the enormous impact of a non-state actor on the international system.

Secondly, independent and interdependent actors in the complex adaptive international system have infinite numbers of interactions that constitute positive and

negative feedback. Interaction between actors in the international system is not new in IR theory. For example, Buzan et al. (1993) point out that systemic theories lack analysis of the interaction among units; furthermore, Wendt (1999) took interaction to a more sophisticated level by saying that it shapes the actors' identity and interests in a mutually constructed way. Complexity theory suggests different roles for the interaction between actors, which can be understood in two dimensions. Firstly, in the complex adaptive international system, the actors' interaction has no limit, as they interact with each other spontaneously and these interactions contain either positive or negative feedback. More importantly, interactions always occur in a nonlinear way. The second dimension is related to the power of interactions within a whole system, since interactions are formed on the basis of the dynamic structure of the CAS. Interactions are determinant for the changing patterns of the system; the interaction is essential both for the interacting components themselves and for the rest of the other components (Erçetin et al. 2013). In short, the complex adaptive international system is directly change-based, and the emergent behaviour of actors results from the interaction among them.

Thirdly and related to interaction comes the emergence characteristic, which fits well within the nature of the international system in terms of change and order.

There are a constant action and a reaction to what other agents are doing; thus, nothing in the environment is immutable. Emergence can be realized at both regional and systemic levels regarding the international system. For instance, any conflict in Africa starts as local or regional; however, due to the intense human rights violation that occurs, the UN, regional organizations such as the African Union or the European Union and global powers become involved in the conflict. This is what happened, for example, in Sudan, which was divided, and its south became a newly independent state. Of course, the emergence of a 'new' African order takes time; it does not happen overnight. But precisely, the length of time here depends on the system's magnitude with respect to the number of actors and dynamism. Another example is when the World Trade Center collapsed after being hit by two hijacked planes on 9/11, most observers expected that W. Bush's so-called war on terror would be limited to the United States and its allies against Al-Qaeda and its affiliate groups. But the truth is that both the global war on terror and the invasions of Afghanistan and Iraq challenged the existing order of the international system. It became impossible to talk about conventional approaches to both international and domestic politics. The emergence of a new international system after 9/11 showed the natural complexity of the international system and how a single event and a terrorist organization can affect the whole system.

Fourthly, self-organization is a process after the emergence of the new order/system through which actors self-organize themselves in order to adapt to the new order. Moreover, not only the actors but also the system has self-organization capability. Self-organization is a norm, not an exception in nature (Nicolis and Prigogine 1989; Prigogine 1996; Prigogine and Stengers 1984), which can be adapted to the international system. Actors in the international system naturally self-organize to adapt to other actors, different challenges and new dynamics. The interesting points and big questions here are what drives the actors' self-organization

in the international system and what will be the implications of their self-organization at micro and macro levels. The actors' self-organization can be considered as their own reforming based on their interests, and it removes the realist perspective of self-help because some scholars claimed that rational actors make decisions for the state (Dye 2004; Simon 2007). Notwithstanding the various explanations of IR theories about how actors promote their interests and ideas in the international system, it is impossible to underestimate the role of the self-organization process in a complex adaptive international system.

The last characteristic of the system is also related to self-organization. Complexity theory suggests two dominant types of self-organization: coadaptation and coevolution (Guastello 2002). Coevolution means changing together and coadaptation is fitting together. Both are a never-ending game of mutual adjustment and change. To understand the implications of coevolution in the international complex adaptive systems, it should be differentiated by the usage of the notion of evolution and adaptation in IR. Evolution is the local process of maximization, but adaptation is used as a kind of strategic choice (Gunitsky 2013). This sheds light on the thinking that, in the adaptive process, actors are driven by actors' experience and anticipated by others. On the other hand, evolution is not driven by future plans or previous experience. Owing to that, the micro and macro implications of self-organization can be understood through coevolution and coadaptation. Both at micro and macro levels, actors and system in evolution and adaptation push other actors and systems to evolve and adapt. Similarly, the system and the actors' coevolution and coadaptation process can be considered to mutually affect each other. To exemplify, the end of the Cold War was a major event that led to the emergence of a new world order or a new international system, and all actors (from the sovereign states to individuals) underwent a self-organization process, and all the international players and the international system coevolved within the new situation. In sum, adaptation highlights the main distinction of the complex system: both actors and system have self-organization capacity, and thus the international system is not only a complex system but also an adaptive one. And once it is understood as a macro complex system of systems, then the whole international system undergoes successive adaptations by virtue of the multiple self-organizations of its many integral systems.

1.1.4 Agent-Structure Debate and Complexity Theory

The agent and structure debate has been one of the controversial issues among IR scholars, generally discussed within their respective ontological assumptions. The dominant ontology in mainstream IR theories for thinking about 'agent-structure problem' is methodological individualism, particularly as expressed in rational choice and game theory of neorealism and neoliberalism. Individualism holds that structures supervene on the properties and interactions of independently existing, pre-constituted agents, like states. In contrast, constructivism claims a 'holist' or 'structuralist' ontology: 'Given an idealist frame of reference, this comes down to the

proposition that the ideas held by individual states are given content or meaning by the ideas which they share with other states – that state cognition depends on states systemic culture’ (Wendt 1999: 372).

Also, the agent-structure issue is related to the level of analysis. Following Waltz’s (1979) influential works, neorealism divides world politics theories into two levels of analysis: the level of states and the level of the international system. Theories pitched on the level of states, which Waltz calls ‘reductionist’ or ‘unit level’, explain outcomes by referring to the attributes or interaction of the system’s parts, while systemic or structural theories explain outcomes by referring to the structure of the system. This conceptualization of the nature and relationship between agent-level and structural theorizing has become the norm in IR. Yet, there has also been some opposition to this dichotomous approach, namely, by liberalism/idealism IR scholars who focus on interaction at a unit level (see Keohane and Nye 1989; Buzan et al. 1993). In this regard, the position taken by constructivism is synthetic, combining elements primarily from structuration theory and symbolic interactionism and making three distinctions: between two ‘levels’ and two ‘effects’ of structure on two ‘things’. The two levels are micro and macro, where microstructures refer to structures of interaction and macrostructures refer to structures of multiple realizable outcomes. The two effects are causal and constitutive. And lastly, the two things are behaviour and properties, properties referring to the agents’ identities and interests (Wendt 1999).

Recognizing that the main IR theories make important contributions and have significant variations among them, the general discussion about the agent-structure problem is still very limited. As we have said previously, conventional IR theories are interested in the structure and effects of states’ systems, explaining them by referring to structure or to the properties and interactions of units (mostly states).

Complexity theory’s propositions give new insights to the agent-structure issue. As mentioned earlier, complexity theory characterizes the complex adaptive international system according to various independent and interdependent actors and systems with nonlinear relationships. Hence, it also suggests the coexistence with non-human systems such as the global food production system (Cudworth and Hobden 2013). Likewise, approaches to agents in the international structure should recognize the heterogeneity of players. Interestingly, according to complexity theory, each international agent is also a structure related to many other agents/players and embedded in human and non-human systems. So, human systems, which are embedded in the non-human system, produce changes in both agents and structure in infinite ways. Change can be derived from shifting equilibrium in non-human systems and lead to change in the international system too.

On the other hand, agents (international actors) are independent but not entirely free when they act within a structure, since the system plays constraining roles in material, ideational, identity, economic, political, social and many other aspects. Accordingly, complexity theory offers a middle way between materialist and constructivist ways.

If one takes assemblage theory, drawn from *dynamical systems theory*, as an example, it provides a bottom-up framework for analysing social complexity by

emphasizing fluidity, exchangeability and multiple functionalities. Like a constellation, any assemblage is made up of imaginative contingent articulations among myriad heterogeneous elements. Philosopher DeLanda (2006, 2016) has adopted the concept of assemblage to further argue that the components of social bodies are self-subsistent and retain autonomy outside the assemblage in which they exist; however, he further asserts that the social assemblage does not lose its reality nor its materiality, through its complexity. This theory suggests a complex social gear in which, from the individual to the system, groups, networks, organizations and governments form an assemblage as a whole composed of organic, non-organic and social elements. Consequently, there is a relation of the smaller scale to the greater one, assumed as the primary one, implying that even two apparently disconnected individuals on a smaller scale are linked by the larger structure. On the other hand, DeLanda's assemblage theory emphasizes a nonlinear causality within a bottom-up approach that is never defined as stable. On the contrary, it is flexible and dependent on assemblages between hierarchal layers.

As with assemblage theory, several other social complexity theories must be seriously taken into account in IR theory because they have a valuable contribution to make. In fact, the complexity approach challenges the reductionism of the agent-structure relationship and claims that both agents and structures are effective in change, through nonlinear ways.

1.2 Conclusion

As expected, the scientific revolution in natural science had implications in the social sciences too. For several decades now, social scientists have centred their foci around the argument of social systems as naturally complex adaptive systems (CAS) and revisited the more reductionist and materialistic approaches to social sciences. With regard to IR, events such as the end of the Cold War, globalization, 9/11, the Arab Spring or the rise of the so-called Islamic State surprised theorists of all conventional paradigms, contributing to the encouragement of rethinking that IR naturally and inherently possess unpredictability.

The IR theory has long been suffering from reductionist, exclusive and competitive approaches that have proven unable to adequately explain all the complexity of IR and its mutations. To fill the gap between IR theory and reality, an increasing number of scholars have come to embrace a spirit of intellectual openness, recognizing both the need for greater flexibility in the theoretical formulations and the possibility of complementarity by other theories and approaches. In this spirit, the theory of complexity has made particularly relevant contributions to the IR theory, starting by its assumptions of nonlinearity, complex systems, dynamic and changing systems and constant interactions and coevolution between agents and structure. Based on these elements, in this paper, we have emphasized the contribution of complexity theory to the understanding of the international system, the idea of change and the agent-structure debate.

At the core of the contribution of complexity theory lies its notion of complex adaptive systems. This concept emphasizes the ideas of unpredictability and adaptation, thus contradicting the sense of linearity because it means that the outcome of interactions would be naturally unpredictable and constantly adapting to the environments. It is worth remembering the main characteristics of the CAS: numerous independent and interdependent actors, infinite interactions-feedback systems within actors, emergence, self-organization and coevolution and coadaptation. And, indeed, when we look at the international system, we see a wide variety of international actors ranging from sovereign states to billions of individuals, transnational social movements, multinational corporations, warlords, international/regional organizations, NGOs and transnational organized crime networks and terrorist groups. Also, those numerous actors form a feedback system through infinite interactions. Thirdly, interactions result in the emergence of a new order – once there is a constant action-reaction chain, nothing in the international environment is immutable. Fourthly, the self-organization of actors happens after the emergence of a new order in the international system, in which they reshape themselves and reconsider their position and interactions within it. And not only the actors but also the system has self-organization capability. Finally, coevolution and coadaptation represent the adjustment of all actors together and also of the system, thus meaning that the international system is not only a complex system but also an adaptive one. And as the international system is assumed to be a complex system of systems, then the whole international system undergoes successive adaptations by virtue of the multiple self-organization of its many integral actors and systems. On the other hand, as evidenced by these characteristics, change is something inherent in the international CAS, alongside a certain notion of order.

Complexity theory also provides a new insight for the agent-structure debate in IR theory. Firstly, its approach to agents in a structure implies the need to assume the heterogeneity of international actors. Secondly, it suggests the coexistence of human-made agents and systems with non-human systems within the international one. In fact, each international agent/actor is also a structure related to many other agents/players and embedded in human and non-human systems. Also, the structure/international system plays constraining roles on the (not so) independent agents/actors. And the example mentioned earlier, assemblage theory, provides a bottom-up framework to analyse social complexity, by emphasizing fluidity, exchangeability and multiple functionalities. In short, the complexity theory approach challenges reductionism in the agent-structure relationship and claims that both agents and structures are effective in making change through nonlinear ways.

Complexity theory is, therefore, a new lens and an asset for understanding the international system and its change, given that it fits quite well into the features of complex adaptive systems. In addition to being a methodological tool and a lens for examining case studies, the contribution of complexity could be a key to revisit some ontologies and cognitive structures of mainstream IR theories, particularly from a problem-solving approach.

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Chapter 2

The Chaotic Awareness Reality and the Complexity in Turkish Novels



K. Gediz Akdeniz

Abstract Depending on postmodern aesthetic debates, recently the metaphors of the chaos theory as paradigm also have been a critical theory in art, cinema, and literature. Mainly they can be listed as chaotic list, chaotic coding, and chaotically broken. In addition to these, in this work we propose the chaotic awareness reality in complexity as a new critical theory in the literature world. In consideration of this theory, we investigate the novels *Silent House* (*Sessiz Ev*; Orhan Pamuk), *Dear Shameless Death* (*Sevgili Arsız Ölüm*; Latife Tekin), and *Black Terra Kefalos* (*Kara Kefali*; Gediz Akdeniz) in Turkish literature. Also by this theory, we understand the difference in fictional complexity in these novels and try to identify the place of Turkish novels in the third culture.

2.1 Introduction

In addition to the postmodern aesthetic criticism (Shusterman 2005), recently, the metaphors of the chaos theory as paradigm also have been considered as a critical theory in art, cinema, and literature. These paradigms mostly can be listed as chaotic list (Eco 2011), chaotic code, and chaotically broken in novels (Akdeniz 2016). In the frame of postmodern aesthetic, some Turkish novels have been also studied by these chaos metaphors (Ertem 2000; Aydın 2006; Akdeniz 2016). In this work we would like to present our recent theory, the chaotic awareness simulation theory (Akdeniz 2010, 2012, 2013a, b), as a possible chaos metaphor critic in the novels too. And in order to explain the role of this metaphor critic in novels, we shall consider three Turkish novels.

The chaotic awareness as non-modern local realities mostly can be found in the complexity of community where East culture (non-modern, disorder-sensitive human behaviors) and West culture (modern, order-sensitive human behaviors) meet. For example, Middle East geography is one of the most important examples for such kind of area which has chaotic historical and regional traditions in its

K. G. Akdeniz (✉)

Non-Linear Science Working Group, İstanbul, Turkey

background. According to the chaotic awareness simulation theory, *zuhur*¹ can appear when the chaotic awareness as non-modern local realities is disorderly simulated in simulation world (Akdeniz 2012, 2013a, b). And the social evolutions (from individual to family, from ethnic groups to communities, from ethnic groups to publics), which are not predicted and controlled by East and West cultures, can be only by such *zuhurs*. We are regrettably watching what happens wildly and monstrously in the Middle East in the last five decades. According to the chaotic awareness simulation theory, this could be the interference for to stop the emerges such *zuhurs* (Akdeniz 2013a, b).

The novels as well as movies, social media, and Internet in which the chaotic awareness is disorderly simulated in complexity could have historical roles in the emergence of new culture like butterfly effect. Of course this new culture will be an original part of *Third Culture* (Brockman 1996). Sure that the writers, the cinema makers, and the artists in Turkey can also have important roles in bringing the new culture in the Middle East, if they take the local chaotic awareness as the reality for the disorderly simulated complexity in their works.

In this work we would like to lead the way on how one can use the disorder simulations of the local chaotic awareness reality in the complexity for their works. For this purpose we study how the disorder simulations of the local chaotic awareness reality in the complexity are considered in three Turkish novels with different authors. They are *Sessiz Ev (Silent House)*, by Orhan Pamuk (Pamuk 1983); *Sevgili Arsız Ölüm (Dear Shameless Death)*, by Latife Tekin (Tekin 1983); and *Kara Kefali² (Black Terra Kefalos)*, by Gediz Akdeniz (Akdeniz 2008). We think that by this study in these novels we could understand better what the differences between simulacra and *zuhur* in complexity are. We also believe that complex fiction in these novels as models could lead us to understand what was going the Middle East in last years and what will be in future in world with related the Middle East.

2.2 *Sessiz Ev (Silent House) by Orhan Pamuk (1983)*

The first novel we would like to critic is *Sessiz Ev (Silent House)*. *Silent House* is Orhan Pamuk's second novel. According to the chaotic awareness simulation theory, it has been fictioned in complexity by the local reality governing metaphors of tradition (chaotic awareness) and intergenerational tension before military coup of 1980 in Turkey. A moderate-class family reunion is taking place in a summer village in Asia part of İstanbul. Figurative agents in fiction are the legal and illegal family members around grandmother Fatma. All agents have different characters with long-range correlations (political, educational, social class ext.). And these agents are in short and chaotic correlations which define each other differently with family secrets

¹The unpredictable emergences in Turkish (originally Arabic Zahara).

²Kefal, gray mullet in English. Κέφαλος (kefalos) in Greek.

in the mansion controlled by Fatma. Interactions of these correlations make complexity in fiction as the typical complexity definition is agreed by complexity scientists in complexity science. During the editing (the chaotic awareness simulation), Fatma is the center of attraction for the agents (family members) to keep this complexity in the novel under the control of writer.

2.3 *Sevgili Arsız Ölüm* (Dear Shameless Death) by Latife Tekin (1983)

In the fiction *Sevgili Arsız Ölüm* (Dear Shameless Death), there is a different local chaotic awareness reality than that of *Silent House*. It is the reality of the complexity in a squatter's house in İstanbul in which there is a social chaotic diffusion between the non-modern disorder-sensitive human middle Anatolian village life and the nonsensitive fake modern human life. This is the reality of all complexity editing in fiction as disordered simulation via family members. All family members (agents) in *Dear Shameless Death* are legal, and family members, and they are in chaotic short correlations to changing their lifestyle under the long correlating influence to be able a city member of out of the family. The mother (Atiye anne) does her best to keep the complexity autonomy of the story in family by using Anatolian traditional methods and practices. When Atiye mother dies, this is the end of complexity in her family as well as in novel with a *zukur*, Dirmit (the daughter of Atiye mother). In the next novel of Latife Tekin, *Gece Dersleri* (*Night Lessons*) (Tekin 1986), Dirmit will appear again to put in order form in ideological class reality of her complexity in *Dear Shameless Death* for her new life.

2.4 *Kara Kefali* (Black Terra Kefalos) by Gediz Akdeniz (2008)

The complexity in this novel is edited by chaotic awareness simulations, mostly in İstanbul, with different fantastic local realities. The short correlations in this complexity are chaotic dialogues and interactions between a child and *ilarya*³ and in their chaotic meetings both on the terra and in the sea. On the other hand, the long correlations in the fiction are the disorder-sensitive relations of a man (aged child in the fiction) with terra and the disorder-sensitive relations of a *kefalos* (aged *ilarya* in the fiction) in the sea. And in the fiction, these correlations are simulated by disorder simulations. Namely, this novel tells us that human evolution in today's simulation world could be only one in complexity, because the complexity in fiction is ending with a *zukur* which is a new species mixed of human and fish on terra.

³In Turkish, young kefalos, baby gray mullet.

2.5 Conclusions

In this presentation we studied three Turkish novels to understand what the complexity in novels is. The complexity in both *Silent House* and *Dear Shameless Death* is simulated by Turkish chaotic awareness realities in a family autonomy. But the complexity in fictions of *Silent House* are in fake modern class in the family member's correlations itself. Because of this diversity in complexity, *Silent House* ends with simulacra (Baudrillard 1995) which are defined by the author himself. But the ending of the fiction in *Dear Shameless Death* is with a *zuhur* (Dirmit). Dirmit will appear as a woman in Latife Tekin's next novel in 1986, *Night Lessons (Gece Dersleri)*. By both ends in these novels, we understand the diversity between simulacra and *zuhur* in the case of the disorder simulation of the local chaotic awareness reality in a complex fiction⁴.

In additional to these conclusions, as we have pointed out before, in *Black Terra Kefalos (Kara Kefali)*, the chaotic awareness reality in complexity is the disorder-sensitive simulation itself. By this diversity we also understand that the *zuhur* in *Dear Shameless Death* is the evolution of the consciousness. But in *Kara Kefali*, the *zuhur* is the evolution of human behaviors.

By this presentation, we also understand that the complex fictions in these novels can be considered as design models to lead us what is going in Middle East in the last 30 years (Akdeniz 2012, 2013b; Akdeniz and Anastasopoulos 2014) and what will be in future in world with related Middle East.

Key Explanations

<i>Chaos in Novels and Poems</i>	It is the chaos metaphors in the fictions of the novels and the poems. It is considered to be a paradigm both the new fiction technique and a kind of the postmodern critics. These paradigms mostly can be listed as chaotic list, chaotic code, and chaotically broken in the fiction.
<i>Chaotic Awareness Simulation Theory</i>	It is a simulation theory with the chaotic awareness reality principle in simulation world. It is proposed to investigate disorder simulations of the non-modern realities and for the identify of <i>zuhurs</i> of such simulations.
<i>Zuhur</i>	According to chaotic awareness simulation theory, <i>zuhur</i> (emergence in Turco-Arabic) is an unidentified and a non-predictable emergence in the simulation world. They could evolve human behavior with nonrational form to build a new culture and civilization.
<i>Complexity and Simulation in Novels and Poems</i>	It is a critical method to discover the simulation of complexity and to identify simulacra and <i>zuhurs</i> as models in novels and poems.

⁴In this proceeding, for another work on the relationship between simulacra and *zuhur* (Tangün 2017).

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Chapter 3

An Assessment on Positive Reflections of the Restructuring of Public Banks After February 2001 Financial Crisis in Turkey and 2008 Global Crisis to Turkish Finance Sector



Niyazi Erdoğan

Abstract In terms of effects and consequences of crisis process, it has caused serious damage in many countries, especially the USA, and it took a long time to repair. Crises are chaotic and complex situations that can be encountered in the lives of organizations and societies and cause administrative disruptions and major organizational instability in administrative processes. To reach its goals, to live their lives, to keep their market share against increasingly intense competition, to increase their market share, and their ability to enter new markets of organizations in such a chaotic situation depend on their ability to adapt to the environment to a large extent. The banking sector acts as an intermediary in the financial markets for the transfer of funds in the conversion of savings into investments through the payment system established on it. Because of these duties, it is also a very important sector that provides economic growth and development in all countries. Positive reflections of the restructuring of public banks after February 2001 financial crisis in Turkey and 2008 global crisis to Turkish finance sector are discussed in this chapter.

3.1 Introduction

The capitalist system has faced serious economic crises in the historical process. The most important of these is the great vortex, which lived in 1929 and was called *Black Thursday*. In this crisis, the stock market of the USA collapsed; the collapse spread all over the world, and there was a great depression that lasted 10 years. In 1933, the gross national product (GNP) was about two thirds of the value of 1929. By 1933, about 13 million people had lost their jobs, and by 1938, one in five was still unemployed. In this period prices have fallen by around 25%. In short, in terms of effects and consequences of crisis process, it has caused serious damage in many

N. Erdoğan (✉)
Ufuk University, Ankara, Turkey
e-mail: dmierdogan@gmail.com

countries, especially the USA, and it took a long time to repair (Galbraith 2009: 177–190). Crises are chaotic and complex situations that can be encountered in the lives of organizations and societies and cause administrative disruptions and major organizational instability in administrative processes. To reach its goals, to live their lives, to keep their market share against increasingly intense competition, to increase their market share, and their ability to enter new markets of organizations in such a chaotic situation depend on their ability to adapt to the environment to a large extent.

The banking sector acts as an intermediary in the financial markets for the transfer of funds in the conversion of savings into investments through the payment system established on it. Because of these duties, it is also a very important sector that provides economic growth and development in all countries. In developed countries, the size of the payment system can be equal to or greater than the GNP from time to time (Erdoğan 2002a, b:11).

However, the payment system does not show the required performance in every country, and financial and structural problems in the banking sector cause “systemic crises” in many countries. “Restructuring in the banking system” and “bank couplings,” which are an important element of this construction, are on the agenda for the solution of these systemic crises. Financial markets hold a central place in terms of economic development in Turkey which has an important place in emerging market economies. The role of the banking system in financial markets in Turkey’s economy is significant. That is why structural problems in the banking sector are discussed in Turkey as well as in most countries with the crisis in the financial system revealed (Çolak 2000).

3.2 Turkish Banking Before February 2001 Economic Crisis

Turkish banking system that forms the basis of Turkey’s economy and financial system, through certain stages to the effects of political and economic development that grew rapidly, has played a role in the growth and strengthening of the financial system, the transformation into a structure to an outside open-closed structure, and the switch to a free market economy from planned economy.

The Turkish financial system has undergone significant structural change and dynamism as a result of the liberal policies implemented by the decisions of January 24, 1980. These developments have taken place in the development of deregulation practices such as the elimination of selective credit policies, liberalization of deposit and loan interest rates, liberal foreign exchange regulations, and facilitation of foreign capital flows, as well as efforts to raise the sectoral legislation regulations to international norms. The Turkish banking sector has been rapidly expanding in number of banks, employment, service diversity, and technological infrastructure with the introduction of the banking sector, the competition, and the legal and institutional arrangements that facilitate growth.

In the past decade, the banking sector has demonstrated rapid growth in the areas of ATM banking, online connections, and electronic funds transfer (EFT) and the use of the Society for Worldwide Interbank Financial Telecommunication (SWIFT) systems in the field of interactive banking and Internet banking to adapt to technological developments and technological infrastructure development.

An important step toward compliance with legal and institutional regulations to changing conditions and developments in international standards in the banking sector in Turkey has been laid. Regulation, control, and supervision of banking sector as parallel to international applications have been transferred to the Banking Regulation and Supervision Board (BRSA) which has administrative and financial autonomy with Banking Law No. 4389 that was enacted in June 1999. Regarding the banks, all the decisions to be taken from establishment to liquidation have been left to the power of BRSA with the Law No. 4491 dated December 19, 1999, and the institution has started to work effectively since August 31, 2000 (Erdoğan 2001: c.641).

Although the banking sector's share in the economy, openness, the diversity of technological infrastructure of banking services, and the positive developments in the first legal and institutional framework in the field, because of increasing uncertainties in the economy and high-inflation environment in the same period, has prevented the formation of an efficient financial system in Turkey, the transfer of resources to the real sector, and the fields that will provide the development of national income. That is, the share of loans in total assets of the banking sector decreased from 47% in 1990 to 32.8% in 2000. Similarly, the loan/deposit ratio dropped from 84% in 1990 to 51% in 2000. GNP ratio of loans in Turkey remained at relatively low levels compared with countries of similar category.

There are three main reasons why the banking sector cannot effectively fulfill its financial intermediation function (BRSA, November 3–4, 2002):

- (a) *Macroeconomic instability: The high and instable inflation experienced in the 1990s, fluctuations in growth rate, and the fragile nature of capital movements have increased the uncertainties of the future, led economic agents to move in a short-term perspective, and weaken confidence in the Turkish lira, accelerating the creation of money. As a consequence of this process, maturity of bank funding sources has significantly shortened, and the share of foreign exchange liabilities in total resources has increased significantly.*
- (b) *High public sector deficits: The increase in the public sector deficits and the financing of these deficits by the high real interest rates and the domestic markets led the banks to move away from the real economy resources and to finance the public deficits. The arbitrage opportunities arising from high real interest rates have made it attractive for the banking sector to borrow from abroad and finance public deficits, which has led to an increase in the short position of the banking sector. At the end of this trend, the share of state domestic borrowing bonds (SDBB) in total assets of deposit banks increased from 10% in 1990 to 25% in 2000 year. In addition, due to borrowing from foreign currency, foreign exchange risk is assumed due to open positions. The tax benefits provided to the SDBB and the legal regulations on an attributive*

reserve and liquidity have also influenced the increase in the SDBB portfolios of the banks.

- (c) *Disturbing effects of system of public banks: The timely nonpayment of duty losses, interventions contrary to economic efficiency, duties other than essential functions, and weakness in management have resulted in significant deterioration in the financial structure of the public banks. The short-term and high cost of meeting the financing needs of public banks has led to increased losses and, on the other hand, financial instability. This has caused the interest rates to move at high levels in the market. (<http://infosource.london/tuumlrkiye/99-secimleri>).*

As a result, public banks have become unable to fulfill their banking functions; in these banks while collecting 40% of the total deposits in Turkey, the share of loans remained at around 25%. Although the weakening of risk perception and management and as a result of the developments summarized above have made the banking system vulnerable to liquidity, interest and exchange rate risks, macroeconomic policies, particularly in the second half of the 1990s, which aimed at facilitating the financing of public deficits, reduced the banking sector's perception and management of these risks to the secondary level. As a consequence of this process, the Turkish banking system has faced the following structural weaknesses:

Self-resource inadequacy.

Small-scale and fragmented banking structure.

The high share of public banks in the system.

Weak asset quality, credit concentration, group banking and concentration of risks, inconsistency between loans and provisions.

Hypersensitivity and fragility to market risks (maturity mismatch, open position).

Inadequate internal control, risk management, and corporate governance.

Lack of transparency.

3.3 Reasons of February 2001 Financial Crisis

The structural problems outlined above have made the banking sector highly sensitive and fragile to internal and external shocks. Banking sector has faced significant losses as a result of the crisis in Turkey's economy in 1994, and three banks were liquidated. The negative effects of the 1994 crisis were soon overcome, and the banking sector grew at an average annual rate of 18% in dollar terms in the post-1995 period. However, due to the earthquake disasters in 1999 and Far East and Russian crises in this period, Turkey faced severe contraction in the economy, and this has negatively affected the banking sector.

At the beginning of 2000, a comprehensive economic program was introduced to reduce inflation and restore the growth in the economy. In addition to implementing a tight fiscal policy under the program, in order to rapidly reduce inflationary expectations, exchange rates are determined according to targeted inflation and are

laid out in a framework that has been previously announced and links monetary policy and liquidity expansion to foreign resource inflows (exchange rate anchor).

The increasing uncertainty in the economy toward the end of 2000 and the deviations in the program caused the risks accumulated in the banking system to emerge. As a result, the banks, which have a marginal position with respect to other banks in the system and have increased their risks considerably, have been risking their entire financial system in a short period of time like one or two weeks.

In November 2000, sensitivity to market risks increased, interest rates increased significantly, and overnight interest rates increased by 1700%; public banks which are in need of excessive overnight borrowing and the banks covered by the Savings Deposit Insurance Fund (SDIF) further destroy the financial structures. The climbing November 2000 crisis resulted in the transfer of Demirbank to the SDIF and the removal of the Park Investment Bank's operating permit on Wednesday (December 6). Although all of these were precursors of a crisis to be born, actions were not proactive and quick. The Law No. 4603 on the restructuring of these banks has been enacted, acknowledging the fact that the stabilization program could not be successful before public banks were restructured. However, the slowing of the public banks' securitization of their duty losses and restructuring caused these banks to continue to raise funds at high cost through deposit collection, money market borrowing, and short-term repo.

In sum, the fact that the public banks cannot manage their primary balance has been a preparation for a new crisis, affecting the entire financial system. The negative developments before the Treasury auction in February 2001 led to the complete disappearance of the program and currency anchor, and the foreign exchange demand increased considerably. The Central Bank tried to control the liquidity against this high level of foreign exchange demand, but the resulting liquidity shortage caused the payment system to be locked due to excessive daily liquidity needs, especially by public banks. In this environment, the exchange rate anchor is abandoned, and the Turkish lira is left to fluctuate.

The reasons for the November 2000 and February 2001 crises are briefly:

- *The overvalued Turkish lira.*
- *The current account deficit is above the critical limit.*
- *The bank, the real sector, and the public open positions (foreign exchange commitments).*
- *The real sector, which lacks capital.*
- *The heavy treatment of public banks' securitization of their duty losses and their restructuring.*
- *The increase in the interest and exchange rate risk of the financial sector.*
- *Customization delays and hurdles.*
- *Disagreements among government partners and escalating political tension.*
- *Interbank competition.*
- *The fact that the Central Bank is late to intervention.*
- *The negative impact of the relations with the European Union (EU) on the inclusion of Cyprus and Aegean in the accession partnership document.*

- *The inadequate tax system, the weakness of the public sector, and the delays in structural reforms such as the public pension system worsen the already existing problems.*

It was expensive to wait for a financial crisis or even chaos in an environment where all these negativities were present and to watch instead of being proactive. On the positive side, it is now clear that a number of radical structural changes are needed to deal with the problems.

3.4 Restructuring of Public Banks (2001–2003)

Law no. 4603 dated November 15, 2000 entered into force on November 25, 2000; the aim of the law is “to be restructured in order to ensure that contemporary banking and international competition work according to their needs and prepare to privatize” of the Ziraat Bank, HalkBank, and Emlak Bank (Günceler, 293). In order to fulfill this purpose, the public banks have been restored to the status of joint-stock company like other banks in the sector, subject to the provisions of private law and the provisions of “Banks Act.”

The “joint board of the public banks” started to work in April 2001 in order to manage the abovementioned public banks in coordination. The Decree of the Council of Ministers numbered 201/2001 dated March 28, 2001 entered into force on April 3, 2001, the principles and procedures regarding the restructuring of the banks were determined, and the board members and general managers of the banks were authorized to carry out all procedures for restructuring in preparation for privatization.

The Law on Amendments to the Budget Law No. 2640 of April 11, 2001 entered into force on April 26, 2001, and the payment of duty loss receivables through public papers was decided. Therefore, a major deficit in the balance sheet, which forced the banks into hardship, would have been closed. When the joint board of directors of the public banks started to work in April 2001, firstly:

A. *Financial restructuring* was decided, and three main objectives were determined¹:

- *Lowering interest rates:*

Lowering interest rates that was the first objective was very successful in a very short time, and public banks have brought borrowing rates to market levels. For example, in March 2001, borrowing rates of private banks were 97%, while borrowing rates of public banks were 115% (18 points difference); 3 months later, in June 2001, it was 66% in private and it was 66% (0 difference) in public banks.

¹Ziraat Bank 2002 Annual Report contains detailed information about the subject.

- *Discarding short-term debt:*

The short-term debt of public banks was reduced from 13 quadrillion TL in February 2001 to 2.5 quadrillion in December 2001. In this respect, the public banks, which are going to resolve the interest risk with a more balanced maturity structure, have also prevented a new financial crisis.

- *Transparency of balance sheet:*

Transparency of balance sheet is the most important step of the financial restructuring, and this is one of the most important politics of the public banks' joint board of directors. In this respect:

- *Duty losses have been converted to public papers (SDBB).*
- *Returns have been reached to market interest rates, and unnecessary interest cost of the public has been prevented.*
- *Provisions are set aside for frozen loans.*
- *In addition to daily transactions, reconciliation and liquidation of all the records in past transfer accounts and in the balance sheet temporary accounts have been made, and no unrecorded records have been left in the balance sheet accounts (Günceler 2016: 295).*

Public banks which gave the highest interest rate on the market due to their high liquidity needs and thus disturbed the interest market rapidly lowered the interest rates with the discipline they provided in the new period and analyzed the market well-informed team so as to increase the margin between the passive costs and the asset revenues. By this skill, the public banks have rapidly reduced their own resource costs as well as the borrowing costs of the entire industry and the treasury, thus playing an important role (Erdoğan 2002a, b:177). Financial restructuring has allowed public banks to quickly overcome the crisis and concentrate on “organizational restructuring” efforts.

B. Organizational Restructuring

Within the Turkish banking sector, public banks have had to offer many public services besides commercial banking, and they have faced many problems due to their functions. These problems can be listed as follows:

- *Classical management perspective and bulky organization structure.*
- *The absence of effective task and authority distribution.*
- *The organizational dispersal of the general directorate units and the availability of task switching.*
- *The weight of public services, nonrationally positioned of the branches, and therefore nonprofitable branches cannot be closed because of political approaches, and the bank legislation contains strict rules in the administrative law framework.*

According to the requirements of today's modern banking, the organizational principles to be followed during the complete change of public banks have been determined. These are:

- *Corporate governance:*

Basically, governance that is based on common sense management principle means good, fair, transparent, appropriate to the rules, and well-defined responsibilities. Corporate governance points to a flexible management structure, while democratization, clarity, accountability, and pluralism come together on the other side (Stoker 1998).

The main elements of the governance concept are accountability, participation, transparency, efficiency, strategic vision sharing, and compliance with the law. In this sense, the Ziraat Bank made public opinion research to strengthen the governance integration of the employees by an independent research institution; both bank employees' and public opinion surveys, market-oriented banking, intra-institutional trust and communication, relations, and satisfaction of human resources management have been scientifically examined; and the results have been reinforcing the belief in change. By this understanding:

- (a) *Change in bank organization structure.*
- (b) *Branch rationalization (Fig. 3.5).*
- (c) *Norm staffing, implementation.*
- (d) *A road map for applications to be followed (road map).*

projects have been prepared, and all necessary education, information, and studies have been completed and implemented rapidly.

- (a) It is clear that the bank organization structure before restructuring is not functional (Fig. 3.1).

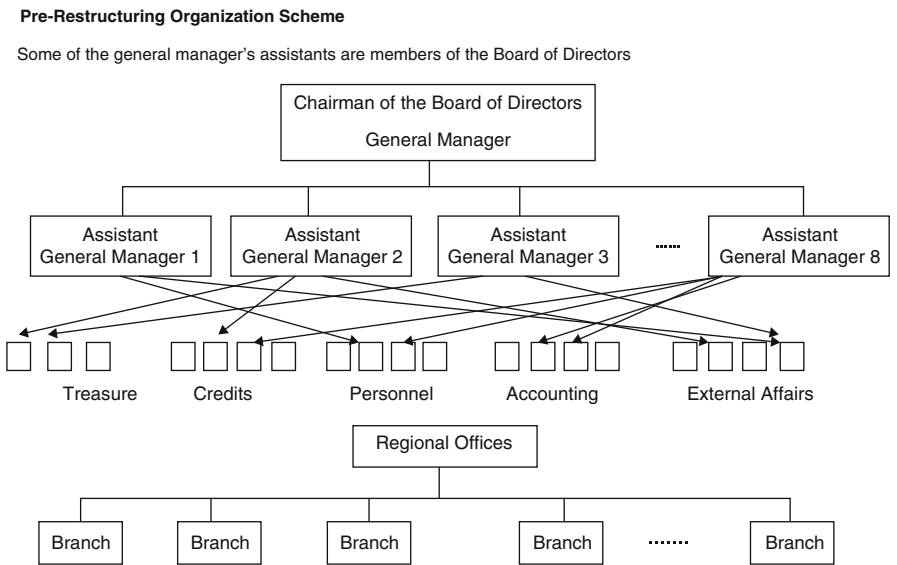


Fig. 3.1 Organization structure before restructuring

Organization of the Bank

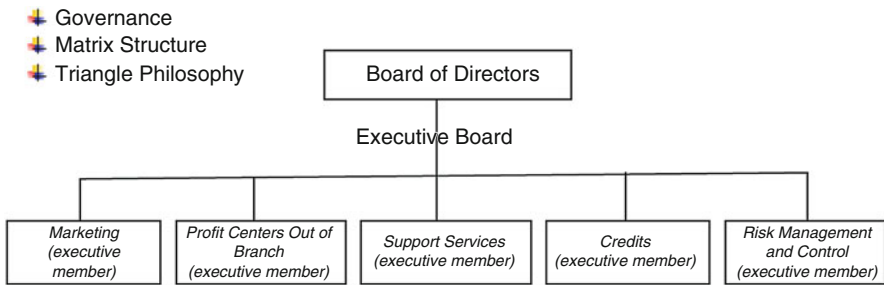


Fig. 3.2 Bank new organization and departments. (Resource: After 20 months (Ziraat Bank’s Promotion Documents, February 2003: 29))

It is aimed to be a profitable and productive bank by creating economy plus value within contemporary banking rules with the new organizational restructuring. In line with these principles, the functions of the public banks are summarized under five main headings (Fig. 3.2):

- *Marketing*
- *Credits*
- *Support services*
- *Profit centers out of branch*
- *Risk management and control*

In the new organizational structure, public banks first met with the “marketing” function and acquired a vision that is focused on customer satisfaction. This function has been given to the responsibility of the “executive director,” who is also the CEO and member of the executive board.

Each of these functions is linked to the managing directors who are members of the board of directors as “general manager,” creating an independent structure that will avoid the effects of the hierarchical order of decision-making, pricing, finalization, and follow-up functions in all transactions (Ziraat Bank Main Contract, Article 26).

The most important feature of this new structure as the “matrix organization” is that the “control activities” are given to the responsibility of units that are purely enforced and only focused on time.

Thus, the “common mind management” process was implemented. The executive board is the highest executive body of the bank and has been formed from five managing directors elected by the board of directors to express their duties and powers explicitly in order to conduct ordinary business. The executive board elects the president (CEO) and general manager candidates and presents them to the board of directors for approval² (Fig. 3.3).

²Following this process, N. Erdoğan, who made this study, was selected as the first “chief executive officer and general manager” on the bank’s history.

MATRIX STRUCTURE

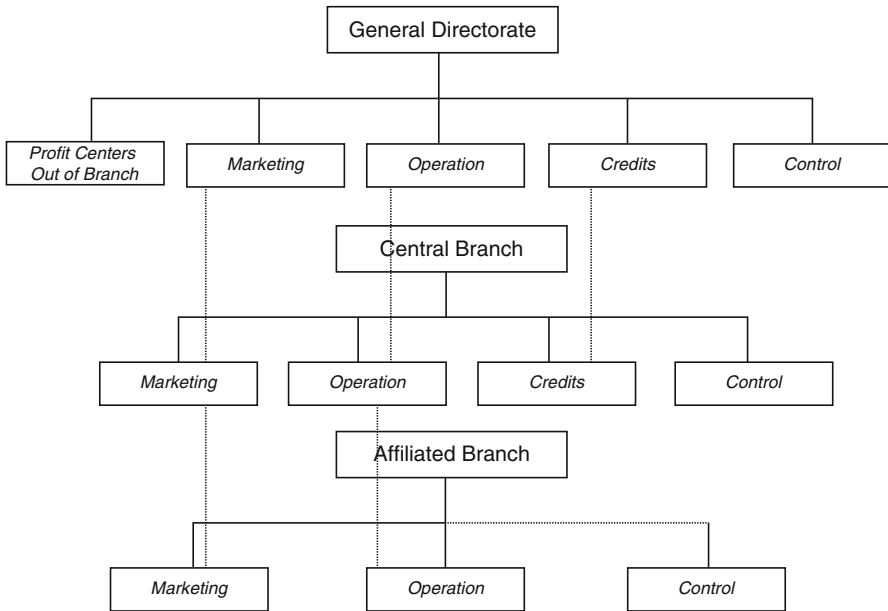


Fig. 3.3 Matrix organizational restructuring. (Resource: After 20 months (Ziraat Bank's Promotion Document- February 2003:29))

A “management council” consisting of approximately 100 directors, including general director and executive directors, chief executive officers, heads of departments, division managers, corporate branch managers, and career inspectors, has been set up in the comprehensive restructuring of the public banks. Various committees have been established to produce policies in administrative matters. The policies created at the end of the work of these committees were presented and discussed at the monthly management council meeting, and the finalized policy proposals were forwarded to the executive board and forwarded to the board of directors in order to be put into effect as bank policy if appropriate (Fig. 3.4).

As is known, this application is similar in modern countries; it is one of the first in this new process that began for the first time in public banks in Turkey. To provide branch communication and management activities, 37 central and related 25–40 subsidiary branches of public banks having a very wide branch network, especially Ziraat Bank, have rapidly adapted to the new structuring and horizontal management understanding, with the “performance meetings” of the branches and units that are held every 3 months; both the fulfillment of the objectives and the meeting with the top management of the bank and the departments and branches were made to get acquainted with each other and to strengthen communication.

(b) Branch Rationalization (Fig. 3.5)

(c) Human Resource Rationalization (Norm Staff)

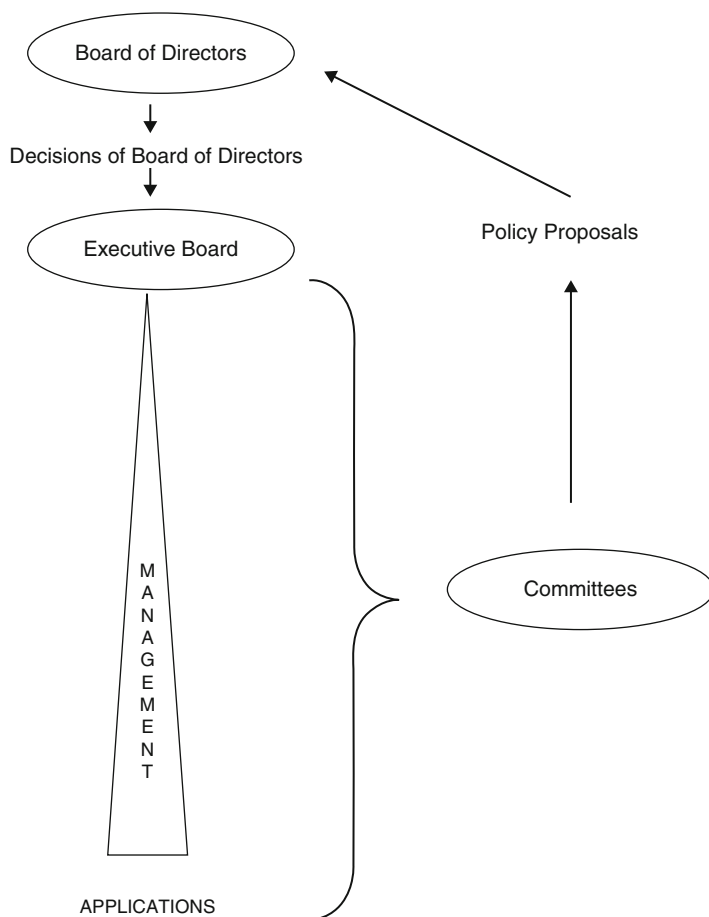


Fig. 3.4 Public bank governance schemes. (Resource: Ziraat Bank, restructuring in preparation for privatization report, December 2002:45)

RATIONALIZATION OF THE BRANCH

NUMBER OF THE BRANCHES	December 2000	March 2001	July 2001*	October 2001*	December 2001	June 2002*	December 2002
ZİRAAT	1.286	1.286	1.621	1.523	1.499	1.141	1.139
HALK	806	805	803	899	899	551	546
EMLAK	403	403	-	-	-	-	-
TOTAL	2.495	2.494	2.424	2.422	2.398	1.692	1.685

*06.07.2001 Ziraat Emlak Association

*12.10.2001 Branch Transfers from Ziraat Bank to Halk Bank

*30.06.2002 Completion of branch transfer and closing in public banks

*A total of 810 branches have been closed since December 2000

Fig. 3.5 Branch rationalization of public banks

As we have seen in the tables, Emlak Bank was acquired by Ziraat Bank on the same day with organizational change with 391 branches and 10,000 personnel on July 06, 2001. This bank, which is different in terms of technological infrastructure, business, and human resource profile, has been transferred to Halk Bank without any problems with 2000 employees and 96 branches. There has been no merger or dissolution that took place in such a short period of time in the history of Turkish banking (Ziraat Bankası, Annual Report 2002). During these rationalizations, retirement was monetarily encouraged; the reasons for closing branches were shared with the local people, after the consolidation of a voluminous bank like Emlak Bank; and especially the adjustment of the human resources to the new banks was provided without deteriorating their motivations; it has not been a single legal event.

Although Ziraat Bank is the only Turkish bank that was established as an “expertise bank” to finance the agricultural sector, agricultural credit policies have been misplaced for political reasons, and agricultural loans of around 650,000 have become problematic, even though they are agricultural and have a significant market share in the sector.

From time to time, honest farmers who have received credit pays and regularly paying loans have regretted this situation, and they have begun to disrupt their payments. In the process of restructuring, “agricultural central branches, agricultural branches, and agricultural specialization branches” were established in hinterland, where agricultural customers are predominant in branch segmentation studies, and 838 branches were given the authority to apply agricultural credit. Approximately 650,000 farmers whose loans have become problematic have lent credits in the long term to facilitate payment, and borrowers have continued to use loans within the same limits. Furthermore, in July 2002 and December 2002 period, the effectiveness of the agricultural credit system has been scientifically determined with “a strategic review of the role of agricultural bank for the financing of agriculture in Turkey” project of the World Bank Project Group that is consisting of the Boston Consulting Group (BCG) and Rabo International Advisory Services (RIAS) and bank employees.

Active marketing with the restructuring of public banks, efficient and fast working of intra-bank relations with corporate governance approach, and performance management and career planning based on measurable targets have positively affected other banks in the sector. The foreign branches and subsidiaries of the public banks are structured within the same vision and strategies.

In this period, education was greatly important. Every level of human resource has been trained to use the technology to perform the jobs it carries perfectly, fast, and error-free to complete the tasks that they are responsible, so that very high levels of improvement in operational quality have been achieved. In the branch and the headquarter units, the rooms have been turned into open offices with their compartments removed, and even more important, four quarters of these spaces have been left to the customers. Thus, great success has been achieved in customer satisfaction. In order to raise the quality of service for more than two million customers, most of which are made up of many pensioners, a separate special study has been continuously carried out, and problems have been solved in a very short time. Numerous

messages, both from the media and directly from the customers, have ruined the employees.

Housing acquisition assistance (KEY) accounts in Emlak Bank, which have no transactions, have been solved with a team set up to enter millions of accounts into the system, and ten thousands of people who have deposited money into the system have been able to get their money saved on this account.

3.5 2001–2003 Period Banking Structurings

3.5.1 2008 Global Crisis Provides Not to Be Affected of the Turkish Finance Market

The economic crisis in our country in February of 2001 was a crisis caused by the explosion of economic, financial, and political problems that accumulated from previous years and internal dynamics. As mentioned earlier, the financial and structural problems of the public banks, which are the main problem of the crisis, have been corrected by the professional management team and the uncompromising application of the program, and the banks have become profitable and productive. In 2003, the restructuring team left for the task, but the law, the decisions of the Council of Ministers, and other implementing regulations issued at that time also made it easier for the incoming staff, and the process has been continued.

In 2008, the crisis of mortgage and unskilled subprime loans in the USA has been rapidly spread by the effect of the capitalist system of capital relations and globalization. Liquidity abundance, USA growth, and good indications in macro-data have fueled the appetite of capital owners; confidence to US Federal Reserve Bank (FED) has increased.

The lack of confidence and carelessness of the financial sector in the provision of housing loans in this confidence environment and the abundance of liquidity have created problems in loan repayment. The real problems broke out as a crisis with the plunge of the American giant investment bank “Lehman Brothers”; the FED’s failure to intervene in order to prevent the crisis, especially the monetary expansion, did not work, and the crisis became deeply depleted from the financial area to the real field.

Globalization and the integration of world economies have caused the crisis to spread rapidly to the world, with some of the European Union (EU) countries experiencing great shocks. Macroeconomic data and unemployment rates were severely negatively affected, and impoverishment trends were observed. Even though it has been over a decade now, countries have not yet to find the desperation of the global crisis, and each country is trying to get rid of the infectious effects of globalization by managing its economy within the framework of global factors and developments. Wide speculations have been made on the European Union (EU) and

its currency euro, which have been created as an alternative to a unipolar and US dollar-based reserve currency, and the problems of unity have been still continuing.

As a result of the serious regulations and the better identification of the troubles experienced in the Turkish banking sector after the 2001 financial crisis, a serious recovery and increase have been seen in the Turkish banking sector. It is seen that the level of the impact of the Turkish banking sector is very limited from the 2008 financial crisis which is the oldest and the biggest of the crises that have lived to this day. As a matter of fact, it is clear that the problems arising from the liquidity and demand in the banking sector do not occur at a level that would harm the banking system and that the high level of “capital adequacy,” especially one of the most important ratios for banking, is resistant and strong to sudden shocks. Capital adequacy is a buffer for sudden liquidity shocks, sudden asset sales, and bank runs, hampering serious losses of banks and the banking sector. Therefore, capital adequacy is an important factor in the stability of the banking sector.

It is stated that almost all of the news and academic studies that examine the “effects of the 2008 global financial crisis on the Turkish banking sector” have played a role in not feeling the impact of the crisis on the sectoral structures, especially in the public banks after the February 2001 crisis. In this context, high growth rates of production and exports were realized in 2002–2007 period, inflation rates decreased, and financial discipline was improved. In the economic structure, despite the structural current account deficit growth during the growth period, there was no financing problem due to the global liquidity precrisis period.

In 2001 crisis, Turkey economy had shrunk by 9.5%. In the following years, record growth experienced was 7.9% in 2002, 5.9% in 2003, and 9.9% in 2004.

- *Turkey Banks Association (TBA):*

The banking sector’s strong capital base, low foreign currency risk, and a deposit-based funding structure have led banks to overcome financial and real shocks without any problems. The reduction in policy interest rates and the change in the response rates made a recovery with high interest margins on the banks’ profits and capital ratios with the measures taken during the 2001 crisis and compensated for the increase in the loans that did not return due to the crisis in the same period. (TBA. 2012:190)

- *Bakkal and Alkan:*

The banking sector in Turkey, has managed to remain standing firmly on the global crisis experienced in 2008. Although the effects of the crisis were felt, these effects were limited and the sector recovered in a short time. The main reason for this situation in the sector is that after the 2001 financial crisis, strengthening bank balance, stronger equity and confidence in the Turkish Lira. Unlike before 2001, two-thirds of banks in Turkey are composed of TL deposits. (Bakkal and Alkan 2011:113).

In the study, Afşar examined the effects of the global crisis on the Turkish banking sector. According to results of the study based on observations and data that many banks in developed countries were affected by billions of dollars of losses

and bankruptcies, Turkish banking was not affected in the global crisis of 2008. According to the study, the banking sector, which has suffered a great deal of negativity during the 2000–2001 crisis and thus completed its structural reforms, has renewed its self-confidence by remaining strong in the global economic crisis with its strong infrastructure. Moreover, it has been revealed that the Turkish banking system is not affected by the crisis because of not having invested in credit derivatives called “subprime” mortgages and having strong asset quality, liquidity structure, capital adequacy, risk management, and internal control system (Afşar 2011:169).

Çağıl analyzed the effects of the 2008 global crisis on the financial performance of the Turkish banking sector with the elect management. According to the results of the study, it is observed that some banks are placed higher in the bank performance order in the crisis period and some banks are staying lower, and thus crisis has an effect on bank performance orders. According to the results obtained in the study, while the public banks were in the upper rank in general in 2010, the private banks were in the middle and upper ranks, while the foreign banks were in the lower ranks (Çağıl 2011:83).

This suggests that the working principles set out in that day’s management team continue, even though it has been through the structuring period for a long time. Especially with the new law and other official applications, it is understood that there were no interventions that disturbed the structure of the public banks as before. Otherwise, it was inevitable to face very grave consequences with the impact of the 2008 global crisis.

Artar and Saridoğan have examined the effects of the global financial crisis on the financial structure of the Turkish banking sector. As a result of the research, the banking system which strengthened its financial structure during the restructuring period entered after the crisis of 2001 has been found to have a limited level of adverse effects of the crisis (Artar and Saridoğan 2012:6). The study titled “Turkish Banking Sector in the Third Year after the Global Crisis” of Kartal in 2012 analyzed the performance of the banking sector and the balance sheet data. As a result of the study, between November 2007 and June 2011, the banking sector was found to have a robust balance sheet, high capital adequacy ratio, and strong profitability. At the end of the analysis, it was determined that the profitability and stability of the banking sector continued during the crisis (Kartal 2012–2015).

In parallel with the financial globalization process and the rapid development of international integration movements, the impact and importance of international direct investment (IDI) on economic development are increasing steadily. On the other hand, short-term capital movements, which are increasingly entering into the country’s economies, may have some adverse effects on the country’s economies, especially financial crises. The effects of these negativities increase because of the fact that these short-term capital movements are aimed for meeting the temporary financing needs rather than the production.

3.6 Discussion and Conclusion

Public banks have become the main actors of the 2001 crisis as a result of political influence and interventions, so they could not fulfill their real functions at the end of the day; senior management must be assigned ratings other than merit and performance criteria and as a result of poor governance. For this reason, restructuring of public banks in order to carry out their activities according to the “strong capital structure,” “modern banking” countries, harmonizing “funding costs” with the market conditions and eliminating the risks of “maturity incompatibility” and “market-based” banking on this account with the Law No. 4603, which was put into effect on November 25, 2000. However, being slow to take action as usual has caused the 2001 economic crisis. The structure envisaged for restructuring (4603 numbered Law, Art. 1), which will enable banks to work and prepare for privatization in accordance with their contemporary banking and international competition requirements, is characterized by its own expertise, which is not related to politics.

Since the current will cannot carry out the structure envisaged in Law No. 4603, the IMF Vice President Dr. Kemal Derviş has been invited to Turkey and then was appointed to the Ministry of Economy. Kemal Derviş’ initiation of relativism and business ownership made it possible for the new professional staff to work with an autonomous understanding and to avoid political habits. Both the joint board of directors of the public banks and the directorate and executive boards of each public bank have worked independently, highly planned, in accordance with their goals and motivations, without paying the working hours, and have attained very important milestones in a very short time.

Before the 2001 financial crisis, our country has been still experiencing problems due to its political, social, financial, and economic conditions. Every economic problem is experienced by serious problems on financial institutions and, therefore, real sector companies that are in a relationship. For example, in the 1994 economic crisis, three Turkish banks were settled (Marmara Bank, TYT Bank, Impex Bank). The current deficit in 1999 was \$ 1.3 billion, but in 2000 it was \$ 9.8 billion due to short positions. In February 2001, the dollar rate increased from 688,000 TL to 962,000 TL and increased to 1.4 million TL later. This is chaos. Most of the institutions that deal with foreign currencies have suffered to a great extent. Twenty-five banks went out of the sector; companies and deposit customers working with these banks suffered.

The consequence of this study is that risks can no longer be managed with a classical method known by miracle waiting to spread to a clear process. The causes that give rise to risks need to be determined before the crisis; strengthening of weak factors, structural changes, and strategic decisions should be taken seriously and carried out with competent people who will manage the business.

The “restructuring of public banks” project in the February 2001 financial crisis is a project to be shown as an example to many countries. The project has helped the banking sector recover in a short period of time, especially in the Turkish banking sector in general, which emerged in 2008, despite the ongoing decades of global

financial crisis. Management that realizes this positive result fully complies with agreements made by the International Monetary Fund (IMF) and the World Bank (WB) to deal with the crisis, and program was completed long before the planned period; they leave banks which are the main elements of the 2001 crisis to the next managements.

Assuming that the banks will not be structured with the same staff, about 1% of the new management personnel are assigned from taking the experienced bankers from the private sector according to law (about 500 people for Ziraat Bank). The new administration believed that there was a human power that could make this change in the public banks first, and they received a limited number of specialists for use in certain technical fields. The most striking aspect of the process is the identification of a human resource, which is summarized in this work and which gives a sense of liberation struggle, revealing the conclusions of the public banks that they have a sense of belonging for their existence.

The financial chaos of our country has aroused, it has become normalized in a short period of time from the anarchic environment of the markets, and the banking sector has regulated itself, so, I would like to express our gratitude not only for our own adherence but also for our nation to human capital of our country which adapts to the innovations that are very dependent on the banks which are able to normalize the general economic conditions and which implements the learning and learning without error.

I have specialized in national and international banking throughout my banking career. However, I have received training both in Turkey and abroad on human resources management, corporate governance, and crisis management. My master thesis was "Financial Risk Management in International Business." I'm a lucky person. As one of the most difficult and most risky financial conditions in the country, having no experience in the public sector, I have had the professional honor and satisfaction of finding the opportunity to apply our technical and theoretical knowledge in a "common sense" manner. I am happy to live with this honor throughout my life.

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Assoc. Prof. Dr. Niyazi Erdoğan has worked senior positions in the Turkish banking and finance sector between 1972 and 2003; he was appointed as general manager (CEO) of Ziraat Bank after the financial crisis 2001 to manage the “government banks restructuring” process which is an important part of the government program “Transition to a Re-Enforced Economy Government Program”; he successfully managed the process discussed in this article and left in 2003 with his own request

Chapter 4

Organizational Intelligence



Daniels Aide Okun

Abstract An organization intelligently and systematically applies knowledge-based organizational principles, organizational traditions, and organizational culture to define, reflect, and assert the goals, visions, and the desires of organizations. To be realistic, organizational intelligence is an investment in the analytical evaluation of the business structure of an organization, further contributing to the inclination of the organizational vision that justifies the organization of intelligent and the development analysis of the structural framework of the security sciences; in this context, organizational struggles, efforts, and crashes are reviewed and strategically evaluated to circumvent the risk of organizational threats, competition, and identification of organizational opportunities, prospects, potentials, and advantages that create competitive advantage in the marketplace. The research and application of organizational intelligence is an inclusive and evolving dynamic science and has soon become a unique and interesting research field, for seminars and marketing practice in most academic writings, research, intellectual debates, and business forums. The rapid growth and changing nature of international marketing has increased the relevance and value of organizational intelligence and its irreplaceable need. The rise of the supply, scarcity, and demand of high products and services in the global market has placed a pressure on the scalability of most enterprises to meet customer standards and expectations. This is explained through an understanding of the existence but yet a lack of organizational intelligence, the research, and business analysis that examines the comprehensiveness and relevance of most organizations in the operation of intelligence. The purpose of this study is to explore the relationship between organizational intelligence and innovation management and the professional development of enterprises.

D. A. Okun (✉)

Nesibe Aydin Educational Institutions Language Skills and Theory of knowledge Instructor,
Ankara, Turkey

4.1 Introduction

In a globalizing world, the advantage of organizational intelligence is that most organizations can enhance knowledge and create awareness by analyzing business data and improving business capacities through results, experiences, and progress. The introduction and education on the important of organizational intelligence enables organizations to analyze information in their surroundings faster and more accurately, by collecting results through strategic methodologies, and providing better and more comprehensive assessments for decision-makers at a more appropriate time. It accelerates the communication of information and knowledge in the organization and improves the effectiveness of the thought process by which collective decision-making is accomplished.

While today's organization faces challenges, taking into account the process of organizing intelligence is a necessary demand to improve the performance and growth of any organization by studying and promoting strategic insights, the common goals, visions, and organizational aspirations. The utilization of knowledge and the pressure of performance to change, the zeal, the level of team unity, and the consistency in the organization are the core and basic aspect of organizational intelligence.

Organizational intelligence has the potential, capacity, and embedded principles of business values and empowerment, which inspires and ignites most employees with a rare form of eagerness to contribute to the success and survival of their organization without being paid any money. In other words, successful organizations need employees whose day-to-day work is more efficient, and their performance exceeds the organization's expectations. Organizational intelligence has been defined as the sum and the utilization of the competencies that allow the organization to maintain its dynamism (Erçetin et al. 2007). Organizing intelligence to support the actions of employees in addition to their roles will result in a highly improved level of organizational effectiveness. These results have over time shown that employees demonstrate the strength of organizational leadership beyond their jobs and responsibilities, which has always been labeled and identified with the highly productive workers and organizational groups, as well as with the establishers and founders of high-quality cooperation. Organizational intelligence is all the abilities that make the organizations able to continue their existence and the utilization of them; these abilities are (1) being rapid in action and reaction, (2) being rapidly adaptable to changes, (3) being flexible and comfortable, (4) being intuitive and far-sighted, (5) being open-minded, (6) being able to use one's imagination, and (7) being able to renew (Erçetin 2000, 2004; Erçetin et al. 2016).

Taking into account the importance of organizational intelligence and its high level of influence on employee behavior modeling, i.e., with high standards of performance, productivity, organizational achievements, customer satisfaction, customer loyalty, and quality of service, is worthy of notice, and this acknowledges the actions that have thus inspired and built the cultural behavior of excellence in the employee's state of management. However, in a highly competitive business world,

it has become vital to determine the effective forces that lead to the success of managers and their organizations. By identifying these forces, the required context for targeted decision-making provides in addition to the appropriate strategies a room for further facilitations.

On a wider scale of analysis, by examining these forces, organizations and agencies can compare and continuously improve their business position of relevance at a national and international level toward achieving and upgrading their status to similar organizations in the future.

4.2 The Conceptual Understanding of Organizational Intelligence

Organizational intelligence improves the capability of any enterprise to utilize all of its potential brainpower and to direct its intellectual power on fulfilling its core mission. Knowledge innovation and the uprising relevance of information technology have become the key players for competitive marketing among countries, but their core values and fundamental strengths now lie in the competition of innovative potentials and capabilities. Organizational intelligence is not only identified as an inspiration for the innovative thinking ability of workers but also the pusher of organizational innovation that now plays a huge role in the promotion of organizational accomplishments and achievements. It is, therefore, now of a great significance to study the development of organizational intelligence. Organizational intelligence as the systematic process of planning, collaborating, collecting, analyzing, and sharing of information as well as the apportioning of responsibilities in the organization helps in the reduction of uncertainty by optimizing the organization's time response (Albrecht 2002).

Organizational intelligence is a product of active human intelligence and artificial intelligence, which provides organizations with relevant facilities and makes important and reasonable decisions to improve their performance and efficiency. In every organization, each person's performance at different situations indicates their level of insight and understanding of any particular situation or problem. At present, most organizations have realized that it is difficult to achieve sustainability unless they implement policies on the management boards and the organizational intelligence units. And by doing so, most companies have been able to evaluate the merits, advantages, and strengths as well as the threats, risks, and drawbacks of their organizational intelligence by utilizing the positions of key decisions and practical methodologies. By this reasoning, most organizations have refrained from paying too much attention to certain parts of the organization, which do not have the potential to advance the organization in the current and later years to come. A better understanding of the relevance of product innovation can help most organizations to achieve and actualize the potentials of the organization (Ebrahimi Fard and Shahrabano 2014).

Innovation is a process in any organization that ought to occur when the organizational changes can be seen as the impact and influential force for high organizational intelligence. In most and many organizations, staffs are highly responsive to change, they are either seeking the best way to carry out their tasks productively, or they are always looking for ways to improve the drive and passion for organizational innovation. Organizational intelligence empowers organizations to deal with today's issues and discover unidentified environments.

Technically, the innovation process in an organization is empowered from the intelligence base of the organization, because the intelligence of the organization shows the innovative ability of most organizations. The importance of organizing information is due to the inability of staffs' intelligence to override the previous problems; therefore, in order to deal with the problem, it, however, becomes necessary to update and evaluate the level of intelligence in the organization. The innovation and creation of intelligence are the most powerful and vital elements that play the fundamental role in advancement and progression of the organization. This justifies the definition of innovation as the core element that determines the strength of any organization in a business competitive platform. The increase of the changes in human life in a variety of political, economic, social, and technical terms has raised the need to create new and innovative ideas; hence issues and concerns on creativity, innovation, brands, market expansion, and the various vital aspects of businesses ought to be taken more seriously. It is believed that most organizations need to be innovative.

Innovation is the core element that leads the expectations and accomplishing performance of any organization through a heightened level of advancement and improvement. It operates by empowering businesses to benefit from the heights of their performances at whatever level and stage. The high competitive nature of the global market and business world has transformed the organizational environment; the presence and value of innovation is now viewed and asserted to be a pragmatic solution that could form the core part of the organizational intelligence in an enterprise. Hence, companies and organizations are envisioning, developing, or maintaining their competitive edge around the relevance of innovation. In this time and era, innovation has become the main foundation for many companies. In the current changing environment, creativity and innovation are the main strives and enabling power needed for the survival and the tools for success. The global business demands and need to create innovation in an organization have allowed many companies to assert and agree to the fact that the absence of innovation and creativity could lead to the drawbacks and struggles of any organization (Darroch and Mazerolle 2013).

The creation of new products through key innovative ideas and knowledge solidifies the position of any organization in the global market. Innovative brands and ideas have the market potentials to create competitive advantages for most organizations which in turn could lead to the huge changes and advancements in the organization's business market approach.

4.3 Organizational Intelligence and the Culture of Innovation

Organizational intelligence creates the ability for organizations to achieve and attain the innovative knowledge through the application of the right use of strategies to reinvent and re-collaborate with new business ideas in the global marketplace. It is similar to the intelligence that frames the organizational level of businesses. There is no doubt that building a culture of innovation at the top of most corporate agenda is indeed one of the boldest steps that most organizations can take. After all, most company employees are in a unique position to understand the intersection of business operations, pipeline product development, and the ever-increasing demands and the ever-changing needs of customers. This new growth and awareness should be triggered from inside. Trying to build a culture of innovation where employees share new ideas, as compared to a quick and cheap solution that processes the penetration of the market place with ideas, often fails because business intelligence strives deeper.

In the past the running and managing of business operations, by organizations, were mostly considered to be the compilation of task and profit makers. While this traditional thought pattern is currently changing, most smart organizations are increasingly now being considered to be intelligent systems designed to manage business knowledge passed on by organizational intelligence. The global markets have inspired the need for organizations to be eager and willing to explore the learning processes with a tacit form of strategic knowledge, far beyond the hard data stored in computer networks and the information obtained from their business surroundings, which could, however, be used for a reasonable decision. The complexity of this process has involved knowledge-based interactions between the various forms of information systems, which now make organizational intelligence more relevant than ever before (Ferdousi et al. 2012).

The core and fundamental aim of this research is to integrate this study in a more vivid-comprehensive and in a more productive whole that would continue to advance roughly through the exact-same methodology applied in the analysis of human intelligence.

The intelligence capacity for dealing with the problems of humanity is composed of various aspects, such as “emotional intelligence” which is a combination of a more conventional and common form of “rational intelligence.” This implies that organizational intelligence is a problem-solving tool for organizations with regard to the human capacity development.

Organizational intelligence deals with the human capacity development that entitles the organizational structures, cultural diversity, business-customer relationships, knowledge resources, and strategic principles, which are highly influenced and controlled by the intelligence of the global market through IT advancements in different ways. Every global market advancement has all in one way or the other influenced the impact of organizational intelligence as they control the elements of

the cognitive functions of most organizations. Globalization and big business cooperations have the most complex, most dynamic, and most competitive nature.

The ability and potential to work effectively in the most diverse cultural contexts, which is referred to as cultural intelligence (CQ), has become more than ever one of the most important tools that controls and sets the pace for most organizations (Patterson et al. 2005).

Employees with a high level of cultural intelligence act as a force for good through the bridging of the disagreements and the gaps in the knowledge transfer in most organizations, by educating peers of a different culture, passing knowledge among different groups, helping to build relationships, and smoothing multicultural workforce relationships. Culturally literate employees have the potential to drive innovation and creativity by integrating with the diverse resources and helping businesses take advantage of the broad perspectives therein within and outside, which is much more than what multicultural employees bring to the workplace. This identified and recognized ability is not just smart, and emotionally mature, but also has and is embedded with the high broaden social skills. Cultural intelligence is systematically made up of three interactive intellectual elements and scopes that enlarge its meaning and purpose:

1. Multicultural knowledge
2. Multicultural skills
3. Multicultural metacognition and communication

Although these three intellectual elements and scopes of cultural intelligence can develop into different ways, it is important to note that they do not work independently of each other; they are connected and cannot function without the recognition of the other.

Multicultural knowledge is vast and core to the unification of broad ideas and the development of product types from their various stages of creativity while it is composed of the contents and analytical questions as: (which) and the process (Why) the unification of this holistic form of knowledge transcends through diverse cultures. The core elements that could help anyone better understand the influential purpose of multicultural knowledge are enlisted below:

- Multicultural knowledge consists of a broad set of knowledge based on the functionality of intercultural effectiveness and productivity.
- Multicultural knowledge enlightens the relational skills, of how and when staffs engage in the communication and interaction with other staffs from other cultures.
- Multicultural knowledge gives us the boldness and skills to endure and tolerate uncertainties, how and when staffs overcome the odds to tolerate uncertainties, ambiguities, and unexpected changes in an intercultural communication.
- Multicultural knowledge ensures and instills in us the adaptability mindset that helps us through when and how staffs can change our thought patterns, actions, and behaviors in order to serve the interests of other people's cultural demands and requests.

- Multicultural knowledge teaches and schools us on the impact of empathy, how one can imagine and respond to the events and occurrences in a culturally different point of view from a staff's situation and imagine the situation from staffs' cultural perspective and standpoint.
- Multicultural knowledge empowers staffs with perceptual acuity, on how they can best understand other staff's feelings and subtle meanings during intercultural work communications.

Multicultural knowledge is best attained and enhanced through experiential learning, such as through learning or working in an international cultural environment where one is, by all means, complied to practice these skills through experimentation and mistakes. Organizational culture must continuously support and aid the analysis of the external environment to identify current, most recent, and future threats and opportunities that lie ahead of time. This is specifically and fundamentally important in the broader sections and departments of businesses that are more susceptible to market dynamics, depending on the advancements of innovation and its ever-increasing activities, such as the ability of external partners to apply key innovation procedures and strives. Organizations need to understand the needs of partners and the changes in their market positioning. Some partner organizations and even some customers may move from allies to direct competitors.

This may be a result of the fact that there are rapid and fast-changing technological progresses in advancements, customer's expectations of service or price changes, the arrival of new traders and new products and their values in the market, or strategic terms, partnerships, and mergers that are now made up of partners and middlemen or the diving into new products. Whether it be service or products based on the results achieved, organizations ought to have an updated knowledge about the global market environment in order to respond positively and enthusiastically to the business powers of change based on intelligent moves, plans, objectives, or assumptions. The prerequisite and existence of cultural innovation in the workplace is one of a kind that innovative leaders have already created over time to cultivate an unconventional and an unorthodox way of thinking and how it attends and pertains to the engines in the workplace that propels the power of innovation and culture.

Generally asserting while most staffs may believe that "innovation" is the highest-headed power, from another staff in the same organization, "this" may be contestable and debatable. The culture of innovation is cherished and adored by most organizations in the market competition which has been defined by the occurrences of rapid changes and the state of affairs which have not been sufficient to function productively; hence creating the culture of innovation becomes a necessary and a needed condition for any success to occur.

Innovative cultures often measure the employee's worth of professional value which can be based on the pointers such as value creation (between the customers and shareholders) and the competitive differences, rather than the traditional pointers such as just-in-time delivery and income generation which is by all standards very pragmatic and fundamental. Companies that nurture innovative thinking also aid and justify the science and research of discovery (Vaccaro et al. 2012).

Like companies that are committed to changing their business processes from traditional to digitized operations, innovation becomes a matter of course. In fact, “applying digital” is often the first move toward creating a culture of innovation that runs through the workplace, not just in the company’s business domain but also in other external aspects. Retrospectively, all up until recently, these projects were unrealistic and highly expensive. The culture of innovation has now given a lot of people the opportunity to visualize and envision the possibilities that exist and how endless they might be. For example, the information technology organizations that managed the deals with historical data have no specific problems and may find completely unexpected results based on the dependencies in the data. Data discovery exercises from emerging data and improved high-performance analysis engines have previously been too time-consuming or highly expensive for most companies.

It is important to notice that building a culture of innovation is not only enough, but the intellectual ability to keep this culture is another matter of weighty knowledge to explore. One way that can be imagined on how the IT organizations can develop and maintain a smart and a creative approach, toward the preservation of an innovative culture, is to develop a system for the employees that will promote hard work and excellence. The activeness of these creative thoughts will reestablish and emphasize the need for different corporate cultural patterns, such as the ever-new holarchy’s self-organizing team.

4.4 Organizational Intelligence and Management Innovation

How to lead, shape, and manage organizational innovation is always an important study matter for organizational management. Overall, there are three approaches that systematically organize the concept of innovation from a management perspective and outlook:

- The first approach recommends innovation to be referred to and recognized to be a great determinant for organizational growth and performance of excellence. With this approach in mind and put into action, it gives a high priority to organizational intelligence and it accentuates that innovation-oriented business strategies and intelligence can enhance and develop a wider and greater path for investments to strive productively in organizations with the right capacity and growth line to innovate new brands, services, and goods.
- The second approach treats innovation as an outgrowth and an offshoot of the dynamics of organizational advancements and developments, and it prioritizes the company’s arena and working ethics and level of intelligence while structurally focusing essentially on the foundations of the company’s acknowledgment and appreciation of innovation management.
- The third approach takes a broader outlook and a view on how innovation has supportively created a benchmark and a back for businesses; it accentuates a

cautious equilibrium between the concept of innovation and other supportive forces of business activities that have achieved productive business performances.

It is worthy of notice to assert that these distinct levels of accentuation on innovation are regarded as advanced management practices with reference to management leadership and innovative thinking and strategy. Even though most theoretical thoughts and assertions accentuate that organizational structure, adaptability, and capabilities are the basis of management innovation, other models affirm and point out that organizational environments, participatory management, and influential innovation are the key fundamental prerequisite for any management organization, leadership organization, and innovation to strive and achieve a mark in the business world (O'Cass and Viet Ngo 2007).

Management innovation creates a life-lasting advantage once it comes close to these three conditions: innovation is established on the new principles that pose a question to the traditional and conventional administration of business; it is, however, a comprehensive system that encompasses and engulfs a very wide and broad range of processes and methods; it has become a huge part of an ongoing exploration and progressive business limelight, which has provided over time the principles by which management innovation can achieve a long-lasting level of success.

Management innovation is derived from any economic school of thoughts that significantly alters the process by which the functions of a business are implemented, or significantly alters the traditional organizational forms, thus developing organizational objectives. Clearly defined as management innovation which creates a paradigm shift from the conventional ways managers carry out their business deals and operations, it does so in a way that enlightens and justifies the organizational accomplishments of companies and businesses. The process of innovation management entails the management of the organization's innovation functions, from the beginning phase of the induction to its last phase of a successful implementation. It includes agreements, responsibilities, and actions for creating and implementing a form of innovative intelligence. Management innovation is regarded to be the application of new strategies, systems, and administrative structures that represent a significant departure from the current standards which has over time led to a radical shift in the way it works; it has many tasks and activities.

Managerial innovation as a powerful force for a bright start aims to promote the organizational goals and visions of most companies by embracing and introducing evolutionary perspectives within the organizations and by examining the roles and factors of change within and outside the business arena that leads and shapes the stimulus processes, of innovations, creations, and productions, and by theorizing the business and trade nomenclature that collectively defines and directs the model of management innovation.

Management innovation is associated with the introduction of new business approaches and styles into an existing organization, by ways and means of constituting and creating a certain form and standard of organizational change. Management innovation through a holistic analysis can be defined as the ever-changing and

pure form of the quality base or visionary position of the organization's administrative and operational structures, where change is a new or unprecedented departure from the past. Management innovation is the innovation and creation of the business principles of management that processes the highest change of practice in the tasks and duties that managers carry out on a daily basis. It differs from operational innovation; it is concerned with how the input conversion works and how products actually get produced. The classification of a company as a group of business processes that transforms its resources into production explains the business processes of how it shifts its work and capital toward better services and product sales where smart business processes control and direct the workflow. Duties and tasks such as logistics, processing requests, mailing centers, customer support units, and production houses work on transforming the capital into investments and further into wealth in all that managers are involved with which includes putting and collecting resources together, setting targets, aiming goals, selecting teams, strengthening relationships, and forging partnerships which is an excellent type and form of innovation management which is highly relevant in the business world. Managing innovation is more or less in actuality a style and type of future consideration; being productively creative and intelligently imaginative creates a competitive advantage and a business niche for any business above and beyond their competitors and threats (Knight and Cavusgil 2004).

Businesses of all types and forms ought to always move and aspire to be greater and not fall behind. Big companies need to do more than they have done in their past. Every business enterprise must innovate and compete within and outside the business arena and world. Businesses ought to invent and produce new products and create services for the new market, new demands, and new needs. Companies ought to be creative and upcoming with new ideas that had never been seen or envisioned before. This approach to business is referred to as the "new management paradigm." Being accustomed to this, in theory it hasn't yet disappeared. Everything will accelerate the conversion and fasten the processes, functions, data, and inventories of business which will force employees to embrace the new languages, opportunities, and challenges of innovation. Innovation management is acknowledged and expected to be a management tool, such as its technologies and clichés that have challenged and shelved as new rules and new ways of doing business.

The future management style is no longer based on the premises of command and control. In today's world, in order to succeed in the business world, management ought to create a level of trust on the advancements of technology and the secluded honesty of any leadership type.

4.5 Organizational Intelligence and Market Innovation

Market intelligence involves the collection and analysis of information that affects and influences the current and future market opportunities, threats, strength, and weakness of the enterprise. It is interesting to note that most companies would rather

not, and more often than not, apply market intelligence in the product creation, innovation phase, or the creation of greater values and greater competitive advantage in the global market space.

The understanding, recognition, and appreciation of market intelligence can help the intellectual development of ideas and the expansion of business theories, within the market space, and these phenomena enlisted below explain it:

- A better and higher understanding of the existing market trends and future market trends
- The application of the innovative nature of technological advancements within and outside the enterprise
- The identification and recognition of the business alliances and networks in the business world
- Reasonable and the validities of information on the innovation of short-term IPOs, as well as the market appeal of existing technologies and products
- A better and deeper understanding of customer needs and product development

Marketing intelligence through companies collects external data and examines these data before entering a specific market. This external data is analyzed by the company before executing an investment plan. Market intelligence is always and ought to be the first dataset that a company utilizes through the analytical phase before moving into a particular market in the connection and recognition of the increasing pace of population; the business infrastructures needed for trade, the understanding and recognition of consumption habits, and the abidance by the national or government regulations in the business region all team up to justify the components and elements of marketing intelligence (Vaccaro et al. 2012).

Marketing intelligence collects and articulates information from various datasets; it analyzes information, decomposes data into small subsets, and publishes information to the active sectors within a company. A company's purchasing arm and sector require a different set of data in marketing intelligence, while the sales department needs different things. Marketing intelligence stands within four main cornerstones. First is competitive intelligence, another product intelligence, market understanding, and customer understanding. It is understood that by knowing a whole lot more about these, competitive intelligence then becomes a strategic approach by which achieving a competitor's product information becomes a clear and easy path toward achieving the benefits of knowing a competitor's agenda.

The fundamental goal of competitive intelligence is to articulate and achieve smarter business goals and targets through intelligent decisions. Product intelligence is known to be related to the functions of collecting information about a company's products. The accentuation surrounding product intelligence is to collect all the needed information about a product element and accomplishment through a programmed process. With that understanding, the knowledge needed for most companies to develop and improve the experiences of their products or to create the changes in the product itself is to ensure that their functions are more secured by building up additional new functionality that could be embedded into the services and output of their product. Market development is a broad system and a phase

wherein the company attempts to improve the product's accomplishment (Garcia-Morales et al. 2012).

Market intelligence uses a variety of resources and information to provide broad business and market prospects. That ensures the customer satisfaction, competitive advantages, and the capacity to develop and create new products and services. The raw data to analyze these facts include the market data from journals, the analysis from surveys, the forces of social media, and so on. Market intelligence addresses specific questions about recent and valid customers and competitors that help companies to identify the fundamental goals to be pursued.

The core problems and key challenges that market intelligence can solve include:

- What are the lists of companies to invest more resources on?
- How do companies keep trying to penetrate markets?
- How does following the pattern and trend enrich the customers' highest buying power?
- How products can be cross-marketed to the existing demographic segmentation?
- How can companies push new products to customers?

Most organizations ought to collect valid market information; they, however, do so through various forms of high-level market analysis, "a broad level of intelligence"; the knowledge of all these aspects of market intelligence that generates and creates a higher level of market understanding which is examined by analyzing the various distinctions between the business arena and the product is core. These include competitors, products, market changes, and customer judgments.

This realistic information can answer the relevant business questions that range from within and outside. By considering the following concerns:

- What are the pros and cons of organizational competition?
- How does competition strive in a marketplace?
- What is the highest purchasing power for competitive products?
- How does market intelligence compare the accomplishments of companies in relation to the current industry benchmarks and market value chain?

Intelligence market has the potential to answer strategic questions like the questions enlisted above because they are rooted and centered on the many sources of data, including primary and secondary sources that reveal the contexts that create a more balanced view of the market, market intelligence through the collection of, analysis, the needed information for the external environment which is often a huge part of the establishing function that traces the strategic location of products for better markets. This is in conjunction with the process, potential, functionality, tools, and approaches that are often used to aid and encourage the decision-making process; market information is another very vital area because it can aid companies with the identification of new trends and ways before competitors can reach out for it.

This, in turn, gives warnings about the battle of survivals, which allows companies to create smarter moves instead; incredibly, it could guide and aid the business decisions by setting the risks and threats. Any company that creates market research

services should, however, be able to compile intelligence portfolio. Other possibilities through the applications for market intelligence might include the findings of new suppliers, risk management, and expanding existing information of the suppliers that can provide better marketing intelligence which includes the resource data required for the process to be gotten to the obtained procedures while the information from the business decision-making arena could strive. This information can either be external or internal. This data refers to the various components which are usually political, demographical, economic, technological, social, and cultural (Albrecht 2003).

Market intelligence illustrates the pattern of schemes that avails companies with the goals of the market, by using current sources of information to ascertain what is happening in the market, what markets are worth competing for, what customers or companies are doing and trying to achieve (through the media space), and what is the probable potential of the market for new products or services based on previous activities and reactions.

A type of market-based analysis from an external data is usually collected by examining the secondary sources of information, usually through the analysis or through an ongoing or partially ongoing elevating method, which implies that searching the analysis of declassified information creates a business market perspective that is derived from the answers of specific business questions like which available market potential is viable to enhance, what competitors' future plans will probably be a threat, and what prices can customers be willing and comfortable to pay. These concerns can be of the best value and interest of market intelligence which can, in turn, guarantee the entering position of companies to the market. Core and fundamental to these smart research findings is the ability to track the sources of information and provide a valid and highly qualified analysis that interprets the data and identifies not only the data but the historical facts behind the data, which will determine and suggest who the competitors, risks, and threats truly are and analyze their position in the market world against other companies (Ferdousi et al. 2012).

The aim of looking out for the market strengths, weaknesses, and signs of new advancements, or by solely identifying the potential means for business alliances and partnerships or opportunities and avenues to create new products leads to the developments of new brands. Market intelligence has the skills to see what cannot be seen and what might be missing from the data. Market intelligence by all means tries to go the extra miles to ensure that all the needed facts and information are sorted out for and achieved with nonbeing off the limits. In order to pave a way or assist the domestic market intelligence or market assessments, many companies use external resources such as the official advice of the current market, not only through data but also a critique or assessment based on a review and contact with the market sources information, and they share more information widely.

A strategic form of market intelligence is competitive intelligence which is usually set in motion on the basis of an ongoing business investigation which includes the collection of new materials and other information about the various competitors for the open and available business resources which may, however, include market positioning and market emergence. By collecting and gathering this

vital information about a market opening, it gives the company an upper hand and a competitive advantage over other companies. Competitive intelligence utilizes the main sources of interest, which can be derived from the general sales of products, the distribution channels of products, and the direct assessment of the products from the general public through the product accomplishments. Market intelligence system deals with the systematic system and procedure of processing all the means of resources around the market environment and beyond (Patterson et al. 2005).

4.6 Organizational Intelligence and Productive Innovation

The far-reaching interests of productive innovation are core and fundamental to a company's business model which is expected and has been examined to have the potential to be the business game changer (the power of innovation) in any given investment or firm. Not only is innovation the invention of new products and services, or a business chain breaker, but it is also the systematic conversion of ideas through the new products that further creates the brand identity, market niche, and power for any company.

Hence, productive innovation through organizational intelligence has embedded within and outside its elements the tenacity, capacity, and audacity to build and create a revolutionary timeline of changing effects in the business environment. While it contributes a lot timelessly to multiply the purchasing power of products, it has also reshaped the market and has retrospectively allowed most companies to play a new (and profitable) trade that most and other companies have never dared to reach. This makes the relevance of productive intelligence a business force to reckon with.

In the current business world, a lot of game-changing innovators are creatively contributing their quarter to the successful advancement of product designs and manufacturing, and all of which are greatly remarkable innovation. The pivotal role that this plays in the business world is that it contributes a lot more than imagined to the building of the business culture of innovation that reveals more attractions and attention to the relevance of productive innovation through organizational intelligence (Garcia-Morales et al. 2012).

The vital and important component that obviously makes up for the product innovation of any company is the company's ethics and culture which translates into the enabling ability that inspires innovation at any level. The accentuation and emphasis on product innovation have always created a direct impact on the development and advancements of business. Organizational intelligence teaches most companies the strategy on how to sell most of their undesirable products and businesses, so they can reinvest on the products that are driven by time and demanded by time empowered by great innovations that excel the best in the business market world. This business approach has gone a long way to prove and reaffirm that most companies that had shrunk due to poor administrative management, poor business ideas and whatnot have through the guidance of organizational

intelligence invested resources, knowledge and attention in the business line that was needed to build a broad and an innovative branding culture of excellence which has become the best fit for their company. This furthermore allowed companies to pay attention to and focused squarely on creating an open, bright and innovative culture thereby leveraging the skills and interests of their staffs to attracting the right business bonds, alliances and business partners from within and outside the firm (Hamel 2008).

These are a few guiding clues, steps, and tips that most companies would have to identify, recognize, and acknowledge in order for the beginning of the starting point for the development of innovation to be successful.

Primarily, every company ought to and is supposed to expand their capabilities, even when their businesses are already doing well and better off with the help of some form or sort of innovation (upgrading), keeping up with the pace and demands of an ever-changing world. This is essential, to the key roles of leadership and motivation. For business owners to be able to make fair judgments, understand specific business ideas—prospective (great business ventures), and make a solid business decision out of them within a highly competitive environment and still have the ability to find the most effective, loyal, and favorable consumers is indeed all possible with organizational intelligence.

Technically, creating an open and innovative culture which is fundamentally essential to achieving the ever-increasing growth opportunities presented by the emerging markets would create more options, and a broader link and access to the global economy, and the ability to achieve more business aspirations along the way, as companies stay true and diligent to the creation of branded products for customers such as personalized services in order to reach new consumers; it will be relatively easy to implement these strategies with the intervention of organizational intelligence and technological advancements.

Pragmatically, as companies have begun to focus on the market saturation of their branded goods and services, “in particular, and selected markets,” more consumer goods and companies are now quickly operating in these potential areas of the new zone, where most companies have more than 180 countries with more than 100 large enterprises in a region where they can only develop and recreate their businesses in these “particular, and selected markets” by constantly developing new, likeable, and sellable products, where the processes and forms of their brand presence is recognizable and cherished more than the other competitors in the market (Wilensky 2015).

To achieve this height in business successfully, most companies would have to reach out more and keep on staying in turn and in touch with the ever-changing reality of time inside and outside the company with product re-innovation, as they familiarize the company’s goals and visions with the broader world outside from within. These are the core values and standards of business that are sometimes visible and admired even by smarter and older clients that notice them. The needs of consumers around the world to feel and have a sense of inclusion in the product life cycle of their favorite brands are key and strategic to the successful journey of any product.

A focus on the “open product innovation” could lead to a form and a type of innovation that readily means the desires, taste, needs, and interests of clients by all standards. This can only be, however, realized and achieved through foresight and through the ideas and research of organizational intelligence.

This strategically from a business standpoint illustrates a rare and an intellectual combination of ideas, product initiation, customer loyalty, and customer satisfaction which over time and within a long run would translate into a business security for any company regardless of the company’s size and unit. Over time, when companies embrace opportunities like the one explained above, it brings about experiences that could lead to a more innovative conceptual path for the company with futuristic ideas, the potential commercial added values that lead to the development and advancement stages. The channels and communications between customers and brands that lead to the production stage of brands through dialogues on the innovation of products are beneficial to the company and its market.

Productive innovation as a technique and a method defines innovation, as not only an idea but also a power for the regulation of the business success. The process of innovation and execution is the link between the product and the market. Creating a culture for innovation within an organization or in corporate channels the development of a company to a high level of advancement, while asserting the concept of innovation justifies the origin of ideas, or the process of inventing the production of the concept of innovative returns which is interesting, but the idea of a successful framework is even more interesting and encouraging to examine.

The drive for product innovation includes and reveals some core competencies of the company and how best the company can utilize and apply their various core competencies in order to gain a market value. At the stage of product innovation, it is important for most companies to investigate and evaluate these following key and fundamental questions:

- What does the company regard and identify as its core competencies?
- What are some of the company’s competitive advantages?
- What are the values of the company that could make it become a targeted market?
- What are the company’s strengths in relations to the needs, desires, and trends of the targeted market?
- What are the companies’ marketing capabilities?

Product innovations are by all standards and measures undoubtedly the creation and subsequent introduction of service or a new or a bettered version of the previous product or services. More critically and holistically understood than in simplified sense, innovations include the invention and introduction of new products into the market. The development of most markets through the introduction of a new, redesigned, or substantially improved product gives rise to the acknowledgments of organizational intelligence (Fard and Shahrabano 2014).

4.7 Organizational Intelligence and Branding Innovation

The strengths of innovative products are beginning to have stronger holds in the marketplace through the marketing activities of fast-moving consumer goods companies and other companies as well. It is, however, noticed that this could be a little bit risky and challenging; while most business strategies might as well rely on innovation to strengthen the position of their company, some other companies might view the introduction of new products as a bold and scary move to take. While viewing the significance of consumer's acceptance of new brands and products, the image and market position of every company are always assessed critically (Albrecht 2003).

A clear evaluation of the key products, existing competition, and an examination of the consumer factors that affect the consumers' acceptance of new products in an international market come in line with market intelligence recommendations.

It has become important to notice that the market achievements and accomplishments of great branded new products are not easily achievable without the tenacity of organizational intelligence, which by in and out of every company plays a very strategic role and an important role in the branding of any product.

Branding a new or old product requires more than just innovation; it involves a high level of intellectual applications of business theories and practices which ought to accentuate and emphasize the processes of brand equity, brand trust, business branding, brand loyalty, brand security, and brand intelligence which would explain how strong and secure the brand will outlast its existing competitors in a global market of strong brand diversity and options that substitute another.

The key interests and concerns of organizational intelligence are its ability to help any company's brand prospects to continue to succeed, by building a strong brand, curving a niche for the brand, with a strong image, for the best market accomplishments and highest shareholder value.

Brand equity is often viewed and regarded as the force for any brand's strength which gives the accurate conceptual labels and definitions, operational metrics, and responsiveness to the changes of the brand's acceptance which is key to marketing. A solid brand by all standards provides a platform of consumer unity for both the consumers and companies that are bounded by the value of the brand.

A solid brand can bring about a loyal form of partnership between the consumers, customers, and the company that extends the value of the brand to a level of trust seen far beyond the product quality and relevance. A solid brand has the product potential to direct and transform the consumer's choice and reaction to a product, over a period of time, whether it be through the selective choice of loyalty over the partnership or the choice between change and preferences.

So many companies have recently acknowledged the fact that a solid brand can manage, control, and direct the future and pace of a company's level of success. Solid brands create a long-lasting platform that can technically transport a brand to other segments of the market and other geographical boundaries that were never covered nor explored by any company (Knight and Cavusgil 2004).

Innovative branding can create and play out a great and significant role in the core existence of an entire company. The strengths of a brand can go and travel far beyond a single product to the collective combination of all the different components and structural elements that make up an organization such as the company's visions, missions, values, and goals. Innovative branding is changing the face and images of companies around the globe. The influence of branding has become a business force to reckon with. Companies are now embracing and acknowledging the market strengths of brands and innovation.

4.8 Conclusion

Organizational intelligence now designs and creates a social system that inspires new ideas and makes room for critical decisions to strive and excel in places where it hitherto could never survive. The remarkable factors that could foster the pace of innovation in most companies can be regarded and referred to as the "lost spark" only because the ideals and ethics that make up for the development of innovation are passive or nonexistent in most companies due to a couple of reasons, setbacks, and business decision failures that most companies around have found their strengths to be limited by.

Pragmatically and simply expressed and defined, organizational intelligence is the ability that an enterprise has that empowers and enables it to control and productively direct all the viable human capacity potentials it has toward the accomplishments of its visionary goals, aims, and targets. Organizational intelligence becomes the capital resources that can prepare an organization to strategically development possible business areas to invest and explore by utilizing the right organizational competencies, through extraordinary decisions on business intelligence. Organizational intelligence has been explored and utilized by most organizations; this illustrates and indicates the value of organizational intelligence and the impact it has had on the market performance of these organizations.

The type of business security that is needed in today's business world is organizational intelligence which enables and empowers workers to make organizational decisions and take on upon their shoulders huge organizational responsibilities and demands. Organizational intelligence means a valid, profound, and comprehensive understanding of all the elements that affect any organization such as customer's satisfaction, competitive advantage, economic empowerment, the organizational operations, and the policies that shape and control the impact from the global market on the quality of the management decisions in the organization.

One of the main strengths of any given organization is and ought to be its source of knowledge and value of the stored information in the organization over a track period of years and the application of this rare and uncommon knowledge to the strengthening of organizational decisions which helps to lead the pathway to a phenomenon called organizational intelligence.

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Chapter 5

The Views of Trainee Substitute Teachers on Organizational Socialization (İstanbul Sample)



Elife Doğan Kılıç and Nayil Kılıç

Abstract The purpose of this study is to determine the views of prospective teachers in Istanbul who work as a substitute teacher on socialization in terms of gender. The study group of this research consists of trainees who work as a substitute teacher in schools bound to Istanbul Provincial Directorate of National Education and who receive initial teacher training in Hasan Ali Yücel Educational Faculty in February, 2017. Fifty trainees attended the research. The percentages of participants in terms of gender are 52% and 48% for female and male prospective teachers, respectively. Socialization scale, which took place in the study of Yussuf Aliyev called “The Relationship Between the Organizational Socialization and Organizational Identification: A Research,” was used as a data collection tool. The data collected were analyzed with SPSS 21. T-test was used in analysis, and the data were interpreted according to these results.

5.1 Introduction

Organizational socialization is defined as the process of training a new member of an organization for his/her role in organization by transferring organization’s values and norms. Organizational socialization is regarded as a learning process. Organizational socialization keeps social order by getting employee learn group norms and adapting them (Memduhoğlu 2008). The main purpose of this process is to ensure that this new employee is an effective member of the organization (Kuşdemir 2005). In this process, the employee learns both how to work in the correct way and to accommodate organizational culture (Güçlü 2004). It is necessary in organizational socialization to train newcomers, to develop organizational understanding, to support co-workers, and to support employee’s expectations about the future

E. D. Kılıç (✉) · N. Kılıç
İstanbul University, İstanbul, Turkey
e-mail: ekilic@istanbul.edu.tr

(Balci 2003). The purpose of this study is to determine the views of prospective teachers in Istanbul who work as a substitute teacher on organizational socialization in terms of gender.

5.2 Method

The research model, working group, data collection tool, and data analysis are handled in this section.

5.2.1 Research Model

This study is a survey research, one of quantitative research methods. Survey design describes trends, attitudes, and opinions in a population quantitatively by using the studies obtained from a sample of a population. The opinions of a group of people on a certain topic or problem are determined by survey design. It determines the current situation via the individuals from the working group and makes inquiries on opinions, beliefs, and attitudes (Creswell 2013). The method was chosen in order to collect data in a comprehensive and rapid way.

5.2.2 Working Group

The study group consists of 50 trainees who work as a substitute teacher in schools bound to Istanbul Provincial Directorate of National Education and who receive initial teacher training in Hasan Ali Yücel Educational Faculty in February 2017.

5.2.3 Data Collection Tool

The organizational socialization scale, which took place in the study of Yussuf Aliyev in 2014 called “The Relationship Between the Organizational Socialization and Organizational Identification: A Research,” was used as a data collection tool. The scale used in this study benefitted from “organizational socialization inventory,” which was created to determine employee’s socialization levels by Taormina (1994, 2004) and adapted into Turkish by Zonana (2011). The original scale consists of four dimensions (training, understanding, co-worker support, future prospects), and each dimension consists of five items (Aliyev 2014). In this study, the scale consists of

two parts. The demographic information takes place in first part, and organizational socialization scale consisting of 19 items takes place in second part. Organizational socialization scale uses 5-item Likert-type scale.

5.2.4 Data Analysis

50 trainees who worked as a substitute teacher in schools bound to Istanbul Provincial Directorate of National Education and who received initial teacher training in Hasan Ali Yücel Educational Faculty in February 2017 participated in this research. For the validity and reliability evidences, explanatory factor analysis was conducted, and Cronbach alpha coefficients were calculated through SPSS 21.0 package program.

5.3 Findings

Factor analysis was conducted to investigate the scale's factor structure and item selection. According to analysis, the factors were determined and their loadings were estimated. In literature, there is a common opinion about minimum value (0.32 and above) for the factor loading (Büyüköztürk 2010), and besides, Büyüköztürk (2010) states that the choice of cutoff values used to evaluate factor loadings depends on the researcher's preferences. From this point of view, minimum cutoff value for the factor loadings was determined as 0.32. Factor loadings for the items ranged from 0.349 to 0.777. Cronbach alpha reliability coefficient was estimated as 0.805. The communality values for the items ranged from 0.637 to 0.911. According to analysis, the first, second, and third items account for 24.740%, 17.476%, and 12.074% of the variance, respectively, and it consists of 19 items (Table 5.1).

The t-test result that was conducted to reveal the relationship between the opinions of the trainees who work as a substitute teacher on organizational socialization and the gender variable is given in Table 5.2.

According to t-test analysis conducted to reveal the relationship between the opinions of the trainees who work as a substitute teacher and the gender, it was found no significant difference [$t_{(48)} = .901$ $p > .05$]. The male trainees have more positive opinions ($X = 10.90664$) on organizational socialization in the school they teach than the female trainees ($X = 8.35188$). This finding suggests that the male trainees have more organizational socialization than female trainees.

Table 5.1 Factor analysis results for organizational socialization scale

Item no.	Communality values	Loadings for factor 1	Loadings for factor 2
Item 1	.779	.656	
Item 2	.877		.461
Item 3	.835		.364
Item 4	.903	.566	
Item 5	.889	.625	
Item 6	.637		.446
Item 7	.761		.777
Item 8	.769	.558	
Item 9	.860	.757	
Item 10	.710	.767	
Item 11	.882		.754
Item 12	.842	.588	
Item 13	.903	.686	
Item 14	.911	.349	
Item 15	.767		.638
Item 16	.736	.403	
Item 17	.839	.685	
Item 18	.868	.606	
Item 19	.847		.617

Table 5.2 The relationship between school identification and gender for the teachers

Gender	<i>N</i>	<i>X</i>	<i>S</i>	<i>Sd</i>	<i>t</i>	<i>p</i>
Female	26	59,0769	8,35188	48	.901	.115
Male	24	61,5417	10,90664			

5.4 Results

In this study, organizational socialization scale was applied to 50 trainees so as to determine the views of the trainees on organizational socialization in their schools where they teach as substitute teachers. As a result of the reliability and validity analysis, it was found that the scale consisting of 19 items had 2 factors. Cronbach alpha coefficient was estimated as 0.805 for the scale. As a result of the factor analysis, the first item accounts for 24.740% of the total variance. The factor loadings of the items in the scale range from 0.349 to 0.776. According to t-test results, there is no significant difference between the opinions of male and female trainees on organizational difference in their school they teach.

The prestige of an employee in their social life is related to the level of organizational prestige. Organizations should make a difference with their past, special programs and socialization activities (company dinners, picnics, or other social activities) (Tokgöz and Seymen 2013).

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Chapter 6

Prerequisites to Getting Rid of Chaos in a Collaborative Learning Classroom: Addressing the Chaos Theory



Akbar Rahimi Alishah

Abstract Cooperative learning has considerably changed the way languages are learned around the world and has reflected a growing interest among the TEFLists (Teaching English as a Foreign Language) over the last two decades. Cooperative learning is a not merely bringing number of learners together and asking them to do something where, most of the times, an activity is done by one student in particular and others put their name on it. The urge for using cooperative learning increases exponentially when it comes to teaching foreign languages and classroom management (Crandall J, Cooperative language learning and affective factors. In: Arnold J (ed) *Affect in language learning*, 1999), along with chaos theory. Theorists suggest a lot of benefits behind implementing a cooperative learning program for ESL and EFL programs: increased students' talk, higher motivation, relaxing atmosphere, and more varied talk (e.g., Liang X et al., *TESL Canada J* 15(2):13–23, 1998; Kagan S, Kagan M, *Kagan cooperative learning*. Kagan Publishing, San Clemente, 2009). There are a lot of philosophical and psychological questions that demand the attention of the teachers regarding the effectiveness of the cooperative learning. However, based on my personal experience doing teacher training courses, I believe that teachers have doubts if they can manage the lesson while they are running a cooperative learning. This article addresses the importance of chaos theory in relation to cooperative learning and focuses more on administrative aspects of implementing cooperative learning that maximizes teacher control (to help some teachers to allay their fear) and minimize the classroom chaos. This article also emphasizes the fact that cooperative learning will maximize the chances of mitigating negative aspects of chaos theory and turning it into opportunities.

A. Rahimi Alishah (✉)
İstanbul Aydın University, İstanbul, Turkey
e-mail: Akbaralishah@aydin.edu.tr

6.1 Introduction

Cooperative learning has considerably changed the way languages are learned around the world and has reflected a growing interest among the TEFLists (Teaching English as a Foreign Language) over the last two decades. Cooperative learning is a not merely bringing number of learners together and asking them to do something where, most of the times, an activity is done by one student in particular and others put their name on it. The urge for using cooperative learning increases exponentially when it comes to teaching foreign languages and classroom management (Crandall 1999). Theorists suggest a lot of benefits behind implementing a cooperative learning program for ESL and EFL programs: increased students' talk, higher motivation, relaxing atmosphere, and more varied talk (e.g., Liang et al. 1998; Kagan and Kagan 2009). There are a lot of philosophical and psychological questions that demand the attention of the teachers regarding the effectiveness of the cooperative learning. However, based on my personal experience doing teacher training courses, I believe that teachers have doubts if they can manage the lesson while they are running a cooperative learning. This article addresses the importance of chaos theory in relation to cooperative learning and focuses more on administrative aspects of implementing cooperative learning that maximizes teacher control (to help some teachers to allay their fear) and minimize the classroom chaos. This article also emphasizes the fact that cooperative learning will maximize the chances of mitigating negative aspects of chaos theory and turning it into opportunities.

6.2 Chaos Theory

The father of chaos theory and butterfly effect Edward Lorenz (1917–2008) introduced the theory in an attempt to explain the difficulty behind the accurate prediction of weather forecasts. He emphasized the influence of even a very minor change on meteorology that unleashed a revolutionary alteration in the weather condition to occur. He must have been amazed finding his simple expression of chaos theory being applied to almost all of the sciences and looming as a multidisciplinary paradigm revealing an astonishing 3 millions of results in a single search on Google.

Chaos theory has mostly been manifested through butterfly theory that crossed the limits of science and spread out abundantly to a nonscientific domain. They further argue that this amount of diffusion renders the main idea of the theory oversimplified. Several authors have adopted a strong stance in defense of the importance of the theory in management and education debating that the interdisciplinary nature of the theory can bridge the gaps among them (e.g., philosophy, sociology, and education) and create a paradigm called “united science” (Waldrop 1992; Töremen 2000; Farazmand 2003; Yeşilorman 2006). In an article McAndrew (1997), cementing the relationship between science and English teaching, identifies chaos as depending on initial conditions resembling it to the flap of a butterfly's wing

creating a storm in America. He continues that in chaotic systems small changes can lead to dramatic effects because of the latent interconnected variables. Such variables and “rich array of potential causes” (Çobanoğlu 2008) must be scrutinized to find a solution for management and effective learning issues. Having done that the students will be treated with maximum sensitivity and the student’s entry to the vicious circle of frustration and disappointment or in Akmansoy and Kartal’s (2014) term “the negative avalanche effect” would be prevented, and the opposite of the situation would happen, marking a milestone in a learner’s education life.

6.3 Chaos Theory and English Language Teaching

I will illustrate how chaos theory opened up a new horizon in my English classes as a student. Based on the belief that all conditions are intensely vulnerable to even minor and unnoticed events, and that a little “butterfly flap” can be augmented and cause a storm, an English teacher’s comment to me about collocational and phrasal expressions helped me write a book years later. In an advanced level English class in 2001, the teacher came toward me and showed me that a passage is composed of a lot of prefabricated patterns and changed my perspective of process of learning and using a foreign language. I started collecting the most common and colorful ones and turned it into a book named *Impress Your Listener*. I appealed for the help of a colleague and translated it (which included mostly American expressions) into Turkish. The English life of an advanced student who was urgently seeking for dexterity in speaking and writing had undergone a change. This change was amplified by the some interrelated issues and factors like the class environment, the interrelation with a teacher who is source of information and backs him up with feedbacks, and the interaction with a peer who shares the same interest areas. The latter, I believe, is the one which does the great amplification hence keeps the wings of the butterfly flapping. The multiple numbers of connections during a group and collaborative work with a peer increase the possibility of escalating the power of effect which in turn can cause the student to improve in terms of the new “change” in particular. Regarding my case, the students noticed more sentence complexity in my writings and word sophistication and fluency in my speaking and praised me. The warm approval, respect, and admiration that I received, every time I was involved in a pair or group work, resulted in an untiring perseverance and relentless energy (for more information refer to Slavin 1995). Fortunately the classes that we had then were small, and students received more feedback from the teacher. However, most classes are large in number, and teachers find themselves working with 30 and 40 students. In order to promote optimal learning, there are two issues to be considered in a classroom where learning is spearheaded through the delicacies of communication and interaction, i.e., management and evaluation.

6.3.1 Management

There are a number of causes for developing a well-defined management system. According to Thompson and Taymans (1996), not only students need to have specific techniques for handling distribution of materials, sharing of the workload, and learning from each other in group works, but also the teacher needs some systematic ways to have students' attention during instruction and after group activities. Hence, the responsibility falls upon the shoulders of the teachers to devise boxes or cases where the students' diaries or evaluations of their groups are saved and retrieved promptly when needed. When organizing the learner-generated materials, not only the time will be spent more efficiently, but also it will help the students keep a track of their folders and realize how much of good work they have collected and how much backlog of work exists. Archiving the activities will also allow the teacher to understand the content and quality of tasks and therefore treat the students equally giving them equal chances of participation and being selected.

Another important factor that teachers have to take into consideration is to help group members to learn a number of effective communication and social skills (e.g., maintaining eye contact, use proper body language, remaining flexible all the time). The teachers can teach them explicitly through direct instruction, modeling, and practice. For instance, in order to reinforce the ability of the students to listen to others, they can practice it. They can use the easy and straightforward technique called "speaker power" where the student holding a particular object obtains the right to speak and the rest of the group keeps quiet and listen to the speaker.

6.3.2 Evaluation

The fear of being evaluated is also known to be a source of apprehension in foreign language learning (Mesri 2012) because "it leads to the fear of being called on in class, test anxiety fear of making mistakes while speaking and negative attitudes towards language learning" (p. 153). Cooperative learning provides multiple chances of assessment for the teacher. Therefore, the teacher can manage to evaluate teams rather than individual students and lower the anxiety level. Moreover, the teachers can evaluate on regular intervals rather than the end of the term evaluations. The students then will provide a self-critical analysis of what has gone wrong based on the teachers' evaluation, hence self-evaluation. This type of evaluation (under the teacher's validation) will make learning experience a pleasant and stress-free one. The comments can be recorded in the folder for later revisions. The evaluations (both of the individual and the group) during the activities can help the learner keep focused on effective interactions and sharing of the information as well as the task itself.

6.4 Conclusion

Along with the salient recognition of student-centered classroom management, more importance is given to the students' role as learners and not absorbers of information. The students' active engagement in the lesson will bring more individual factors into play which in turn will leave lasting effects stretched far beyond the students' immediate attendance in the classroom, hence the "chaos theory." The language learners' new experiences as individuals can be accentuated, while they are in connection with their peers or fellow group members. A cooperative classroom can leave a tremendous effect on students' "life" if they are managed and evaluated in the best way possible. The classroom activities should be systematically governed, and the students' progress should be checked occasionally during the cooperative activities and let the learners get habituated to the process of the cooperative work through practice. A well-managed cooperative classroom can also reduce the noise level of the classroom to minimum since in a class with larger groups (as opposed to dyads), less number of students would be speaking (Rhoades 2013). The students would be learning considerably easier and more effectively.

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Chapter 7

The Concept of Self-Organized Criticality: The Case Study of the Arab Uprising



Şuay Nilhan Açıklan and Erbil Can Artun

Abstract In today's more connected, interdependent, fast, and highly globalized social world, conventional concepts and approaches for understanding social dynamics and social events have been getting weaker day by day. There is a need of more dynamic points of view and new concepts which will help us to grasp the underlying mechanisms of social dynamics and what is really happening beyond the phenomena that we observe as social events. Complexity science offers a fresh understanding of real systems, since they are usually complex. In the present study, an important concept of complexity science, self-organized criticality, is used gingerly to reinterpret the Arab Uprising, while a former study interpreted the Arab Uprising with the help of the concept “butterfly effect” of chaos theory. From chaos theory viewpoint, the starter event of the Arab Uprising which is the protest of a young Tunisian can be interpreted as the initial condition of the whole protest series and social movements. Although this approach supplies new ways of interpretations on the social movements, it misses the background state of the society. Self-organized criticality concept takes into account the whole society as a system and interprets the event not as an initial condition, but rather as a tipping point where the system which has reached a critical state begins to reorganize itself into a new state—a phase transition takes place. Has the Arab Uprising or as formerly so-called the Arab Spring finished? Was it a “spring” that the following days will bring the summer, or was it a “fall” that will bring the winter? Although the answer depends on one's point of view, it will be understood only when the phase transition process is completed. Hence, the important thing, for everyone, is to understand the state of the society and the intentions of the organization of the society. That's why this study seeks to explain dynamics of the Arab Uprising phenomenon with critical self-organization property of complexity theory as an alternative approach.

Ş. N. Açıklan (✉)
Middle East Technical University, Ankara, Turkey

E. C. Artun
Yeditepe University, Istanbul, Turkey

7.1 Introduction

After the condemnation and death of Socrates, western tradition of political thought had begun (Arendt 1990) standing on the viewpoint of how should a society be constituted for not condemning “Socrateses” to death. It had took ages to figure out that the approach of “constituting the society” has dangerous potentials in it. Especially, after the Second World War and totalitarian regimes, we have started more to try to understand the dynamics of the societies and how big events, such as the world wars or the Great Depression, occur, to be able to prevent societies and people from catastrophes. As the pioneers of the scientific thinking of politics tried to do, such as Machiavelli and successors, we need to understand the underlying mechanisms and dynamics of the social systems.

As the modern era had evolved for the past few hundred years, professionalization and disciplinarity resulted in the rupture of the fields and disciplines. Consequently, scientists from different disciplines could not benefit of the concepts of each other’s. However, in the last decades, by the chaos theory and complexity theory, interdisciplinary studies have been increasing exponentially. A better understanding of how social and political systems work is needed, especially in these days of highly fast-changing world. While interdisciplinary connections provide us new perspectives, unpredictable crises, mass movements, and violent conflicts all over the world push us to reconsider our thinking of the social dynamics. As an example of such an attempt, the present chapter aims to introduce one of the concepts of complexity theory, and apply it, as trying to do that in the reasonable range, to international relations (IR), taking the Arab Uprising as a case study.

There is a need of more dynamic points of view which will help us to grasp the underlying mechanisms of social dynamics, because conventional concepts and approaches for understanding social dynamics and social events have been getting weaker day by day. While one approach focuses the parts, it misses the whole or vice versa. Complexity theory or complex systems studies consider the system as a whole constituted by parts, which are organized in a complex relationship network. Most real systems are complex, such as biological systems, ecosystems, etc. Human societies can and are also considered to be complex. For the sake of our aims in this chapter, the questions in the mind are those of that are political crises, big social events, or large conflicts unpredictable: are they random, can they be controlled or prevented, and what are the system dynamics behind the phenomena?

A useful example for such an IR analysis from a complex systems approach is the so-called Arab Uprising, a term first coined (Lynch 2011) and then rejected (Lynch 2012) by Marc Lynch. He rejected the first term, because he thought that it did not do justice to the nature of the change; and he coined a term for the events, because “the uprisings are an exceptionally rapid, intense, and nearly simultaneous explosion of popular protest across an Arab world united by a shared transnational media and bound by a common identity. Those uprisings are playing out very differently across the region and are likely to produce new, very mixed regional politics—some new

democracies, some retrenched dictatorships, some reformed monarchies, some collapsed states, and some civil wars” (Lynch 2012).

An earlier study (Açıklalın and Bölücek 2014) interpreted the Arab Uprising with the help of the concept (or a fundamental feature) “butterfly effect” of chaos theory. The said study focuses the chaotic behaviour of the protest series. From the point of view of chaos theory, setting himself on fire of a street vendor, Mohamed Bouazizi, in an act of protest after being humiliated by police officers for not having a permit to run a stall, had begun the starter event of the Arab Uprising; it is considered as an initial condition, and the events are interpreted as they manifest a chaotic sequence of successive events. We here will try to focus rather to the systemic behaviour and try to understand the reasons that cause such large-scale events.

A system is said to be self-organizing, if the parts or actors of the system show an organized pattern at the macro-level. And, it is said to be critical when special conditions or parameters are effective. Self-organized criticality, first coined by Per Bak et al. (1987), is a concept for a theoretical explanation attempt of a classic problem in physics, which is the ubiquitous existence of the so-called “ $1/f$ ” noise. As the corresponding authors state, “dynamical systems with extended spatial degrees of freedom naturally evolve into self-organized critical structures of states which are barely stable. [. . . This] self-organized criticality is the common underlying mechanism behind” (Bak et al. 1987) the said phenomena. Here, we will present the said concept and reconsider it for its applicability to political events. And finally, we will see, over the Arab Uprising as a case study, how can (and should) we think of a social system wherein big events can be triggered. But first of all, a question needs to be clarified.

7.2 What Is Complexity?

A system is said to be complex simply if the whole is something transcending the sum of its parts. This means that we cannot make predictions directly about macro-level by just looking to the micro-level interactions. This is still a naive definition that we cannot get use of it much. There are basically four features that the agents of a complex system show: diversity, connection, interdependence, and adaptation (Page 2009). Besides that, we can say that complex systems have the following common properties: complex collective behaviour and signalling and information processing. What gives rise to the complexity, hardly predictable behaviour, and changing patterns of behaviour is the collective action of the great number of parts of the system; and “all these systems produce and use information and signals from both their internal and external environments” (Mitchell 2009). Most real systems’ agents meet these qualifications. Ecosystems, for instance, involve many different species—this is diversity. And, every species is connected to each other somehow, and in some degree, they are also interdependent. One species can be the predator of another species, while it is at the same time the prey of another. By this diversity, ecosystems can survive; if one or several species become extinct, the whole, that is,

the ecosystem, can still survive with the rest species, if diversity is high enough. This is because the agents can adapt to the new conditions, and the system gets regulated to the new conditions. A system can be complicated; it can have diverse parts. However, if the parts are not adaptive, the system is not complex. If we talk about the last example again, it is obvious for the said ecosystem, which loses some of its species, that it could not survive and face with a sequence of extinctions, if the parts are not adaptive.

Moreover, complex systems show emergence phenomena. A beautiful visual example to that is that the dance of flying birds, bird flock patterns in flight. Consciousness, also, is accepted by some of the scientists to be an emergence phenomenon of the collective behaviour of the single neurons. Page introduces two different distinctions between types of emergence: simple vs. complex and strong vs. weak. “Simple emergence is a macro-level property in an equilibrium system, like the wetness created by weak hydrogen bonds holding together water molecules. Complex emergence is also a macro-level property, but it exists in a complex system not in equilibrium, like the mobility of slime molds. Strong emergence says that whatever occurs at the macro level cannot be deduced from interactions at the micro level. Weak emergence says that whatever occurs at the macro level would not be expected from interactions at the micro level” (2009). A social system is always in action, and we usually observe complex emergence. We might expect both a weak emergence or a strong one.

A complex system, due to its adaptive, diverse, communicative, and interconnected agents, self-organizes itself. We see self-organization, which is an also emergent phenomenon, in many real systems, from biological structures to social systems. As long as we get a more understanding of self-organization and change, we might say that “change is no longer something that is done to us by nature but something we can choose to do to nature and to ourselves” (Nicolis and Prigogine 1977). Self-organization stresses macroscopic coordination processes at various levels, and nonlinear processes and nonequilibrium conditions are crucial in the game. These self-organizations that are observed in complex systems are mostly “critical.” That is, as the next chapter introduces, most of the changes in complex systems take place through catastrophic events. They usually do not follow a smooth gradual path. This is because of a critical state of the system, and the system self-organizes itself to that critical state. This critical self-organization has a significant role in complexity.

7.3 Self-Organized Criticality: The Sandpile Model

As it is stated above, a system self-organizes if the collective actions of the individual parts manifest an organized pattern at the macro-level. And, it is said to be critical if small events can and do trigger big events and cascades, which follow a power-law distribution. Therefore, a system that critically self-organized is such a system that can produce large events. The concept, as it is said above, is first

introduced by Bak et al. explaining the power-law distributions observed in systems with extended spatial degrees of freedom. Power-law distributions are seen in many systems. It is observed for transport in systems like resistors, the flow of the river Nile, etc., as well as spatially extended systems like mountain landscapes, coastal lines, etc., which show self-similar fractal structures. And, for example, we see again power-law distributions in wars, economic crises, or traffic jams. Behaviour of many systems seems to be not random. For example, wars. If we determine the size of a war according to death numbers, we see that most wars are relatively small, while some few, like two world wars, are big. That is, we see many wars, but every once in a while, we see a bigger one with greater many deaths. If we plot a graph of that data, for example, we get a power-law distribution, that is, a curve with a long tail. The tall part of the curve indicates the big events, or big wars—these are a few, but possible. And, the long tail of the curve indicates the small events, or small wars—these are many. In contrast to that, random events show a Gaussian or normal distribution according to the central limit theorem (Feller 1945). If we want to understand, for example, why the distributions of wars follow a power law, we need a model.

As Page exemplifies (2009), a model for modelling a power-law behaviour can be the so-called return times of a one-dimensional random walk. In random walk, for which the steps are random, that is, independent of each other, return time indicates the number of steps to turn back to the initial point. If we plot a curve for the return times versus the steps taken, we see a power-law distribution. Is this model suitable for, for example, wars, traffic jams, etc.? It seems like not, because for random walk, the steps are independent from each other, but for other systems' behaviours, there seems to be an interdependence. Thus, we need a more suitable model. Self-organized criticality seems to be the answer for the underlying mechanism, and the sandpile model (Bak 1996) is a more suitable model to understand the phenomena.

A sandpile which is fed with grains on top shows a power-law behaviour in terms of the avalanches, which are caused or triggered by a last one grain. For many times of each grain thrown, only one, two, or a few grains topple down from the sandpile, but every once in a while, an avalanche occurs. This means that the system self-organizes to a critical state in which a small event (the last sand grain for our example model) can trigger a large event. It is different from the random walk, because the grains are in connection with each other, and the toppling of one grain can depend on many others.

The system self-organizes to a critical state in which a small event can trigger a cascade that will take the system to a new state. This can be considered as a phase transition. A big event occurs, and the systems undergo a transition from one state to another. However, the said criticality in the theory is not the same as the critical point at phase transitions in equilibrium statistics which can be reached only by tuning of a parameter (Bak et al. 1987): "The critical point in the dynamical systems studied here is an attractor reached by starting far from equilibrium: The scaling properties of the attractor are insensitive to the parameters of the model. This robustness is essential in our explaining that no fine tuning is necessary to generate $1/f$ noise (and fractal structures) in nature." The scaling properties of the attractor being insensitive to the parameters of the model means that the behaviour is scale-

invariant. That is, the behaviour does not change when the scale is multiplied by a common factor. In the sandpile case, for example, the behaviour or the avalanches seem similar no matter how close we look at it. The behaviour shows a fractal pattern. Scale-invariance property has a specific importance. As Kron and Grund state (2009), when “the same process operates on objects of different magnitudes, the same cause can have major or minor effects. A single grain dropping on a pile of sand can cause a large or a small avalanche. Hence, forecasting is impossible, that is we cannot say when an avalanche will occur, and even if we observe a starting avalanche we are not able to say how big it will be. If one imposes this principle on the social world one can say: If society is a critical system every action/communication could produce unintended large or small consequences, and predictions are nearly impossible.”

From the self-organized criticality point of view, as the world becomes more connected and interdependent, we are more likely to face with big events that are triggered by small events. If one wants to predict big events, or prevent them from occurring, he needs first to understand the nature of the corresponding systems and needs to understand unpredictable big events are not random but are due to the complexity of the corresponding systems. Because of this, the Arab Uprising may be a useful example to make an analysis on the subject.

7.4 Applicability of the Concept to the Arab Uprising

One of the first works regarding application of complexity theory to the Arab Uprising written by Açıkalin and Bölücek (2014) was called “Understanding of Arab Spring with Chaos Theory: Uprising or Revolution” which analyses the Arab Uprising through butterfly effect based on trigger point of first protest of Bouazizi in Tunisia on December 19, 2010. Protests spread to Cairo, Egypt, on January 1; 6 days later they were on the streets of Algeria; 2 weeks later and in the same month, protests spread to Yemen; only in 2 days, they were in Lebanon; and Jordan; protests continued to spread within just a few days between Bahrain, Libya, Morocco, Iraq, Saudi Arabia, Syria, and Kuwait (Blight et al. 2012; Naar 2013). As it is seen, protests spread from one country to another not through an orderly path, but they rather follow a disordered one and spread through short and long distance leaps; e.g., from Jordan to Bahrain, from Algeria to Yemen. There is no doubt that this work contributed as new approach to analyse Arab Uprising; however, this article brings new approach to understand how the Arab Uprising had been processed via sandpile model in self-organized criticality (Fig. 7.1).

The series of events were interconnected yet diverse (Dalacoura 2012). This shows how the region is sensitive and how one part can be affected by another whether it is a near neighbour or a far region—that shows the connectedness and interdependence over the region. Not only region but also it shows how the structure of each country is fragile in terms of economic, social, and political aspects. This nature of the region and countries may find its roots in the common culture, similar

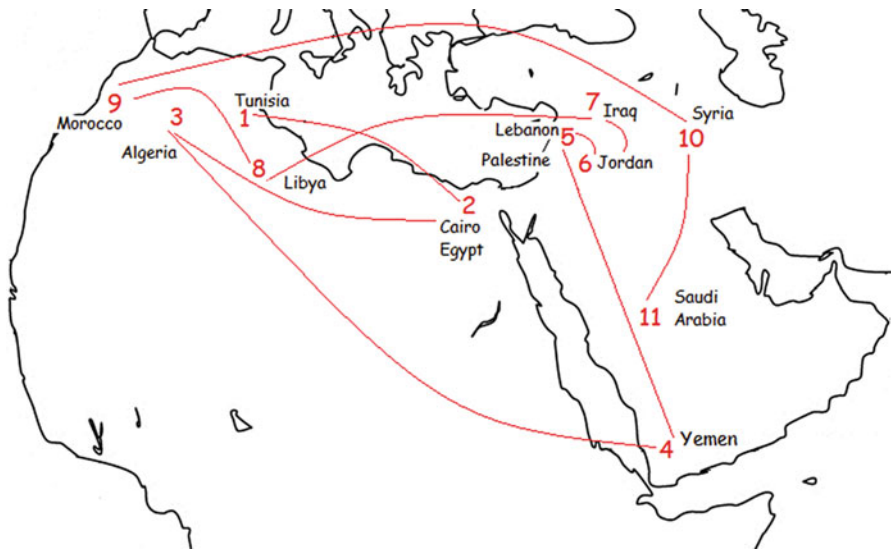


Fig. 7.1 Middle East. The spread of the protests in chronological order

identities, common histories, and common and similar social memories, as well as also the connected and interdependent regional and global politics between the countries in the Middle East. Thus, we can treat the region as a system, which has connectedness and interdependence between its parts. And, as all human societies, that system is also a complex system. The applicability of the critical self-organization concept might show itself in the background state of the society (the system) that lead to the events. There are a few basic and longstanding internal and structural problems and causes that pushed people to participate the protests. Economic hardships, like high unemployment, increasing prices (especially food prices), etc., ideologically and morally bankrupt dictatorships, political corruption, and internal regional and social inequalities (Dalacoura 2012). These causes turned into demands and became visible on the slogans of the people who participated to the demonstrations: “Huriyyah, Adalah Ijtima’iyah, Karamah!” [Freedom, Social Justice, Dignity]. In other words, Tunisian protests were not initial point but last grain of sand in the system. It is not possible to discuss each country's political, economic, and social turbulence; we are going to discuss various economic, social, and political reasons, especially in Tunisia and Egypt through historical perspective since post-Ottoman era, because countries share common domestic characteristics (Fig. 7.2).

Every new sand dropping to the pile represents an additional energy to the system that makes the system self-organize to a critical state (the picture is the manipulated form of the drawing by Ms. Elaine Wiesenfeld (Bak 1996)).

George Antonius who is a Lebanese Christian writer in his book entitled *The Arab Awakening* in 1938 suggested that Arabs had their awakening against Ottoman Empire longstanding rule. However, the flow of history was not linear for Arabs,

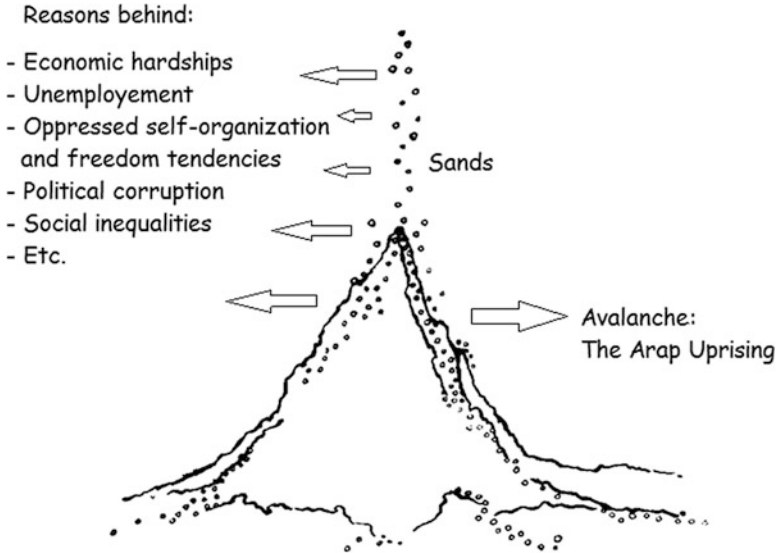


Fig. 7.2 Sandpile. An analogy between the sandpile model and the Arab Uprising

post-Ottoman era unfortunately remarked by colonialism, dictatorship, repression, and ultimately unavoidable Arab Uprising.

Political turbulence where regimes had been drifting away from democracies can be deemed as common characteristic of those countries where the Arab Uprising happened. Although almost all of Arab countries have had common structural problems, the erosion of system and undemocratic structure could be exemplified with Tunisia and Egypt where the protests turned to almost revolution. Beginning with Tunisia was colonised by France in 1881 with Bardo Treaty until Tunisia could get their independence in 1957. The new republic of Tunisia had been ruled by Burguiba as a lifetime president within one-party state. However social movements in Tunisia and health issues of Burgiba pushed to resign his position in 1987 till Zine El Abidine Bin Ali (Ulutaş and Torlak 2011). From 1987 to 2011 when the protests began, Tunisia was marked as one of the most oppressive regimes in the world in terms of freedom of speech and violation of human rights such as torture (Walker and Tucker 2011).

As well as Tunisia, Egypt was colonized by Great Britain till 1952 when Gamel Abdel Nasser made coup detat and threw Egypt Kingdom was belonged to Great Britain and established republic with one party system. Then, Egypt was unified with Syria and called United Arab Republic and dissolved in 1961. Actually republic as a form of government had been “de facto” which was never implemented fully; multiparty election was tried but however failed. Muslim Brothers was banned from politics. Hosni Mubarak came to power in 1980 for 31 years. Unfortunately Mubarak era could not be considered as a democracy due to violation of human rights and oppressive actions in social and political areas (Güçtürk 2016). There is no

doubt that other countries of the Arab Uprising also shared the same political history in general. Not only political turbulence but also economic hardship became one of the main internal reasons of the Arab Uprising or, in other words, other element of sandpile!

As Iffat Idris suggests when fail of democratic state meet with population growth led to inability to create job market by both in private and public forces, youth unemployment, rising of food prices and ultimately deteriorating living standards of majority of population (Idris 2016; Winckler 2013).

The numbers from Tunisia and Egypt showed how the economic structure is fragile. One of the main problems of people of Tunisia has been food prices. Including with Somalia, Haiti and Tunisia had the highest food prices (Breisinger et al. 2012). According to World Bank statistics, unemployment rate of university graduates in Tunisia had been steadily increasing between 1984 and 2010 when was peaked 20% of population. When it comes to Egypt, economic picture is almost the same. 2007 and 2008 were remarked by huge protests against rising food prices, and the second peak point was reached at 2010 just before the Arab Uprising began (Lagi et al. 2011). Ansani and Daniele suggest that the rising of food prices was doubled by high inflation rate, which led to undermine welfare of people (2012). In addition to university graduates, unemployment rate has another dimension in Egypt which is female unemployment which peaked almost 48% (Ghafar 2016). Two similar pictures of Tunisia and Egypt prevail that how economic hardship pushed Arab people to protest on the streets.

Last domestic factor which triggered protests is of course social dimension. Social dimension of any country could not be separated from politics and economics. The fragile economy and long-term undemocratic policies of government had created social earthquake among society. Both in Tunisia and Egypt, most of political and economic sources have been held by a group of elites related with military. In other words, exclusive policies of government and political structure led to social inequality which undermines social welfare of society in terms of distribution of wealth and access to opportunity (Tinoco 2013). Actually, Gini coefficient and unemployment rate of university graduates and females are also proof of how inequality is high in those countries. In addition to this, corruption is another reality of the countries which cannot be controlled by government, and most of the time, people who work in government mechanisms are the main actors of it. However the most important point here is that if we look closely government policies, we can see the incapacity of government to meet frustration of majority of society.

In addition to domestic reasons, there are also external reasons like the global 2008 financial crisis and the influence of western countries so accumulation of the effects of colonialist and postcolonialist politics shaped Middle East in historical manner. It should be noted that domestic and external causes are interdependent with each other. There is no doubt effects of 2008 global financial crisis have been felt in most of countries but especially directly affect those countries in terms of dropping of tourism income and fall of oil prices which is one of the main income sources of the countries (Behr 2012). Furthermore, long-term colonization and then traumatic postcolonial period led to more open and fragile countries to intervention of foreign

countries. Thus, it seems to be the consequence of a dialectic sustained between domestic tyranny and globalized imperialism (Dabashi 2012).

As mentioned in the beginning of this subtitle, application of complexity theory to IR and especially Arab Uprisings is quite new. There is not so much literature. The only article on application of complexity theory to Arab Uprisings written by Açıklın and Bölücek's which suggest that protest of Bouazazi can be considered as the initial point of the protests with the characteristic of the Arab Uprising. However as we prevailed both internal and external reasons we mentioned from a complexity theorists' point of view, the system seems to had self-organized itself to a critical state, a minimal stability condition, in which a small event could trigger an avalanche. In other words, long-term misleading political, economic, and social reasons accumulated in society led to spark for protests. In addition, oppressive rule of the society, suppression against people's tendencies to self-organization, and suppression against freedom demands and *energy flows*, in other words, *dams* that are built against the *flows* coming from the bottom of the society, make the system self-organize to a criticality and led to spark for protests. From the perspective of the concept self-organized criticality, we suggest here to interpret the events as for the system it was a transition from one state to another state, not because of a relevant parameter that has reached to a critical point as it is in equilibrium statistical mechanics, but rather because of a critical point that behaves as an attractor reached by starting far from equilibrium. This is due to the complex nature of the system.

Another important feature had also been observed in the protests, which is the scale invariance. The behaviour was similar at every scale. In each street, in neighbourhoods, in cities, and in whole country or region, the behaviour was similar to each other.

In regions that are highly chaotic, sensitive, and complex, like the Middle East societies, we can observe strong complex emergencies. And, the Arab Uprising seems to be one of them. "One fascinating thing about emergent phenomena is that they arise from the bottom up, without superimposed formalism" (Page 2009). And, the movements in the Arab Uprising, although many classically organized groups with leaders and sometimes with arms joined after then, had consisted primarily of the independent participations of ordinary people with the help of communicative opportunities of the Internet and social media (Eltantawy and Wiest 2011; Howard et al. 2011). "Their 'leaderless' character was a genuine bottom-up expression of public will. The political, economic and social oppression of the Arab people, the lack of government transparency and unemployment were the real motivating factors behind demands for reform. People were united under their desire to ensure the fundamental principles of human security, dignity and respect to human rights, their share in a respectful, decent life and prosperity" (Frangonikolopoulos and Chapsos 2012).

7.5 Conclusion

There is no doubt that the Arab Uprising is one of the biggest and controversial twenty-first-century phenomena in terms of its reasons and consequences in long term. Since 2011 when the first protest took place, there have been thousands of academic work about it. However, density of the Arab Uprising encouraged the scholars to focus on the big picture with nontraditional approaches. This ambitious take us to the complexity theory and especially property of self-organized criticality—the sandpile model in order to analyse the evolution of the Arab Uprising.

Firstly, complexity theory is a new tool in social science and IR regarding to its application; it has been quite a phenomenal approach in natural science to prevail realities of nature. Transition from linear approaches to nonlinear concepts was groundbreaking when first social scientists define social system as complex system. Not only social science but also application of complexity theory and its tools has become new phenomenon in international relations. Different scholars in IR have used complexity theory as new lenses to anatomize different aspects of the field such as theory, modelling, and case studies. From this perspective, this chapter could be considered as a consequence of ambition to analyse the Arab Uprising with self-organized criticality through the sandpile model properties of complexity theory.

Complex systems have two main sources which are iteration and interaction. Iteration means generating the system many times. “Fractals and chaos result from repetition of simple operations. These generating rules produce complex phenomena” (Bossomaier and Green 2000). Complexity theory contains a number of parts (agents or actors) that interact with and adapt to each other endlessly. Then, interaction as another source is between different independent and adaptive actors. In addition to this, perhaps one of the most important features of complex systems, which is a key differentiator, is the concept of *emergence*. In large systems, macro features often emerge that cannot be traced back to any particular event or agent, so complexity theory is based on interaction, emergence, and iterations.

Secondly, related with emergence, self-organization is one of the vital characteristics of complex systems which means that both system and actors within system self-organize itself. Under the self-organization property of complex systems, the self-organized criticality sandpile model unveils spatial and temporal power laws and scale invariance, without controlling the external parameters (Banerjee 2012). The system changes spontaneously; that is why it can be a useful tool to analyse natural phenomena which would be used to understand evolution of the Arab Uprising phenomenon. When we take historical analysis of political, economic, and social conditions of countries in the Middle East especially the Arab Uprising countries, it is highly possible to see similarities between countries that can be considered as domestic reasons of the Arab Uprising. Those countries have suffered from political instability, suppressive and de facto undemocratic regimes, high inflation and unemployment, and of course social inequality which were escalated with effects of colonialism and postcolonialism. If we apply self-organized criticality to the sandpile model, these domestic factors have been accumulated for society and

led to permanent social unrest. Not only those domestic reasons but also external reasons perpetuate this social unrest and finally led to the Arab Uprising or might be called as revolution in some countries too. In other words, the Arab Uprising did not spark with only Bouazizi's burning himself, but it is the last grain on the sandpile which caused a regional transformation and a phase transition and even a change in global dynamics. As it is seen in some regions (like Syria), phase transition continues. And in addition to the Arab Uprising case, from the said perspective, we can say generally that if a social system has its critical state and needs a phase transition, it will self-organize itself to the new state or conditions ultimately, and suppression against these flows helps only to a more violent transition and might only delay the transition. Thus, we say: *Dams bring ruins!*

Consequently, the Arab Uprising cannot be solely analysed with classical approaches. Complexity theory and self-organized criticality can be one of them to introduce possible narrative of how the protests and even revolution happened in some countries. It is still highly unclear and fuzzy to make predictions about the region in the long term, but at least the self-organized criticality sandpile model gives hints to see where the system would be evolved possibly.

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Chapter 8

Migration Process and Its Effects on Mental Health



Faruk Bozdağ and Filiz Bilge

Abstract Migration, especially for immigrants, causes significant changes in the lives of individuals. Although immigrants may face several problems related to mental health, the disciplines that examine mental health, such as counseling, psychology, and psychiatry, have not been adequately interested in this issue. Identifying problems of immigrants will allow a host society to understand their problems better. In this study, problems of immigrants are discussed as three stages: pre-migration, migration, and post-migration. Immigrants are found extensively among targeted groups of counselors offering mental health services at many different institutions. For this reason, the results are evaluated for mental health professionals, especially counselors.

8.1 Introduction

As they face changes throughout their lives, human beings must try to adapt to them. These changes may stem from their environment and can be biological, intellectual, ethical, and psychological as a course of an individual's natural development. Those persons who cannot develop appropriate coping styles experience psychological problems.

Migration, which causes important changes in individuals' lives and is a social phenomenon, has a past that is as long as the history of humanity. Migration is

This study is composed from "Self construals, adjustment problems and coping styles of internalmigrant and non-migrant adolescents," accepted as a master's thesis by the Department of Psychological Counseling and Guidance, Hacettepe University, in the 2014–2015 academic year.

F. Bozdağ (✉)
İstanbul University, İstanbul, Turkey

F. Bilge
Hacettepe University, Ankara, Turkey
e-mail: fbilge@hacettepe.edu.tr

defined as a change in the places where people live at any time period (Bhugra and Gupta 2011). It is inferred that migration as a phenomenon has not been interesting to disciplines examining mental health, such as counseling, psychology, and psychiatry, although migration is closely related to the whole scope of society and has multi-dimensional value and influence (Abadan-Unat 2002; Akkayan 1979; Kağıtçıbaşı 2012; Yalçın 2004).

Nearly one third of the world's population could be identified as "migrant" when the place in which they are currently working and the place where they were born are compared (Bhugra and Gupta 2011). Nearly 3% of this population (215 million people) is estimated to live outside their own country borders (TWB 2011). Although debates continue about the issue that migration takes place from underdeveloped countries to developed countries, many of the movements do not happen in such a way – that the moves do not even occur between countries. Most migration actions take place across a country. Although the number of the people migrating between countries is estimated to be 213 million, the number of people migrating across their own country is estimated to be 714 million (UNDP 2009). From this point of view, it is clear that migrants occur extensively among targeted groups of counselors offering mental health services at many different institutions, starting with schools.

Migrants may face several problems related to integration, cultural differences, and mental health. With immigration, people may lose their social structure, some of the members of their families, and the language that they are accustomed to; their attitudes, values, social structure, and social support networks also change (Bhugra and Gupta 2011; de Wit et al. 2008). Bhugra (2004) stated that migration is a complicated process, and one that includes many stress-related situations. However, not all migrants are affected by this situation in the same manner. Depending on the nature of migration and the reasons for it, the effects of migration on individuals and societies differ. Although most studies emphasize the negative effects of migration on mental health, Pyakuryal et al. (2011) suggested that migration cannot be the only source of problems that immigrants face. Studies that have found that, in terms of mental health, migrants are similar to or in a better state than non-migrants (Aronowitz 1984; Breslau et al. 2007; Tam and Lam 2005; Fuligni 2003; Tomita et al. 2014) support this view.

Migration affects individuals differently according to their gender and current developmental stage. Among migrants, women, children, and adolescents constitute the most vulnerable group. Most migrant children experience higher levels of stress because they have to live in a culturally different world. Kwak (2010) stated that depending on social experiences and traditions in their own cultures, adolescents try to acquire new social roles and experiences to develop themselves. However, emerging with migration, changes in identity may create stress and cause some problems in self-perception and mental health (Bhugra and Becker 2005). That adolescents recognize and accept their selves is closely related with their need to accomplish their developmental duties in adolescence, achieve their goals, and overcome their anxiety (Akin and Ceyhan 2005). Therefore, it is considered that a healthy self-construal development may decrease possible problems both

individually and socially. This situation needs to be taken into consideration when mental health services are offered to children, adolescents, and parents by school counselors.

According to Kağıtçıbaşı (2010), that migrants develop autonomous-related self-construal is observed more because autonomy is essential for sociocultural adaptation whereas relatedness is essential for psychological adjustment. Relatedness improves social responsibility and cooperation, and autonomy provides making decisions individually and with competence. Therefore, it is possible for migrants to adapt to changes in their lifestyles with the development of the autonomous-related self that fulfills two basic psychological needs.

The adolescents whose social systems and social support networks are changed try to adapt to the new environment with the self-construals that they possess. Several coping styles that can be employed during this period foster the development of adolescents. Negative coping styles could make their current state more complicated and increase their adaptation problems.

One of the problematic areas that migrants could encounter is the need to adapt to a new culture and achieve psychological adjustment (Chung et al. 2011). With migration, acculturation starts over again in the new society in which the individuals are relocated. Acculturation is a multi-dimensional change process including language, culture, ethnic identity, attitude and behaviors, social habits and relationships, gender roles, eating habits, music choices, and ways of utilizing media (APA 2013). During this process, different adaptation levels develop depending on assimilation, separation, integration, and marginalization strategies. Among them, integration is claimed to be the healthiest way in young migrants to protect their cultural heritage and build close relationships with the society (Berry 1997; Berry et al. 2006). When evaluated from this point of view, counselors are expected to utilize integration strategy effectively when helping migrant clients.

As pointed out here, migration may cause stress by bringing about many changes. Encountering stressful situations and trying to handle these is closely related to the behavioral, emotional, and social development of individuals. Individuals worry about how to build relationships with the world and how to handle these (Cook et al. 2012; Lazarus and Lazarus 2006). They try to react to changes via the general adaptation habits they acquired on their own. In addition to this, as new stimuli differentiate from old experiences, they need to develop various reactions (Kurç 1989).

In addition to the nature of migration and its reasons, some migrants and refugees have to cope with various problems in pre-migration and post-migration periods. Depending on individual, familial, and environmental differences, while pre-migration problems include trauma, family loss, etc., they may encounter issues such as cultural shock, finding a job, language, and change in family dynamics in the post-migration process. It should be ensured that migrants have the necessary aids to handle their problems effectively (Chung et al. 2011; Crijnen 2003; Tuzcu and Bademli 2014).

8.2 Reasons for Migration

There are many different reasons that migrations happen all over the world. Tomsa (2010) states that throughout history, political factors such as poverty, social changes, conflicts, and torture, and many other factors, cause waves of migration. Tanfer (1983) also mentions social, economic, demographic, and political pressures as reasons for migration and puts forward the idea that people migrate as a reaction to changes stemming from these pressures. It could be said that people migrate from where they have composed their cultural and psychological identities to somewhere else for the sake of a better life (Batista and Wiese 2010).

When reasons of migration are taken into consideration in terms of migration type, Esipova et al. (2013) mention that internal migration stems from mostly economic and political issues, and every year, thousands of people change their place of living because of such conflict and pressures. Also, the authors add that environmental changes and natural disasters may force people to leave their homes, and better educational opportunities may be among the reasons for migration. Todaro (1980) states that economic issues are a basis for people to migrate. Also, improving their educational status and skills, getting away from rural areas that are homogeneous in terms of social and cultural conditions, staying far from violence and political unconformity, and joining their relatives or friends who have migrated previously are other reasons for migration. According to Bhugra (2014), although it is possible that migration from rural areas to urban areas stems from economic and educational reasons, international migrations could depend on social, educational, economic, and political reasons. As Turkey is an important case in terms of migration history and its types and causes, the migration process in Turkey is discussed here.

8.3 Turkey and Migration

Turkey has been migrated to and from, and provided a home to transit migrations, for many years. For reasons of its internal dynamics, mutual treatises, wars and conflicts, and economic and political developments, different types of migration have taken place at different times in Turkey, and those migrations have included various stages of the migration cycle. This cycle has caused some loss for both migrants and non-migrants and has provided some benefits. In addition to these, Turkey has also been a country of emigration. This situation has led Turkey to be an interesting research field in terms of migration and human development (CIDOB 2011; İçduygu 2009).

Before the 1950s, not migration itself, but not being able to leave the peasantry, clan, or region, or—more clearly—not being able to migrate, was seen as a problem. This situation continued throughout the 1950s; later, continuous migrations were observed throughout the 1960s and reached a peak until the mid-1970s

(Akşit 1998). In Turkey, since 1975, 7% to 8% of the population has immigrated from one province to another every 5 years. These immigrations generally take place from the East, the Southeast, and the North to the Northwest, West, and the South. Individuals change their places from regions where urbanization and industrialization are low and poverty is high to regions where urbanization and industrialization are high and poverty is low (Akarca and Tansel 2012). Also, regional and local differences have been deterministic for internal migrations (Yakar 2012).

With mechanization in agriculture, mass internal migrations started in 1950s, and migration from rural areas to urban areas accelerated in the 1960s. Approximately 1.5 million people left their villages between 1950 and 1960. Half of them went to the three big cities of Turkey—Istanbul, İzmir, and Ankara—directly, and the others went to small- and medium-scale towns first and then went on to big cities. The first seasonal migrations were observed between 1960 and 1975 as a result of developments in infrastructure and transportation networks. Later, seasonal immigrants settled down permanently where they had come. Between these years, almost 6.8 million people immigrated and most of them resettled in İstanbul, Ankara, and İzmir. The urban population constituted 25% of the total population in 1950, but this proportion increased to 44% in 1980 and to 59% in 1990 (Kleff 2007; TMMOB 2003).

To explain the internal migration process that started in the mid-1980s, lasted until the end of the 1990s, and affected mostly people living in the East and the Southeast, the classical push-and-pull factors of sociology have been insufficient (Kaya et al. 2008). Although it is possible to talk about the pulling influences of industry centers in cities and around cities and the pushing influences of agricultural productivity issues that cannot fulfill the needs of the increasing population for internal migration taking place in the first period, it could be said that political reasons were the major provocateurs in the 1990s (Adaman and Keyder 2006). Political choices, rather than the social and economic developments that led to migrations as in the West, were instigators of the migration process in Turkey (Gün 2006). As a result of the military coup in 1980 and conflicts starting in the Southeast, internal migrations increased significantly. Because of the evacuation of villages and many regions in the Southeast and burning of fields and plants, peasants had to migrate to cities such as Diyarbakır, Şanlıurfa, Gaziantep Adana, and Mersin and metropolises such as İstanbul, İzmir, and Antalya. In addition to conflicts in the region, the Southeastern Anatolia Project (Güneydoğu Anadolu Projesi, GAP) failed to provide necessary living conditions in the region (Ayata 2011; Kleff 2007). As a result of the evacuation of villages, which increased in the 1990s and continued until 1999 and forced migration, more than 3 million people from more than 3700 settlement areas were forced to leave their living spaces without their consent and control (TMMOB 2003). The problems of those individuals were not limited to the time before and during migration: they encountered many issues in cultural, social, political, economic, educational, and psychological areas after migration.

Turkey has been flooded with immigrants because of wars continuing in neighboring countries, especially in recent years. Individuals who were affected by shootouts in their countries had sought refuge in neighboring countries because

they had to leave their homes with their families. Today, the number of people who immigrated to Turkey because of the war in their own countries has reached the millions. The number of Syrian immigrants alone is estimated to be nearly 2.7 million (UNCHR 2016). Further, some researchers claim that this is only the number that government officials provide and the real number of immigrants may be much higher (Oral 2016). With the help of the fieldwork conducted with asylum-seeking children in İstanbul by the Development of Social and Cultural Life Association (Sosyal ve Kültürel Yaşamı Geliştirme Derneği, SKYGD), it is pointed out that they expect better education, health, and job-related conditions (Oral 2016). Those children face very serious problems. It is clear that when necessary interventions are not implemented, this kind of significant problem will increase both among asylum seekers and members of the host society because of the floods of immigrants. For this reason, it is crucial to provide mental health services for immigrants.

8.4 Migration and Mental Health

The effects of migration on the migrants and the settled society depend on its nature, stage, and causes (Bhugra 2004). Migrants encounter many problems such as adaptation to the environment, family organization, economic struggles, accommodation conditions, clothing styles, and daily life and cultural differences. Managing these issues and the adaptation process are closely related to relationships between migrants and inhabitants, the cultural and economic status of both sides in social structure, similarities, and differences being low or high (Deniz and Etlan 2009). That similarities in social structure are high makes the adaptation process easier but high levels of differences could make it harder.

That individuals coming together via migrations have to continue their lives together may cause significant problems related to adaptation and conflict. The level of problems encountered during getting used to social relations and coping with the lifestyles of migrants who may experience some stressful situations, depending on cultural differences and health (Aksoy 2012; de Wit et al. 2008), changes according to the physical, socioeconomic, and cultural features of the place to which they migrate (Güzel 2013). During the process of adaptation to the new society and new lifestyle, migrants might feel loneliness, social isolation, regret, and being undervalued, which could increase their stress level. In a situation in which they cannot cope with stress in an effective way, migrants could face some health problems such as anxiety and depression (Tuzcu and Bademli 2014).

In this long and compelling cultural adaptation period, migrants need to become familiar with a new language, with different attitudes and roles, and lose their social networks (Gülşen et al. 2010). As a result of changes in social networks, they are exposed to new experiences and must confront new culture- and language-based problems. The migrants experience more chronic stress, social support problems, and symptoms of mental health disorders. In addition, it is discussed that migration is not the only reason that causes all the problems (Pyakuryal et al. 2011). Bradley and

Van Willigen (2009) point out that the psychological well-being of migrants is affected by their individual features and the current social context of the society into which they migrate. Also, some studies found that migrants are in a similar or better situation than non-migrants in terms of mental health (Aronowitz 1984; Breslau et al. 2007; Tam and Lam 2005; Fuligni 2003; Tomita et al. 2014). By considering these findings, different factors should be examined in a sophisticated manner within the scope of studies on mental health of migrants.

While examining the influences of migration on mental health, it is suggested that the process to be taken into consideration has three stages: pre-migration, migration, and post-migration. Pre-migration requires decision and preparation. The second stage is the emigration itself and includes changing places. Post-migration refers to the period in which migrants adapt themselves to the new society from the social, political, economic, and cultural aspects (Bhugra and Gupta 2011; Salem and Flaskerud 2010).

8.4.1 Pre-migration Stage

Loue (2009) states that economic and political conditions, social status, educational level, and whether individuals have symptoms of mental disorders and have enough financial support to pay for mental health services, affect the mental health of individuals generally (as cited in Salem and Flaskerud 2010, p. 185). Müller (2013) points out that personality, migration type, and being exposed to torture and violence before migration are associated with mental health disorders. Similarly, Bhugra and Jones (2001) suggest that in the pre-migration period, personality is one of the vulnerable factors in terms of possible problems that migrants will encounter later. The reason for migration and the size of loss are included among significant factors that affect the mental health of individuals (Bilici and Yeşildal 2015).

The social skills, self-perceptions, and psychological, social, and biological vulnerability levels that individuals have before migration influence the problems they will face (Bhugra 2004). Migrants experiencing higher levels of trauma before migration are under high risk throughout the settlement process (Murray et al. 2008). The traumatic events these migrants go through before migration may cause vulnerability to psychological stress that results in lower adaptation abilities (Schweitzer et al. 2006).

8.4.2 Migration Stage

According to Loue (2009), migration-related factors that affect mental health could be listed as travelling conditions, being exposed to and/or witnessing violence, traumas stemming from witnessing, not being able to reach enough water and food, and being exposed to torture (as cited in Salem and Flaskerud 2010, p. 185).

With migration, positive and negative life situations and relationships, with deprivation resulting from loss of value and support, could affect possible problems (Bhugra 2004). Bilici and Yeşildal (2015) emphasize travelling conditions among migration-related problems and state that whether travel is safe, dangerous, or compelling is associated with possible problems. Parallel to these, Bhugra and Jones (2001) put forward that loss, bereavement, and posttraumatic stress disorders experienced during migration put migrants under risk of mental disorders in the post-migration period.

8.4.3 Post-migration Stage

In the post-migration period, features of place migration that occur are one of the main concerns (Bilici and Yeşildal 2015). The similarity level between migrant lifestyles and the culture of both the places from which they came and of the places to which they migrate affects migrants' emotions and the adaptation process after migration (Erol and Ersever 2014). Loue (2009) points out that factors such as acceptance and support in the place where migrants arrived at the end of migration, being around individuals from the same ethnicity, similarities between the countries individuals migrated from and to, and detention before settling down in the country where they arrived, and its duration on the impact on the mental health of individuals (as cited in Salem and Flaskerud 2010, p. 185) are involved. During this process, some difficulties such as leaving the family, isolation, and socioeconomic struggles can be widely observed. Difficulty in adaptation, threats to the family life, loss of culture and social support are among the most common problems. These problems experienced after migration influence mental health unfavorably (Carswell et al. 2011).

Göhler (1990) stated that it is observed that migrants get through some changes in their mental states and have many negative feelings without taking into consideration their age, gender, reason of migration, social class, educational status, and cultural history, and how long they stay in the place to which they migrate. Migrants feel loneliness, alienation, gap, longing, negativism, offense, guilt, and inferiority (as cited in Şahin 2001, pp. 64–65). When they are not supported by or respected by the society enough, their problems become more and more complicated.

According to APA (2013), depending on the period of acculturation in the society into which they are moving, migrants could experience changes in gender roles, conflicts between generations, conflicts in the family, decline in communication, struggle in attachment, and identity development related to the new culture and their own cultures, loneliness and isolation. Unemployment may cause migrants to become more vulnerable, sensitive, and angry. Discrimination and racism practiced overtly and covertly influence belongingness and the well-being of migrants in a negative way. Through the migration process, migrants could experience some mental disorders such as anxiety, depression, post-traumatic stress disorder, substance abuse, or commitment to suicide. That these problems decrease or disappear

completely depends on the individual efforts of migrants with reactions of other individuals, groups, and institutions that are dominant in the society.

Policies related to migrants, level of pluralism, and attitudes toward integration with individuals living in the place where migrants settle affect their problems (Stevens and Vollebergh 2008). That their relatives are settling previously in the places to which they migrate makes their adaptation process easier and accelerates it (Çelik 2005). This situation emphasizes the importance of social support. In that, migrants who are not well supported socially cannot integrate with the society and thus face various problems.

No matter what kind of migration takes place, such an experience harms the identity perceptions of individuals. For the integration of migrants, it is important that language support is provided and officers are trained for cultural competency in public institutions, health services, and especially psychotherapy services. That migrants cannot benefit from these services because of language barriers hinders their integration with the society (Davoliüté 2008). For instance, Kurdish immigrants who had to migrate to İstanbul state that they cannot rent houses or vote because they cannot obtain their official papers, nor register their children in schools. Among these individuals, women must endure many more problems. Women who experience problems such as language barriers, being illiterate, social exclusion, and poverty cannot integrate with the society (Çelik 2005). Anagnostopoulos et al. (2006) state that forced migration causes serious psychological effects on both migrants and their children. They also claim that the identity formation process of adolescents in minority groups is twice as hard than that of other adolescents within their cultural and social framework, and these adolescents often experience value conflict. That adolescents are labeled as “others” in the society into which they migrate stands as an obstacle for their psychosocial development.

As stated here, migration affects women, children, and adolescents more than adult men (Tuzcu and Ilgaz 2015). During the migration process, women are not able to take place in the decision-making mechanism. Because of posttraumatic stress disorders, cultural conflicts, change in family roles, domestic violence, and language-related issues, women may experience numerous mental problems. Some of the complaints of children often noted are fear and introversion (Gökdemir 2012; Topçu and Beşer 2006). In the migration process, migrants being in ethnic minorities, their distinctive cultural backgrounds, and their willingness to migrate are some of the factors that impact mental health (Stevens and Vollebergh 2008). In addition to these, the low socioeconomic status of migrant adolescents, unable to speak the language of the host society, the high level of unemployment, being unemployed for a long time, and suffering from poverty for a long time are considered to be factors associated with behavioral problems (Crijnen 2003).

Studies indicate that refugee and migrant children coming from war regions face various mental problems after migration and that these problems affect their educational attitudes and achievement and adaptation after settlement (Stermac et al. 2008). Problems of migrant children are listed as poverty, adaptation to the school and environment, attachment, academic achievement, language and communication, tendency to violence, alienation, prejudice, and being exposed to violence (Angay

2010). Behavioral disorders, identity crisis, low self-esteem, anxiety disorders, depression, somatic disorders, and problems related to bilingualism, enuresis, low academic achievement, and conflicts between generations are among the common difficulties observed after migration (Gün 2006; Gün and Bayraktar 2008).

Migrant children do not think that the place they live in is safe; they have trouble with language and expressing themselves and are exposed to regional and urban discrimination, mocked by others, and alienated (Nar 2008). It is stated that those children have more tendency to commit a crime for reasons such as urban people having prejudices about them and because they cannot adapt to the new socioeconomic and cultural environment (Erkan and Erdoğan 2006; Yavuzer 2006). Parlakkaya (2010) identifies the undesired and most common behaviors of migrant children as being violent to each other, not bringing class materials, swearing, breaking or damaging class equipment, and absenteeism. Polat Uluocak (2009) claims that migrant children display more mental maladjustment and that they encounter problems such as tics, nail-biting, and failure.

The self-respect and life satisfaction of migrant adolescents decrease and their social support networks shrink (Gün and Bayraktar 2008). Migrant adolescents have trouble with social relationships and they do not receive enough social support. Non-migrant adolescents can apply for social support while coping with stress but migrant adolescents are not so successful in this. Also, non-migrant adolescents develop enough heteronomously related self-construal, but this situation is observed rarely among migrant adolescents (Bozdağ 2015).

As understood from findings of the studies cited here, it could be claimed that the migration process has many negative effects on children and adolescents. It is hard for children to endure this process because they were not able to resist leaving the place where they used to live and migration happened without their control. Adolescents, on the one hand, try to fulfill the requirements of their current developmental stages and adapt themselves to biological, psychological, cognitive, and social changes, whereas on the other hand they have to try to cope with other changes that emerge with migration.

8.5 Discussion and Conclusion

Identifying the problems of migrants will allow other people in the society to understand their problems better. With mutual understanding increasing in this way, it would be possible that migrant and individuals in the host society could accept each other more easily.

According to Erdur-Baker (2007), counselors need to know the social, cultural, and political atmosphere of the society in which they live. Also, they need to be familiar with the ways members of the society make sense of and interpret psychological problems others experience, how they see these problems, and what are their judgements related to them and the coping styles those individuals create. After migration that may lead to a crisis is over, counselors need to take into consideration

the reason that the clients changed the place in which they lived, their living styles, culture, family structure, social environment, and educational status, and how skillful they are at coping with stress while providing counselling services (Erol and Ersever 2014).

As a result of migration, people from other cultures come together. This situation requires the counselling profession to keep in mind intercultural components as is necessary in many other professions. Effective intercultural counselling depends on counselors being able to change and adapt themselves for clients (Benezer 2006). For this reason, counselors and psychologists working with bilingual or multilingual migrants need to get educational support to increase their linguistic proficiency and enhance their knowledge and skills to work with translators effectively (Chung et al. 2011). Besides, counselors who will provide service for migrants are required to be cautious for environmental discrimination and biases (Yakushko et al. 2008). Apart from these, it is important for counselors to develop familiarity with their own features and prejudices. Counselors that cannot develop that familiarity become alienated from their clients (Loewy et al. 2002).

Conclusively, counselors offering mental health services at schools try to help students to promote their healthy development. Counselors working at schools in regions where migration is occurring intensively need to be aware of the possible educational and psychological influences of migration in addition to helping students acquire skills. Similarly, counselors and other professionals offering mental health services at Family Counselling Centers, Psychological Counseling Centers, state and private hospitals directed by the Ministry of Health, and other institutions should be knowledgeable about the dynamic effects of migration and the cultural features of migrants and their problems to ensure the quality of their services.

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Chapter 9

Exploratory Factor Analysis in the Measurement of the Four Dimensions of Sustainable Leadership Construct



Miir Farooq and Mohd Bruhan Ibrahim

Abstract The purpose of the study was to establish the underlying factors that determine the measurement scale of sustainable leadership. The empirical quantitative study was done on 6 universities selected from 29 universities using simple random sampling technique in SPSS version 22. A 25-item survey tool was distributed to randomly selected respondents from 6 universities using the permission letters secured from both Uganda National Council for Science and Technology (UNCST) and individual universities. After data screening and cleaning, 300 questionnaires emerged reasonable for further analysis. Exploratory factor analysis was used to arrive at the four dimensions of measuring sustainable leadership construct. The study recommends that university management should fill the missing gaps by opening up more opportunities of training staff to take up new positions to help universities change their performance level. Since the study was a cross sectional in nature, future research can be done on others universities in different parts of the country using longitudinal research technique.

9.1 Introduction

Due to increased accountability and high competition toward organizational success and customer satisfaction, leadership has been singled out as one of the key factors that contribute to establishment of excellent performance. Leadership is perceived as an admixture of the total sum of leadership acts and subordinates team work in order to complete organizational mission and goals. With increased competition and struggle for high ranks at both local and international levels, organizations and their workers have experienced several types of leadership styles; however, issues of immorality, intrigue, corruption, spillages, and mismanagement have remained rampant among leaders in all business ventures. Therefore to curb down these

M. Farooq (✉)
Islamic University in Uganda, Mbale, Uganda

M. B. Ibrahim
International Islamic University in Malaysia, Kuala Lumpur, Malaysia

malpractices on both the side of the individual and organization, there is need to opt for a new dimension leadership and its holistic approach for sustainability development. Organization excellent performance today and tomorrow calls for sustainable leadership practices whose sole aim is to ensure security with efforts for continuity and results orientation. The aim of this paper was to explore the theoretical and conceptual factors that determine sustainable leadership construct among universities in Uganda. Furthermore, the paper exposed the values and benefits of adapting sustainable leadership toward achievement of set goals in an organization.

9.2 Sustainable Leadership

Sustainable leadership construct is still in its infancy stage with its literature traced way back in 2003. Sustainable leadership has different conceptual and theoretical definitions. The concept is a way that compels leaders of organizations to create differences in the way organizations operate with preference to global market demands (Adharina and Latiffi 2016). It can also mean the adoption of new ways of viewing, thinking, and interaction that influence results in the form of innovation that yield sustainable remedies (Visser and Courtice 2011). Sustainable leadership can refer to establishment of employee motivation and support sustainable movements toward having a better world either for present or future (Peirce 2011). Meanwhile, it is important to note that organizational employees in most cases cannot determine the way to go without proper leadership since leadership is meant to move workers to the desirable direction and focus on effective implementation of organizational strategy with an aim of creating differences through use of efficient operational systems and structures (Visser and Courtice 2011). Nevertheless sustainable leadership can imply the intention to establish organizational sustainability under suitable conducive working environment with the purpose of creating a difference from the usual way of doing business. Equally sustainable leadership can be described as an assessment of organizations' groups and workers toward sustainable growth and development in terms of efficiency and effective performance (Lambert 2012). Yet the practice demands contribution from each individual of an organization such that transformation as a way of thinking and part of system is achieved. It is therefore important to consider that leadership informs the employees about the strategy and needed efforts toward change for both internal and external parts of the organization (Šimanskienė and Župerkienė 2014).

Sustainable leadership should be used as a tool for emerging leadership capacity within an organization (Lambert 2012). It can be argued that when an organization adopts sustainable leadership practices and development, the value for the money invested is likely to be achieved; however, the results may not always be achieved in a short-term fix (Harun et al. 2014; Jabor et al. 2012). Since organizations lay this trajectory while aiming at long-term achievements, sustainable leadership rest assures the employees and the organization that regardless of whoever occupies

the first chair, an organization will continue to progress and sustain employee development and organizational success (Hargreaves and Fink 2004).

From the definition seen above, sustainable leadership is the capability to influence and motivate individuals and groups toward organizational transformation and excellence through assessment of the available capacity, knowledge, and experiences to principles capitalizing on the past and present to predict continuous future better performance.

9.3 Literature

9.3.1 *Sustainable Leadership Practices and Challenges in Educational Institutions*

Understanding the subdimensions of sustainable leadership construct is a key issue that leadership and employees should consider first so as to avoid job stress and reduction in funding and manage diversity very well (Adharina and Latiffi 2016). Furthermore, sustainable leadership practices enhance leadership capacity building and protection of achievement (Lambert 2012). Meanwhile, educational institutions today seem to have problems with attraction of quality leadership who can lead to good values and profits (Hargreaves and Fink 2004; Jabor et al. 2012).

Much as many organizations are laying strategies for survival and manage issues of diversity and staff growth, though attracting potential and qualified staff who can attract funding and scholarship, it is still a very big challenge (Hargreaves and Fink 2004; Harun et al. 2014; Jabor et al. 2012). For instance, educational institutions still operate in traditional management manner and at the same time the exacerbating aging population has also contributed to shortage of experienced leaders who can ably handle senior posts to facilitate organization progress (Hargreaves and Fink 2004; Lambert 2012; Miirio et al. 2016; Visser and Courtice 2011). Since universities are organization of societal change, it is important that they do not only focus on profits and money making but rather consider providing the society with reasonable and skilled human resources (Harun et al. 2014; Šimanskienė and Župerkienė 2014).

Concavely, Spencer (2010) stated that the survival of higher education development requires sustainable leadership to integrate green orientation, improvement of graduation requirements, provision of interdisciplinary education to cater for diversity, community-based education, and focus on sustainable academic programs with a comprehensive approach for replicating strategy to overcome untimely huddles in the management of educational institutions. Moreover, achievement of vision and sustainable long-term efforts of transforming higher education requires both individual and group efforts to prepare formal systems to avoid showering people to the world with unhealthy minds, inequitable and unsustainable to stay within societies. Since sustainable leadership is vied as the impetus for providing intellectual masses and disciplines, it should lay strategies of improving the current image of higher

education institutions and their graduates for betterment of the community (Cortese 2003). Furthermore, there is need to create new positions for suitable staff who can maintain, manage, coordinate, and communicate sustainable leadership practices through acceleration of efficiency and effective performance to win customer satisfaction (Metzger, and Ruedig 2013). Meanwhile, the leaders who are groomed from among staff should be targeted as extra effort and support so as to cause practice change rather than being hypothetical in the school (Hargreaves and Fink 2004). To achieve this objective, several scholars developed several models, for instance, Hargreaves et al. (2007) and Hargreaves and Fink (2004) suggested seven elements to shape sustainable leadership practices; they included depth for integrity and learning purposes, length for purposes of succession and endurance, breadth to avoid delegation and cause distribution of power, avail justice for self and others, diversity to achieve complexity and cohesion, resourcefulness for renewal, and restrain and conservation for protection of legacy and history. Moreover, Lambert (2012) extracted six elements out of the earlier studies in order to suit the needs of educational sector, and these elements range from staff capacity building, diversity, conservation, strategic distribution, consolidation, and building long-term from short-term goals.

9.3.2 Problem Statement

Many organizations have undertaken responsibility of improving their performance and change due to its important aspect in organizational management; however, higher education institutions have not laid firm strategies for its implementation (Adharina and Latiffi 2016; Lambert 2012). This can be evidenced in the failure to attract more qualified and quality staff to take on leadership positions, whereas at the same time they experience high aging population of workers. Yet stress at work is also increasing and affecting the progress and performance of these institutions (Adharina and Latiffi 2016; Lambert 2012; Šimanskienė and Župerkienė 2014). Likewise in Uganda, universities have been experiencing similar challenges that sometimes have tantamounted to strikes, closure of universities and leaderships gaps (Miiro et al. 2016), brain drain, and lack of innovation (Bora 2014; Iqbal et al. 2013; Maphota 2016; Mpaata 2010; NCHE 2011; Zeelen 2012). Therefore the current study aimed at establishing the current state of affair among universities toward implementing sustainable leadership practices in relation to sustainable leadership model.

9.3.3 Purpose of the Study

The current study aimed at establishing the factors that determine the conceptual framework of sustainable leadership and also validate the scale of the four subdimensions of the sustainable leadership construct using the data collected.

9.3.4 Instrument

The quantitative study survey instrument was built basing on the earlier research conceptual framework findings and the operational terms for each of the subdimensions used in the study. A 25-item questionnaire was developed to measure the subconstructs of sustainable leadership, and these included staff capacity building (7 items), diversity (6 items), conservation (6 items), and strategic leadership distribution (6 items). The survey tool was given to specialist in the areas of management and research for verification before data collection. Meanwhile the questionnaire contained two sections that covered the demographic details of the respondents and subdimensions' explanation. A Likert scale of 5 points that ranged from strongly disagree to strongly agree was employed to gather data from the randomly chosen sample from the six universities that were selected using simple random sampling of SPSS version 22.

9.3.5 Sample

The study was conducted in 6 universities chosen from 29 universities in central region of Uganda using simple random sampling of SPSS version 22. Data was collected from both administrative and teaching staff of the universities from both the level of administrative and teaching assistants on words. Since the thump requirement for exploratory factor analysis for each item is 5 respondents, the researcher and research assistants distributed 500 questionnaires. However out of the 500, only 300 emerged useful for further analysis after data security and cleaning.

9.3.6 Data Analysis Procedure

The study employed exploratory factor analysis with use of SPSS version 22 to obtain the subdimensions that make up sustainable leadership structure basing on the items of the data collected. In order to arrive at reasonable data findings for publication, the study was observant of the attainment of 0.50 in reference to

Kaiser-Meyer-Olkin index of sampling adequacy. This was done to ensure that there is a common variance in the data set. Meanwhile, the significance levels of the index value of Bartlett sphericity test was also investigated as one of the criteria for addressing the requirements of using EFA to ensure correlation among the factors using the available data. Also the eigenvalue was examined to predict the factor extraction. The study employed principle component analysis an orthogonal Promax rotation in reference to (Kaiser 1974; Stella 2012). Lastly the study further examined the items convergence to determine the suitability and acceptance of the factor, and only factors that weighted above 0.45 with minimum of three (3) items were deemed reasonable for this study.

9.4 Study Findings

The demographic factors studied were gender, where females were at 59.3% with a mean value of 1.41 and standard deviation of 0.492; staff position, where lecturers were at 53%, administrators scored 30.7%, and both were 16% with mean of 1.63 and standard deviation 0.749; and university status, where government scored 61% and private universities were at 38.7% with a mean value of 1.39 and standard deviation of 0.496.

9.4.1 Exploratory Factor Analysis

The study employed a 25-item questionnaire formulated to measure the construct of sustainable leadership derived from earlier conceptual findings of Lambert (2012). The subconstructs included staff capacity building (7 items), diversity (6 items), conservation (6 items), and strategic leadership distribution (6). These were the items considered after attaining research experts' input. After securing the data, 300 survey questionnaires were analyzed using SPSS version 22 and the following results were got. The convergence of the items on each of the subconstructs is indicated in the table below, and those that weighed below 0.45 were eliminated as shown in the Table 9.1 below.

The results from the data of the study exhibited that exploratory factor analysis produced value score for Kaiser-Meyer Olkin index (0.877), hence indicating that the measurement index for the sample of study deemed adequate. This value score was much higher than the threshold as indicated above, yet the Bartlett Sphericity test value was also significant with approx. Chi-square of 2589.606, degree of freedom of 276, and p value was 0.000. The eigenvalue was reflected at value score ranging between 7.1 and 1.7, the total variance explained for all the four subdimensions was (51.4) percent, and the factors also reflected intercorrelation among themselves with significant commonalities between 0.432 and 0.755.

Table 9.1 Extracted subconstructs of sustainable leadership construct

Subdimensions	1	2	3	4	Eigenvalue	Variance explained for individual subconstruct	Commonalities
Staff capacity building					7.1	29.8%	
My university provides opportunities for staff training in leadership development programs	0.839						0.66
My university conducts formal training workshops and mentoring	0.799						0.67
The university leadership encourages me to participate in several leadership projects and activities that lead to the acquisition of further skills.	0.756						0.59
Staff with vast experience, skills and knowledge are appointed in senior leadership and management positions	0.588						0.42
My university senior staff offer training services to other staff in leadership and management skills	0.73						0.59
The university leadership provides opportunities to junior staff for mentorship both at work and outside profession	0.621						0.58
The university leadership facilitates me in leadership and management skills offered by National Council for Higher Education	0.588						0.54
Diversity					1.94	8.08%	
My university entertains all kinds of staff and students from different cultural backgrounds and experiences				0.793			0.68
University rules and policies treat both students and staff equally without tribalism and cultural biases				0.854			0.75
I am not negatively challenged with cultural and tribal issues due to social cohesion and inclusion mechanisms used by the university				0.497			0.45
Conservation					1.75	7.32%	
My university leadership enables me to honor and learn from its past for consolidation of its achievements			0.671				0.50

(continued)

Table 9.1 (continued)

Subdimensions	1	2	3	4	Eigenvalue	Variance explained for individual subconstruct	Commonalities
The university leadership and staff put the university's mission above everything to consolidate the past and present for better future			0.8				0.54
University systems or processes are revised based on the past history to maintain the agenda of the stakeholders			0.816				0.55
The university refined process and systems are fit for me to improve on my performance toward institutional transformation			0.729				0.54
The university leadership demonstrates sustainability when hiring, promoting employees, to replace the current leadership			0.507				0.52
Strategic leadership distribution				1.48	6.16%		0.57
I am involved in leadership's decisions process of the organization		0.779					0.60
I am aware of the university strategic plan and projects that can boost institutional change		0.86					0.58
The university leadership involves me in celebration of staff achievements that develop university corporate image collectively and reward		0.82					0.49
I receive communication about transformational strategies and decisions made from university leadership		0.713					
Extraction method: principal component analysis							
Rotation method: Promax with Kaiser normalization							

Furthermore out of the 25 items of the survey tool, nineteen (19) deemed reasonable for measuring the four constructs with loading between 0.860 and 0.497. Staff capacity building factor loading ranged from 0.588 to 0.839, for diversity the items loaded between 0.497 and 0.793, the items for subconstruct conservation converged with value score between 0.507 and 0.800, and strategic leadership distribution items were loaded with values between 0.713 and 0.860.

9.5 Discussion

From the findings of the study, it can be observed that exploratory factor analysis has supported the earlier research findings of Lambert (2012) whereby the four important subdimensions extracted are in support of the conceptual framework that contains six subdimensions. It is therefore important to note that university leadership should focus on these four factors to ensure that sustainable leadership takes effect within university strategy so as to improve its corporate image (Goolamally and Ahmad 2014). In addition leadership should ensure that the staff trained are ready to preserve the institutions history and handle fellow staff with dignity due to different education and social background. Future leaders should be given positions of influence so as to become familiar with the institutional environment in order to make decisions that are pertinent to and influence toward transforming their institutions (Kaweesi and Miir 2016).

9.6 Conclusion

The study concludes by stating that the four subconstructs of sustainable leadership are traits that university leadership must develop to its potential workers and future leadership so as to lay proper strategies of institutional excellence in terms of performance and growth. Many institutions have failed to cope with the new dimensions of management due to rigidity and lack of competent staff who are ready to change and cause quality service products. Staff with institutions at heart with integrity, dedication, and self-motivation should be at the forefront since they are loyal and ready to serve diligently even when there is no supervision. With this kind of employees, university leadership should provide all the necessary means of motivation and protection from dangers of being derailed and downplayed by the enemies of the institution from within and outside environment.

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Chapter 10

A Comparative Analysis of the Fractal Leadership Practices of Female and Male School Principals



Ssali Muhammadi Bisaso and Şefika Şule Erçetin

Abstract At the apex of educational research lies a deliberate effort to investigate the most appropriate ways in which leadership can best be served. This is precipitated by both the changing educational terrain due to paradigm shifts and the need to keep up with the times on the part of educational leaders. The result of this has been a rise of a variety of leadership approaches that can be obtained within this complex jigsaw. One of such new leadership approaches is fractal leadership and it guided this research. The views of teachers regarding the fractal leadership practices of male and female schools principals were explored in a comparative setting. This was accomplished via a Likert-type questionnaire developed by the researchers. According to the findings of the study, the fractal leadership-related practices of male school principals were found to be at a moderate level of effectiveness, while the fractal leadership-related practices of female school principals were found to be at a low level of effectiveness. Responses of teachers regarding fractal leadership-related practices of female and male school principals showed significant differences in some dimensions or elements based on school type, age, educational qualification, and professional experience. Meanwhile, responses of teachers regarding the fractal leadership-related practices of female and male school principals showed no significant differences in all dimensions or elements based on gender and marital status. In order to improve on the fractal leadership-related practices of school principals, a number of appropriate recommendations have been put forward for institutionalization. Equally, recommendations for further research are presented.

The paper is drawn from a PhD dissertation of Ssali Muhammadi Bisaso submitted to the department of Educational Management, Supervision, Planning and Economics, Institute Of Educational Sciences of Hacettepe University.

S. M. Bisaso (✉)
Islamic University, Mbale, Uganda

Ş. Ş. Erçetin
International Science Association-Ankara, Turkey, Hacettepe University, Ankara, Turkey

10.1 Introduction

Education systems are witnessing a number of changes just like other systems in the world. Due to these changes, education has not been offered at a realistic level. In order to deal with such changes effectively, both efficient and serious efforts have to be engaged. Nevertheless, for such efforts to witness the light of day, all stakeholders in the education system have to play a critical and central role. School principals are among the most important stakeholders in education, and accordingly, their actions, processes and knowledge regarding change should be of the highest level. This is because they hold the highest level of responsibility in the success of the school system. Premised on this, school principals ought to be highly competent. However, the competence of school principals is affected by a number of factors: the training system undergone, the workplace, perception, experience, gender, and so many others. This makes competence of school principals differ significantly.

Leadership is one of the most critical processes of education. Accordingly, studies that have explored leadership are largely uncountable (Avolio and Gardner 2005; Baloğlu and Karadağ 2008; Boekhorst 2015; Brown et al. 2005; Burns 1978; Covey 1992; Dansereau et al. 2013; Edwards 2015; Epitropaki et al. 2013; Erçetin 1999, 2000; Erçetin and Kamacı 2008; Erçetin and Bisaso 2015; Erçetin and Açıkalın 2016; Fein et al. 2015; Fusco et al. 2015; Goleman 2000, 2002; Lester 1975; McDaniel 1997; Mott 1972; Tripathi 2013; Vodicka 2015; Van Dierendonck 2011; Waldman and Galvin 2008 etc.). As a matter of fact, without leadership education systems remain unsuccessful.

Leadership has however become very complex as a result of the emergence of new paradigms. These paradigms reflect democratization, globalization, transitional exams between academic levels, organizational structure and management processes, and schools as strategic institutions (Eğitim-Bir-Sen Genel Merkezi 2006). Resultantly, new leadership approaches like educational leadership, institutional leadership, cosmopolitan leadership, learning leadership, follower leadership, etc. have emerged (Dağlı 2010; Demir et al. 2010; Memişoğlu 2001; Sağır and Memişoğlu 2013). Traditional leadership styles like autocratic and laissez-faire (Lester 1975) are no longer seen as effective or appropriate. New leadership systems have accordingly emerged quite intensively. It has thus become necessary to explore how the new leadership approaches affect education systems.

In the prevalent literature, new leadership approaches have been explored in the form of charismatic leadership (Bass 1985), transactional leadership (Covey 1992), and transformational leadership (Burns 1978; Bass 1985). Others are in line with specificity of leadership like strategic leadership (Uğurluoğlu and Çelik 2009), servant leadership (Dansereau et al. 2013; Van Dierendonck 2011), authentic leadership (Avolio and Gardner 2005; Boekhorst 2015; Fusco et al. 2015), responsible leadership (Waldman and Galvin 2008), performance leadership, people leadership, ethical leadership (Brown et al. 2005), visionary leadership (Goleman 2000), spiritual leadership (Baloğlu and Karadağ 2008; Erçetin 2000), implicit leadership (Epitropaki et al. 2013; Fein et al. 2015), and dissonant leadership (Goleman 2002).

Other contemporary approaches have also come into play as reflected in quantum leadership (Erçetin and Kamacı 2008), local leadership (Erçetin et al. 2011), and plazma leadership (Erçetin and Açıkalın 2016).

Fractal leadership has also been identified as one of those key leadership approaches of recent (Edwards 2015; Erçetin and Bisaso 2015; Raye 2012; Shoham and Hasgall 2005; Tripathi 2013; Vodicka 2015). Fractal leadership owes its abode to fractal properties. These properties include self-similarity, self-organization, dynamic processes, simple regularization in complexity, emergence, coevolution, suboptimal, requisite variety, connectivity, simple rules, edge of chaos, and nested systems (Erçetin and Bisaso 2015; Erçetin et al. 2015; Li 2005). Fractal leadership, therefore, has become a key feature today and has been in existence either consciously or unconsciously depending on practices of those in the systems or institutions. Fractals have an effect on strategy, diversification, integration of ideas, the effectiveness of communication, socialization, and the level of productivity within an organization. Fractals simplify management and leadership tasks by informing managers about various expectations. Fractals thus provide leaders with ideas for constructive and progressive action. This implies that fractals have become indispensable with educational leadership at all levels.

Fractal leadership behavior application can aid leaders in reinventing their leadership approaches, developing strategies for transformation, and institutionalizing innovation in the education system. Hence, it has become obvious that understanding fractals plays an important role in promoting effective leadership and overall organizational effectiveness and sustaining a durable competitive advantage (Erçetin and Bisaso 2015; Li 2005; Raye 2012). In keeping with the above view, Raye (2012) actually notes that fractal organizations have flat hierarchies and distribute responsibility and accountability throughout the organization.

Erçetin and Bisaso (2015) citing Topper and Lagadec (2013) offer a clear outlined view of the relevance of fractals to leadership systems and organizations. They contend that fractal organizations:

- Live by clear values and not regulations
- Promote understanding instead of subordination
- Bring about inspiration as opposed to exploitation
- Empower members to function independently
- Reduce dependency on managerial overhead
- Bring a common sense of purpose and ownership among all staff
- Inculcate a sense of responsibility among all staff
- Reduce turnover because personal growth is encouraged
- Reduce health-care costs since there is no stress
- Allow a wise use of resources due to the sense of ownership (p. 46)

Powers (2011) also highlights some relevant aspects attached to fractal leadership as follows:

- Leading to student academic success
- Creating a vibrant learning organization that values people who are willing to grow and accept responsibility

- Willingness to take risks to increase production
- Participation in deep learning
- Growth of staff as educators and as leaders
- Students develop a continuous learning culture
- Students get a sense of security in trying new ideas
- Developing immunity to constant change in organizations (p. 1).

However, despite this leadership approach being so critical, it has not attracted field research attention. Studies done on fractals have been more about the concept, science unit, teaching and learning aspect, an organizational component, and a planning approach (Doğan and Genç 2006; Erçetin and Bisaso 2015; Erçetin et al. 2015; Günay and Kabaca 2013; Jamali 2004; Karakuş 2010; Karakuş 2011; Li yan-Zhong 2006; Raye 2012; Shoham and Hasgall 2005; Tripathi 2013). Besides, studies on leadership have always focused on male leaders despite gender being one of the key factors affecting leadership. Indeed, studies on women leaders are largely few. Most crucially, when male or female leaders are studied, some aspects of inconclusiveness loom large. In some cases, male leaders are found better than female leaders and the vice versa, while in some other cases they are found to be virtually similar. This makes a comparative study of the two rather critical. This study, thus, was conducted in this spirit and made a comparative analysis of the fractal leadership-related practices of male and female school principals.

10.2 Methodology

10.2.1 Objectives

The study in question was conducted to realize three objectives: to establish the fractal leadership-related practices of male school principals, to establish the fractal leadership-related practices of female school principals, and to establish whether significant differences exist in the views of teachers regarding the fractal leadership-related practices of their school principals in terms of school type, gender, marital status, age, educational qualification, and professional experience. Equally, null hypotheses were set for each of the demographic variables engaged in the study. These formed the basis for acceptance or rejection premised on the findings.

10.2.2 Research Model and Participants

The study obtains within a quantitative approach. A survey model was adopted for the study in question. Both a single and relational survey technique was applied. The population of the study included 419 teachers from three (3) female-led and three (3) male-led selected secondary schools in Mbale District, Uganda, in the year 2016. All

the teachers were considered for the study and accordingly, no sampling technique was required. While 343 (81.85%) of the participants returned the filled instruments, 30 (7.15%) of the questionnaires were filled wrongly or were incomplete and were left out in order to protect data integrity. The data used for analysis in the study, thus, was taken from 313 questionnaires representing 74.7% of the targeted teachers.

10.2.3 The Instrument and Its Validity and Reliability

A fractal leadership practice scale (FLP-Q) developed by the researchers was used to collect data on the fractal leadership-related practices of female and male school principals. The fractal leadership-related practices of female and male school principals were limited to ten fractal leadership and management functions adopted from Raye (2012) and Shoham and Hasgall (2005) as follows: shared purpose and values that create pattern integrity, universal participation in ideas and solutions for continuous improvement, decision-making at functional levels, leadership devoted to employee development as a source of intellectual capital, competition energy directed outward instead of inward (Raye 2012), synchronization of the goals of each employee as a fractal with the system as a whole, the ability to cope with the environment and change, decentralization of power and resources, work processes and knowledge transfer, and self-development of each fractal (Shoham and Hasgall 2005). Meanwhile the items under each dimension or function were adopted from various authors in the shape of Erçetin and Bisaso (2015), Galbraith (2004), Jamali (2004), Li (2005), Powers (2011), Binsztok and Krzysztof (2006), and Tripathi (2013).

In order to establish the validity and reliability of the instrument developed by the researchers, a pilot study was conducted on a representative population. The pilot study attracted 304 school teachers with 156 of them from selected secondary schools in Uganda and 148 school teachers from selected schools in Turkey. A Cronbach alpha value was computed for the items in the instrument as reflected in the main elements. The results of this analysis are thus being presented in the following table.

According to Table 10.1, the Cronbach alpha reliabilities for the constructs or subdimensions identified as a result of the component analysis were determined. The reliabilities vary between 0.939 and 0.949 with the lowest construct being the ability to cope with the environment and change and the highest construct being competition energy directed outward instead of inward. However, on average the general reliability score for the ten (10) elements is 0.948.

Table 10.1 Cronbach alpha values of the major constructs

Elements	Mean	SD	Alpha
Shared purpose and values that create pattern integrity	3.3974	0.68298	0.945
Universal participation in ideas and solutions for continuous improvement	3.4289	0.71648	0.941
Decision-making at functional levels	3.4507	0.70317	0.942
Leadership devoted to employee development as a source of intellectual capital	3.2747	0.79933	0.940
Competition energy directed outward instead of inward	3.3961	0.71549	0.949
Synchronization of the goals of each employee as a fractal with the system as a whole	3.3352	0.77582	0.941
The ability to cope with the environment and change	3.3164	0.82650	0.939
Decentralization of power and resources	3.2954	0.79978	0.942
Work processes and knowledge transfer	3.4273	0.78636	0.942
Self-development of each fractal or unit	3.3602	0.81145	0.943

10.2.4 Data Analysis

In order to ascertain the fractal leadership-related practices of female and male school principals based on teachers' views, frequencies, percentages, and arithmetic means were utilized. The weight of scores was determined as follows: 4.50–5.00 as highly successful, 3.50–3.99 as moderately successful, 3.00–3.49 as lowly successful, 2.50–2.99 as weakly successful, 2.00–2.49 as unsuccessful, and 0.00–1.99 as highly unsuccessful. An attempt was also made to establish differences in views of teachers regarding fractal leadership-related practices of female and male school principals based on school type, gender, marital status, age, educational or academic qualification, and professional experience as dependent variables. In tandem with this aim, the independent sample *t*-test statistical technique was applied to establish differences in variables with two (2) groups or elements, while the one-way analysis of variance (ANOVA) statistical technique was applied to variables with three (3) or more groups or elements.

At the end of the statistical tests, whenever a statistically significant difference was established, an attempt was made to ascertain which group the difference came from. Before doing so however, a Levene's test was conducted to find out whether the variances of various groups obtained were homogeneous or not. After analyzing the variances, in cases where the variances were homogeneous, the highly credible and utilized LSD (Fisher's Least Significant Difference) test was applied. In the study, all statistical computations were premised on the 0.05 significance level. Conversely, all statistical computations related to the study in question were done using the "SPSS 23.0 for Windows Packet" analysis program.

10.2.5 Findings and Discussion

The findings of the study were presented in tandem with the research objectives earlier on set. These were (1) to establish the fractal leadership-related practices of male school principals based on views of teachers, (2) to establish the fractal leadership-related practices of female school principals based on views of teachers, and (3) to find out whether there are statistically significant differences among views of teachers regarding the fractal leadership-related practices of male and female teachers.

10.2.5.1 Analysis of the Views of Teachers Regarding the Fractal Leadership-Related Practices of Male and Female School Principals

Objective one and two results are presented concurrently in order to bring out a comparative analysis of the fractal leadership-related practices of male and female school principals. To do this effectively, the views of teachers regarding each of the major elements were put into consideration. Bearing in mind that the items in the instrument were very many, a computation of the average, median, variance and standard deviations of the elements as a whole was made and has been considered in this paper. The views in question are presented in the following table.

According to Table 10.2, views of teachers regarding the fractal leadership-related practices of male school principals indicate that on average the principals practice fractal leadership at a moderate level of effectiveness based on the scale set earlier in the study. Decision-making at functional levels ($x = 3.67$) and self-development of each fractal ($x = 3.68$) were found to be the dimensions with the highest scores. Meanwhile, competition energy directed outward instead of inward ($x = 3.43$) was found to be the dimension with the lowest score.

As regards fractal leadership-related practices of female school principals, teachers' views indicate that they practice fractal leadership at a low level of effectiveness based on the yardstick set earlier on in the study. Universal participation in ideas and solutions for continuous improvement ($x = 3.31$) was found to be the variable with the highest score value, while leadership devoted to employee development as a source of intellectual capital ($x = 3.03$) was found to be the variable with the lowest score.

The findings here are corroborated by those of Mitonga-Monga et al. (2012) as well as Osuola (2002) who found that male leaders were accorded more positive views in terms of participants' perception of their leaders' style compared to female leaders. Nevertheless, Fjaerli (2015) claims in his study that male leaders need more leadership attributes and skills in order to be considered successful and outstanding compared to female leaders.

Table 10.2 Views of teachers based on the major dimensions of the study ($n = 313$)

Dimensions	Type of leader	Average	Median	Variance	Std. dev.
Shared purpose and values that create pattern integrity	Male principal	3.5274	3.6000	0.419	0.64695
	Female principal	3.2833	3.3000	0.485	0.69615
Universal participation in ideas and solutions for continuous improvement	Male principal	3.5529	3.7000	0.473	0.68786
	Female principal	3.3077	3.3000	0.506	0.71125
Decision-making at functional levels	Male principal	3.6739	3.8000	0.412	0.64203
	Female principal	3.2353	3.3000	0.488	0.69827
Leadership devoted to employee development as a source of intellectual capital	Male principal	3.5312	3.6000	0.425	0.65200
	Female principal	3.0308	3.2000	0.703	0.83840
Competition energy directed outward instead of inward	Male principal	3.4357	3.5000	0.532	0.72942
	Female principal	3.3538	3.5000	0.481	0.69341
Synchronization of the goals of each employee as a fractal with the system as a whole	Male principal	3.4943	3.6000	0.540	0.73487
	Female principal	3.1788	3.0500	0.584	0.76437
The ability to cope with the environment and change	Male principal	3.5051	3.7000	0.644	0.80278
	Female principal	3.1186	3.2000	0.648	0.80529
Decentralization of power and resources	Male principal	3.5121	3.6000	0.467	0.68373
	Female principal	3.0744	3.2000	0.711	0.84326
Work processes and knowledge transfer	Male principal	3.5987	3.8000	0.574	0.75753
	Female principal	3.2532	3.3000	0.604	0.77713
Self-development of each fractal	Male principal	3.6885	3.9000	0.420	0.64837
	Female principal	3.0622	3.0500	0.716	0.84635

10.2.5.2 Differences in Views of Teachers Regarding the Fractal Leadership-Related Practices of Male and Female Principals Based on Demographic Variables

In order to find out whether there are statistically significant differences among views of teachers regarding the fractal leadership-related practices of male and female teachers, six independent variables were tested. These were school type, gender, marital status, age, educational qualification, and professional experience. Appropriate statistical tools were applied in regard to each of the cases under scrutiny.

10.2.5.3 Teachers' Views Regarding the Fractal Leadership-Related Practices of Male and Female Principals Based on the School Type Variable

In order to find out whether statistically significant differences existed among views of teachers regarding the fractal leadership-related practices of male and female teachers in relation to the school type variable, an independent samples *t*-test was adopted in the analysis. School type in this case reflects the schools led by male principals and schools led by female principals. A summary of the findings in relation to school type is presented in the following table.

As reflected in Table 10.3, a statistically significant difference was found among teachers' views regarding the fractal leadership-related practices of male and female school principals in terms of school type. This difference was found in all elements apart from competition energy directed outward instead of inward ($p = 0.310$). The statistical difference in question shows that teachers found in schools led by male principals hold more positive views regarding their principals' fractal leadership-related practices compared to the teachers in schools led by female principals. This can be attributed to the fact that teachers are not that much used to female principals especially in a place like Mbale where the study was undertaken. Equally, male teachers in schools led by female principals are likely to downplay the credibility of female school principals, while female teachers in schools led by female school principals may evaluate them from an emotional perspective, thereby rendering their views quite subjective. As a result, the researchers seek to reject the null hypothesis originally set in the study. Mitonga-Monga et al. (2012) as well as Osuola (2002) also found that male leaders were accorded more positive views in terms of participants' perception of their leaders' style compared to female leaders. Notably though, Fjaerli (2015) claims that male leaders need more leadership attributes and skills in order to be considered successful and outstanding compared to female leaders.

Table 10.3 *T*-test results for differences in teachers' views regarding the fractal leadership-related practices of male and female school principals based on the school type variable

Dimensions	School type	No.	Average	Std. dev.	<i>t</i>	<i>p</i>
Shared purpose and values that create pattern integrity	Led by male principal	157	3.5274	0.64695	3.213	0.001
	Led by female principal	156	3.2833	0.69615		
Universal participation in ideas and solutions for continuous improvement	Led by male principal	157	3.5529	0.68786	3.100	0.002
	Led by female principal	156	3.3077	0.71125		
Decision-making at functional levels	Led by male principal	157	3.6739	0.64203	5.786	0.000
	Led by female principal	156	3.2353	0.69827		
Leadership devoted to employee development as a source of intellectual capital	Led by male principal	157	3.5312	0.65200	5.892	0.000
	Led by female principal	156	3.0308	0.83840		
Competition energy directed outward instead of inward	Led by male principal	157	3.4357	0.72942	1.017	0.310
	Led by female principal	156	3.3538	0.69341		
Synchronization of the goals of each employee as a fractal with the system as a whole	Led by male principal	157	3.4943	0.73487	3.722	0.000
	Led by female principal	156	3.1788	0.76437		
The ability to cope with the environment and change	Led by male principal	157	3.5051	0.80278	4.252	0.000
	Led by female principal	156	3.1186	0.80529		
Decentralization of power and resources	Led by male principal	157	3.5121	0.68373	5.043	0.000

(continued)

Table 10.3 (continued)

Dimensions	School type	No.	Average	Std. dev.	<i>t</i>	<i>p</i>
	Led by female principal	156	3.0744	0.84326		
Work processes and knowledge transfer	Led by male principal	157	3.5987	0.75753	3.983	0.000
	Led by female principal	156	3.2532	0.77713		
Self-development of each fractal	Led by male principal	157	3.6885	0.64837	7.346	0.000
	Led by female principal	156	3.0622	0.84635		

10.2.5.4 Teachers' Views Regarding the Fractal Leadership-Related Practices of Male and Female Principals Based on the Gender Variable

In order to find out whether statistically significant differences existed among views of teachers regarding the fractal leadership-related practices of male and female teachers in relation to the gender variable, an independent sample *t*-test was adopted in the analysis. Gender, in this case, was used to coin the male and female teachers. A summary of the findings in relation to gender is presented in the following table.

As reflected in Table 10.4, no statistically significant difference was found among teachers' views regarding the fractal leadership-related practices of male and female school principals in terms of gender. This can be argued for all elements in the study. The views of male and female teachers regarding the fractal leadership-related practices of male and female school principals are somewhat similar. A closer look at the average means of descriptive statistics would reveal some difference, but in statistical terms, the difference is not significant. Accordingly, the null hypothesis earlier set for this variable is accepted. Mitonga-Monga et al. (2012) also found no statistically significant result in terms of perception of leadership style based on gender. The same applies to studies conducted by Rouse (2005), Fjaerli (2015), and Avcı (2015) who equally found no statistical significance in views on leadership styles based on the gender of respondents.

Table 10.4 *T*-test results for differences in teachers' views regarding the fractal leadership-related practices of male and female school principals based on the gender variable

Dimensions	Gender	No.	Average	Std. dev.	<i>t</i>	<i>P</i>
Shared purpose and values that create pattern integrity	Male	176	3.4324	0.71564	0.794	0.428
	Female	137	3.3715	0.63685		
Universal participation in ideas and solutions for continuous improvement	Male	176	3.4199	0.73609	-0.304	0.761
	Female	137	3.4445	0.67551		
Decision-making at functional levels	Male	176	3.4778	0.74213	0.642	0.522
	Female	137	3.4263	0.65499		
Leadership devoted to employee development as a source of intellectual capital	Male	176	3.2557	0.82668	-0.671	0.509
	Female	137	3.3153	0.74260		
Competition energy directed outward instead of inward	Male	176	3.3937	0.76046	-0.032	0.774
	Female	137	3.3964	0.64653		
Synchronization of the goals of each employee as a fractal with the system as a whole	Male	176	3.3148	0.78915	-0.584	0.560
	Female	137	3.3657	0.73469		
The ability to cope with the environment and change	Male	176	3.2693	0.86267	-1.048	0.296
	Female	137	3.3679	0.77535		
Decentralization of power and resources	Male	176	3.2841	0.83596	-0.251	0.802
	Female	137	3.3066	0.74658		
Work processes and knowledge transfer	Male	176	3.3636	0.80876	-1.609	0.109
	Female	137	3.5073	0.74957		
Self-development of each fractal	Male	176	3.3136	0.84484	-1.546	0.123
	Female	137	3.4569	0.77087		

10.2.5.5 Teachers' Views Regarding the Fractal Leadership-Related Practices of Male and Female Principals Based on the Marital Status Variable

In order to find out whether statistically significant differences existed among views of teachers regarding the fractal leadership-related practices of male and female teachers in relation to the marital status variable, an independent sample *t*-test was adopted in the analysis. In the study, marital status was limited to married and single teachers. A summary of the finding in relation to marital status is presented in the following table.

As reflected in Table 10.5, no statistically significant difference was found among teachers' views regarding the fractal leadership-related practices of male and female school principals in terms of marital status. This can be argued for all elements in the study. The views of married and single teachers regarding the fractal leadership-related practices of male and female school principals are somewhat similar. A closer look at the average means of descriptive statistics though would reveal some difference, but in statistical terms, the difference is not significant. Accordingly, the null hypothesis earlier set for this variable is accepted. Studies that have focused

Table 10.5 *T*-test results for differences in teachers’ views regarding the fractal leadership-related practices of male and female school principals based on the marital status variable

Dimensions	Marital status	No.	Average	Std. dev.	<i>t</i>	<i>p</i>
Shared purpose and values that create pattern integrity	Married	232	3.3909	0.65270	-0.539	0.591
	Single	81	3.4430	0.77006		
Universal participation in ideas and solutions for continuous improvement	Married	232	3.4444	0.69274	0.466	0.642
	Single	81	3.4013	0.76301		
Decision-making at functional levels	Married	232	3.4405	0.64088	-0.678	0.499
	Single	81	3.5127	0.86830		
Leadership devoted to employee development as a source of intellectual capital	Married	232	3.2957	0.75866	0.439	0.662
	Single	81	3.2468	0.88475		
Competition energy directed outward instead of inward	Married	232	3.3828	0.71681	-0.542	0.591
	Single	81	3.4329	0.70869		
Synchronization of the goals of each employee as a fractal with the system as a whole	Married	232	3.3310	0.73789	-0.120	0.905
	Single	81	3.3430	0.84954		
The ability to cope with the environment and change	Married	232	3.3487	0.79864	1.189	0.237
	Single	81	3.2127	0.90417		
Decentralization of power and resources	Married	232	3.3030	0.79709	0.517	0.606
	Single	81	3.2494	0.79645		
Work processes and knowledge transfer	Married	232	3.4353	0.79938	0.356	0.722
	Single	81	3.3987	0.75609		
Self-development of each fractal	Married	232	3.3832	0.79746	0.235	0.815
	Single	81	3.3582	0.87025		

on marital status in terms of leadership have considered the influence of marital status on leadership behavior and practices (Loh 2010; Polatcan and Titrek 2014). This study however looked at marital status from the perspective of its influence on teachers’ perceptions of leadership practices of school principals.

10.2.5.6 Teachers’ Views Regarding the Fractal Leadership-Related Practices of Male and Female Principals Based on the Age Variable

In order to find out whether statistically significant differences existed among views of teachers regarding the fractal leadership-related practices of male and female teachers in relation to the age variable, an ANOVA test was adopted in the analysis. The age in this study was categorized as 25 years and below, 26–35 years, 36–45 years, as well as 46 years and above.

After a general ANOVA test was conducted, a statistically significant difference was found among teachers’ views regarding the fractal leadership-related practices of male and female school principals in terms of age. The difference was observed in

Table 10.6 LSD test results for the dependent variable shared purpose and values that create pattern integrity

(I) years	(J) years	Mean diff. (I-J)	Std. error	Sig.
25 years and below	26–35 years	0.21613a	0.10660	0.043
	36–45 years	0.27608a	0.11362	0.016
	46 years and above	0.21545	0.14472	0.138
26–35 years	25 years and below	-0.21613a	0.10660	0.043
	36–45 years	0.05995	0.09316	0.520
	46 years and above	-0.00069	0.12927	0.996
36–45 years	25 years and below	-0.27608 ^a	0.11362	0.016
	26–35 years	-0.05995	0.09316	0.520
	46 years and above	-0.06063	0.13512	0.654
46 years and above	25 years and below	-0.21545	0.14472	0.138
	26–35 years	0.00069	0.12927	0.996
	36–45 years	0.06063	0.13512	0.654

^aMean diff. is significant at the 0.05 level

six elements as follows: shared purpose and values that create pattern integrity ($p = 0.043$), decision-making at functional levels ($p = 0.027$), competition energy directed outward instead of inward ($p = 0.006$), decentralization of power and resources ($p = 0.011$), work processes and knowledge transfer ($p = 0.004$), and self-development of each fractal ($p = 0.001$).

Effort was then made to establish the subgroup from which the obtained difference originates. Before doing so, however, Levene's test for equality of means was conducted, and after finding the means homogeneous, an LSD (Fisher's Least Significant Difference) was set in motion. The results of the LSD test are presented in the following tables.

Based on the findings in Table 10.6, the significant difference in the element shared purpose and values that create pattern integrity originates from the 25 years and below as well as the 36–45 years' category of teachers. This 25 years and below category of teachers holds a highly positive view of their school principals regarding the dimension in question, while the 36–45 years' category holds the lowest average score. The argument is that the conceptualization of leadership and understanding of leadership processes for such a young group of teachers is still low. That is why their views differ significantly from the views of other teachers involved in the study.

Based on the findings in Table 10.7, the significant difference in the dimension decision-making at functional levels equally originates from the 25 years and below as well as the 36–45 years' category of teachers. This 25 years and below category of teachers holds a highly positive view of their school principals regarding the dimension in question, while the 36–45 years' category holds the lowest average score. The argument is that the conceptualization of leadership and understanding of leadership processes for such a young group of teachers is still low. That is why their views are found to differ significantly from the views of other teachers involved in the study.

Table 10.7 LSD test results for the dependent variable decision-making at functional levels

(I) years	(J) years	Mean diff.(I-J)	Std. error	Sig.
25 years and below	26-35 years	0.17038	0.11037	0.124
	36-45 years	0.26209a	0.11763	0.027
	46 years and above	0.21971	0.14983	0.144
26-35 years	25 years and below	-0.17038	0.11037	0.124
	36-45 years	0.09171	0.09645	0.342
	46 years and above	0.04932	0.13384	0.713
36-45 years	25 years and below	-0.26209a	0.11763	0.027
	26-35 years	-0.09171	0.09645	0.342
	46 years and above	-0.04238	0.13989	0.762
46 years and above	25 years and below	-0.21971	0.14983	0.144
	26-35 years	-0.04932	0.13384	0.713
	36-45 years	0.04238	0.13989	0.762

^aMean diff. is significant at the 0.05 level

Table 10.8 LSD test results for the dependent variable competition energy directed outward instead of inward

(I) years	(J) years	Mean diff. (I-J)	Std. error	Sig.
25 years and below	26-35 years	0.21037	0.11103	0.059
	36-45 years	0.32450a	0.11833	0.006
	46 years and above	0.25482	0.15072	0.092
26-35 years	25 years and below	-0.21037	0.11103	0.059
	36-45 years	0.11413	0.09702	0.240
	46 years and above	0.04445	0.13463	0.741
36-45 years	25 years and below	-0.32450a	0.11833	0.006
	26-35 years	-0.11413	0.09702	0.240
	46 years and above	-0.06968	0.14072	0.621
46 years and above	25 years and below	-0.25482	0.15072	0.092
	26-35 years	-0.04445	0.13463	0.741
	36-45 years	0.06968	0.14072	0.621

^aMean diff. is significant at the 0.05 level

Based on the findings in Table 10.8, the significant difference in the element competition energy directed outward instead of inward still originates from the 25 years and below category of teachers and that of the 36-45 years. The young teachers have more positively inclined views as compared to their more senior counterparts. The argument could be that the conceptualization of leadership and understanding of leadership processes for the young group of teachers is still low. That is why their views differ significantly from the views of other teachers involved in the study.

Based on the findings in Table 10.9, the significant difference in the element decentralization of power and resources originates from the 25 years and below category of teachers and that of 26-35 years. The relatively younger group posted

Table 10.9 LSD test results for the dependent variable decentralization of power and resources

(I) years	(J) years	Mean diff. (I–J)	Std. error	Sig.
25 years and below	26–35 years	0.31839a	0.12435	0.011
	36–45 years	0.30723a	0.13253	0.021
	46 years and above	0.18247	0.16880	0.281
26–35 years	25 years and below	–0.31839a	0.12435	0.011
	36–45 years	–0.01116	0.10866	0.918
	46 years and above	–0.13592	0.15079	0.368
36–45 years	25 years and below	–0.30723a	0.13253	0.021
	26–35 years	0.01116	0.10866	0.918
	46 years and above	–0.12476	0.15761	0.429
46 years and above	25 years and below	–0.18247	0.16880	0.281
	26–35 years	0.13592	0.15079	0.368
	36–45 years	0.12476	0.15761	0.429

^aMean diff. is significant at the 0.05 level

Table 10.10 LSD test results for the dependent variable work processes and knowledge transfer

(I) year	(J) years	Mean diff. (I–J)	Std. error	Sig.
25 years and below	26–35 years	0.35160 ^a	0.12193	0.004
	36–45 years	0.38508 ^a	0.12996	0.003
	46 years and above	0.20508	0.16553	0.216
26–35 years	25 years and below	–0.35160 ^a	0.12193	0.004
	36–45 years	0.03349	0.10656	0.754
	46 years and above	–0.14651	0.14786	0.323
36–45 years	25 years and below	–0.38508 ^a	0.12996	0.003
	26–35 years	–0.03349	0.10656	0.754
	46 years and above	–0.18000	0.15455	0.245
46 years and above	25 years and below	–0.20508	0.16553	0.216
	26–35 years	0.14651	0.14786	0.323
	36–45 years	0.18000	0.15455	0.245

^aMean diff. is significant at the 0.05 level

more positively inclined views. It can be argued that the conceptualization of leadership and understanding of leadership processes for young teachers is still low, but it keeps changing with age. That is why their views differ significantly from the views of other teachers involved in the study.

Based on the findings in Table 10.10, the significant difference in the element work processes and knowledge transfer originates from the 25 years and below as well as the 36–45 years' category of teachers. This 25 years and below category of teachers holds a highly positive view of their school principals regarding the dimension in question, while the 36–45 years' category holds the lowest average score. The argument is that the conceptualization of leadership and understanding of leadership processes for such a young group of teachers is still low. That is why their views differ significantly from the views of other teachers involved in the study.

Table 10.11 LSD test results for the dependent variable self-development of each fractal

(I) years	(J) years	Mean diff.(I-J)	Std. error	Sig.
25 years and below	26-35 years	0.40851a	0.12575	0.001
	36-45 years	0.49156a	0.13403	0.000
	46 years and above	0.36712a	0.17071	0.032
26-35 years	25 years and below	-0.40851a	0.12575	0.001
	36-45 years	0.08305	0.10989	0.450
	46 years and above	-0.04140	0.15249	0.786
36-45 years	25 years and below	-0.49156a	0.13403	0.000
	26-35 years	-0.08305	0.10989	0.450
	46 years and above	-0.12444	0.15939	0.436
46 years and above	25 years and below	-0.36712a	0.17071	0.032
	26-35 years	0.04140	0.15249	0.786
	36-45 years	0.12444	0.15939	0.436

^aMean diff. is significant at the 0.05 level

Based on the findings in Table 10.11, the significant difference in the element self-development of each fractal also originates from the 25 years and below as well as the 36-45 years’ category of teachers. This 25 years and below category of teachers holds a highly positive view of their school principals regarding the dimension in question while the 36-45 years’ category holds the lowest average score. The argument is that the conceptualization of leadership and understanding of leadership processes for such a young group of teachers is still low. That is why their views differ significantly from the views of other teachers involved in the study. Generally, a person’s age can have a significant effect on his or her perceptions of things. Premised on the findings therefore, the null hypothesis earlier set for this variable is hereby rejected by the researchers. This view is however different from that of Mitonga-Monga et al. (2012) whose study found no statistically significant result in terms of perception of leadership style based on age of respondents.

10.2.5.7 Teachers’ Views Regarding the Fractal Leadership-Related Practices of Male and Female Principals Based on the Educational Qualification Variable

In order to find out whether statistically significant differences existed among views of teachers regarding the fractal leadership-related practices of male and female teachers in relation to the educational qualification variable, an ANOVA test was adopted in the analysis. Educational qualification in this study has been categorized as bachelor’s degree, master’s degree, and doctorate.

After a general ANOVA test was conducted, a statistically significant difference was found among teachers’ views regarding the fractal leadership-related practices of male and female school principals in terms of educational qualification. The

Table 10.12 LSD test results for the dependent variable self-development of each fractal

(I) Educational qualification	(J) Educational qualification	Mean diff. (I–J)	Std. error	Sig.
Bachelor's degree	Master's degree	–0.15275	0.11445	0.183
	Doctorate	1.00202	0.57594	0.083
Master's degree	Bachelor's degree	0.15275	0.11445	0.183
	Doctorate	1.15476a	0.58267	0.048
Doctorate	Bachelor's degree	–1.00202	0.57594	0.083
	Master's degree	–1.15476a	0.58267	0.048

^aMean diff. is significant at the 0.05 level

difference was observed in the element of self-development of each fractal ($p = 0.048$).

Effort was then made to establish the subgroup from which the obtained difference originates. Before doing so, however, Levene's test for equality of means was conducted, and after finding the means homogeneous, an LSD (Fisher's Least Significant Difference) was set in motion. The results of the LSD test are presented in the table below.

As reflected in Table 10.12, the significant difference in the element self-development of each fractal originates from the group of teachers with a doctorate and those with a masters' degree qualification. The average score of the views for the doctorate holders is the lowest compared to that of teachers with a master's degree which is the highest. The key argument here is that the conceptualization and understanding of leadership structures and processes on the part of doctorate holders is virtually higher than their counterparts given exposure to knowledge and skills at a higher level. Obviously, it would be surprising if they shared similar views on leadership with teachers owning just a bachelor's degree. A higher level of education has an influence on people's perceptions. Premised on the findings therefore, the null hypothesis earlier set for this variable is hereby rejected by the researchers. This is consistent with the view put forward by Mitonga-Monga et al. (2012) who found that master's and doctoral degree holders had more positive views about their leaders' style. Equally, Avcı (2015) found meaningful differences in views of respondents regarding leadership styles based on the educational qualification variable. Ekmerikçi (2011) however, found no statistically significant result in terms of perceptions of leadership style based on educational qualification.

10.2.5.8 Teachers' Views Regarding the Fractal Leadership-Related Practices of Male and Female Principals Based on the Professional Experience Variable

In order to find out whether statistically significant differences existed among views of teachers regarding the fractal leadership-related practices of male and female teachers in relation to the professional experience variable, an ANOVA test was

Table 10.13 LSD test results for the dependent variable shared purpose and values that create pattern integrity

(I) Professional experience	(J) Professional experience	Mean diff. (I-J)	Std. error	Sig.
1-10 years	11-20 years	0.19085a	0.08401	0.024
	21-30 years	-0.00157	0.11699	0.989
	31 years and above	0.19918	0.28280	0.482
11-20 years	1-10 years	-0.19085a	0.08401	0.024
	21-30 years	-0.19242	0.11960	0.109
	31 years and above	0.00833	0.28389	0.977
21-30 years	1-10 years	0.00157	0.11699	0.989
	11-20 years	0.19242	0.11960	0.109
	31 years and above	0.20076	0.29533	0.497
31 years and above	1-10 years	-0.19918	0.28280	0.482
	11-20 years	-0.00833	0.28389	0.977
	21-30 years	-0.20076	0.29533	0.497

^aMean diff. is significant at the 0.05 level

adopted in the analysis. Professional experience was categorized as 1-10 years, 11-20 years, 21-30 years as well as 31 years and above.

After a general ANOVA test was conducted, a statistically significant difference was found among teachers' views regarding the fractal leadership-related practices of male and female school principals in terms of professional experience. The difference was observed in the element of shared purpose and values that create pattern integrity ($p = 0.024$).

Effort was then made to establish the subgroup from which the obtained difference originates. Before doing so, however, Levene's test for equality of means was conducted, and after finding the means homogeneous, an LSD (Fisher's Least Significant Difference) was set in motion. The results of the LSD test are presented in the table below.

As seen in Table 10.13, the significant difference in the element shared purpose and values that create pattern integrity originates from the group of teachers with 1-10 years' experience in the teaching profession and those with 31 years and above. The less experienced teachers in this study had more positively inclined views about their principals' practices than their more experienced counterparts. Given this limited experience, it is easier to assume that their conceptual view of leadership as well as their contextual understanding of leadership practices or processes is still low as compared to other groups of teachers with a better or longer experience. Without doubt, experience brings about a variation in views of teachers regarding their principals. Premised on the findings therefore, the null hypothesis earlier set for this variable is hereby rejected by the researchers. This finding therefore is consistent with the views of Sharma (2010) who postulated that experience influences perception of leadership. However, the findings differ from those of Brown et al. (2012) who found that experience especially in teams had no effect on perception of leadership style.

10.3 Conclusions and Recommendations

The study explored the fractal leadership-related practices of male and female school principals. The findings indicate that male school principals have applied the fractal leadership-related practices at a moderate level. Meanwhile, the female school principals have applied the fractal leadership practices at a low level of effectiveness. When statistical significance within the views of teachers was investigated, there was statistical significance based on school type (teachers in schools led by male school principals had more positive views regarding their principals' fractal leadership practices compared to their counterparts in female principal led schools), there was also a significance based on age in the following variables (shared purpose and values that create pattern integrity ($p = 0.043$), decision-making at functional levels ($p = 0.027$), competition energy directed outward instead of inward ($p = 0.006$), decentralization of power and resources ($p = 0.011$), work processes and knowledge transfer ($p = 0.004$), and self-development of each fractal ($p = 0.001$). This was observed within the teachers of 25 years and below. Another significance was based on educational qualification, this being in the self-development of each fractal element ($p = 0.048$). Teachers at doctorate level differed from all the other groups. The other significant result was observed within professional experience in the element of shared purpose and values that create pattern integrity ($p = 0.024$). This significance emanated from the group of teachers with experience between 1 and 10 years. No statistically significant result was observed in the gender and marital status variables although the descriptive statistics were somewhat different.

Owing to the findings therefore, the researchers recommend action in the form of extending leadership responsibilities to young and inexperienced teachers in order to improve on their understanding and practice of leadership, organizing in-service and pre-service training on fractal leadership, development of a new performance evaluation system, improved motivation of teachers, increasing the number of female school principals in order to aid development of a women leadership paradigm, and professionalization of school units and departments to allow them to grow more efficiently and effectively.

This research study was inextricably interwoven with pursuit of a relatively new area of leadership and a number of discoveries were made as a result. However, research is better served in terms of continuity and sustainability. Accordingly, further research can be done on this topic in different areas other than Mbale, views of other school stakeholders apart from teachers can also be investigated, this study can also be done using qualitative designs and results be compared with those of this study, and a similar study can be done at different levels of education especially universities, while, a comparison of public (government aided) and privately funded schools can also be engaged.

Key Terms and Definitions

The terms below were used frequently in the study and they laid a foundation for the pursuit of fractal leadership. They were conceptualized as follows:

<i>Fractal</i>	a curve or geometrical figure, each part of which has the same statistical character as the whole. They are useful in modeling structures (such as snowflakes) in which similar patterns recur at progressively smaller scales and in describing partly random or chaotic phenomena such as crystal growth and galaxy formation.
<i>Leadership</i>	the action of leading a group of people or an organization or the ability to do this. It is thus the influential increment over and above mechanical compliance with routine directives of the organization.
<i>Fractal Leadership</i>	a leadership system based on fractal properties. Focus is no longer a hierarchy system but more of a web design, encouraging people to highlight their strengths and being confident enough to make a difference.
<i>Principal</i>	according to Wikipedia, a principal is the teacher with the greatest responsibility for the management of a college; can also be the head of an educational institution especially a school. Sometimes a principal can also be called a head teacher, headmaster, and headmistress.
<i>Teacher</i>	according to Merriam-Webster, a teacher is a person or thing that teaches something; especially a person whose job is to teach students about certain subjects.
<i>Chaos</i>	the property of a complex system whose behavior is so unpredictable as to appear random, owing to great sensitivity to small changes in conditions. It is thus a sensitive dependence on initial conditions, domination of uncertainty, and instability to individual, group, society, or the world
<i>Complexity Perception</i>	the state or quality of being intricate or complicated. according to Merriam-Webster, perception is the ability to see, hear, or become aware of something through the senses. It is the way in which something is regarded, understood, or interpreted.

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Chapter 11

Veteran Principals' Views over the Effect of Positive Discipline on Classroom Management for Novice Teachers



Fethi Kayalar, Mehmet Özbaş, Sinan Yalçın, and Turgut Uslu

Abstract One of the most effective ways to manage problematic students misbehaving in the classroom is positive discipline rather than punishment or rewards. Through positive discipline, novice teachers do not only enjoy peaceful and efficient classroom environment, but they also encounter less trouble in managing the classroom and enable students to learn well and adapt their behaviours to meet expectations in courses. The outcomes of positive discipline applied in classroom include students' own self-discipline, consistent communication, self-regulation, self-confidence, self-respect and respect for others, reinforcement of expectations and long-term solution. The aim of this study is to evaluate the views of the experienced school principals over encouraging novice teachers to practice positive discipline strategies and determine their roles on this issue. We asked two open-ended questions to the participant principals to obtain the data: "What are the discipline issues in classroom environment" and "What should novice teachers do to place positive discipline in classroom?" We used a qualitative research method to evaluate and compare the views of the principals and to determine their suggestions on encouraging novice teachers to achieve smooth management in classroom environment. The research was carried out with the participation of ten school principals managing various primary schools, secondary schools and high schools in some cities in Turkey. From the data obtained from principals, we can argue that the principals have the most important roles for novice teachers to develop positive discipline strategies in the classroom by making the suggestions that novice teachers should not run away from misbehaving students, not fight back and not scare and punish them for their unwanted misbehaviours.

F. Kayalar (✉) · M. Özbaş · S. Yalçın · T. Uslu
Erzincan University, Erzincan, Turkey

11.1 Introduction

School management doesn't always accompany with the students in all aspects of their lives. The school provides students with problem-solving skills. For this reason, the students must learn the causes, consequences and other influences of their own behaviours at school. The concept of freedom expresses that the individual should be responsible for their behaviour. Individuality does not mean that responsibilities will not be accepted. An individual must be able to understand the social consequences of his actions through his own free will. What is important here is not the external stimuli that determine the aims of the discipline but the self-control of the individual (Özcan 2008). On the other hand, all the students have individual differences such as learning styles, learning speeds, talents, expectations, readiness, experiences and motivations (Kayalar and Güler Arı 2017), which require novice teachers to get professional advice and support from the veteran teachers and principals in the school.

11.1.1 *Positive Discipline*

Positive discipline in school environment means that students can control their own movements, and it is a management technique that helps them solve problems. In view of a positive discipline, it is important to establish a school environment that students will respectfully approach teachers and each other for a successful school life and to help students meet the conditions of a school environment generated by the school management. In this environment, students can learn to work collaboratively instead of racing and competing with each other. Teachers and students aim to work together on joint solutions. In that thinking of being inadequate and breaking his or her courage can no longer be part of the educational environment with positive discipline, the students and the teachers helping each other to create a thrill for life and learning will be able to work together on the conditions of positive discipline. The teaching and learning activities in such an environment contribute to young people (Ada and Çetin 2006), and as long as disciplines can be presented to the students in various forms and learning can be achieved in various ways, they will be better served in educational environment (Kayalar and Kayalar 2017). In such a discipline that embraces the students, their positive attitude, steadiness and attendance to the school are more likely to increase. While trying to establish a positive discipline in the classroom environment, it can be misleading for novice teachers to take into account only classroom events. Therefore they should not isolate classroom environment from the social, economic and cultural environment. Every positive and negative change and situation that happens in this environment affects school, student and even school programmes at certain rates.

Considered as discipline issues among students in school environment, unwanted behaviours are based on many different causes. The sources of unwanted behaviours

in the classroom vary according to the characteristics of the teacher, the student, the physical structure of the class, the school, and the distant and close environment. In identifying students' academic failures, unwanted behaviours and their unfulfilled needs, the school and classroom circles can be searched; thus, the occurrence of undesirable behaviours can be prevented (Jones and Jones 1998). In this context, functional research on the causes of unwanted behaviours will form a basis for solving existing problems. After extensive research, measures and practices for resolution can be launched right away.

11.1.2 School Principal and Discipline

Schools are subunits of the education system. Therefore, school discipline cannot be independent of the discipline comprehension of the educational system to which the school is attached. In this context, disciplinary practices in school are generally the projection of disciplinary and management comprehension of the education system.

Discipline at school is an important issue for school principals. In almost every school, principals, teachers, students and other staff are involved in disciplinary behaviours (Esen 2006). In order for education system and school to achieve their goals, it is necessary to remove any obstructive behaviour that hinders or impedes the process. The principal of the school should do his best to carry out an appropriate training programme. A training programme prepared in accordance with contemporary educational goals will attract the students and enable them to be in cooperation with each other. The veteran principal or experienced principal always sets up and follows a good guidance system, through which the necessary actions can be taken before problems arise. Through an effective parent-school relationship, principal ensures the parents to participate in school work. Effective use of the school building is also very important for discipline. The way the school buildings and audio-visual tools are used can interfere with the discipline. For example, insufficient lighting of the school and the classrooms can cause serious disciplinary problems. On the other hand, a school building with bright and prosperous corridors always makes students comfortable. It should be known that everything in the school building will facilitate or make discipline in harmony (Küçükahmet 2003).

Each of the school staff has certain important duties to create an appropriate climate and culture and to take necessary precautions in the school; on the other hand, school principals play a central role in every step from identifying the cause of discipline issues to planning and implementing the measures. This situation requires them to show leadership behaviours beyond management (Dönmez 2001). The school principal is the first person responsible for the implementation and supervision of the duties and mission. More importantly, the principal is responsible for ensuring that the students comply with the rules and that the staff do their best to achieve educational goals. At the same time, the task of ensuring communication with students, teachers and parents in matters of discipline is also largely a matter of management. In addition to taking all kinds of discipline precautions by using the

manager's possibilities, it is also important to create a suitable climate so that all students can learn, work and live together.

11.1.3 Novice Teachers

There are many factors that are effective in student achievement, the most important of which is teacher qualifications. Studies conducted on the subject revealed that the common point in the countries where student performance is highest is the teacher quality (Barber and Mourshed 2007). Upgrading the quality of teachers is also possible with experience. This is because the more experience teachers have in their profession, the more they can contribute to the students.

In each country, thousands of new teachers enter classrooms each fall. Many of these new teachers are not prepared to handle the challenges ahead (Haldeman 2008). Of the new teachers entering schools each year, most do not only vary in their traits, moods, personalities, cultures, backgrounds, skills, experience and emotions, but they even vary in the amount of their formal preparation in anticipation of the serious responsibility of teaching. As different teachers have different teaching styles, the essential key is finding what teaching style is suitable or works for them.

Inexperienced in teaching profession, novice teachers are annoyed when they have difficulty in class domination and therefore lose control more easily. They do not know the characteristics of the students in the classroom, which is quite evident from their behaviours. They often become stubborn with students, which makes their jobs more difficult. They can have prejudices in different issues and they can have difficulty overcoming this situation. They determine the rules they use in the classroom themselves; as a result these rules do not make their job easier. They are unprepared for the course and do not know what to do at classroom facing with unexpected questions. Because they have little confidence and they do not have a lot of control over them, they stick to the book and the slides they prepare, which makes the course very boring. There are a lot of hardships in the exams and most of them are not solved. They have difficulty controlling their emotions in classroom environment.

11.2 Literature

Aydın (2000) argued that it could not be expected that the rules would be effective in the environment if the students were excluded from any kind of decision concerning the school management. Contemporary theories propose that students should be involved in the formation of class rules instead of the idea that teachers are unquestionably autonomous.

In a study carried out on discipline at school, Sadık (2006) pointed out that positive discipline approach is based on the notion that the students should obey the existing order and rule rather than resistance. He argued that the role of the manager is to help students learn and act responsibly, convincing that they can succeed in school and control their own lives.

According to Vatansever Bayraktar and Kaya (2017), supportive discipline involves the acceptance of students in their natural state and the assistance of development and learning efforts in order to create the desired classroom environment. In this way, students can gain confidence and sense of value. This approach consists of thinking based on the rights and responsibilities of managers and students. Helpful and supportive managers show that they value them by listening to the students. While listening to students, they act passively and add body language to the listening process.

According to the research carried out by Çerçi (2009), the disciplinary approaches of the teachers in the public schools do not differ according to the gender, the level of education, the faculty they graduate and the courses taken on discipline management. The researcher found that teachers in public schools differ in their disciplinary approach in the school according to their age, seniority, the schools they work in and classroom or branch education.

Türnüklü et al. (2001) carried out a study through interviews with principals and psychological guide in a primary school and observed that discipline incidents are caused by the crowd of classes, inadequacy of teaching materials, teaching programmes, social activities, playgrounds and canteen, social environment of the school, teachers, the effect of guidance services and the student himself.

According to Rogers (2003), a “discipline plan” is a fundamental framework for discipline leadership. Its emphasis lies in having thought through likely scenarios in which teachers need to exercise discipline and planning thoughtful and (potentially) more effective ways to address the typical range of disruptive behaviours that the teachers may have to face.

According to Jim Walters and Frei (2007), students, like adults, respond to positive reinforcement better than to sarcasm or use of constant negative chastisement. Praising desired behaviour is usually much more effective than reactive discipline and punishment. Nevertheless, positive reinforcement needs to be specific and descriptive, earned and accurate.

Waterman (2013) argued in his book that the majority of twenty-first-century students have little respect for the kind of authority compared to the past, and classroom management and discipline may present a significant challenge; the teachers have troubles in schools where children come from poverty or dysfunctional families or communities. These children interfere with their ability to function in the classroom and in society. They may bring their problems from home or neighbourhood into the school. The students exhibit such deficiencies as lack of respect for self, peers and authority, lack of self-control and impulse control, inability to deal effectively with frustration or anger and lack of empathy.

11.3 Materials and Method

11.3.1 Problem Statement and Purpose

The aim of the study on veteran principals' views over the effect of positive discipline on classroom management for novice teachers is to determine the various views of ten veteran school principals in primary schools, secondary schools and high schools in various cities in Turkey and to emphasize the importance of discipline in school environments and its effect on classroom management. We aimed to find out satisfying answers to our problem statement. To fulfil the purpose of the study, we asked the principals "What are the discipline issues in classroom environment" and "What should novice teachers do to place positive discipline in classroom?"

11.3.2 Methods and Research Design

We used a qualitative research method to determine and evaluate the views of the principals about the effect of positive discipline on classroom management for novice teachers. This kind of methodological approach was chosen as it enables researchers to interpret and make judgement about immeasurable data (O'Tool and Beckett 2010, p.28). We preferred and used easy accessible sample technique in the research, as it increases the speed of collecting data and enables researchers to access the sample easily (Yıldırım and Şimşek 2006). We conducted this research with the views of the principals serving in primary schools, secondary schools and high schools in various cities in Turkey. For this reason, we relied on case study design for the purpose of our enquiry.

11.3.3 Participants

We included ten volunteer veteran school principals in our study, who serve in primary schools, secondary schools and high schools in various cities in Turkey. As shown in Table 11.1, seven principals are male, three principals are female and the youngest principal is 45 years old, in high school with 15 years of experience in management, while the eldest is 54 years old, in secondary school with 23 years of experience in management. We obtained the data from ten principals who admitted to be involved in the interview for the research. The participants were asked whether they were contented to answer to the questions, and then we applied the tool. The names of the principals are coded with letters and numbers.

Table 11.1 Statistical data as to gender, age, school and duration of experience

Gender		Age		School		Experience	
Male	7	30–40 years	–	Primary school	4	1–10 years	–
Female	3	41–50 years	6	Secondary school	3	11–20 years	5
		51–60 years	4	High school	3	21–30 years	5

11.3.4 Research Instrument

In the study, we used the tool with semi-structured interview form to gather data from the veteran school principals who serve in primary schools, secondary schools and high schools in various cities in Turkey. We asked two open-ended questions to the participants. The questions were designed in accordance with the main characteristics of discipline in classroom environments and its effects on school management. The questions of the interview were formed by the final judgement of three experts at the Department of Educational Sciences in the Faculty of Education.

11.3.5 Data Analysis

We obtained the data through one-by-one and face-to-face interview with the participants; the replies to the interview question were abstracted and made into pure data. The data were then transferred and digitalized into computer in order to form digital data.

11.4 Findings

In order to get satisfying replies to our questions “What are the discipline issues in classroom environment” and “What should novice teachers do to place positive discipline in classroom”, we abstracted and filtered the statements of the participant principals in a way the statements could keep their deep and main meanings. The first principal’s views on discipline issues in classroom are as follows:

1. Male principal with 16 years of management experience in secondary school) “... I always get views from the students about teachers, particularly new and inexperienced teachers, so as to help them manage the classroom. Inexperienced teachers remain too attached to the books or the slides they prepare because they do not trust themselves and do not master the topics and units. So the course session is boring and monotonous; as a result, the students lose motivation and interest in the classes. This situation raises discipline problems in the classroom. ... They should make the course attractive for uninterested students; otherwise they can face certain discipline problems”.

Teachers, during the course planning process, need to make decisions about the course. It is possible that they will benefit from experienced teachers in these decision-making processes. In a study, it is seen that experienced teachers plan the courses according to the students' viewpoints and adapting them according to the needs of the students; besides the novice teachers are making plans according to the gains that are not suitable for the needs of the students.

In our changing and developing world, the qualities that a school principal needs to have are also changing. It is not possible today to achieve the desired success of the principal who does not come out of the office, who is closed to innovations, who takes his power from his office, who uses the penalty as a means of punishment and who has difficulty in communicating positively with teachers, school personnel, students, environment and parents. In this way, he can explore the problems in the first place and can find solution to them. Observing the novice teachers, veteran principal can help them manage the classroom effectively and prevent the discipline problems from emerging.

2. Male principal with 15 years of management experience in primary school) “. . . In my school, the novice classroom teachers are often unable to finish the lesson on time because their preparation for the course is inadequate and their experience is limited. Sometimes they're too early or sometimes too late. Both are things that the student does not like. Sometimes they tell the same things over and over again. They are doing it because they are unprepared to the lesson, and they are probably forgetting what they will do next. It's also a very repulsive situation to connect to the book and the table. . . . The new teachers should get professional advice from the experienced teachers. They make their course preparations in relevant to the students' needs and their learning styles. They must use the time effectively so as to finish the lesson on time. They should be in contact with the students not with their belongings in the classroom”.

According to the principals, the novice teachers cannot accord the lesson with the duration of the course. The teachers finish the lesson either earlier or later. Some inexperienced teachers never leave the table and deal with the students. In these circumstances, the students may lose their interest in the lesson and become distracted into other things. As the novice teachers are not good at preparing the lesson plan in relevant to the curriculum, the students might be bored and don't prefer to be involved in learning activities. One of the duties that the principals should fulfil is to enable the novice teachers to benefit from veteran ones in the school. The learning style is also very important for the students to concentrate on the topic in the course. If the novice teachers don't take the learning styles of the students into account, it is unlikely that the students can achieve the academic success or educational goal. A student who has a hard time achieving academic success tends to create discipline problems in the classroom.

3. Female principal with 20 years of management experience in high school) “. . . I have observed that the new teachers in their first year of profession think that the students are completely inadequate. One of the most obvious behaviours that

show they are very excited about the class are constantly moving forward and backward in the classroom. At the same time, they deal with too much with their pens, bag and their hands. Thus, the students who are not interested in the course begin to behave out of discipline the novice teachers should know the academic levels of the students so that they can carry out the course in their capacity, and the teachers should concentrate on teaching and the topic and the contents of the lesson to attract the students to the course”.

Classroom is a social field where educational activities are carried out. A significant part of the study period goes into the classroom. During this time, teachers and students will participate in the classroom life within the predetermined goals. The teacher's responsibility in this life area is to ensure that the objectives of discipline are carried out appropriately. Effective learning and teaching cannot be expected in an environment where classroom management is inadequate. If students are irregular and disrespectful, and no rules and regulations can solve their behaviour, there is a state of turmoil, leading to discipline issues. The duty of the teacher is to give the behaviours of the students in the direction of the goal. Sometimes it can be difficult to achieve this. In the case of this situation, the principal should collaborate with the novice teachers and share his experiences to reach positive discipline in classroom.

According to the principal, teachers cannot be successful in their profession if they cannot transfer their knowledge to their students no matter how much knowledge they have about the subject they are teaching (Erden 1999). The results that support this finding have been reached in different studies. For example, Akyüz (2006) and Anderson et al. (1989) state that professional experience influences student achievement positively and that there is a relationship between student achievement and teacher's professional experience.

4. Male principal with 22 years of management experience in high school) “. . . I experience some discipline problems at the examination sessions in my school. Whether the teacher is experienced in the exams or not is understood in the first examination. During the exam, there are constant problems, questions are wrong, explanations are insufficient, time is not enough and some questions are not related to the course and similar situations. These problems appear when the teacher is doing the examination for the first time. Sometimes instead of examination, they often give homework to the students and evaluate them”.

In order to form an effective and positive learning environment, and to maintain discipline in classroom environment, many teaching elements should be taken and edited together. The likelihood of a student to achieve the desired behavioural change depends on the student's or teacher's central position, the academic knowledge and intelligence of the student, the physical conditions of the classroom, using the time, the classroom atmosphere, the methods and techniques used by the teacher and the most appropriate evaluation (Akkaya 2011). All these also determine the level of the discipline in classroom environment.

5. Male principal with 20 years of management experience in high school) “. . . As far as I am concerned, most of the time the novice teachers who are teaching in

my school are said to be not fair. Those who do not study enough are appreciated with the highest marks and the hard-working ones are overthrown. Novice teachers do not appreciate the difference between hard-working ones and non-hard-working ones. This situation in the classroom leads to disobedience and distrust in those teachers. . .”.

Investigations into effective classroom management reveal that every successful change in school is related to the skill and ability of the teacher. The most important role of the teacher is to create a positive and supportive environment based on well-organized and planned classroom management so as to maintain discipline in the classroom. Learning at the best level occurs in the classrooms where students acquire new knowledge, they feel themselves as valuable member of the class (Sucuoğlu et al. 2004), and they feel that they are assessed and appreciated in a fair way. The way the novice teachers assess the exams is very important for the students to be motivated and to acquire interest in learning. The teacher should be fair, and the exam should distinguish the good students and bad students.

6. Male principal with 20 years of management experience in primary school) “. . . Especially within the past 3 years, there have been a lot of novice teachers in our school. They are assigned to the first grade; however it is argued that the first year is the most important year for the students to have positive emotions and attitudes to learning. They should be encouraged, loved and cared much more than others. But the novice teachers have a hard time controlling their emotions. They get angry very quickly or become embarrassed. In such situations, they lose control and are confused at what they will do. Sometimes they try to apply what they learn in university, but they never succeed. At that time they are usually a mockery. . . . In such cases, they always blame the whole class and blame the students. They are constantly saying that they cannot adapt to the conditions of their workplace”.

One of the mistakes that novice teachers make is the determination of class rules (Özer et al. 2016). School principals think that novice teachers are inadequate in setting classroom rules, trying to set rules for everything, being overly disciplined, constantly trying to silence the class and deciding on class rules themselves. It appears that the students prefer the type of teacher who is able to manage class effectively by using authority rather than the type of teacher who cannot manage the classroom who is passive in the classroom environment.

The inability of the teacher to manage the class, and behaving too hard or too soft, giving punishment continuously and frequently warning students are the disadvantages of novice teachers in classroom management. The failure of teachers to be dominant in the classroom is a situation which is not welcomed by the students (Anılan and Kılıç 2013). As a result of the research, it was revealed that the students’ opinions about the inexperienced teacher behaviours and mistakes were similar, that they were excited because of the lack of general professional experience and that they were challenged in anger control, were weak in directing the teaching process and had problems in different topics in classroom management.

When teachers measure classroom management skills, it is insufficient to have knowledge of the skills of disciplining and teaching. If the teacher becomes a good classroom manager, he must be a good teacher in every aspect. Because students observe their teachers not only in classroom but also outside the classroom, they are evaluating the teachers not only with their teaching skills but also their characteristics. For this reason, the personal characteristics of teachers influence the success of classroom management (Akin 2006); also personal characteristics are important to maintain discipline and to solve discipline problems.

11.5 Conclusions

One of the most important tasks for teachers in terms of education and training is to manage their classrooms well and to achieve their goals. For this, teachers need to have classroom management skills. Otherwise, the inadequacy of the teacher's classroom management skills may negatively affect teachers' satisfaction with their work, as well as feelings of inadequacy at work. The school principals have the most essential role in the achievement of the novice teachers to maintain positive discipline in classroom through their valuable experiences in their previous life of school management. Only with a good classroom management can a teacher make the most of the disruptions that impede the attainment of the educational objectives.

What should be done to improve teachers' classroom management skill levels should be investigated and personal development programmes should be prepared for teachers. Because students learn what they will or will not do in classroom discipline, their reasons are conceived. Thus they become aware of the necessity of adapting to rules and understand the indispensability of rules for social life. On the other hand, the teacher should make it easier to arrange the classroom and avoid the chaos that could happen in the classroom by giving responsibility to the students. The responsibilities of the students should be changed every week to ensure that all students should take the same responsibilities through some sort of displacement (Korkmaz 2011: 290).

The veteran principals should help the teachers control their emotions and avoid making mistakes. The principals should give support to the novice teachers when they are very frustrated or embarrassed in the classroom due to inability of controlling the classroom and when they are also confronted with behaviours such as losing control and being surprised at unexpected events. Behaviours such as these indicate that the teacher is having difficulties because there is no experience in this subject, and these behaviours are perceived as mistakes.

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Chapter 12

Evaluation of Teaching Practice Performance of Students of Secondary Mathematics Education by Fuzzy Logic



Ayşe Öcal and Necla Turanlı

Abstract This study examines the use of “fuzzy logic approach” in the evaluation process of performance, to evaluate teachers that took the Teaching Practice Course at the Department of Mathematics for Secondary Education. Researchers compare these results obtained with results obtained by conventional method and present positive and negative sides of these methods in terms of evaluation. In this study, the prospective teachers that took the Teaching Practice Course at the Department of Mathematics for Secondary Education, at Hacettepe University, in the spring term 2013–2014 academic year participated in the study. Their performance was evaluated first by the conventional approach and then by using the “fuzzy logic approach.” Then, researchers analyze the data according to the criteria in the teaching practice assessment form, which was already in use, and the results were compared. Final data were tested by Wilcoxon signed-ranks test in SPSS. In conclusion, performance scores obtained by “fuzzy logic” were higher than those obtained by conventional method, and there was a significant difference between scores.

12.1 Introduction

The importance of teachers in providing an efficient education process is very significant. Teachers’ thoughts, attitudes, and behaviors affect the students positively or negatively. These influences might sometimes be permanent. Thus, providing a high-quality education with qualified and well-developed teachers will build the society of the future which is an important element for the success and prosperity of society (Sönmez 2005).

This study focuses on a teaching practice course in which prospective teachers, senior students in their bachelor in education faculty, though for a short time, have the chance to teach students in a real school environment. They used their teaching

A. Öcal · N. Turanlı (✉)
Hacettepe University, Ankara, Turkey
e-mail: turanli@hacettepe.edu.tr

skills and developed themselves in the light of feedback after this teaching experience.

One of the most important purposes of the teaching practice course was to provide the prospective teachers experience, before they began to serve as real teachers. The fuzzy logic approach is acknowledged by many researchers more convenient for analyzing of behaviors and measuring performance of people that is hard to explain in mathematical formulas (Elmas 2011). In this study, the performance of prospective high school mathematics teachers is assessed by using the fuzzy logic approach and also by conventional performance assessment.

Teaching performance of prospective teachers was assessed according to certain criteria. A lecturer from Hacettepe University and a mentor teacher in the high school where prospective teachers have their teaching practice evaluated the teaching performance of prospective high school teachers by filling an assessment form. According to points in the assessment form, at first the performance of prospective teachers are evaluated by benefitting from the fuzzy logic approach, then it is also evaluated by summing the points in assessment forms and calculating the arithmetic mean of these points, then converting it into percentages, which is called conventional method in this paper. The results obtained by the fuzzy logic approach were compared with the results obtained with the conventional method; advantages and disadvantages of these two assessment methods were presented.

The fundamentals of fuzzy logic are based on fuzzy sets. The term *fuzzy logic* was introduced with a proposal of fuzzy set theory by Lotfi Zadeh in 1965 (Zadeh 1965).

Fuzzy logic is based on multivalued logic in which truth values of variables could be any real number between 0 and 1. By contrast, in Boolean logic, the truth values of variables could only be the “exact” values 0 or 1. Fuzzy logic has a concept of partial truth, namely, the truth value could range between completely true and completely false, which is between 1 and 0 (Novák et al. 1999) [2]. Furthermore, if linguistic variables are included, their degrees of truth are expressed by specific (membership) functions. In fuzzy logic, a membership function represents the degree of truth as an extension of valuation.

Zadeh (1965) stated that vast majority of human’s thought is uncertain. Thus, it is inadequate to express this thought system by classical logic represented by exact true or exact false, namely, exact 1 or exact 0 in Boolean logic. In fuzzy logic, each element may have a truth value degree of membership in the interval $[0,1]$. So, it is more convenient to explain human’s thought by fuzzy logic.

12.2 Performance Evaluation by Utilizing “Fuzzy Logic” Approach

Evaluators write the scores for each criterion which is in the assessment form. After that, these scores are passed by fuzzification and defuzzification steps. As a result, researchers are able to obtain actual overall assessment scores.

For this study, classical logic (two-valued logic) can be defined as a logic in which a proposition or statement is logically called true or wrong. True “*T*” is indicated by “1,” and wrong “*F*” is indicated by “0.” $A = \{0,1\}$ is called the set of truth of the proposition. Hence, in this logic, there is only right or wrong; there are not intermediate values (Chen 2000).

For this study, multivalued logic can be defined as a logic which is generalized in which there are more than three truth values of a proposition. Thus, in this logic, grading the value of the truth is proposed. This logic expresses that a proposition is true or false in a certain amount rather than exact true or false. Fuzzy logic is based on this logic (Gökbulut 2003).

12.3 Method

The aim of this study was to examine the existing situation, to measure the performance of prospective teachers in two different ways, and to examine only those methods without intervening in the class. Hence, this study is a descriptive study.

12.4 Working Group

The working group of this study consisted of 20 undergraduate prospective teachers who were taking the teaching practice course at Hacettepe University in Mathematics Education Department of Secondary Science and Mathematics Education Department (SSME) in spring semester in 2013–2014 academic year.

12.5 Data Collection Tool

A teaching practice assessment form was used to assess the performance of prospective teachers taking the teaching practice course by conventional methods. Prospective teachers were assessed by a faculty member and an experienced high school teacher who was their mentor. In this study, this performance assessment form was previously created to account for the qualifications which were expected from the teachers. This form is consisting of eight main criteria such as knowledge in subject area, field training info, planning, teaching process, classroom management, communication, evaluation and record-keeping, and other professional qualifications and 46 sub-criteria. This form was used/has been used for many years in assessment of the performance of prospective teachers who took the teaching practice course in their last year of teaching programs at Hacettepe University. There were three different types of points for each sub-criterion in the assessment form: the highest point was 3, the moderate point was 2, and the lowest point was 1. Their verbal responses, respectively, were “weak,” “acceptable,” and “good” shape. The form is shown in Table 12.1.

Table 12.1 Teaching practice evaluation form criteria weights

Main criterion	Value of weight	Sub-criterion	Value of weight
1 (1.1) knowledge in subject area	0.125	1.1.1. Knowing the basic principles and concepts on the subject	0.25
		1.1.2. Capability of relating to the basic principles and concepts in the subject in the logical consistency	0.25
		1.1.3. Using verbal and visual skills required by the subject (e.g., figures, diagrams, graphs, and so on.)	0.25
		1.1.4. Being able to relate subtopics with the main topic	0.25
2 (1.2) field training info	0.125	1.2.1. Knowing special and appropriate teaching approaches, methods, and techniques	0.2
		1.2.2. Utilizing instructional technology	0.2
		1.2.3. Identifying concepts students misunderstood	0.2
		1.2.4. Creating adequate and appropriate responses to student questions	0.2
		1.2.5. Ensuring the safety of the learning environment	0.2
3 (2.1) planning	0.125	2.1.1. Writing lesson plans clearly, understandably, and appropriately	0.16
		2.1.2. Being able to express clearly the goals and objectives	0.16
		2.1.3. Determining appropriate methods and techniques to obtain course objectives	0.16
		2.1.4. Choosing and preparing appropriate equipment and materials	0.16
		2.1.5. Determining appropriate assessment methods which are convenient course objectives	0.16
		2.1.6. Relating the subject to the subjects of previous and next courses	0.2
4 (2.2) teaching process	0.125	2.2.1. Utilizing from various appropriate teaching approaches, methods, and techniques in teaching process	0.125
		2.2.2. Using time efficiently	0.125
		2.2.3. Organizing activities for active participation of students	0.125
		2.2.4. Teaching according to individual differences of students	0.125
		2.2.5. Using the appropriate teaching tools and materials in the class	0.125
		2.2.6. Summarizing and giving students appropriate feedback	0.125
		2.2.7. Associating the topics in lessons with the real life	0.125
		2.2.8. Evaluating the level of achievement of the objectives of the course	0.125

(continued)

Table 12.1 (continued)

Main criterion	Value of weight	Sub-criterion	Value of weight
5 (2.3) classroom management	0.125	2.3.1. Making a proper introduction to the course	0.11
		2.3.2. Attracting interest and attention to the course	0.11
		2.3.3. Providing a democratic learning environment	0.11
		2.3.4. Providing the continuity of interest and motivation in the course	0.11
		2.3.5. Taking appropriate measures against interruptions and obstacles	0.11
		2.3.6. Giving praise and sanctions	0.11
		2.3.7. Doing efficient conclusion at the end of the course	0.11
		2.3.8. Giving information about the future course and assignments	0.11
		2.3.9. Preparing the students to leave the classroom at the end of the course	0.12
6 (2.4) communication	0.125	2.4.1. Ability to communicate effectively with students	0.2
		2.4.2. Giving clear explanations and instructions	0.16
		2.4.3. Asking appropriate thoughtful questions related to the subjects taught in the course	0.16
		2.4.4. Using tone effectively	0.16
		2.4.5. Listening to students with interest and care when students talk	0.16
		2.4.6. Using verbal language and body language effectively	0.16
7 (3) evaluation and record-keeping	0.125	3.1. Preparing appropriate evaluation material for the course	0.25
		3.2. Providing feedback according to the students	0.25
		3.3. Grading of the product of the students as soon as possible and report to the relevant people	0.25
		3.4. Holding the records of evaluation	0.25
8 (4) other professional qualifications	0.125	4.1. Being aware of the laws and regulations related to the profession	0.25
		4.2. Being open to professional advice and criticism	0.25
		4.3. Participating in school activities and/or in various ceremonies of school	0.25
		4.4. Being a good example in terms of personal and professional behavior	0.25

12.5.1 Implementation of Data Collection Tools

While assessing the teaching practice performance, primarily the weights of each evaluation criteria in the form of teaching practice performance are determined. Then the lectures of prospective teachers are determined to carry out what order. Each

prospective teacher prepared a lesson plan which would not exceed to 45 minutes related to the subject which she/he would teach. Prospective teachers prepared their lesson plan and teaching practice, considering the set criteria in the assessment form, so as to fulfill the academic skills they had learned in the courses they had taken in their bachelor education. While prospective teachers were teaching the students in the class at the high school, the evaluators, a person from the faculty of Hacettepe University and the practice guiding teacher from the high school where teaching practice occurred, rated them according to the criteria given to them in the form of assessment.

Prospective teachers taught the lectures for 45 min with materials prepared by themselves. At the end of the lecture, evaluators expressed their opinion about the lecture of prospective teachers taking advantage of the criteria given in the evaluation form.

12.5.2 Analysis and Resolution of Data

In this study, firstly scores for each criterion in the assessment form which had been scored by the assessors were passed by fuzzification step, the conversion of a precise quantity to a fuzzy quantity, and results are demonstrated by fuzzy relationship sets. After this, fuzzy assessment results of the main criteria were obtained by decision-making process. Fuzzy inference has been used in the decision-making process. While the fuzzy result matrix of the main criterion was obtained, the combination of sub-criteria weight matrix with the fuzzy relationship matrix consisting of fuzzy relationships sets sub-criteria was used. Finally, defuzzification step was implemented to obtain precise quantities of the main criteria from results demonstrated by fuzzy quantities.

Results were obtained in the defuzzification process using the weighted average method. Sanchez and Gomez (2003) stated that triangular fuzzy numbers are the most widely used type of fuzzy numbers, because they enable ease of operation and can be created intuitively.

According to Ecer (2007), using the triangular or trapezoidal fuzzy numbers does not change the results of the evaluation by fuzzy logic. In this study, triangular fuzzy numbers are used because it provides ease and speed of operation.

Descriptive statistics about teaching practice performance scores obtained by conventional method and fuzzy logic method of the 20 teachers were investigated. Moreover, it is investigated whether there is a significant difference between the results obtained by different methods, namely, fuzzy logic method and conventional method by Wilcoxon signed-ranks test which is one of the nonparametric tests for dependent groups. First, when assessing performance of the prospective teachers' teaching practice, assessors marked "missing," "acceptable," and "good" linguistic markers for each criterion in the assessment form. Because these linguistic markers expressed 1, 2, and 3 points, respectively, they are translated into these points for each criterion. Relationship matrixes of each sub-criterion in each main criterion are

created considering these scores, the number of assessors, the value of the weight of assessors, and the weight value of each criterion. Composite matrixes for each main criterion were found.

Then, by utilizing the composite matrixes for each of the main criterion, defuzzification process in which final results would be found was implemented. Weighted average method was used in the defuzzification process.

Should I write something about previous studies related to this topic?

12.6 Results

The teaching practice performance assessment scores of 20 prospective teachers obtained by the fuzzy logic approach were compared with the scores obtained by the conventional method. In Table 12.2, teaching practice performance assessment scores obtained by the fuzzy logic approach and the scores obtained by the conventional method are demonstrated. Points are in percent.

Although scores obtained by utilizing the fuzzy logic and the scores obtained by the conventional method are very close to each other, the former is higher than the latter. Before investigating whether there is a significant difference between the

Table 12.2 The teaching practice performance assessment scores of prospective teachers obtained by the fuzzy logic approach and the scores obtained by the conventional method

Prospective teachers	Assessment scores obtained by the fuzzy logic approach	Assessment scores obtained by the conventional method
A1	93.19	92.79
A2	98.58	98.47
A3	98.09	97.85
A4	100	100
A5	93.91	93.31
A6	92.5	91.59
A7	95.4	94.92
A8	95.6	95.15
A9	93.21	92.47
A10	94.25	93.58
A11	95.96	95.55
A12	95.78	95.30
A13	94.68	93.81
A14	93.99	94.26
A15	95.03	94.45
A16	93.77	92.90
A17	93.12	92.22
A18	95.05	94.61
A19	98.92	98.8
A20	95.69	95.12

scores obtained by these two different methods, descriptive statistics related to scores obtained by these two different methods were calculated. When descriptive statistics are examined, it was seen that the scores obtained by fuzzy logic are higher than the scores obtained by the conventional method.

A teacher or an instructor has to evaluate the performance of the students (Gökbulut 2003).

Teachers and instructors using conventional methods based on classical logic evaluated the performance of the students according to specific standards. For example, if the passing grade was determined as 70% for an undergraduate course, all students having a score below 70 for this course fail. In this evaluation, both students who got scores 30 and 69 fail the class, because both scores are below the crisp boundary 70. Hence, the difference between scores 30 and 69 is ignored. But the same assessment, if made by the multivalued logic, fuzzy logic-based method, it is not mentioned a crisp boundary. Using linguistic expressions such as “good,” “acceptable,” “poor,” “failing,” and fuzzy numbers appropriate for these expressions can be done evaluations. As a result, a more detailed assessment is done. For instance, in this evaluation as the scores approached from 55 points to 65 points, the performance also approaches from poor to acceptable.

Because fuzzy logic is based on multivalued logic which is also included in two-valued logic, it is mentioned from grading in fuzzy logic (Gökbulut 2003).

For example, in this study, the set of membership of one of the main criteria in the assessment form “communication” for a prospective teacher is found as below:

$$B_6 = \begin{matrix} \text{Weak} & \text{Acceptable} & \text{Good} \\ [0.0 & 0.18 & 0.82] \end{matrix}$$

From here, it can be said that the performance of this prospective teacher in “communication skill” is 18% acceptable, and 82% is good. Namely, this evaluation is more flexible and more detailed.

Fuzzy logic approach is closer to people’s way of thinking. In daily life, grading is very commonly used with linguistic expressions such as cold, very cold, much, little, a little, etc. Especially in evaluating of performance in unwritten practices based on practical performance, fuzzy logic approach might be more objective. This is because when application performance is often evaluated by conventional method which does not base on a mathematical model and depends on the discretion of the evaluators, it might lead to a subjective evaluation.

12.7 Conclusions and Recommendations

In this study, the teacher’s place in education and training has been emphasized, and it has been seen that the fuzzy logic approach is used in the evaluation of performance.

As a result of evaluating the performance by fuzzy logic method, the following conclusions were reached:

1. Fuzzy logic approach can be successfully applied in the evaluation of the performance of the participating prospective teachers in the teaching practice.
2. In evaluation of performance of the prospective teachers, using multivalued logic enabled to examine the talents, capabilities, and professional competences of them in a more detailed manner.
3. Linguistic expressions which are mostly used such as “good,” “acceptable,” and “missing” can be converted into real numbers by fuzzy logic method.
4. Although there was a significant difference between the performance scores obtained with the conventional method with performance scores obtained by fuzzy logic method, there was no statistical difference between these two methods in terms of measurement variability. Thus, statistically, these methods cannot be said to be more effective than the other.

The model created in this study forms 8 main criteria and 46 sub-criteria. If the main criteria and sub-criteria in this model are changed, it can also be used in decision-making process in different areas. Besides, with increasing of the number of the main criteria and sub-criteria, altering the weight of criteria, the new assessment model can be created and more fruitful, and objective assessment can be obtained.

Furthermore, the studies can be done to find out why the performance results obtained by fuzzy logic are higher than the results obtained by conventional method. Focusing group of this study consists of only 20 teachers taking the teaching practice course at Hacettepe University in Mathematics Education Department of Secondary Science and Mathematics Education Department (SSME) in spring semester in 2013–2014 academic year. This model can be applied in the evaluation of more crowded samples. By changing criteria, new models can be created easily and can be implemented for evaluation of students, employees, etc.

In the light of existing studies in the literature, fuzzy logic could also be used with confidence in the performance evaluation in different areas other than teaching practice.

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Chapter 13

Revisiting the Environmental Kuznets Curve Hypothesis for Turkey



Kamil Demirberk Ünlü, Nihan Potas, and Mehmet Yılmaz

Abstract We empirically reexamine the interdependency between renewable energy, nonrenewable energy, economic growth, and carbon dioxide emission by employing multivariate time series techniques for the periods between 1970 and 2013. Our results prove the evidence of a long-run relation between the tested variables. Also, we revisit the environmental Kuznets curve hypothesis for the case of Turkey.

13.1 Introduction

One of the most important issue for the mankind in the long run can be shown as the global warming. Every year the earth gets hotter, and it changes the balance of the environment. The main reason of the climate change is the release of the greenhouse gases like carbon dioxide, methane, nitrous oxide, and so on. According to the United States Environmental Policy Agency, 25% of the gases are caused from energy producing activities (European Environment Agency (EEA) n.d.). On February 5, 2009, the Parliament of Turkey signed the Kyoto protocol. Kyoto protocol is an international agreement which aims to reduce global greenhouse gases emissions. For that reason Turkey should develop and imply new policies to reduce the greenhouse gases. Beacouse of that, our aim in this study is to identify the interrelation between economic growth (GDP), carbon dioxide emission (CO₂), and energy production from renewable (RNW) and nonrenewable resources (CLN) which may help policymakers to take necessary precautions. Also, we revisit the Kuznets curve hypothesis which was proposed by Kuznets in 1955. Kuznets (1955) suggests that increase in per capita income at first increases the income inequality, than it declines after a turning point. There exists an inverted U-shaped relation

K. D. Ünlü (✉) · M. Yılmaz
Ankara University, Ankara, Turkey
e-mail: kdunlu@ankara.edu.tr; mehmetyilmaz@ankara.edu.tr

N. Potas
International Science Association-Ankara, Turkey, Gazi University, Ankara, Turkey

between per capita income and income inequality. Same kind of relation between income and environmental degeneration is proposed by Grossman and Krueger (1991). They showed that economic growth cause environmental deterioration, but after some level, it leads to an improvement. They point out an inverted U-shaped relation between environmental conditions and economic growth. In the literature, this type of relation is known as environmental Kuznets curve (EKC).

The quadratic regression line for the EKC is as follows:

$$\text{CO}_2 = \beta_0 + \beta_1 \text{GDP} + \beta_2 \text{RNW} + \beta_3 \text{RNW}^2 + \beta_4 \text{CLN} + \varepsilon_t,$$

where β_0 is the intercept of the line, β_i , $i = 1, 2, 3, 4$ are the coefficients of the variables and ε_t is the white noise. In general, the sign of the β_1 is expected to be positive. As economic activities increase, the demand for energy increase, and it stimulates carbon dioxide. In the same manner, the positive sign is expected for β_2 and β_4 . Also, we expect a negative sign for β_3 which may cause from improvements in technology. As technology develops the efficiency on energy production or electricity production from renewable energy increases, which stimulates price and carbon emission reduction. In the next section, we give the literature review, which is followed by data and methodology, and lastly, we concluded the study.

13.2 Literature Review

Pioneering works on EKC are Grossman and Krueger (1991) and Selden and Song (1995). Their empirical results show that economic development with environmental conditions has an inverted U-shaped form. After these two works, effect of economic growth and environmental degeneration is highly studied. These studies can be divided in to two parts. The first part examines the casual relation between environmental conditions and macroeconomic indicator such as gross domestic product, foreign trade, and the level of stock market and foreign currencies. The second one investigates the existence of the EKC with these variables.

Not all but a few studies on EKC are as follows: Özokcu and Özdemir (2017) investigates the linkage between income and carbon dioxide emissions for 26 OECD and 52 emerging countries in the sense of EKC, and their results indicate a cubic functional form. Akbostancı et al. (2009) investigates the EKC hypothesis in two levels. They first show the relation between CO₂ and per capita income of Turkey, and then they investigate the hypothesis for particulate matter and sulfur dioxide. The inverted U shape for the Pakistan case is studied by Shahbaz et al. (2012). The results support the hypothesis. The autoregressive distributed lag (ARDL) methodology is employed by Shahbaz et al. (2013) to examine the hypothesis for Romania; their results indicate that there exists an inverted U-shaped relation between energy consumption and air pollution. The effects of energy intensity on air quality for Spanish case is studied by Roca and Alcántara (2001). Gill et al. (2017) suggests that renewable energy has a negative significant effect on carbon emission of Malaysia.

Lastly, Yavuz (2014) studies the EKC hypothesis for the Turkish case. An extensive literature review about environmental Kuznets Curve can be found in Bo (2011).

There exists an intense amount of studies on the environmental degeneration and macroeconomic indicators nexus. A brief literature about this concept can be found in Omri (2014). On this part we will try to focus only on the studies for the Turkish case. Halicioglu (2009) reveals the dynamic relation between CO₂, foreign trade, income, and energy consumption. The results show that carbon emission is controlled by foreign trade, income, and energy consumption. Nazlioglu et al. (2014) examines the economic growth and energy consumption nexus by employing three different methodology, and their result indicates the casual relation between these variables. The pioneering and the most significant study on the energy and carbon dioxide nexus is Soytaş and Sari (2009). In the study authors reveal the cointegrated structure of the investigated variables. Ozturk and Acaravci (2010) uses multivariate time series analysis to examine the causal relation between economic growth, carbon emissions, energy consumption, and employment ratio in Turkey.

13.3 Data and Methodology

The data set in this study consists of annual gross domestic product per capita (GDP) measured in USD and carbon dioxide emission per capita (CO₂) for the periods 1970 and 2013. These variables are taken from World Bank databank (<http://databank.worldbank.org/>). Data set for the electricity part consists of energy produced from renewable energy sources (RNW) and energy produced from nonrenewable energy sources (CLN) between the years 1970 and 2013. The data set is obtained from Turkish Electricity Transmission Company (<https://www.teias.gov.tr/tr/turkiye-elektrik-uretim-iletim-2016-yili-istatistikleri>). All variables are in their natural logarithms.

Time series modeling of economic data mostly corrupted by non-stationarity. The data set should be stationary to give reasonable results and interpretation. Let $\{X_t, t \in \mathbb{Z}\}$ be a time series. X_t is said to be weakly stationary (covariance stationary), if its first and second moments are invariant of time. To be stationary, X_t should satisfy the following three properties:

- $\forall t \in \mathbb{Z}, \mathbb{E}[X_t] = \mathbb{E}[X_{t-1}] = \mu.$
- $\forall t \in \mathbb{Z}, \mathbb{E}[X_t^2] < \infty.$
- $\forall t, s \in \mathbb{Z}, \text{Cov}[X_t, X_s] = \text{Cov}[X_{t+h}, X_{s+h}].$

The first step in econometric analysis is to check the above stated stationarity property. We used augmented Dickey-Fuller test (ADF) to investigate the stationarity properties of the data set. In the ADF, the tested model and its null and alternative hypothesis are as follows (Dickey and Fuller 1979):

Table 13.1 Unit root test results

	CO2	GDP	CLN	RNW	RNW ²
Test-statistics	-1.8419	-1.0486	-1.8164	-1.4775	-1.4775
<i>P</i> value	0.3559	0.7272	0.3678	0.5353	0.5353
	ΔCO2	ΔGDP	ΔCLN	ΔRNW	ΔRNW ²
Test-statistics	-5.9485	-6.7451	-7.2578	-7.2108	-7.2108
<i>P</i> value	0.0000	0.0000	0.0000	0.0000	0.0000

$$\Delta X_t = \alpha + \beta X_{t-1} + \gamma t + \sum_{i=1}^k \delta_i + \Delta X_{t-i} + \varepsilon_t,$$

where ε_t is a white noise. The null hypothesis of the test is

- $H_0 : \beta = 0$, that is the data has a unit root and need to be differenced to be stationary.
- $H_0 : \beta \neq 0$, that is the data is stationary.

The results of ADF with *P* values are given in the next table. The results show that all the variables are nonstationary at the level, so to eliminate the effect of non-stationarity, the series are differenced (Hamilton 1994) (Table 13.1).

The effect of variables on each other can be investigated by vector autoregressive (VAR) models. The multivariate representation of a such model is as follows:

$$X_t = \mu + \beta_1 X_{t-1} + \beta_2 X_{t-2} + \dots + \beta_k X_{t-k} + \varepsilon_k, \tag{13.1}$$

where ε_k represents white noise, $\{\beta_i\}_{i = 1, \dots, k}$ is the *k*-dimensional vector of coefficients, and μ is a constant. Now let *L* be a lag operator, i.e.,

$$L^1 X_t = X_{t-1}, L^2 X_t = X_{t-2}, \dots, L^k X_t = X_{t-k}.$$

The Eq. 13.1 can be rewritten by the lag operator *L* as:

$$\beta_k(L)X_t = \mu + \varepsilon_k, \tag{13.2}$$

where $\beta_k(L)X_t = 1 - \sum_{i=1}^k \beta_i L^i$. By using the difference operator Δ which is $\Delta X_t = X_t - X_{t-1}$, the Eq. 13.2 can be written as an error correction representation as:

$$\beta_{j-1}^*(L)\Delta X_t = \mu - \theta X_{t-1} + \varepsilon_k, \tag{13.3}$$

with $\beta_{j-1}^*(L) = 1 - \beta_1^* L - \beta_2^* L^2 - \dots - \beta_{j-1}^* L^{j-1}$ and $\beta_i^* = - \sum_{k=i+1}^p \beta_k$,

$i = 1, 2, \dots, p - 1$. The coefficient θ represents the long-run relation between the variables. Re-parametrization of the Eq. 13.3 gives vector error correction model of Engle and Granger (1987) and Granger (1988) as

Table 13.2 Johansen cointegration test results

H ₀	Eigenvalue	λ_{tracae}	5%	P-value	λ_{max}	5%	P-value
$r = 0$	0.5898	82.8686	69.8189	0.0032	37.4301	33.87687	0.0180
$r \leq 1$	0.4176	45.4385	47.8561	0.0829	22.7077	27.5843	0.1863
$r \leq 2$	0.2979	22.7308	29.7971	0.2595	14.8536	21.1316	0.2993
$r \leq 3$	0.1555	7.8777	15.4947	0.4786	7.0966	14.2646	0.4778
$r \leq 4$	0.0184	0.7896	3.8414	0.3770	0.7805	3.8416	0.3770

$$\Delta X_t = \mu + \pi X_{t-1} + \sum_{i=1}^{p-1} \beta_i X_{t-i} + \varepsilon_t. \quad (13.4)$$

Here, the rank of π gives the number of cointegration vector. This can be found by trace statistics, J , given in the next equation:

$$J = -T \sum_{i=r+1}^n (1 - \bar{\Lambda}_i),$$

T represents the sample size, while $\bar{\Lambda}_i$ shows the largest canonical correlation. The null hypothesis of J is r number of cointegration vectors against n number of cointegration vector (Johansen and Juselius 1990, Juselius 2006). The more information about multivariate time series analysis can be found in Kirchgassner and Wolters (2012). The results of cointegration test of trace statistics are given in Table 13.2, and the results indicate one cointegration vector in the VAR system.

The existence of cointegration indicates the dependency between the variables. To identify the direction of the causality between the variables, we apply the methodology of Granger (1988). The vector error correction of the system as follows:

$$\begin{aligned} \Delta CO2_t &= \mu_{1,1} + \beta_{1,2} \Delta CO2_{t-1} + \beta_{1,3} \Delta GDP_{t-1} + \beta_{1,4} \Delta RNW_{t-1} \\ &\quad + \beta_{1,5} \Delta RNW^2_{t-1} + \beta_{1,6} \Delta CLN_{t-1} + \xi_{1,1} ECT_{1,t-1} + \varepsilon_{1,t}, \end{aligned}$$

$$\begin{aligned} \Delta GDP_t &= \mu_{2,1} + \beta_{2,2} \Delta CO2_{t-1} + \beta_{2,3} \Delta GDP_{t-1} + \beta_{2,4} \Delta RNW_{t-1} \\ &\quad + \beta_{2,5} \Delta RNW^2_{t-1} + \beta_{2,6} \Delta CLN_{t-1} + \xi_{2,1} ECT_{2,t-1} + \varepsilon_{2,t}, \end{aligned}$$

$$\begin{aligned} \Delta RNW_t &= \mu_{3,1} + \beta_{3,2} \Delta CO2_{t-1} + \beta_{3,3} \Delta GDP_{t-1} + \beta_{3,4} \Delta RNW_{t-1} \\ &\quad + \beta_{3,5} \Delta RNW^2_{t-1} + \beta_{3,6} \Delta CLN_{t-1} + \xi_{3,1} ECT_{3,t-1} + \varepsilon_{3,t}, \end{aligned}$$

$$\begin{aligned} \Delta CLN_t &= \mu_{4,1} + \beta_{4,2} \Delta CO2_{t-1} + \beta_{4,3} \Delta GDP_{t-1} + \beta_{4,4} \Delta RNW_{t-1} \\ &\quad + \beta_{4,5} \Delta RNW^2_{t-1} + \beta_{4,6} \Delta CLN_{t-1} + \xi_{4,1} ECT_{4,t-1} + \varepsilon_{4,t}, \end{aligned}$$

where $\xi_{i, 1}$, $i = 1, 2, 3, 4$ is the coefficients of the error correction term, it measures the speed of adjustment, $\mu_{i, 1}$, $i = 1, 2, 3, 4$ is the intercept of the equations and $\varepsilon_{i, t}$, $i = 1, 2, 3, 4$ represents the white noise term. ECT is the error correction vector, and it determines the long-run relationship, and it is estimated as follows:

$$\text{CO2} = \kappa + \alpha_1 \text{GDP} + \alpha_2 \text{ENR} + \alpha_3 \text{TRD} + \alpha_4 \text{CRD} + \varepsilon_t,$$

where κ is the intercept and ε_t is the residual. The models given above are estimated, and the results of the short-run and short-run Granger causality test statistics with coefficients and the estimated coefficients of the ECT with significance levels are given in the Table 13.3.

According to Table 13.3, the interpretation of the results are as follows:

- When the dependent variable is CO2, there exists a significant ECT, which indicates the long-run equilibrium between the variables. In the short and long run, RNW, RNW2, and CLN cause CO2. Only in the long-run GDP cause CO2. In the both short and long run, the coefficient of RNW is significant and positive, but the coefficient of RNW2 is negative and significant which indicates the existence of environmental Kuznets curve.
- In the first model, both in the long and in the short run, coefficients of the RNW, CLN, and GDP are positive, so an increase in one of the variables will increase the emission. Again, in the short and in the long run, coefficient of the RNW2 is negative; thus as electricity production from RNW gets larger, it will have positive effect on the air quality.
- In the second model, neither of the variables cause GDP in the short and in the long run.
- For the third model, only the square of itself cause RNW in the short run and neither of the variables cause RNW in the long run.
- In the last model, CO2 causes CLN in the short run; thus the causal relation between these variables is unidirectional in the short run. Also, RNW and RNW2 cause CLN in the short run.

13.4 Conclusion

In this study, our aim is to enlighten the relation between carbon dioxide emission, economic growth, energy produced from renewable energy sources, and energy produced from nonrenewable energy sources in the sense of environmental Kuznets curve. The empirical results show that these variables are cointegrated, and they influence each other in the short and in the long run. Another important result of this study is the verification of the existence of the environmental Kuznets curve between renewable energy and carbon emission which indicates an inverted U-shaped relation between renewable energy and carbon dioxide emissions. Thus, as the energy produced from renewable energy increases, the air quality of Turkey also increases. Also, we show that increase in economic growth, energy production from

Table 13.3 Granger causality test results

Dependent variable	Short run					Error correction					Long run					Lag	
	Coefficients (<i>F</i> -statistics)					Coefficients					Coefficients (joint <i>F</i> -statistics)						
	Δ CO2	Δ GDP	Δ ARNW	Δ ARNW ²	Δ CLN	ECT	Δ CO2	Δ GDP	Δ ARNW	Δ ARNW ²	Δ CLN	Δ CO2	Δ GDP	Δ ARNW	Δ ARNW ²		Δ CLN
Δ CO2	–	0.243782 (0.1115)	1.615328 (0.0097)	–0.105394 (0.0090)	0.231861 (0.0997)	–0.332114 (0.0354)	–	0.243782 (0.0190)	1.615328 (0.0080)	–0.105394 (0.0081)	0.231861 (0.0526)	–	0.243782 (0.0190)	1.615328 (0.0080)	–0.105394 (0.0081)	0.231861 (0.0526)	1
Δ GDP	538.9221 (0.8162)	–	1455.84 (0.2235)	–996.1032 (0.1849)	2709.67 (0.1536)	113.4950 (0.1071)	538.9221 (0.2547)	–	1455.84 (0.2546)	–996.1032 (0.2490)	2709.67 (0.1387)	538.9221 (0.2547)	–	1455.84 (0.2546)	–996.1032 (0.2490)	2709.67 (0.1387)	1
Δ ARNW	597.3419 (0.7735)	–322.2 (0.6067)	–	1827.9 (0.0034)	–1259.5 (0.4401)	–37.5285 (0.1635)	597.3419 (0.3405)	–322.2 (0.6067)	–	1827.9 (0.0000)	–1259.5 (0.2695)	597.3419 (0.3405)	–322.2 (0.6067)	–	1827.9 (0.0000)	–1259.5 (0.2695)	1
Δ CLN	–6508.89 (0.0464)	767.601 (0.3938)	–34748.3 (0.0011)	2138.8 (0.0019)	–	17.51370 (0.9299)	–6508.89 (0.0976)	767.601 (0.6882)	–34748.3 (0.0034)	2138.8 (0.0053)	–	–6508.89 (0.0976)	767.601 (0.6882)	–34748.3 (0.0034)	2138.8 (0.0053)	–	1

nonrenewable source, increases the carbon emission. Policymakers may consider this result to control the environmental degeneration. Although Turkey has a scarce amount of energy reserves, she can turn it to an opportunity. Instead of increasing the external dependency by purchasing energy from other countries, she may invest heavily on research and development of renewable energy technology. In the long run, improvement in the technology may help Turkey to improve its air quality, and it may help her to improve her economy by decreasing the foreign trade deficit.

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Chapter 14

Complexity in Abstract Poetry



Rengin Özemesi

Abstract Poetry can reproduce, amplify, and complicate everything. Poetry is an interface that links the poet and the other, arising from connotations of complexity. Temporal distances may not create any problems in poetry. A complex landscape painting can form with integrity, which happens in poetry, too. When the poet tries to create a unique world in poetry, he suffocates himself—and suffocates poetry as well. For this reason, complexity in poetry can become incomprehensible. Complexity in poetry is discussed in this chapter.

14.1 Introduction

Poetry can reproduce, amplify, and complicate everything. Poetry is an interface that links the poet and the other, arising from connotations of complexity. Complexity arises from clumsiness, which leads to new manifestations. Clumsiness is complex in itself. New words may arise from clumsiness in poetry, which leads to new expansions in the reader's mind. For example, poetry may be created with variations of sounds, wandering or weaving. The meaning of these sounds may not matter here. The beauty of sounds—wandering, in a word—the power of variation, and the harmony of voices can create the poeticness.

They say that poetry is a variation and measurement of rhythms. The poet sometimes seems to be creating these sounds unknowingly. The language is abstract and complex, using symbols and signs.

They say that language is a route for sounds; so is poetry. If ever language carries the endlessness inside itself, poetry also carries the endlessness inside itself.

They say that verbal expressions are time receivers, whereas mathematics shortens time. Poetry also shortens the time. A single line of poetry can tell you what a novel is telling.

R. Özemesi (✉)
Poet, İzmir, Turkey

They say that a word is the essence of a thing. A poem is the essence of the person who wrote it, too. They say that words are peremptory; then, a poem is peremptory, too.

They say that poetry gains meaning and vitality with the reader, and the reader can complicate poetry. The complexity understood from a poem may be the complexity of the reader's own mind.

Everything that has been experienced—and not experienced—enters the poetry. Poetry is a field of freedom. In poetry, everything that the poet experienced himself is displayed in words. The observations of other people's lives are guided into the content of one's own mind. The meaning is re-signified in the poet's way. Emotions that do not belong to the reader are also displayed with words.

The poet sees the poetry in the mirror of his mind firstly. Sometimes poetry appears; sometimes, it suddenly disappears. It can be hidden in the mirror and from the mirror. When a person struggles to connect with himself, he comes close, moves away, and comes close once again to the poetry.

Words that separate from each other and alienate from each other can also form integrity.

It is very difficult to compose poetry, just as it is to melodize a ballad. The bursting of the poem is very difficult. Writing a vehement poem to burn the paper it is written on is very tough. However, when seemingly unrelated words come together, they can produce poetry.

Temporal distances may not create any problems in poetry. A complex landscape painting can form with integrity, which happens in poetry, too. As you look at a complex landscape painting, you may not be able to imagine how things can come together to form it; words with different meanings can also come together in poetry. However, when new meanings are produced with incongruous words used together, it may also surprise the poet himself.

When a poet tries to create a unique world in poetry, he suffocates himself—and suffocates poetry, too. For this reason, complexity in poetry can become incomprehensible.

The poem ignites itself, writes itself, and then goes away by itself.

Rebirth oneself. Words are ferocious; they can procreate the complexity that is instinctively in the poetry. Poetry carries unpredictable indications and occurrences inside of itself. Maybe the depression, chaos, and confusion are necessary for the insemination of the poem.

These new seeds make the poet write new poems. Old poems are kept in mind. Sometimes, the variety of objects, human diversity, and the complexity of this mind create different sparks for poetry.

In the stages of writing poetry, the writer of poetry produces different delights for himself. The preparation and ambition to write the poetry takes the excitement to outside of reality. There is anxiety about whether it will happen or not; that is a little like love. This makes the poet live anxiously and worried for days. He gives a little bit of his own life to the poem.

“Let’s go to as such rubbish poetry ...
 hold on from one edge, dismantling strings,
 every poetry is to reach a new lover.”
 Rengin Özsesmi

The imagination of the poet is fed from human faces reflecting various moods, images, stories read, novels, paintings of photographers, photographs, movies, and games. The poet draws a picture from the mixture of these tools. He creates an atmosphere and starts to play with poetry by entering the atmosphere.

The poet may feel that the poetry is over. He sometimes feels like he has been thrown into the clouds for a moment with an explosion of joy and enthusiasm. The moment of “That’s it!” is an enthusiastic moment. The poem is over for the poet when he says, “That’s it!”

“It is five o’clock in the evening,
 the sun darkens.
 fascism is rising.
 neither love, nor sadness, nor death”
 Federico García Lorka

Poetry produces meaning as much as the number of readers. It is poetry that links the reader’s memory, perceptions, and ideas. Poetry may think on its own, and we think together with poetry.

Poetry creates a chain of thoughts for us. The complexity of life or the complexity of living creates a bigger mess in poetry by growing. This is happening because of the jam. All of the complexity is stuck in poetry. This jamming and complexity can produce abstract fertility in poetry.

The pleasure of the poet’s depression and complexity is sometimes apparent in poetry and sometimes invisible. Poetry always pretends not to be as it. It may say, “That is not me; I come from it not.”

Sometimes, manifestations happen inside the poetry writer, as if the seeds crack. The poet needs to find words that fit the manifestations. Feelings like white clouds start to color with words; they start to get slightly dirty and start moving. They implore it to think in space or on the cliff. Perhaps poetry is always born in space or on the edge of a cliff. It is like you are entering a dream with poetry. Poetry with a poem begins breaking away privately from the present moment when you read it, and maybe it takes you away, too.

Poetry speaks with you. Your deferred reactions come out; your feelings come back from where you hide. The voice of the poem turns into the seduction object. The poem makes itself read by gasping for breath.

Some things are said by the critics about depressed poets: selfhood/adductive/disregarding/distress/loneliness/depression/despair/alienation/coincidence/lack of communication/suicide. These are the facts that every poet writer and every person goes through. The writer of poetry may wish to overwhelm the poetry reader.

Poetry feels suffocated and suffocates. It takes the reader inside and imprisoned body.

“His body is a madhouse
 lots of workers in it, crazy and hardworking
 his body is a tower
 many steps inside it, dark and humid
 going up stairs by making laughed
 coming down by making cried!”
 Nilgün Marmara

Poetry enters the spirit of the poet and then he takes his spirit into his scope. Or, let us say that a poet temporarily hosts the poetry in his own mind, becoming an interface temporarily. This interface conveys the pain of poetry to you through poetry. Poetry is the poet’s voice, shadow, and carrier, but other than the poet; it takes you out of the way your life has gone. Poetry cannot stand in this given life and this layout we live in. Poetry is a protest to the way your life is going. People may want to disrupt their comfort, shake, and make them crazy.

Poetry infects ink in the lives written with a pencil. Sometimes, poetry has emotions appearing on top of what is written, on your side and shining brightly on the stage. If poetry is dynamite for the human mind, that is good. It is good if it causes turbulence, and even if it does not get out of there. Poetry writers must always wander in uncanny areas. Poetry may personalize everything, because everything is already personal. Dealing with poetry is the way to seek and discover yourself.

One can be depressed by poetry, or get out of a depression with a poem. Woes can be solved with poetry. With poetry, troubles are knotted.

A human’s other can get himself into a depression. He can also lead another to depression. Poetry is a thread, a node, a knitting, a weaving, a reveling. In poetry, he reflects himself on the other.

The poet who writes poetry sometimes finds a headline ahead. He asks questions on a topic, but the topic cannot answer questions.

depression: loneliness
 depression: sleeplessness
 depression: be strange to one’s self
 depression: lack of poetry

The human mind’s complexity is visualized from dreams. It creates mediation between the word “thing” and us. The fragmentary images and emotions in the mind of a poet want to hold on to the words.

It cannot be known by anyone about where the poem comes and will go. Sometimes, it comes from a momentary feeling. It can also be born from an unfeeling moment. It keeps the human waiting for a long time on whether I will come; it has come, but you may not have noticed for days. It can stay for a very short time; it can go back as quickly as it came. No matter how alert you are to not miss poetry, nevertheless, you can miss it. When you think you are taking out the poem from your inside, it may have come from somewhere else.

When the poetry comes, sometimes you want to escape to a place occasionally; you want to have a borehole for falling. When it arrives, you can imagine that you will go mad with enthusiasm. It may be felt as if you were thrown into the sky and

disappeared in the clouds. Sometimes, you can bring words that you never wanted to write. Poetry does not tell you what it leaves or what it takes from you when it goes. You can always embrace it with love when it comes. When the poetry comes, you can never fire it.

Acknowledgments I would like to thank Prof. K. Gediz Akdeniz for his advice on this work and Prof. Şefika Şule Erçetin for her kind invitation to publish this manuscript.

Chapter 15

We Need Resilient School Leaders in the Face of Chaos and Complexity



Mustafa Özmusul

Abstract Exploring the nonideal situations affecting today schools, I conceptualize a resilient leadership model with reference to the school system in the face of chaos and complexity. In general, the resilient leadership conceptualized in this preliminary study can be defined as displaying high level of endeavor to overcome both internal and external obstacles that the organization faces and generating different solutions despite the fact that many nonideal situations affect the organization. In conclusion, it seems to me that the resilient school leaders at least should be mentally, emotionally, socially, ethically, and physically strong humans who beat the odds.

15.1 Introduction

Wise (2015) indicated that many public school principals in the USA faced serious obstacles never before seen in education such as overwhelming effects of poverty, increasing pressures on student achievement, the breakdown of communities, lack of financial resources, and a host of other issues. De Jong et al. (2017) revealed four issues producing job dissatisfaction as follows: high job demands with unreasonable expectations, managing difficult stakeholders, problematic work/life balance, and lack of support. Obtaining the data after several years, Shoho and Barnett (2010) have shown the challenges that new principals face regarding instructional leadership, managerial issues (i.e., budgeting and human resources), and community issues involving climate, politics, and differing expectations from parents. It is also possible to give more literature that indicate various challenges that principals face in the school.

As a result, all these challenges have shown that school leadership entails to work in a highly complex environment. And we can say that successful school leaders

M. Özmusul (✉)
Harran University, Şanlıurfa, Turkey
e-mail: mustafaozmusul@harran.edu.tr

today and in the future are those who perceive the complex environment and respond to the challenges in this environment wisely.

15.2 Resilient School Leadership (RSL)

Although describing the resilient leaders seems difficult, we can say that resilient leaders do not seek pretext for struggling against difficulties, and when nonideal situations occur, they can shake but stand up. Such leaders that we expect like a tree which can withstand a storm run in downpour, like a dam which can hinder strong waves or like a flower which can blossom in the snow. They are *mentally, emotionally, socially, ethically, and physically* strong humans who beat the odds.

15.2.1 Mental Resilience

Resilient school leaders focus on a vision that means a common picture for all against the obstacles they face. Focusing the vision the leaders think big, pay attention to the common aims, and see the obstacles as the problems that can be solved. In history, many examples were possible such as Ataturk, Mandela, Gandhi, Lincoln, Teresa, and so on. In the school context, for instance, a resilient principal can focus on “happy school” vision in and out the school although he or she faces the conflicts, negative climate, and lack of motivation among the people and students.

It is an easy and simple way to seek pretext instead of coping with, when the challenges appear. Just as Sagan (1997) said, “It is better to light a candle than to curse the darkness.” From this aspect, the leader should find and light the needed candle against the darkness of the obstacles he or she faces. Resilient school leaders do not let their schools to be plunged into the darkness.

Such leaders also are open to new ideas. In particular, insisting only one way, making decision without searching more ideas, maintaining clichés, and also falling into “group think” trap can destroy organizational creativity. For that, coping with unexpected obstacles and looking for a way for the chronic matters, the resilient school leaders should be open to the new ideas.

15.2.2 Emotional Resilience

Working and leading among the various obstacles, the leaders can meet with emotional collapse, feeling wretched, despair, sorrow, passion, or loneliness. Before anything else, the resilient leaders should be calm and think that “it is not the end of the world.” According to the Brain-Based Learning Theory, the brain works well

without negative feels. For that, he or she is needed to focus on “how we gonna fix it?” instead of the “why does it emerge?”

Resilient leaders love their job, does not feel exhaustion, and give importance to the reason to be in the organization. They are decisive, have strong belief, and focus on achieving. Moreover, they are not pitiless or soulless but make empathy. In particular, the resilient leaders keep common sense and invite all to obey this in the organization.

15.2.3 Social Resilience

Resilient leaders pay attention to develop social relations with his or her colleagues, and see their organization as not only a workplace but a place where they live together the stakeholders both in the school and out. In particular, they are not offended at someone or groups in the organization but try to sustain the relations. And, such leaders seriously care about providing solidarity in their organization. It can also be explained as being “we” instead of “I.” At the same time, when implementing these endeavors, the resilient leaders act spontaneously.

15.2.4 Ethical Resilience

To abide by ethics does empower the leaders. In this respect, resilient school leaders use an ethical filter to be applied for their behaviors in and out of the school. Applying this approach, the leaders creates an ethical culture that invites the others to behave ethically in the organization.

Also the resilient leaders are aware that behaving ethically is more valuable than using power in the organization. Just as Lord Acton said, “power corrupts and absolute power corrupts absolutely.”

15.2.5 Physical Resilience

Working constantly in difficult conditions and trying to be resilient for the obstacles can make the leaders tired, exhausted, nervous, or fragile. For that, the resilient leaders should be physically strong through practicing the relaxation techniques, making sport, sleeping well, taking healthy nutrition, and etc.

15.3 Concluding Remarks

In this preliminary study, I tried to explain some potential characteristics of resilient school leadership. It is possible to give more samples and dimensions. And the study is open for discussion, critiques, and improvement. Furthermore, I tried to contribute to the leadership process that is mysterious, complex, and incomplete by focusing on the resilience concept. It cannot be also said that this conceptual model I suggest is better than the others. But, it can be useful for the policies on selection, appointment, and training needs of school leaders.

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Chapter 16

Supervision and Chaos in the Turkish Education System



Belgin Tura

Abstract The full integration of the Turkish education system into the development and modernization process depends on the compatibility and efficiency of all its subsystems. The most important feedback tool in the success of the education system is the supervision system, which is also a subsystem of the education system. The Turkish education system needs to fulfill the functions of the Turkish education supervision system in a healthy manner—and therefore solve its existing critical problems—for the effective and efficient processing of the whole education system. Much legislation applies to the education supervision system, starting with the Ottoman Empire through the present day. However, each regulation has created new problems and sparked debates about the system. Over the years, the problems of the supervision system have become chronic and the system has drifted into uncertainty. To understand the supervision of the education system in Turkey and gain a perspective of the system, it is necessary to understand the process through which the supervision system emerged and to correctly interpret chaotic situations during this process. Supervision in the Turkish education system is known to have a chaotic structure, like the Turkish education system as a whole, and offer trainers the appearance of a future behind the frosted glass. In this chapter, the development of supervision in the Turkish education system is examined within its historical process and the reflections of daily life are examined. For this purpose, the emergence of educational supervision services in the Ottoman Empire period are first investigated. Then, the changes and chaos of educational supervision services during the Republican period are evaluated. The effects of the chaotic structure of the supervision system are explored during the process of selection, appointment, and rearing of Ministry of Education inspectors. Finally, the effects of the transfer of the teaching supervision task to school principals in terms of the education system and supervisory processes are discussed.

B. Tura (✉)
Hacettepe University, Ankara, Turkey

16.1 Introduction

All organizations tend to deteriorate and disappear over time as open systems. Destroying organizations themselves—in other words, reversing the entropy—is only possible by inputting energy from the outside. Supervision is one of the most important feedback tools to prevent organizations from losing energy and power. Regular supervision and development of the systems and subsystems that create an organization are indispensable factors in providing organizational effectiveness and increasing productivity in organizational activities. Supervision is the process of determining whether organizational activities are appropriate for certain principles and rules in line with specific objectives. As in all organizations, supervision activities are carried out in educational organizations to determine the realization level of organizational goals, take necessary actions to increase efficiency in organizational activities, and improve the education process (Aydın 2014: 1).

Contemporary educational supervision not only functions to correct deviations from the purpose of the education system and to eliminate the deficiencies and obstacles encountered in the process, but it also serves to increase the motivation, morale, and job satisfaction of the employees. For this purpose, contemporary supervision activities provide coordination among employees, support cooperation, and attempt to find solutions to the professional problems of employees. In sum, contemporary educational supervision contributes to the development of both the organization and its members by providing continuous development, guidance, and on-the-job training for members of the organization while helping them to realize their mission and visions and create a contemporary organizational culture. The functioning of the supervision system depends on the efficient and effective working of the system and, more importantly, on resolving the problems (Kayıkçı 2016: 386).

A supervision system is a subsystem in an educational system. For a system to operate in a healthy way, there should be healthy functioning of all its subsystems. The deterioration that occurs over time in subsystems will affect the whole system and will prevent the functioning of the entire system. However, small problems that arise in subsystems will evolve over time and become major problems; they will spread in waves across the whole system and lead the system to chaos. For this reason, the problems that arise in the supervision subsystem actually affect the entire education system and become problems of the education system.

The supervision system within the Turkish education system has chronic problems, with criticisms of these problems over the years. Each new arrangement creates new problems and fuels systemic debate. After every regulation of the supervision system, the accompanying confusion and chaos also increases criticisms of the system. The educational supervision system in Turkey is faced with uncertainty and failure. The supervision of the Turkish education system, which has a strong centralized structure, also tended to be centralized over the years. However, indecision about the units to be supervised in education, as well as the duties and titles of these supervising officials, has continued for many years. Educational supervision in Turkey has been maintained for many years, without taking into

account the development dimension of the process. Educational supervision has not been seen as a professional field, and problems and inadequacies in appointment and development have caused many criticisms.

To understand the discussion on the supervision of the education system in Turkey and to gain a perspective of the system, it is necessary to understand the process by which the supervision system emerged and correctly interpret the chaotic living situation during this process. By understanding the transformations in the system and the effects that these transformations have on the system, strategies for the design of supervision system can be identified and implemented by solving current problems of the educational supervision system.

This chapter examines the development of the supervision of the Turkish education system in terms of the historical process and the reflections of daily life. First, the emergence of educational supervision services in the Ottoman Empire period is examined. Next, the changes and the chaotic situations of the educational supervision services in the Republican period are evaluated. The effects of the chaotic structure of the supervision system were explored during the selection, appointment, and training processes of the inspectors of the Ministry of National Education. Finally, the effects of the transfer of the teaching supervision task to the school principals on the education system and supervision processes are discussed.

16.2 Educational Supervision in the Ottoman Period

It is not known exactly when supervision services started in the Turkish education system and what title was used for people who were responsible for this task. In the Ottoman period, educational supervision was first introduced in 1838 with a draft prepared for *mahalle mektepleri* (primary schools), which constituted the basis for the establishment of *Mekâtib-i Rüştiye* (secondary school). It was decided that the teachers assigned to these schools should be supervised by civil servants who were appointed to ensure their professional competence (Taymaz 2015: 19).

In 1846, the *Mekâtib-i Umûmiye Nezareti* (Ministry of Public Schools), which is the core of the Turkish education system, was established to connect the schools under the administration of the *Evkâf Nezareti* (Ministry of Foundations) to a single governing body. Depending on the Ministry, two supervision units were established: *Mekâtib-i Sibyaniye Muinliđi* (Assistancy of Primary Schools) and *Mekâtib-i Rüştiye Muinliđi* (Assistancy of Secondary Schools).

The regulation “*Sibyan Mekâtibi Hocaları Efendilere İta Olunacak Talimat*” (Regulation Submitted to Primary School Teachers) was enacted in 1847 to inspect and supervise schools and to appoint civil servants named *mektep muini*. In 1862, the *muin* assigned to supervise the *Sibyan* and *Rüştiye* schools were first named as inspectors (Aydn 2014: 234).

In 1869, *Maarif-i Umumiye Nizamnamesi* (National Education Law) was prepared and chaired by the Minister of Education, including public centers to manage the educational affairs. *Meclis-i Kebir-i Maarif* (Great Education Council) was

established and consisted of two offices—scientific and administrative. The responsibility for educational inquiries and evaluations was left to the administrative office. At the provincial level, *Maarif Meclisi* (Provincial Education Board) was established as the department *Maarif* and the executive body of the *Meclis-i Kebir-i Maarif* (Great Education Council) (Akyüz 2015: 192). Under the Presidency of the Director of Education, *Muhakkik* (superintendents) and inspectors were assigned to these councils. Inspection in *Maarif-i Umumiye Nizamnamesi* (National Education Law) was regarded as a management tool (Taymaz 2015: 20). The Education Councils were responsible for preparing a report on the status of the province in each year and sending it to the Ministry of Education. There were four *muhakkik* (superintendents) in Council; they alternately supervised the schools, libraries, and inspectors in the provinces. The inspectors were in charge of supervising the schools in the states. According to the provisions of the regulation, the *muhakkik* (superintendents) were in a higher position than the inspectors (Aydın 2014: 235).

A regulation prepared in 1875 required inspection books to be kept in the institutions, in which the findings, observations, and suggestions would be recorded. In 1879, the duties of the inspectors of the *Kaza Mektepleri* (District Schools) were defined within the scope of the “*Rumeli Şarkı Vilayetinin Tedrisi Hakkında Kanun*” (Law on the Education of Provinces in Eastern Rumelia) (Yenipınar 2016:95).

Since *İkinci Meşrutiyet* (the second Constitutional Monarchy) was declared in 1908, efforts have been made to consolidate all supervision services under *Memurin-i Teftişkiye Dairesi* (Office of Inspection Public Servants) (Öz 2003, s. 3). Central services were structured as administration and supervision units with the “*Maarif-i Umumiye Nezareti Merkez Teşkilatı Hakkındaki Nizamname*” (Regulation about the Central Organization of the Ministry of National Education) issued in 1911. The inspectors were elected from middle and high school teachers according to this regulation (Yenipınar 2016: 95).

The General Supervision Office was established in the central organization with the “*Maarif-i Umumiye Nezareti Teşkilat Talimatnamesi*” (Regulation on Ministry of National Education Organization) published in 1912. The regulation referred to “continuous supervision,” which would be carried out by the General Inspector or by inspectors affiliated with it (Aydın 2014: 236). In 1914, the “*Maarif-i Umumiye Nezareti Tedrisat-ı İptidaiye*” (Ministry of National Education Primary Education) Inspectorate was established in accordance with the “*Tedrisat-ı İptidaiye Kanunu*” (Primary Education Law), which was accepted in 1913. By law, the duties of primary school inspectors were defined as “inspections, inquiries and guidance”. In the same year, the “*Vilayet Maarif Müfettişlerinin Vazifesine Dair Talimatname*” (Regulation on the Duties of Provincial National Education Inspectors) Regulation tried to connect the tasks such as supervision, investigation and preparation of the reports, and preparation of the documents and books; this regulation was the source of the new regulations (Öz 2003: 3–6). In 1920, an Inspection Office was established on behalf of the Minister in the central organization of the Ministry (Aydın 2014: 237).

16.3 Educational Supervision in the Early Years of the Republic

After the Grand National Assembly of Turkey was founded in 1920, the responsibility for education services was transferred to the Ministry of Education. In 1923, “*Maarif Müfettişleri Talimatnamesi*” (Guidelines of Educational Inspectors) and “*İlk Tedrisat Müfettişlerinin Vazifelerine Dair Talimatname*” (Guidelines on First Educational Inspectors’ Duties) were issued. Establishment of the inspectorate, the duties and authorities of the inspectorate, and the principles of the inspection were defined in the Guidelines of Educational Inspectors. In the same year, the *Maarif Vekaleti Heyet-i Teftişye Riyaseti* (Inspection Board Presidency), consisting of a director of the inspection board and ten inspectors, was established (Taymaz 2015: 21).

All schools were connected to the Ministry of Education with “*Tevhidi Tedrisat Kanunu*” (Education Union Act), which was adopted in 1924. The Congress of Education Inspectors was held for the first time in Konya in 1925, and “*Maarif Müfettişleri Umumiyelerinin Hukuk Selahiyet ve Vazifelerine Dair Talimat*” (Instruction on the Rights, Powers and Duties of Educational Inspectors) was prepared during the Congress. On behalf of the Minister of Education, *Müfettiş-i Umumiye* (Inspector General) and assistant inspectors were appointed to inspect whether educational institutions were performing their duties legally. In 1926, with the “*Maarif Teşkilatı Law*” (Educational Organization Law, No. 789), the *Maarif Eminlikleri* (Educational Institutions) were established. Then, a regulation on the rights, authorities, and duties of the inspectors was prepared. In this regulation, the title of *Vekalet Müfettişi* (Deputy Inspector) was used instead of *Müfettişi Umumi* (Education Inspector) and the assistant inspector title was abolished. *Vekalet müfettişliği* (Deputy Inspectorate) was structured as *Merkez ve Mıntuka Müfettişleri* (Central and Provincial Inspectors). In addition, the Central Inspectorate was divided into three specialist groups: education and training, administration, and library and museum inspectorates. In 1931, *Maarif Eminlikleri* (Educational Institutions) were abolished and *Mıntuka Müfettişleri* (Provincial Inspectors) were appointed as the Central Inspector (Öz 2003: 4).

In 1933, the Ministry of National Education was expanded by “*Maarif Vekaleti Merkez Teşkilat ve Vazifeleri Hakkında Kanun*” (Law on the Central Organization and Duties of the Ministry of Education, No. 2287). Primary education inspectors were included in the general budget with the Law No. 3407 “*İlk Tedrisat Müfettişlerinin Muvazene-i Umumiye İçine Alınmasına Dair Kanun*” (Law on the First Education Inspectors into the General Budget) which was adopted in 1938 and the ones to be appointed as primary education inspectors were required to graduate from the Gazi Terbiye Enstitüsü (*Gazi Education Institute*) or similar schools in foreign countries (Taymaz 2015: 21).

In 1949, “Inspection Regions” were established throughout the country. However, the inspection regions could only be collected in Ankara, İstanbul and İzmir and this practice was terminated in 1950 (Aydın 2014: 238). In 1967, the “Inspection Board Regulation” was prepared and amended in some of the articles regulated in

1979. In 1973, some of the inspectors were assigned to investigate because it was difficult for them to undertake investigative affairs as well as guidance services expected from Ministry inspectors. In 1971–1972, a group supervision experiment was carried out and in 1973 it was applied in the direction of “Group Supervision Guide”. Supervision with the group terminated by the Ministry in 1978, then was resumed in 1980 (Öz 2003: 4–6).

In 1980, “Ministry of National Education Inspection Board Coordinator Service Internal Regulation” was prepared. According to the regulation, two coordinatorship were established in the İstanbul and İzmir under the supervision of the Chief Inspectors. In 1983, with “the Ministry of National Education Inspection Board Inspection Continuous Directives” Regulation was designated as the inspection centers of Ankara, İstanbul, İzmir, Adana, Diyarbakir and Erzurum, but the application was terminated soon (Taymaz 2015: 22–23).

The “Primary Education Inspector Board Regulation” published in 1990 and the supervision tasks of the branch teachers in independent secondary schools were given to primary education inspectors (Yenipinar 2016: 95). In 1993, the “Ministry of National Education Inspection Board Regulation” (Law No. 21717) was published and the Ministry of National Education Supervision Board was established (Article 5).

Supervision of the schools affiliated with the Ministry of National Education was carried out by the Board of Inspectors, but was transferred to universities and colleges with the “Higher Education Law” (Law No. 2547, published in 1981). Supervision duties were left to the Higher Education Supervisory Board, which was working under the Council of Higher Education (Taymaz 2015: 22).

Kapusuzoğlu (2012) conducted a follow-up survey with 67 Provincial National Education Youth and Sports Directors, 580 District National Education Youth and Sports Directors, 1282 Primary School Supervisors, and 209,731 primary school teachers to compare supervisory practices in primary education between 1976 and 1986. According to the results of the research, educational inspectors reported on the success of the teachers and performed most inspections in 1986, as it was in 1976; the teachers reported problems related to education and the inspectors. Inspectors also believed that they were beloved and valued, that they had a conciliatory role between the upper echelons and the teachers, and that they respected the teachers’ thoughts; the Provincial and District National Education Youth and Sports Directors and elementary school teachers again did not share this view. In both decades, supervisors and Provincial and District National Education Youth and Sports Directors mostly believed that school principals did not have sufficient cooperation with inspectors in order to make education and training activities more productive; fewer elementary school teachers shared this opinion. The research by Kapusuzoğlu (2012) suggests that the problems related to supervision persisted without any improvement in terms of inspectors, training managers, and teachers, despite all revisions made to the system of education supervision.

The number of inspectors responsible for the training supervision has increased over the years. However, they have not prevented the continuous regulation in education supervision and the accompanying chaos. The number of inspectors increased from 489 in 1960, to 1046 in 1965, and to 1624 in 1978 (Öz 2003: 7).

In 1991, there were 500 Ministry Inspectors and 3500 Primary Education Inspectors in the country. However, by 2014, the total number of inspectors decreased to approximately 2700. In the following years, the effects of subsequent legislative acts spread in waves throughout the entire education system, causing partial chaos and occasional turbulence within central and provincial organizations.

16.4 Educational Supervision in the 2000s

Over the years, the problem of educational supervision snowballed to become one of the most debated topics in the Turkish education system by the 2000s. Educational supervision has been taken up in the 14th, 15th, 17th and 18th National Education Councils (14, 15, 17 ve 18. Milli Eğitim Şuraları 2017) and the idea of “coordination of supervision under one roof and centralization of supervision” has been adopted as a general tendency.

In the 17th National Education Council (17. Milli Eğitim Şurası 2017) dated 13-17 November 2006, Primary Education Inspectorate (under the name of “Educational Inspector”) was restructured by connecting to the central organization of the Ministry. The Educational Inspector was appointed in newly created work centers/regions. Specializations for educational inspectors included guidance and supervision, investigation, preschool, and special education. In the 18th National Education Council (18. Milli Eğitim Şurası 2017) dated 1–5 November 2010, the education inspectors were divided into specialized teams, with career planning to ensure work discipline and productivity. Assistant educational inspector, educational inspector, and head of the educational inspector were based on an inspection every 3 years instead of every year. Based on the council decisions, the Ministry of National Education aimed to specialize and centralize education under supervision.

With the “Law on the Organization and Duties of the Ministry of National Education and the Amendment of the Civil Servants Law” (Millî Eğitim Bakanlığının Teşkilat ve Görevleri Hakkında Kanun ile Devlet Memurları Kanunu’nda Değişiklik Yapılmasına Dair Kanun) numbered 5984 adopted in 2010, “Education Inspectorate Presidency” was established within the Provincial National Education Directorates; the primary education inspectorate also was transformed into the education inspectorate. By law, the functions of the educational inspector and the assistant educational inspector were defined as guidance, on-the-job training, supervision, inspection, evaluation, examination, research, and investigation services of all grades and types of formal and informal educational institutions, except for guidance and supervision of provincial and district national education directorates and secondary education institutions, and investigations and inquiries of the teachers working in these institutions (Article 1). In addition, the educational inspector and the assistant educational inspector were to take part in the “General Administration Services Class,” with their status ensured to be equal to other inspectors (Article 4).

With the “Decree Law on the Organization and Duties of the Ministry of National Education” (Millî Eğitim Bakanlığının Teşkilat ve Görevleri Hakkında Kanun Hükmünde Kararname) No. 652 published in 2011, the organizational structure of the Ministry of National Education was reorganized. With the decree, the Board of Inspectors, which is directly affiliated with the Minister, was abolished and replaced by the “Guidance and Supervision Department,” which was affiliated with the Deputy Undersecretary. The duties of the presidency were defined as follows: “to conduct the control and supervision of the services provided by the Ministry or under the supervision of the Ministry in cooperation with the relevant units, analyzing, comparing and measuring the processes and results according to the legislation, pre-determined goals and targets, performance criteria and quality standards, evaluating them based on evidence, to report the results obtained, to communicate to relevant units and persons” (Article 17). However, the Ministry Inspectorate was abolished and replaced by the title of National Education Supervisor and Assistant Supervisor (Article 44). The Directorate of Guidance and Supervision was not limited to a change of name; it was also transformed in terms of task, position, and function. In the Presidency, the “guidance” function was consciously emphasized and the aim of regulation in the control system was changed to “preventive discipline instead of corrective discipline approach” (Yenipınar 2016: 100). Similarly, in accordance with the decree, the Provincial Education Inspectorate Presidency was transformed into the Education Supervision Presidency and the Education Inspector title was transformed into the Provincial Education Supervisor. The tasks of the Provincial Education Supervisors and Assistant Supervisors were expanded to include guidance and on-the-job training, supervision, evaluation, investigation, research, and investigation services of all grades and types of organized and non-formal education institutions and provincial and district national education directorates (Article 41).

In 2014, with the “Law on the Amendment of the National Education Basic Law and Certain Laws and Decrees” (Millî Eğitim Temel Kanunu ile Bazı Kanun ve Kanun Hükmünde Kararnamelerde Değişiklik Yapılmasına Dair Kanun 2014) No. 6528, the National Education Supervision and the Provincial Education Supervision were merged into the Ministry of Education Inspectorate; the Presidency of Education Inspectors was also established within the Provincial Directorate of National Education. With the decree, the National Education Supervisors were appointed to the Presidency of Education Inspectors (Article 17).

With the “Ministry of National Education Guidance and Supervision Presidency and Presidency of Education Inspectors Regulation” issued the same year, Inspectors of the Ministry of Education, whose appointments were made to the Ankara Ministry of Education Inspectorate, were assigned to the Directorate of Guidance and Supervision (Article 1). With this arrangement, inspectors working in the central and provincial organizations of the Ministry were made equal in terms of authority and status. However, differences arising in salary and personal rights were left out of regulation; this created a hidden disparity, dissatisfaction, and confusion among the inspectors.

In 2016, with the “Law on the Organization and Duties of the Ministry of National Education and Law on the Amendment of Certain Laws and Decrees on

the Laws” (Millî Eğitim Bakanlığının Teşkilat ve Görevleri Hakkında Kanun Hükmünde Kararname İle Bazı Kanun ve Kanun Hükmünde Kararnamelerde Değişiklik Yapılmasına Dair Kanun 2016) No. 6764, the Guidance and Supervision Presidency was reorganized as the Inspection Board Presidency, which was bound to the Undersecretariat. It was decided that the Inspection Board Presidency should be formed by the Ministry of Education Inspectors in presidency units and work centers and Ministry of Education Assistant Inspectors (Article 6). With the provisional Article 12, the tasks of staff working in the positions of the Guidance and Supervision Presidency were terminated. Education Inspectors were assigned to undertake investigations, research, guidance services, and other duties assigned by the Provincial Mission depending on the Provincial Mission. If the staff of the Education Inspectors and the Assistant Inspector are vacated for any reason, they must be deemed to have been canceled (Madde 13) without the task of inspection; the duties of the Education Inspectors in these positions will continue until they retire. The chaotic structure resulting from all these changes in the supervision system created a system that returned to its previous condition—a constant state of evolution over time (Ruelle 2001: 80).

In accordance with Law No. 6764 (published in 2016), 752 Ministry of Education Inspectorate staff were been established to the Inspection Board Presidency as follows: 1 Chairman of the Inspection Board, 1 General Director of Legal Services, 500 Ministry Education Inspectors, and 250 Ministry Education Assistant Inspectors. In accordance with the “Regulation on the Inspection Board of the Ministry of National Education” (Millî Eğitim Bakanlığı Teftiş Kurulu Yönetmeliği) published in 2017, it is still continuing to purchase inspectors for these staffs.

With the arrangements made, supervisor groups that had two titles for many years were combined under a single title. Although the frequent legal regulations created complexity, there is an ever-increasing vagueness in the system. Negativities arise during the selection and training of auditors, with deficiencies in the principles and understanding of cooperation, participation, and accountability (Badavan 2016). It is known that, in social life and in science, small changes in some chained events are crisis points that cause them to become big problems (Gleick 2003: 18). For this reason, legislators and managers have to face the possibility that the continuous changes they made to regulate and balance the system of supervision actually created unchecked fluctuations that cannot be predicted, instead of regular supervision (Ruelle 2001: 83).

16.5 Selection, Appointment, and Training of Inspectors of the Ministry of National Education

The selection, appointment, and training processes of the inspectors of education have a chaotic and unstable structure, much like the supervisory system itself. Although the selection of inspector assistants was conducted through written and

oral competition examinations over the years, the application conditions for the examinations and the process of training have constantly changed.

In the “Ministry of National Education Inspection Board Regulation” (Millî Eğitim Bakanlığı Teftiş Kurulu Yönetmeliği) published in 1993, among the conditions, the requirements to be assigned to the position of assistant inspector included at least 10 years of teaching in their branches, 5 years of teaching in their branch and then serving as a manager in the Ministry organization for at least 3 years, or graduation from a program in law, political science, economics, business administration, or administrative sciences; to have no more than one participation in the competition examination; and to be younger than 40 years old (Article 17). In Law No. 5984 published in 2010, it is stated that the assistants of the education inspector will be selected by the competition examination among the teachers who have at least 4 years of higher education and 8 years or more teaching service.

In the “Regulations of the Ministry of National Education Presidencies of Education Inspectors” (Millî Eğitim Bakanlığı Eğitim Müfettişleri Başkanlıkları Yönetmeliği) published in 2011, the majority of the conditions required to be assigned to the assistant inspectors of the Ministry of National Education were preserved. However, the examination rule changed, with the condition of not participating more than two times (Article 7).

In the “Regulation on the Guidance and Inspection Presidency of the Ministry of National Education and the Regulation on the Presidency of Education Inspectors” (Millî Eğitim Bakanlığı Rehberlik ve Denetim Başkanlığı İle Maarif Müfettişleri Başkanlıkları Yönetmeliği) published in 2014, the conditions required for appointment to assistant inspectors were changed. Besides those who have 8 years or more of service in teaching, graduates with a 4-year bachelor’s degree in education, science, literature, law, political science, economics, administrative sciences, business administration, or theology with the minimum score on the Public Personnel Selection Exam (according to the points specified in the announcement of the competition examination) could be accepted to the competition examination. The regulation also changed the maximum age from 40 years to 35 years, with no limit to the number of participations in the competition examination.

With Law No. 6764 published in 2016, the conditions of application to the assistant inspector were changed again. Under this law, those who have 8 years or more of service in teaching and graduates of education, science, literature, and theology were excluded. This rule limited the assistant inspector competition examination to graduates of law, political sciences, economics, administrative sciences, and business administration graduates who were granted at least 4 years of undergraduate study. There was also no longer an age limit or maximum number of entries required for the competition examination.

In the “Regulation on Inspection Board of the Ministry of National Education” published in 2017, conditions for admission to the competition examination were having 8 years or more service in teaching, including the candidacy and contracted teaching period. Graduates of law, political science, economics, administrative sciences, and business administration who received undergraduate education for at least 4 years continued to be admitted to the competition examination. However, the

Regulation also reinstated an age limit of 35 years and a maximum of one participation in the competition examination.

The process of training inspectors' assistants has also changed constantly, such as the conditions for applying for a competition exam. The Regulation published in 1993 stipulated that in-service training programs should be organized for the training of assistant inspectors and that the assistant inspectors should work for at least 1 year accompanied by one of the chief inspectorates. Based on the reports issued at the end of the 2-year training program, assistant inspectors who were deemed to be sufficient were authorized to independently conduct inspections and investigations, and were entitled to a competency examination after 3 years of service. Supervisors who were successful in the proficiency examination were assigned to the inspector's staff. According to Law No. 5984 published in 2010, the assistants of the inspector were to be appointed to the position of education inspector if they were successful in the competency examination to be made after a 3 year training period.

In the Regulation published in 2011, the training period of the assistant inspectors was defined as 3 years of education. The 3-year training program included three periods of preparatory training (not less than 40 h), on-the-job training, and theoretical training (not less than 120 h). According to the Regulation, assistant inspectors who were in the training process could work with guide inspectors on issues such as inspection and investigation. The assistant inspectors who completed the training process could take the competency examination and, if successful, were assigned to the inspectorate staff.

In the Regulation published in 2014, while the training period of assistant inspectors was defined as 3 years, the total duration of in-service training received was changed to not less than 120 h. In the Regulation published in 2017, the requirement of not less than 120 h was abolished and only in-service training programs were noted. The unstable and chaotic structure throughout the educational supervision system has also manifested itself in the selection, appointment, and training of inspectors. Uncertainty and dissatisfaction between members of the system and those preparing for entry into the system has become apparent.

16.6 Supervision Tasks of School Principals

An attempt was made to correct the imbalances in the supervision system by giving supervision duties to the school principals since 2014; however, this created new problems. With the "Ministry of National Education's Guidance and Supervision Presidency and Regulation on the Presidency of Education Inspectors" published in 2014, the task of training on-the-job, which was previously among the duties of the inspectors, was taken from the inspectors and transferred to the school principals. School directors who have already defined their supervisory duties within the Authority and Responsibility in the Journal of the Communique No: 2508 (2508 Sayılı Tebliğler Dergisi) published in 2000 have officially started to conduct course supervision since 2014. The duties and responsibilities of the principals defined in

the Journal of the Communique No: 2508 (2508 Sayılı Tebliğler Dergisi) (2000) are related to the duties and responsibilities of supervision as follows:

Article 3 In addition to the basic principles and objectives set out in the Basic Law of National Education, principals make, implement, and supervise work plans in order to realize the special purposes of the school. They ensure that the education and administration of the school is carried out within a discipline.

Article 9 Principals prepare annual, unit, and daily plans according to training programs, guide teachers in other studies, and supervise teachers' work.

Article 10 Teachers make annual plans at the beginning of the school year. Principals approve these plans and check whether they were implemented.

Article 13 Principals encourage teachers to grow in their professional field and takes the necessary precautions in this regard. Principals closely monitor teachers' courses and other activities at various times during the school year.

Article 18 Principals investigate the causes of lost productivity by constantly observing and evaluating the performance of the personnel. Principals employ personnel by taking their talents into consideration, guide them, help them to grow on the job, and help them to prepare for higher levels.

Article 49 Principals monitor teachers' use of facilities, such as laboratories, libraries, and sports halls.

In this regard, in response of the government proposal on 1 September 2015, the National Education Minister, Nabi Avcı, stated the following: "Instead of supervising all teachers with control-oriented inspection philosophy, the studies of different branch teachers are examined in the institutional supervision process and services based on guiding principles are provided to the teachers who need them. However, in case of necessity, course supervisions will also be carried out based on the examination and investigation." The aim was to remove result-focused supervision from the process, provide inspectors with the ability to create solutions, and identify problems (Tonbul and ve Baysülen 2017).

Tonbul and ve Baysülen (2017) aimed to determine how the changes made in course inspections by the 2014 regulations were evaluated by education inspectors, school principals, and teachers. The study included 122 teachers, 66 school principals, and 43 education inspectors. The respondents indicated that the period of change was not discussed; the reasons were not explained to relevant education inspectors, school principals, and teachers; and they were not asked for input on the process. Inspectors also had a feeling of resentment and believed that principals would not be able to perform supervision properly, whereas teachers and principals were positive about the supervision of the course by principals. It was thought that school principals would be better able conduct evaluations because of their close understanding of the school and the teachers. However, inspectors, teachers, and even principals were concerned about the contribution of the regulation to the quality

of education when the qualifications of principals for supervision were taken into consideration.

Bozak (2017) surveyed 47 education inspectors to determine their opinions on the legal regulations for the supervision system. The respondents indicated that the removal of class supervision and class visits by inspectors would negatively affect the teachers' training at work, classroom management, and education and training objectives.

Aslanargun and ve Göksoy (2013) conducted a study with 108 teachers to determine their views on teacher supervision in the context of education supervisors and school principals. Teachers did not give positive feedback on the practices of education inspectors who supervised provincial organizations. Instead, evaluations by school principals were preferred, despite some concerns. The teachers who participated in this research preferred the supervision of principals because process evaluation and performance monitoring were conducted more closely.

Şanlı et al. (2015) surveyed 20 school principals to determine their level of competency for supervisory duties. The authors found that the school principals did not have enough knowledge to conduct inspections. In addition, it was pointed out that school principals are not ethically qualified to supervise teachers who work in the same institution; rather, course supervision should be carried out by an external, impartial person.

Ergen and Eşiyok (2017) surveyed 150 teachers from different locations to determine their opinions on the competency of school principals in school supervision. They determined that teachers are unsure of the suitability of school principals for conducting course supervision. The teachers with more than 20 years of seniority thought that the school principals could be biased when evaluating the teachers, whereas younger teachers thought that the principals could remain neutral.

Topcu and ve Aslan (2009) surveyed four school principals and eight teachers to determine how the school principals performed their supervisory roles in primary schools. Participants indicated some negative aspects with regard to principals performing supervision duties, including a lack of scientific criteria in the selection of school principals, the greater importance of political factors than competency levels in managerial appointments, and the insufficiency of principals outside their own school. All study participants agreed that supervision should be carried out in an environment of trust and should be based on mutual cooperation, with an emphasis on human relations and professional development.

Compared with inspectors, school principals know the teachers who they supervise, understand teachers' need to be successful and develop professionally, and are informed about the activities teachers conduct during and after class hours. Thus, they are able to provide guidance and effective supervision in a positive and efficient manner. However, school principals are not educated in management and supervision (Yılmaz 2009). They may also act biased during the evaluation, which creates a serious disadvantage for school principals conducting supervision activities.

The supervisory duties of school principals were defined in the Journal of the Communiqué No, 2508, and principals have supervised courses since 2014. However, the supervision task also belongs to the Ministry Inspection Board, as outlined

in the “Ministry of National Education Supervisory Board Regulation” published in 2017, the “Supervisory Board Presidency Conducting the Inspection, Guidance, Research, Investigation and Preliminary Examination of the Institutions and the Institutions Subject to the Ministry’s Inspection,” and “Performing the Duties Listed in Article 17 of the Decree on the Organization and Duties of the Ministry of National Education No. 652” (Article 7):

The 17th article of Decree Law No. 652 on, “The Organization and Duties of the Ministry of National Education,” outlines the tasks for guiding and supervising schools to the Inspection Board: “To guide the Ministry personnel, the schools and institutions of the Ministry, private education institutions and real and legal persons in matters falling within the scope of the Ministry” and “Inspecting, examining and investigating within the framework of the duties and authorities of the Ministry with an understanding of preventing the irregularities and giving priority to the approach of the instruction and the guidance regarding the activities and transactions of the ministry organization and all kinds of institutions under the supervision of the Ministry.”

The overlapping of these supervisory duties and responsibilities creates a chaotic situation in the educational supervision system, as well as reluctance to practice.

16.7 Conclusion

Historically, supervision of the Turkish education system has been surrounded by ambiguity and uncertainty. Even though supervision of the Turkish education system is centralized, its process has become obscure over the years. Longstanding problems of the educational supervision system continue to develop today, evolving along with social and technological changes.

Educational supervision activities in the Ottoman State started in 1838 in primary schools. This transformed into a dual structure within the central organization in 1846 and spread to provincial organizations at the province level in 1869. In 1875, supervision services were also included to guide teachers; in addition, an attempt was made to professionalize educational supervision services through the use of inspection books. In 1908, when the Second Constitution was declared, supervision services were restored to a centralized structure; this tendency continued with the regulations of 1913 and 1914.

An inspection board was established with the Ministry for the first time with the declaration of the Republic in 1923. *Maarif Eminlikleri* was founded in 1926, then abolished in 1931 and transformed into the Central Inspectorate. In 1949, “inspection areas” were established throughout the country; however, in 1950, the practice was terminated. Group inspection started in 1971, stopped in 1978, and resumed in 1980. In 1980, two coordinators were established in İstanbul and İzmir centers under the supervision of the Chief Inspectors. In 1983, the application was terminated. In 1990, supervision of branch teachers in independent secondary schools was given to primary education inspectors. Regulations made in the first years of the Republic

were not enough to overcome the problems in the supervision system; rather, the confusion led to uncertainty about the supervision system, causing the supervision system's problems to enter the chronic phase.

In the 2000s, the need for centralization and specialization began to manifest in the supervision of education. In 2010, an "Education Inspectorate Presidency" was established within the Provincial National Education Directorates and the primary education inspectorate was transformed into the education inspectorate. In 2011, the Board of Inspectors, which is directly affiliated with the Minister, was abolished and replaced by the "Guidance and Supervision Presidency," which was affiliated with the Deputy Undersecretary. The Ministry Inspectorate title was abolished and replaced by the titles of National Education Inspector and Assistant Education Inspector. The guidance function of supervision was brought to the forefront with the regulation, which tried to make a preventive discipline approach more effective than corrective discipline. Education Inspectorate Presidency title was transformed into the Education Supervisors' Presidency, while the Education Inspectorate title was transformed into Provincial Education Supervision with the regulation.

In 2014, National Education Supervision and Provincial Education Supervision were merged into the Ministry of Education Inspectorate and the Education Supervisors' Office was established within the Provincial National Education Directorates. The National Education Inspectors were appointed to the Presidency of the Ministry of Education Inspectors, Inspector of the Ministry of Education, whose appointments were made to the Ankara Ministry of Education Inspectorate, as assigned to the Directorate of Guidance and Supervision. With the regulation, although the inspectors working in the central and provincial organizations of the Ministry were made equal in terms of authority and status, differences arising in salaries and personal rights were excluded from the regulation. Again, in 2014, the inspectors' duty of educating through on-the-job training was transferred from the inspectors to the school principals; course supervision was started by school principals.

In 2016, Guidance and Supervision Presidency was reorganized into the Chairman of the Board of Inspectors; the duties of the staff working in positions within the Guidance and Supervision Presidency were terminated. A Chairman of the Board of Inspectors was established with 752 Ministry of Education Inspectorate staff; in 2017, the competition examination was required of inspectors. Inspectors working in provinces are now limited to guidance and administrative work; furthermore, when an inspector retires, his or her position is eliminated. The unstable and chaotic structure of the education supervision system has created chronic uncertainty and discontent among the system's members, as well as those who are preparing to enter the system, such as during the selection, appointment, and development of inspectors.

Often, the regulations that attempt to correct existing problems in the education supervision system have been devoid of sound bases, which creates new problems increases chaos within the system. The education supervisor who cannot complete the vocational process in our country cannot attain a certain title and has been passed over in terms of duty, responsibility, and title changes over time. Changes to the

supervision system itself have created confusion in the system and made its future unpredictable.

Thousands of years ago, humans learned that small events can have great effects; thus, it is not possible to predict the future. In some systems, small changes to the initial state lead to such disparate estimates that eventually estimations have no meaning (Ruelle 2001: 45). In the Turkish education system, the supervision process is known to have a chaotic structure, offering trainers the appearance of a future behind frosted glass.

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Chapter 17

Interorganizational Symbiosis Scale (Inorsyms)



Elif Gamze Özcan, Şefika Şule Erçetin, Nihan Potas, and Mehmet Yılmaz

Abstract This study reports a scale for symbiotic relationships of schools with other institutions, and it's produced from Özcan's doctoral thesis (2017) that aims to develop interorganizational symbiosis scale for secondary schools. With this scale, the symbiotic relationships between schools and other 13 institutions were examined. This scale was applied on 67 participants: 52 school administrators and 15 teachers working in Eskişehir. This scale has four parts that contain four or more choices. Cronbach's alpha is used to describe the internal consistency reliability of these parts' measurements. When these institutions are evaluated as a single group, Cronbach's alpha internal consistency coefficients were found to be in the middle- and high-value range. According to the duties and functions of these 13 institutions, when three factors are evaluated, namely, public institutions, commercial enterprises, and social partners, Cronbach's alpha internal consistency coefficients of these factors are found to be sufficient in middle- and high-value range. Additionally that scale has four parts more: two parts contain three choices, and two open-ended questions were used to better explain the symbiosis situation.

17.1 Introduction

Any development in an area in the process of evolution affects and changes the other, and this change makes others and the first system different and complex. Natural and artifact, art and technique, and culture and civilization evolve and

E. G. Özcan (✉)

Muzaffer Çil Anatolian High School, Eskişehir, Turkey

Ş. Ş. Erçetin

International Science Association-Ankara, Turkey, Hacettepe University, Ankara, Turkey

N. Potas

International Science Association-Ankara, Turkey, Gazi University, Ankara, Turkey

M. Yılmaz

Ankara University, Ankara, Turkey

e-mail: mehmetyilmaz@ankara.edu.tr

reshape in a coherent integrity (Erçetin 2001, p. 12). Rosnay argues that this evolution is universal and human beings are the cells of this evolution. All people are connected to each other with artificial organizations and communication network they created and form a cyber-living being as a whole (Rosnay 1998, pp. 17–18).

Cyber-living being is a macroscopic living being corresponding to the data of macro-biology and symbiotic evolution, in other words, a physical, organic, and natural creature. They are born like other living beings, but also they are manufactured. They have spirits, they live, they control their functions, but they are kept alive from interior by cells. All these describe a self-structuring process. Symbiotic human of the third millennium is a neuron capable of thinking itself, part and whole, inner sphere, and its own consciousness. In this way, there comes up a fluid, reticular and continuously configured brain network (Rosnay 1998, pp. 344–345). Thus it is important to be the accelerator and creator of coevolution process which is in progress in the third millennium and to succeed in being a symbiotic human and making the life common. Because in order to maintain existence, it is important to attend and contribute to this process which seems irrevocable. Attending and contributing to this process provides the opportunity to control the disparities that will endanger the future of humanity in this process (Erçetin 2001, p. 13).

Reflection of these ideas on organizational behavior is cybernetic system metaphor. In cybernetic system analogy, organizations reorganize their actions according to negative feedbacks from the environment like the brain processing the information, and in this way it can maintain the balance with the environment (Leblebici 2008, pp. 354–355). Just as the information processing is compared to the functioning of the brain, symbiotic relationships of organizations with other organizations may be compared to the symbiotic relations in biology.

17.2 Conceptual Framework

17.2.1 *Biological Basis of Symbiosis*

Symbiosis comes from the term symbiosis in biology. Symbiosis means living together or mutualism (Walpole, Merson-Davies and Dann 2011, p. 366). Living beings prey, feed, or protect themselves more easily by means of symbiotic associations. Moreover there are some groups of living beings which get harmed by some associations (Walpole et al. 2011, p. 593).

As it is considered necessary to understand such sources in literature, to comprehend and define benefit-harm interactions of symbiotic organizations, it is necessary to explain the biologic categories of symbiosis which include commensalism, mutualism, and parasitism.

Commensalism is the situation in which one side of two species benefits, and the other neither benefits nor gets harmed. In mutualism, both species benefit, and in parasitism, one side benefits, and the other gets harmed (Keeton and Gould 2003,

Table 17.1 Symbiotic relationship types between two living being

Symbiotic relationship types	Benefit or harm situation ^a
Commensalism	+, 0
Mutualism	+, +
Parasitism	+, –

^aSymbolization descriptions: + side benefits, – side suffers, 0 side is not affected

p. 483). In parasitism, parasite doesn't generally kill its host but makes it weak against predators, its opponents, and other stress sources (Solomon, Berg and Martin 2011, p. 1218). A human being is both a commensal and a parasite with respect to certain overall functions of the Earth (Rosnay 2000, p. 72) (Table 17.1).

According to Keeton and Gould, these categories about symbiosis help us organize what we know about nature and shape them as testable hypothesis (Keeton and Gould 2003, p. 484).

17.2.2 *Symbiosis Concept's Usage in Social Subsystems*

Mutual dependence and collaborative processes describe the mechanism of nature. As a part of nature, such an operation can be mentioned in terms of individuals and organizations. Years after 1990, with the fact that interdependence already existed, the idea that cooperative-based processes provided successful performance, and that the formation of synergy was the key to the rule, became dominant (Erçetin 2001; Deming 1993; Senge 1993). To develop new perspectives on the structure and applications of paradigmatic transformations in social sciences, samples and models used in biology, chemistry, or physics fields are required to be used in the third millennium (Erçetin 2001, pp. 25–27). In this way, integration can be evolved about theory and practice.

Our environment is always a bit chaotic and today's increasing demands, diminishing budgets and accelerated processes are also contribute to this chaos (Stilwell 1996, p. 6). In fact, this point of view applies to all living arrangements in the ecosystem. According to the Rosnay's symbiosis model, organizations are crossbred system evolved in a distinctive place, biologic and artificial and human and mechanical, and under distinctive difficulties and restrictions. Its functioning depends on symbiosis between human beings, machines, and other organizations at various levels (Rosnay 1998, p. 244), because systems consisting of many organizations consist of individuals whose actions affect each other according to a formal system. Thus, structures of the organizations are the result of mutual actions of formal and informal aspects. This structure itself is an adaptable organism as a whole and reacts to the effects from outside. Besides, stability of the organization depends on its healthy relations and collaborations with the environment (Selznick 1948, p. 28–34).

In this study, it is discussed that the concept symbiosis which is defined as the interactions between two different biological species in biology discipline can be used as a tool to understand the relationships between formal organizations which are social subsystems. When we analyze the organizations biologically, we can see that these formal human communities are complex systems which process complex and organic inputs.

17.2.3 School and Other Organization's Symbiosis

The types of symbiosis in natural life can be used to explain the nature of symbiosis of different aimed organizations. As organizations have these liveliness features, in this study, interorganizational symbiosis is discussed and focused on the schools which have great social importance among formal organizations, such as school and municipality symbiosis.

It is evident that education is unable to adjust to these developments, which require a complete revision and transformation of the current educational institutions in terms of aims, structure, and process within the framework of paradigms entailing plurality in nature, periodicity, and uncertainty in today's complicated world (Erçetin, Çetin and Potas 2007, p. 151).

A school function that is in harmony with the internal and external environment may be possible in organizations that can accept a multidimensional cyclical evolution with its environment. The way these schools and the organizations they interact with are affected by this symbiosis has dynamism and complexity, and it is very important in all aspects.

When the benefit and harm situation of schools and other external partners which they have symbiotic relationships is determined, especially the connections which include legal obligations may be criticized. Symbiotic relationship with an organization can create both benefit and harm for the school, which is valid for the other side. Interorganizational symbiosis scale has been developed and presented in order to analyze and interpret this complex symbiotic relationship for the schools.

17.3 Review of Literature

In literature, the cases of mutual benefit are generally exemplified with commercial partnerships, and their competitions are exemplified with their moves aimed at keeping or expanding their market presence, but as in the case of parasitism, it is not argued that there is a possibility of getting harmed by these relationships (Davis and Eisenhardt 2010; Doğan 1999; Köksal 2011; Murakami 1994). This difference sets apart the concept of symbiotic organizations from the scope of interorganizational relationships and makes it easy to comprehend the evolution of the phenomenon of symbiotic organizations.

To sum up these ideas briefly, systematic and symbiotic culture has met with the organizations as well as the new fields of science and technology. System theory has been successful in business management and configuration of expansive information networks, ecology, and medicine. Reconfiguration of the businesses, reticulation of organizations, flattening of hierarchic structures, and emergence of multicellular, smart, and virtual businesses are the indications of the paradigm shift we experience. This paradigm shift is catalyzed owing to the emergence of biologic and ecologic culture apart from the mechanics dating from nineteenth century with new information and communication technologies (Rosnay 2000, p. 239).

17.4 Research Methodology

17.4.1 Objectives of the Study

In this study, it is discussed that the concept symbiosis which is defined as the interactions between two different biological species in biology discipline can be used as a tool to understand the relationships between formal organizations which are social subsystems. This study focuses on the schools which have great social importance among formal organizations. The way these schools and the organizations they interact with are affected by this symbiosis has dynamism and complexity, and it is very important in all aspects. Symbiotic relationship with an organization can create both benefit and harm for the school, which is valid for the other side. So with this study, it is aimed to develop “interorganizational symbiosis scale” in order to analyze and interpret this complex symbiotic relationship for the schools.

17.4.2 Sampling Design

Secondary schools in the Central districts of Eskişehir City, Turkey, constitute the target population of the study. By year 2016, this population includes 56 high schools in 7 types. Viewpoints of the managers in all of the schools to symbiosis concept were thought as homogeneous, and it was sampled with simple random sampling method by means of total number of managers in the population. As the levels of all types of schools were accepted as identical, this sampling scale was calculated with 95% reliability and ± 0.10 error margin, and it was determined that at least 63 participants were needed. This scale was applied on 67 participants: 52 school administrators and 15 teachers.

17.4.3 Methods of Data Collection

In the first step of the study, six volunteer high school principals were interviewed in order to establish the items to be included in the scale and which institutions are in symbiosis with high schools. By using this interview methodology, 13 institutions are identified: public institutions and organizations and commercial partners and social partners.

The second step of the study was the pilot applications with school administrators. In this way, the inventory is shaped and the interorganizational symbiosis scale is finalized.

The third and last stage of the study was the main data collection work. The data obtained with this third step are used for validity and reliability analysis.

17.4.4 Research Tool: Interorganizational Symbiosis Scale (Inorsyms)

Participants are asked to fill the prepared scale to measure school's symbiosis with each of 13 organizations. The scale includes six multiple-choice questions and two open-ended questions.

In the scale, four multiple-choice questions which are aligned in scale as A, B, E, and F. These questions have at least four choices. These questions are as follows:

- A. Which of the following statements describes the symbiotic life of the school with this institution?
 1. The school is suffering from this relationship.
 2. The school does not benefit or harm.
 3. The school is both beneficial and harmful to this relationship.
 4. The school benefits from this relationship.
- B. Which of the following statements describes this organization's symbiotic life with the school?
 1. The other organization is suffering from this relationship.
 2. There is no benefit or harm to the other institution.
 3. The other organization is both beneficial and harmful.
 4. The other organization benefits from this relationship.
- E. In case of an end of the symbiosis of school with this organization, which one would take place in terms of school?
 1. The school loses its identity.
 2. The school is damaged.
 3. The school is not affected.

4. The school may compensate for the absence of this institution without needing another institution.
 5. The school establishes a symbiosis with a similar institution.
 6. The school is affected positively.
- F. In case of an end of the symbiosis of school with this organization, which one would take place in terms of this organization?
1. This organization will have to close.
 2. This organization is shaken.
 3. Not significantly affected.
 4. Negotiate with another school.

Two multiple-choice questions; C and D, have three choices. Because the number of options was less than four, for the measures taken for questions C and D, no validity analysis was performed with mean, standard deviation, and reliability. These questions are as follows:

- C. Which side is the initiator of the symbiosis or requesting symbiosis?
1. The other organization requests this relation.
 2. The two parties go together.
 3. The school requests this relation.
- D. Which side is more in need of this relationship?
1. The other organization needs more.
 2. Both sides need a similar situation.
 3. School needs more.

G and H part questions are open-ended type. These questions are as follows:

- G. For which reason(s) is that symbiosis taking place?
 H. In what direction should this symbiosis progress?

17.4.5 Hypotheses

The hypothesis of this research, the developed “Inorsyms” scale, could take valid and reliable measures.

17.4.6 Limitation and Scope of the Study

This measurement tool has a school-sided perspective. So it is meaningful from the point of view of schools. The symbiosis of the school was checked with these 13 institutions:

Table 17.2 Item means and standard deviations of the interorganizational symbiosis scale

Item	Mean	St. dev.	Item	Mean	St. dev.	Item	Mean	St. dev.	Item	Mean	St. dev.
A1	2.55	0.764	B1	2.25	0.766	E1	3.61	1.517	F1	3.04	0.535
A2	3.10	0.554	B2	3.04	0.727	E2	1.75	1.407	F2	2.70	1.015
A3	3.07	0.531	B3	2.97	0.674	E3	2.04	1.596	F3	2.63	1.057
A4	2.54	0.745	B4	3.01	0.590	E4	4.01	1.187	F4	3.15	0.957
A5	3.12	0.508	B5	3.10	0.465	E5	4.01	1.409	F5	2.31	1.305
A6	2.13	0.936	B6	2.87	0.757	E6	4.01	1.285	F6	2.48	0.859
A7	1.42	0.762	B7	2.85	0.839	E7	4.70	1.508	F7	2.40	0.760
A8	1.63	1.013	B8	2.73	0.880	E8	4.07	1.560	F8	2.25	0.859
A9	3.07	0.56	B9	2.78	0.885	E9	2.73	1.452	F9	1.70	1.059
A10	2.97	0.717	B10	3.13	0.694	E10	3.64	1.443	F10	2.82	0.999
A11	2.52	0.841	B11	2.52	0.911	E11	3.85	1.270	F11	3.06	0.457
A12	2.22	0.794	B12	2.85	1.034	E12	3.49	1.248	F12	2.87	0.519
A13	2.46	1.049	B13	2.73	0.872	E13	4.18	1.537	F13	2.51	0.766

1. District municipalities
2. Ministry of National Education
3. Provincial and District Directorate of National Education
4. Salary agreement bank
5. Canteen
6. Nearby markets
7. Nearby package stores
8. Nearby Internet cafes
9. Parent-Teacher Association
10. Businesses for skill training
11. Nearby schools
12. Nearby neighborhood residents
13. Teachers' unions

17.5 Item Analyses

17.5.1 Reliability Analyses

According to the expressions of participants, for the answers given to 13 institutions, the reliability of the measures was determined by Cronbach's alpha, which is the correlation coefficient between the total scores of the answers given for these 13 institutions and the total scores of responses to items A, B, E, and F (Table 17.3).

Alpha for data obtained for questions A, E, and F $0.6 \leq \alpha < 0.7$; these measures can be considered to be reliable. Alpha for the data obtained for question

Table 17.3 Cronbach's alpha reliabilities

Questions	Reliability statistics		
	Cronbach's alpha	Cronbach's alpha based on standardized items	No. of items
A	0.664	0.701	13
B	0.879	0.892	13
E	0.660	0.659	13
F	0.650	0.624	13

B $0.7 \leq \alpha = 0.879 < 0.9$; this measurement is good in terms of reliability (Table 17.4).

The internal correlation of total item scores when the item is deleted is given in the second column. These values are similar to the total item score correlations given in Table 17.2. The third column describes the change in the reliability coefficient when the item is deleted. As seen here, the reliability coefficient does not change when the item is deleted. This is also an indication of the internal consistency of the measurements.

17.5.2 Validity Measurements

Kaiser-Mayer-Olkin (KMO) is an indication value about the suitability of correlation between sample and scale items. The sample size value is greater than 0.60, and as in Bartlett's "correlation matrix is an identity matrix" hypothesis, the value of p is found less than 0.05; it is also an indication about correlation between the items (Table 17.5).

It was found that the sample size was sufficient according to the KMO scores for the answers given for the 13 institutions to the A, B, E, and F questions that were analyzed, and it was a correlation between the items according to the Bartlett's sphericity test results. Accordingly, factor analysis was found to be feasible. The consistency and validity of 13 items have been obtained in this way, and it is not inconvenient that these items are analyzed as a single group.

17.6 Conclusion

It has been determined that the measurements of four and more optioned questions on the scale are valid and reliable. It has been found that it is not inconvenient analyzing the 13 institutions questioned concerning schools as a single group. It was determined that the structure was also compatible with the factor analysis, so these institutions could be factored separately for each question.

Table 17.4 Item-total statistics

Item	Corrected item—total correlation	Cronbach's alpha if item deleted	Item	Corrected item—total correlation	Cronbach's alpha if item deleted	Item	Corrected item—total correlation	Cronbach's alpha if item deleted	Item	Corrected item—total correlation	Cronbach's alpha if item deleted
A1	0.400	0.629	B1	0.449	0.876	E1	0.336	0.634	F1	0.191	0.644
A2	0.518	0.622	B2	0.705	0.863	E2	0.384	0.626	F2	0.435	0.603
A3	0.427	0.634	B3	0.689	0.865	E3	0.296	0.641	F3	0.398	0.609
A4	0.126	0.670	B4	0.729	0.865	E4	0.344	0.635	F4	0.362	0.617
A5	0.308	0.647	B5	0.737	0.868	E5	0.420	0.621	F5	0.416	0.605
A6	0.487	0.609	B6	0.623	0.867	E6	0.069	0.672	F6	0.444	0.605
A7	-0.094	0.701	B7	0.507	0.873	E7	0.307	0.639	F7	0.392	0.617
A8	0.013	0.702	B8	0.633	0.866	E8	0.136	0.668	F8	0.506	0.595
A9	0.382	0.637	B9	0.522	0.873	E9	0.307	0.639	F9	-0.004	0.685
A10	0.347	0.638	B10	0.387	0.879	E10	0.403	0.623	F10	0.188	0.649
A11	0.463	0.616	B11	0.540	0.872	E11	0.341	0.634	F11	0.030	0.658
A12	0.476	0.615	B12	0.403	0.883	E12	0.107	0.666	F12	-0.049	0.666
A13	0.276	0.653	B13	0.649	0.865	E13	0.325	0.635	F13	0.283	0.632

Table 17.5 KMO and Bartlett tests

	A	B	E	F	
Kaiser-Meyer-Olkin measure of sampling adequacy	0.649	0.820	0.627	0.641	
Bartlett's test of sphericity	Approx. Chi-square	270.999	435.780	294.405	277.094
	Degree of freedom	78	78	78	78
	Sig.	0.000	0.000	0.000	0.000

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Chapter 18

Game Theory and John Forbes Nash in the History of Economic Thought



Güner Koç Aytekin

Everyone can see my tactics while I battle, but no one can see the strategy which is the source of the victory.

Sun Tzu

If I had 60 min, I would use 55 min to think, and 5 min for action.

Albert Einstein

Abstract In our globalizing world, progress and innovations are recorded on behalf of the knowledge every day. In this context, very important studies have been made, and significant progress has been achieved after John von Neumann who was a genius mathematician first proposed the idea of explaining the human behavior by means of games. *Game theory*, having wide application range of scientific areas, has found wide application areas such as business, economics, international relations, military areas, politics, education, administration, law, and many others. Game theory has raging application possibilities in many areas; especially in the field of economic sciences and it has gone through a long development process until the present day. Therefore, in this study, the journey of the development process of *game theory* has been studied. In this process, important developments have taken place in the direction of the applicability of the social sciences into game theory which is focusing to take the right decisions to find the right strategies. John Forbes Nash is a major contributor to the studies in this direction among other scientists. Therefore, in this study, it has tried to put forward the critical role of John F. Nash in this process.

G. Koç Aytekin (✉)
Ufuk University, Ankara, Turkey

18.1 Introduction

In our globalizing world, game theory, the first mathematical tool developed for social sciences, has led to great changes and improvements in many areas as well as in economics. In this context, game theory, which can be used in many different fields and become an indispensable tool in many fields as far as economics is concerned, is a standard and systematic structure that examines the strategic situations where interdependence exists and how better results can be obtained.

In a world of limited knowledge, of learning, and of impediments to unbounded rationality, processes of economic evolution help shape the socioeconomic world. The nature of economies, their industrial structure, and their institutions (economic and otherwise) are, for example, molded by such evolutionary processes. The nature of experimentation engaged in by actors and the impediments faced by them influence the evolution of economic systems and organizations and the nature of their responses to the changing world (Tisdell 1996: 3–4).

In this direction, game theory, based on certain assumptions, sets out the rules that will make it easier for players to achieve the best results, and it emerges as a theory for strategic interaction as a result of the analysis made by formal models of strategic situations involving interdependence. Hence, the most fundamental feature of the theory is the expression of behavioral patterns by modeling the situations in which decision-makers are in harmony with or competing with other ideas.

In this direction, game theory, which can be used in many different fields, has become an indispensable tool in many fields such as business, military areas, international relations, politics, law, education, administration, and even biology. In this context, it has made it possible for players to set the rules in order to achieve the best result. As such (Doğru 2016:269), these rules play an important role in all the organizations' reaching their objectives and gaining sustainable competitive advantage which live in a chaotic and complex environment, from the point of regulating human relations and leadership roles.

In this context, game theory influenced not only economics but also other fields such as political science and evolutionary biology, and in these areas, it changed the way the theories were made (Leonard 1994, Eren et al.: 266). For example, nowadays, each video game is built on an artificial intelligence model. This translates each designed artificial intelligence model into a game theory analysis.

From the past to present day, game theory is considered as an important tool in many areas. Recently, it has been attracting attention in the field of computer science with its applications in artificial intelligence and cybernetics. Today, game theory includes not only human players, but also nonhuman ones, such as animals, plants and computers in order to create a wider sense, thus functioning as a kind of framework for the multidisciplinary structure.

18.2 General Overview of Game Theory

Intelligent people do not say everything they think, but think everything they say.
Aristo.

I think therefore I am.

Descartes.

In publications on the history of economic thought, J. F. Nash's work is of great inference. We can say that this was further reinforced by Nash's 1994 Nobel Prize in Economics. The work of Nash can be seen as a mathematical research at first sight. However, it is also a known fact that the production and distribution of goods in social systems are more adaptable to mathematical analysis. In this context, as the field of economics is thought to be much broader than it is in the analysis of behavior in all social sciences, it is clear that Nash's contributions have a very important role in the economic literature.

Today, analytical approaches in economics and game theory are increasingly important. In addition, the cooperation between mathematics and economics is based on older times. Especially in the nineteenth century, famous mathematicians started with the contributions they made to the solutions of theoretical issues in economics and found the field of application with econometrics at the beginning of the twentieth century. In fact, in the modern sense, as far as its present position is concerned, game theory has gone through a long development period. Briefly mentioning this process will be helpful in understanding the significance and meaning of game theory (Akyüz, 1977; Baumol and Jess, 1989; Fudenberg and Tirole, 1992; Üşür, 1996).

The first clear application of Nash equilibrium in a precise mathematical model comes in the work of Cournot. In a brilliant pathbreaking book, Cournot (1838) constructed a theory of oligopolistic firms that include monopolists and perfect competitors as limiting extremes. Cournot wrote a short book on mathematical economics, but he wrote at greater length on the philosophy of science and the foundations of our knowledge. If he had recognized that noncooperative game theory can provide a general unifying structure for analyzing all kinds of social institutions, he would have wanted to write about it more than anyone else in his generation (Myerson: 1070–1071).

Furthermore, the developments in linear programming techniques, and especially the concept of duality, have been influential in the development of game theory. Game theory focuses directly on finding the right strategies and making the right decisions. Success and profit here depend on the other players, the nature of the game, and how the game is played. Taking the right decisions and putting them into practice effectively influence the result of the game (Machina, 1987; Kreps, 1988; Buğdaycı, 1998; Aktan et al., 2013).

In this context, the basis of game theory was constructed in 1928 with the minimax theorem proved by the famous Hungarian-born mathematician John von Neumann. Later, they introduced the economic practices of game theory with the book *The Theory of Games and Economic Behavior*, which they wrote together with economist Oskar Morgenstern in 1944. With the publication of this book, many

universities have begun to use it as a textbook and have opened the game theory courses. Here, from military to economics, general logic of strategic interaction in almost all subjects was targeted to be achieved. However, there were some shortcomings in this book (the *Theory of Games and Economic Behavior*) which made it possible for some talented mathematicians to complete the deficiencies and develop new horizons in this area. In this context, Nash would be the brightest name of these new horizons to open. Nash's interest in mathematics emerged at an early age and consolidated in high school. The work done by Nash in his doctoral degree from Princeton in 1950a was one of the most important applications of game theory, which would later be named as Nash equilibrium. This research has brought along other important studies (Myerson 1999: 1071–1072).

In fact, game theory was, in general, first used by the British Navy, who fought German submarines in the Second World War. It was later formulated and led to very basic discoveries especially in economics, politics, law, IT (information technologies), and military fields. Game theory is considered as a strategy science.

In this context, the expected utility hypothesis is still a particular hypothesis concerning individual preferences over alternative probability distributions over wealth. In the years following its revival by von Neumann and Morgenstern in the *Theory of Games and Economic Behaviour*, it became generally recognized that expected utility theory depended crucially on the empirical validity of the so-called independence axiom (Machina 1982: 277). In this context, because it is the guiding principle here, game theory emerges as an important management tool to show how to get the best strategic result. Since life is formed by a continuous flow of decisions, the great importance of game theory is emerging.

18.3 About Nash Equilibrium

Behavior of individuals and firms constitutes market mechanism, and it is assumed that behavior in this direction is consistent and rational. Therefore, as long as there are no interventions, their developments can be predicted and balanced. The concept of equilibrium, along with being the backbone of the economy, is at the forefront of other fields of science, especially mathematician and physicists.

The Nash equilibrium is a much discussed, deceptively complex, method for the analysis of noncooperative games. If one reads many of the commonly available definitions, the description of the Nash equilibrium is deceptively simple in appearance. Modern research has discovered a number of new and important complex properties of the Nash equilibrium, some of which remain as contemporary conundrums of extraordinary difficulty and complexity (Fellman 2007:2).

How long does it take until economic agents converge to an equilibrium? By studying the complexity of the problem of computing a mixed Nash equilibrium in a game, we provide evidence that there are games in which convergence to such an equilibrium takes prohibitively long. Game theory is about the strategic behavior of

rational agents. It studies games, thought experiments modeling various situations of conflict (Constantinos, Goldberg and Papadimitriou, 2008: 2–3).

In this context (Bulutay, 1979; Mailath, 1998; Daskalakis et al., 2006), Nash equilibrium, which is one of the most important tools of game theory, is made up of the strategy choices that include the specific features of the game players. Each player will decide on an action that exist in the game and through that decision, other players in the game will be also making a decision as well. The selected action for each player creates the best strategy to play, and this is also true for all other players. These movements result in a Nash equilibrium.

Thus an argument for reform of social institutions (rather than for reeducation of individuals) is most persuasive when it is based on a model that assumes that individuals intelligently understand their environment and rationally act to maximize their own welfare. So applied social theorists should find it useful to scrutinize social institutions under the assumption that every member of society will act, within their domain of control, to maximize welfare as they evaluate it, given the predicted behavior of others. The concept of Nash equilibrium is, in its essence, the general formulation of this assumption (Myerson 1999: 1069).

J. F. Nash shows that all players in this game have strategies that will earn them the highest level of profits but that other players in this dominant strategy game cannot be implemented because there are counter-strategies and that it would be a favorable position for everyone to agree to a balance.

The high normative appeal of the independence axiom has been widely (although not universally) acknowledged. However, the evidence concerning its descriptive validity is not quite as favorable. A large amount of research on the validity of the expected utility model has appeared in the psychology literature, where experimenters have similarly discovered that preferences are in general not linear in the probabilities (Machina 1982: 278).

Then, on November 16, 1949, the *Proceedings of the National Academy of Sciences* received from Nash a short note, which was published the next year (Nash 1950b). In this two-page note, Nash gave the general definition of equilibrium for normal-form games, and he neatly sketched an argument using the Kakutani fixed-point theorem to prove that equilibria in randomized strategies must exist for any finite normal-form game. In his Princeton doctoral dissertation, Nash continued to work on proofs using the Brouwer fixed-point theorem, which was then better known, but the Kakutani theorem has since become a standard tool for economists, in part because of its use by Nash (1950b). Early proofs of the existence of general Walrasian equilibrium in price theory were directly inspired by Nash's existence theorem in game theory (Myerson 1999: 1074).

Thus Nash applied the normalization argument to show that any other theory of games should be reducible to equilibrium analysis. With this step, Nash carried social science into a new world where a unified analytical structure can be found for studying all situations of conflict and cooperation. Von Neumann's normal form is our general model for all games, and Nash's equilibrium is our general solution concept. Nash (1951) also noted that the assumption of transferable utility can be dropped without loss of generality, because possibilities for transfer can be put into

the moves of the game itself, and he dropped the zero-sum restriction that von Neumann had imposed (Myerson 1999: 1074–1075).

In this direction, the strategy of Nash equilibrium is the best strategy that a player has developed against the strategy that someone thinks the player will play. As a result of this strategy, no player wants to go to a point other than the constructed Nash equilibrium. Here, using an advanced mathematics, Nash proved the existence of this equilibrium in most conditions and opened the way to the many uses of game theory.

18.4 John F. Nash's Two-Person Bargaining and on the Noncooperative Games Theory

In the decision-making process, if the decision is best made by other players, it is the dominant strategy within the game theory, and a Nash solution is the solution. Here, when all the players in the competition are heading to the same goal, the probability of achieving this goal will decrease, while the tendency toward different goals will increase their profits. We see that this is especially true in oligopoly markets. Oligopolistic markets are the markets that constitutes of few companies where there is a trade-off between price and production decisions, where the competitors have to calculate how they will act mutually and are interdependent. For this reason, the interaction in the economic relations of these markets is always relevant at all times on the global scale.

The economic situations of monopoly versus monopsony, of state trading between two nations, and of negotiation between employer and labor union may be regarded as bargaining problems. It is the purpose of this paper to give a theoretical discussion of this problem and to obtain a definite “solution”-making, of course, certain idealizations in order to do so. A “solution” here means a determination of the amount of satisfaction each individual should expect to get from the situation or, rather, a determination of how much it should be worth to each of these individuals to have this opportunity to bargain. This is the classical problem of exchange and more specifically of bilateral monopoly as treated by Cournot, Bowley, Tintner, Fellner, and others. A different approach is suggested by von Neumann and Morgenstern in the *Theory of Games and Economic Behavior* which permits the identification of this typical exchange situation with a nonzero-sum two-person game (Nash 1950a: 155).

Nash's theory of noncooperative games was the critical breakthrough in this process of extending the scope of rational-choice analysis to general competitive situations (Myerson 1999: 1068). Therefore Nash's first great contribution was his theory of two-person bargaining. By a beautiful axiomatic argument, Nash (1950a) introduced a bargaining solution that was virtually unanticipated in the literature and was the first work in game theory that did not assume transferable utility. Indeed, most subsequent work on cooperative games with nontransferable utility has been

based on Nash's approach to the bargaining problem (Cited by Myerson 1999: 1073 from Myerson 1992: 13–33).

The economic risk varies depending on the product structures, monopolistic nature, and size of the firms (importer-exporter, local company, etc.). Due to the uncertainties that create economic risk in respect to the exchange rate risk, managers need to approach the problem with a long-term strategic perspective, and these strategies vary in many different ways (Erdoğan 1993: 117). While he was studying at the university, Nash began to think that countries have different, unconvertible currencies and have the problem of international bargaining. Nash's work in this area began with a very good explanation of the utility theory of von Neumann and Morgenstern.

Nash's bargaining theory builds on the insight that individuals' utility scales can be defined up to separate increasing linear transformations, but this result follows only from von Neumann and Morgenstern's 1947 derivation of utility. Thus, Nash's bargaining solution could not have been appreciated before 1947. It is remarkable that Nash found this solution so quickly thereafter. His earliest conception of it actually came in 1948 when he was an undergraduate taking a course on international trade (Cited by Myerson 1999: 1073 from Nash 1996).

We can proceed with a game-theoretic analysis of bilateral bargaining; let us be precise about the bargaining protocol. There are many possibilities, among which is the following simple demand game: The two players simultaneously and independently demand the amount of money they wish. These two demands are compared, and if they are compatible (lie in the shaded area), they are implemented. If not, the game is over; there is disagreement (Kreps 1990: 95–96).

In the process of economic relations shaping the world, if what is happening in the economy is a game or a strategy, the gain of one side does not have to be the loss of the other side or the parties, so there can be situations where everyone can win or lose at the same time. In this context, the question of how and under what conditions the competition and price parallelism in oligopolistic markets are formed is critical along with the globalization process.

In oligopolistic markets, when taking price decisions, in general terms, the parties will either make a cartel by making an agreement or they will not be in competition by keeping the prices at a similar and certain level, without the cartel structure. Another way is to create a price parallelism, whether it is involuntary or not, when producing strategies against each other's strategies. Therefore, in all these cases, the parallelism that emerges in prices will not result in competitiveness, which will affect social welfare in a negative way.

18.5 The Place of Nash Equilibrium in Economics

Despite the use of many different areas, the place of Nash Equilibrium in the economic science is undoubtedly very important. In the world where Nash Equilibrium is found to be used extensively in almost all areas of economic life due to its

contribution to strategic interaction areas in both competitive and collaborative environments, Nash Equilibrium strategy stands out as the best strategy that a firm can position according to the strategies applied by other companies. In this context, one of the most fundamental problems of companies in the oligopoly market is whether to compete with other companies or to go to cooperation.

We do not live in a perfect economic world and are unlikely to do so. Our world is characterized by the absence of unbounded or perfect rationality and by the presence of socioeconomic frictions or resistances and of diversity in the behaviour of human beings, their groups, and organizations. Most individuals and groups are less rational than suggested by recent conceptions of bounded rationality. However, this does not spell chaos for economic and managerial theory (Tisdell 1996: 3).

The entry of the game theoretical reasoning into the economy was with Cournot in 1838 (Arrow 2003, Eren et al.: 267). Cournot examined the duopolian specimen and demonstrated the equilibrium using a limited version of the concept to be later termed Nash equilibrium (Walker 2005, Eren et al.: 267). However, the economic use of game theory in this period is limited only to this area (Arrow 2003, Eren et al.: 267).

Just like poker, the games that we face in our daily life and economy are mainly about guessing how our opponent will act and then setting a strategy regarding to that. Because the players here, make the moves simultaneously. Here Nash, by taking the idea of running out of ideas like a vicious cycle of poker-style games out of a loop, let all players have a strategy that will bring the case to the highest gains over themselves; but since they are not the only player in this dominant strategic game, they will not be able to apply it, so they will be willing to settle for an equilibrium (Rubinstein, 1990; Parthasarathy et al., 1997; Eren and Şahin, 2012; Aumann and Sergiu, 1992).

The most important form of coordination without cooperation is the Nash equilibrium developed by John F. Nash in 1950a. In order to understand the importance of noncooperative game theory, it is important to understand why rational choice analysis is so important in the economy. Where there is no cooperation, Nash equilibrium emerges as the most rational form of behavior. J. F. Nash, therefore, showed that the assumption of individual excellence, as in noncooperative game theory, must also be one of rational maximizations.

Nash (1950b) formally defined an equilibrium of a noncooperative game to be a profile of strategies, one for each player in the game, such that each player's strategy maximizes their expected utility payoff against the given strategies of the other players. If we can predict the behavior of all the players in such a game, then our prediction must be a Nash equilibrium (Myerson 1999: 1069–1070).

Although von Neumann has presented an analysis of human interaction with salon games, it is not the economy that focuses on this work (1928). Until he met Oskar Morgenstern in 1938, the connection between economy and game theory was not established (Cited by Eren et al.: 269 from Leonard 1994).

The formulation of Nash Equilibrium has had a fundamental and pervasive impact in economics and the social sciences which is comparable to that of the discovery of the DNA double helix in the biological sciences. The appropriate way

to expand von Neumann's and Morgenstern's theorem on two-player zero-sum games is not to try to apply maximal criterion without rationalizing all decision problems. A suitable expansion expresses in a simple sense; if there is a solution of noncooperative play, this solution lies within the game's Nash equilibrium. Nash's noncooperative game theory is one of the most important scientific approaches of the twentieth century. Even at the core of the price theory, we see that later articles on general Walrasian equilibrium are greatly influenced by Nash's approach (Myerson 1999: 1067).

Hence, the firm nature of the oligopoly market can provide such agreements, while companies cannot provide an environment in which firms can enter into an agreement in which they can cooperate, rather than the competitive nature of the full competition market in various forms instead of competition. Firms in the oligopoly market can go to such a cooperation that can maximize their common interests. Here, game theory emerges as a common technique used in the study of such behaviors (Fisunoğlu 1996: 255–256).

Nash's noncooperative game theory is an abstract mathematical framework for economic analysis; it is not the economic analysis itself. In order to apply the methodology of noncooperative game theory, economists formulate and analyze game models of markets and other institutions of society. The abstract generality of noncooperative game theory means that a great range of applied situations can be studied with a wide variety of models. So the task for economic theorists in the generations after Nash has been to identify the game models that yield the most useful insights into economic problems. So Nash's formulation of noncooperative game theory should be viewed as one of the great turning points in the long evolution of economics and social science. With this game-theoretic methodology, the scope of applied economic analysis gradually broadened. Thus, by accepting noncooperative game theory as a core analytical methodology alongside price theory, economic analysis has returned to the breadth of vision that characterized the ancient Greek social philosophers who gave economics its name (Myerson 1999: 1079–1081).

In general, the very competitive structure in full competition markets cannot provide an environment in which cooperation can be made between firms. Due to the monopoly market and the structure of the players in the full competition market, some easy techniques can be found in creating the prices. However, the oligopoly market's small-firm structure does not provide us with much easier techniques and theories in providing such agreements.

In this context, the most important form of equilibrium without cooperation is the Nash Equilibrium which was developed by Nash in 1950a. In order to understand the importance of noncooperative game theory, it is necessary to understand why the analysis of rational choice is so important in the economy. Where there is no cooperation, Nash equilibrium emerges as the most rational form of behavior. Thus, if the profit and cost situations to be made in the economic sense are dependent on the decisions of the other players, that is, the individuals, it is ensured that the most appropriate behavior is balanced and selected.

These developments have undoubtedly led to the use of game theory in many different areas. Despite Adam Smith's claim that "if every person thinks about their own interest and acts accordingly, their and societies' welfare increases," Nash's thesis is that "if every person thinks about their own interest and the interests of the group they belong to, the total welfare is increased." Thus, game theory emerged by recognizing the importance of strategic relationships in the social systems of life, and the economics became fully dependent on it.

18.6 Two-Person Zero-Sum Games

We know that, in games with zero sum or fixed sum, the loss of one side is the gain of the other side. Therefore, the situation that is good for one side in a zero-sum game played by two players is bad for the other side. Thus, two-person zero-sum games have become a method used in conflict and tense situations where it is impossible to negotiate between the parties.

This theorem was first proved by von Neumann in 1928 by extensive use of topological methods. Later von Neumann himself, and others, published simpler proofs. However, the theorem is by no means elementary. The fact that the theorem is deep is brought out eloquently by a discussion initiated by Frechet in *Econometrica* in 1953. It appears from this discussion that the mathematical problem now known as the two-person zero-sum game was first formulated in 1921 by Emile Borel, who used the term "psychological games." Borel found that the minimax theorem was true for symmetric games where the players had as many as five different pure strategies, but he conjectured that the theorem could not be true in general (Borch 1968: 117).

Nash took such a best-reply analysis as the basis for a generalization of von Neumann's minimax theorem. As a minimum requirement for a pair of strategies to be a candidate for the solution of a two-person game, he required that each strategy be a best reply to the other. Such a pair of strategies, nowadays called a Nash equilibrium, is basic to noncooperative game theory (Nash 1996: x-xi). We have stated that the foundations of game theory were laid by Neumann's minimax theorem and later with the book the *Theory of Games and Economic Behavior* written in 1944 together with Morgenstern which is considered as a masterpiece in this area.

In real life, there are many situations that can be formulated and analyzed in the form of a two-person zero-sum game (Borch 1968: 119). Soccer, tennis, basketball, and so on, which are in many cases in today's lives, are examples of this. Here the gain of one side is equal to the loss of the other side. So here, the number of goals scored to us and the number of goals scored to our rival are equal to each other; in other words, the sum is zero. But this is not always the case in real life.

We can state that the simplest games are the top games. Here, in order to find the peak point, we can express that the top of the game is located at the point where the row minimum element of the game matrix is equal to the maximum element of the

column. The peak point approach is the application of coexistence of the principles of minimax for us and maximin for the rival.

From our perspective, minimax is what guarantees us to not lower our winnings below a certain value; also maximin in terms of our competitor is, whatever we play, there is a way of ensuring that we do increase our winnings above the value of the maximin value, that is, not to make the loss of our rival more than the maximin value. In this context, there may not be any peaks as there are multiple peaks in each game, and if the game does not have a peak, the optimal strategy for each player will be a mixed strategy. In this context, the strategy that gives the maximum value of the row minima is our option; the strategy which gives the minimum value of the column maxima gives the strategy that the rival chooses. If the values of both strategies are equal, there is a balance (Borch 1968: 109–111).

More generally we could argue that any scheme which we may think out – no matter how clever – can also be thought out by the competitor, who then will find to countermove which is best from competitor's point of view. If we think we have found "the obvious" solution, this solution should be obvious also to the intelligent competitor (Borch 1968: 114–115). Here, there's no point in knowing that the rival is not acting rationally, just as he can make mistakes. To gain such a scholarly profit, we need to have some information about what might be the mistakes it might make. The game is usually passed between two or more people, and each player tries to achieve the strategy that is best for him by taking position according to the behavior of another. Again, many economic situations cannot be reduced to this kind of model. The zero-sum (or constant total) situation refers to the estimate of the interindividual comparability of utility, which may not always be realistic or at least desirable for many economic situations.

Problems that do not exist in classical economic theory can be formulated and solved by game theory. Moreover, the analysis of "two-person zero-sum game" showed that there are situations where unstable behavior can be rational. Therefore, game theory has brought into economics an uncertainty principle, similar to the one brought into physics by the quantum theory (Borch 1968: 115).

In this context, these kinds of games are the essence of the game concept because they create an absolute victory or an absolute defeat. However, there are very few such games in social life, in the economy and in other relationships. When we consider what we live in economic life as a game, the winnings of one person in this game do not have to be the loss of the others. As is known, there are situations in which everyone can win together, and there are situations in which everyone can lose at the same time.

18.7 Examples of Solving Nonzero-Sum Games

18.7.1 *An Example of Nash Equilibrium from Daily Life: Battle of the Sexes (Gibbons 1992: 11–14)*

In this example, a man and a woman will decide to choose the kind of entertainment for the night together. The selections are to go to football (F) match or opera (O). The results are as follows:

If they go to a football match, the man will be very happy and the woman will also be happy just because she is with her friend.

If they go to the opera, the woman will be very happy and the man will be happy just to be with her.

If the man wants to go to the football match, but the woman insists on going to the opera, they will discuss and eventually they will never go anywhere. A similar situation will also arise in other cases.

Now let's take the strategy from the point of view of the man.

If the woman chooses F, the male will get a higher result with F.

However, if the male chooses O, then the woman will get a higher result with O.

In other words, there is no dominant strategy for men and women. Symmetrically, this applies to both.

Here, although there is no dominant strategy equilibrium, there are two equilibrium points:

- If they choose (F, F), this is a balance point, and no player can obtain a gain by unilaterally moving away from the equilibrium point.
- Similarly (O, O) is another point of equilibrium.

These two points are known as Nash equilibrium points.

Nash equilibrium is such a point that no player can act unilaterally and obtain a gain. In a game with multiple Nash equilibria, a single Nash equilibria may be suggested as a result of the game if the player has a common knowledge of his choice of pair. This is called the focal point. For the first time, Thomas Schelling introduced the concept of focal point influence in the book *The Strategy of Conflict* in 1960.

If a player has a set of strategies that cannot benefit from modifying his strategy as long as other players do not change their strategies, then this set of strategies and their results will form the Nash equilibrium.

18.7.2 *Prisoners' Dilemma*

Let us discuss another well-known game theory example known as the prisoners' dilemma, which sets out the possible contradiction between individual interests and social interests or cooperating with individual behaviors (Cited by Aktan, et al. from

Osborne and Rubinstein 1994a) (<http://www.canaktan.org/ekonomi/oyun-teorisi/makaleler/aktan-sanver.pdf>).

Osborne and Rubinstein (1994b) argue that the prisoners' dilemma was introduced to the literature by the work of Raiffa. The name of the game is based on the story of two prisoners of the original script that led to this game. It is suspected that two persons caught with unlicensed weapons are about to rob a bank. However, there is no evidence that they will rob the bank. Therefore, it is necessary to question the suspects with a method to confess that they will rob the bank. Accordingly, the suspects are questioned separately, and they are given the following information: If they both deny that they will rob the bank, they will be sentenced to 1-year imprisonment with an unlicensed gun. If they both confess their crimes, the prison sentences will be 5 years. On the other hand, if one confesses while the other denies, the one who confesses will be released as a confession prize, whereas the one who denies will be convicted for 10 years. We can represent this game with the following matrix:

		II	Confess	Deny
I	Confess	A	B	
		-5, -5	0, -10	
	Deny	C	D	
		-10, 0	-1, -1	

Here the rows represent the first suspect, and the columns represent the second suspect where each cell represents the right of each suspect's individual decision. The effect of these decisions on the players is also shown in the intersection areas of the decisions. For example, if both suspects confess their crime, as indicated in area A, both are imprisoned for 5 years, whereas if the first player confesses and the second player denies, as you can see in zone B, the second player goes to prison for 10 years, while the first player is acquitted from all charges. Likewise, region C shows the situation that the first player denies while the second player confesses which results with the first player going to prison for 10 years, while the second player is acquitted from all charges. Finally, in zone D, both players deny and as a result both sentenced a year in prison. The only Nash equilibrium of this game is in the A zone, where both players are imprisoned for 5 years. If cooperation is possible, however, it will be possible for both to deny and spend 1 year in prison.

It is noted here that social interests do not always coincide with individual interests. Again, if we look at the dominant strategy balance, it is a Nash equilibrium. In fact, any dominant strategy balance is a Nash equilibrium (https://ocw.mit.edu/courses/economics/14-12-economic-applications-of-game-theory-fall-2012/lecture-notes/MIT14_12F12_chapter6.pdf).

There are numerous applications of the prisoners' dilemma. It is enough to change the behavior patterns of selfish and benevolent strategies for the applications. For example, public economic theory tells us that public goods production in a very general world is a prisoners' dilemma problem (Cited by Aktan et al. from Bergstrom, Blume and Varian 1986: 25–49) (<http://www.canaktan.org/ekonomi/oyun-teorisi/makaleler/aktansanver.pdf>).

18.7.3 OPEC Example

Here we will briefly describe the logic of Nash Equilibrium on the well-known example of the OPEC; let us imagine that OPEC has determined the price of a certain oil and has also distributed the production quota necessary for that price to the countries. In this context, it is assumed that supply, demand, and price are consistent with each other and that any oil exporter countries have decided to raise production above the quota. Within this context, let's look at the consequences of this decision if other countries remain loyal to the determined denomination; oil production will increase as supply increases, and oil prices will decrease. Therefore, if the country that increases production is showing a decrease in revenue against the new price, we can say that the market is at Nash Equilibrium. Here, although the cost of production is above the price, it appears that there exists no destabilization of the equilibrium behaviour in the markets. In this respect, destabilization of the equilibrium is not a preferable option for the producers. In this case, if the producing country gains more oil revenue from the new price, the market will not be in Nash equilibrium because it will be profitable. Therefore, it is impossible to talk about the sustainability of price and production quotas in the markets that are moving away from the Nash equilibrium (<https://web.stanford.edu/class/msande275/handouts/Win00-01/gametheory.pdf>).

Thus, countries are aiming to bring their profits to an optimal level by preventing oil prices from falling if production increases. Therefore, by creating competition in the market, it is aimed to create supply-demand balance for producers. OPEC is a confederation consisting of 13 countries, which are exporting oil and holding two-thirds of the known oil reserves of the world. Because of the existence of this institution which was established in 1960, the highest beneficiaries were the member states of this institution, as oil barrel prices, which were around US \$ 10 in real terms over those years, now exceed US \$ 70 levels today.

Game theory, as in this example, is a strategic initiative with practicability in almost every field in everyday life. Game theory therefore focuses on finding the right strategies and making the right decisions. Nash equilibrium is an expanded form of the dominant strategy of balance and the maximization of zero-sum games. Here, the dominant strategy in the noncooperative game and the dominant strategy in the cooperative one are quite different. At the core of every strategic encounter that has a tension between cooperation and competition is a dilemma, as it is in this example. For this reason, such games generally fall into the category of games of the prisoners' dilemma.

For every static game, however, such a dilemma may not be the case. There are also games where players have to coordinate their movements, as we have explained in the standard example of the male-female conflict above. In this context, the conflict between men and women or prisoners' dilemma was the basis of many economic games.

18.8 Conclusion

Although game theory has passed the abovementioned scientific development stages, which is an analytical tool that can be used to develop strategies in many subjects such as politics, law, military service, economics, business, international relations, and even biology from the point of view of the intellectual meaning, it contains a historical process that goes back to the time of human's existence. In conditions that include more than one decision-maker as well as chaos, complexity, uncertainty, and even risks, game theory is frequently observed, and its usage areas become widespread each and every day. In this context, game theory has been widely applied in the USA since the 1990s.

It can be argued that Nash equilibrium is the backbone of game theory, which can be considered as the best strategy for all, showing the optimal decision that can be made in situations where there are multiple decision-makers. We can also consider the Nash equilibrium strategy as the best strategy that a player can choose according to the strategy applied by the player against the player. Game theory, however, also shows how all decision-makers will bargain for optimal utilization.

As is known, there is competition at the forefront of the most important issues for the price mechanism to work in free market conditions. In free competition markets, the actual market price is based on the supply and demand of the product, and there are competitors of the companies in the market, being some of them strong, some weak. Firms have to determine the price and sales strategies very well in order to be able to sell their products or services and to be able to sustain their presence in the market. In this context, companies are also part of the big game played at the markets.

Nash Equilibrium is the best strategy for players to choose for themselves against the strategy they think the opponent will play. Once Nash equilibrium strategy is selected, no one in the game will want to go out of balance. In this context, Nash has proved that such an equilibrium state exists under most conditions by using high and intensive mathematics and has created the concept of equilibrium by generalizing John von Neumann's approach. Thus, Nash is entitled to receive the Nobel Prize by developing an important tool that enables game theory to be used not only in the field of economy but also in such diverse fields as biology and politics in 1994.

In recent years, in the whole world, as well as in Turkey, game theory is in a position that has attracted considerable attention in daily life, as much as it is in academic life. In order to support research, education, practice, and research in the field of game theory, Istanbul Bilgi University hosted the fourth of the World Congress of Game Theory in 22–26 July 1999, which was organized every 4 years by the Game Theory Association. In this event, the world's four leading scientists John Forbes Nash (who won the 1994 Nobel Prize in Economics), Reinhard Selten, Roger Myerson (winner of the 2007 Nobel Prize in Economics), and Eric Maskin and a large number of renowned and distinguished researchers and scientists have come together at the Game Theory World Congress 2012.

This congress, which has great reputation in academic community in Turkey, brought together the most reputable scientists working in the field of Economy and Applied Mathematics and has made significant contributions to the scientific tradition in Turkey. In this great scientific meeting, which was hosted for the fourth time in Turkey, 2007 Nobel Prize winner Roger Myerson's speech which was dedicated to Nash and Selten was also quite meaningful:

“Through the work of Nash and Selten, the lives of our scientists have changed. Game Theory has become visible in all social sciences after them, and we are grateful to them.”

In this context, although J. F. Nash has received the Nobel Prize for the practices of his Theory in economics, the reflection of his game theory on politics is also of great interest. Especially in the last years, the concept of “win-win” in diplomacy has often been challenged by governments and politicians to explain complex domestic and foreign policies. Therefore, Nash has made great contributions to knowledge and humanity through his work which can reveal what kind of results every kind of strategic interaction can lead to. In this direction Nash has created a new language and perspective for later work and economic analysis in the general framework of the game theory he has constructed.

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Chapter 19

The Relationship Between the Mathematical Thinking Levels and Conflict Management Strategies of School Directors



Lütfi Üredi and Hakan Ulum

Abstract The aim of this study is to determine the conflict management levels of school directors working in Adana and Mersin cities while being exposed to student conflicts and the relationship between their mathematical thinking skills and conflict management strategies. The research design of the study is based on the relational screening survey model. The sample covers 240 school directors officially working in Adana and Mersin areas in 2017–2018 education years. After the analysis of the gathered data, the following results were found out: the directors mostly use (1) constructive strategies, (2) strategies based on getting support from others, (3) avoiding strategies, and (4) destructive strategies, respectively. Looking at the recent mathematical achievements of the school administrators that they got in the universities they graduated from, it can be said that their mathematical thinking skills are often good. In terms of “destructive strategies” and “avoidance strategies,” there is no significance between the used conflict management strategies and gender. But, the average scores of male school managers are higher than the average scores of female school managers in subdimensions of “constructive strategies” and “strategies based on getting support from others.” The level of schools in which the administrators work has created different averages in different subdimensions. Significant differences were mostly in high school, kindergarten, secondary, and primary school levels, respectively. The results showed that mathematical thinking had a significant impact on conflict management strategies of the school managers.

L. Üredi
Mersin University, Mersin, Turkey
e-mail: lutfuredi@gmail.com

H. Ulum (✉)
Çukurova University, Adana, Turkey
e-mail: hakanulum@gmail.com

19.1 Introduction

Mathematics is a significant required field, and knowing it increases an individual's reasoning and problem-solving competencies as well as enhances the ability to think in general. Therefore, it is important for comprehending nearly each field such as science and technology, economy, business, etc. Mathematics is employed in several dimensions of daily life. A high number of the first coming jobs such as computer operators, business consultants, pilots, company managers, and several others require a solid comprehension of basic mathematics, and in some fields, a very detailed knowledge of mathematics is needed (Kaur 2014). Individuals with good mathematical thinking skills are also excellent in mathematics courses.

Mathematical reasoning covers logical and analytic thinking as well as quantitative examining, all required competencies (Devlin 2012). Mathematical reasoning is not only necessary for solving mathematical problems but also important for learning mathematics (Stacey 2006). Brilliant mathematical analysis refers to specifying how views are associated with each other. Making positive relationships means understanding how mathematical terms are linked with others and to the real world (Scusa 2008). The problems force individuals to administer mathematics to problems in daily life, social life, and in workplace (Bokar 2013). Among such problems, for example, we may see conflict management, which is required to be managed.

One should remember the fact that a conflict is a usual and normal issue. Besides, we can say that it is even a healthy component of normal relationships. For this reason, two individuals can't be expected to always compromise on everything. As relationship complications are unavoidable, knowing or learning to handle them in a proper way is a vital ability. When a complication is directed in a wrong way, it can destroy the relationship. However, when dealt with in a proper or positive style, it generates a chance for development, consequently empowering the relationship between two individuals. Through acquiring such competencies, one gets excellent conflict resolution and also can keep his or her individual and professional relationships brilliant and enduring (CMHC 2009). The proper use of the problem-solving phases of conflict resolution necessitates a variety of approaches, comprehensions, and capabilities for handling a debate or trouble (Crawford and Bodine 1996).

We see significant dimensions associated with complications in the school setting. The more well educated the students and the more professional the instructors are able to figure out the structure of a conflict, the better they can deal with the conflicts appropriately. Moran (2001) refers to conflict management as "a philosophy and a set of skills that assist individuals and groups in better understanding and dealing with conflict as it arises in all aspects of their lives." Conflict as a term never stays positive or negative; however, it has usually been observed to be a simple and consequence-oriented segment of school setting (Ghaffar 2009). School directors have to comprehend what is required in conflict handling, and they should have proper conflict solving skills in order to be excellent in their schools. When conflict handlers have concluded and characterized the nature of a conflict in its occurring atmosphere, they work hard to see the ways to solve it. Several researchers working

on conflict have underlined diverse ways to solve conflict cases. Most of these conflict cases are associated with school settings (Msila 2012).

The efficacy of handling conflict management at educational institutions is affected by school directors' mathematical thinking skills. The capability of mathematical thinking can simply resolve the mentioned complications.

19.2 Aim of the Study

The aim of this study is to determine the conflict management levels of school directors while being exposed to student conflicts and the relationship between their mathematical thinking skills and conflict management strategies. In accordance with the research objectives, answers for the following questions were investigated:

- What kind of conflict management strategies do school managers use to manage conflict?
- Does the type of conflict management strategies used by school administrators show significant differences according to gender and school level variables?
- Is the level of mathematical thinking of school administrators a predictor of the conflict management strategies they use?

19.3 Research Method

This research uses the relational screening models. Relational screening models are used to determine change and/or level of two or more factors. They also try to figure out whether variables differ together or not in correlational relationships, and if there is such a difference, how it happens is tried to be diagnosed (Karasar 2014).

19.3.1 Sample

The sample covers 240 school directors officially working in Adana and Mersin areas in 2017–2018 education years. The sample has been chosen through simple random sampling. Twenty-five percent of the participants are female ($n = 60$), and 75% of the participants are male ($n = 180$); 7.5% of the participants work in kindergarten ($n = 18$), 55% of the participants work in primary schools ($n = 132$), 17.1% of the participants work in secondary schools ($n = 41$), and 20.4% of the participants work in high schools ($n = 49$).

19.3.2 Data Collection Tools

The data collection tools used in this study are as follows:

Administrator information form: This form was developed by the researchers. In the form, information on school administrators' gender, school level, and mathematics level was requested.

Student conflict management scale: Student conflict management scale was developed by Bal (2008) to measure conflict management levels of school directors. The scale consists of 22 items and 4 subdimensions: constructive strategies, destructive strategies, avoidance strategies, and strategies based on getting support from others. The internal consistency coefficient for the entire scale was found as 0.80 (Bal 2008). The internal consistency coefficient for all of the scales in this study was found to be 0.84. Internal consistency coefficients for sub-dimensions are $\alpha = 0.80$ for constructive strategies, $\alpha = 0.86$ destructive strategies, $\alpha = 0.71$ avoidance strategies, and $\alpha = 0.76$ strategies based on getting support from others.

By looking at the factor analysis, 1–11. the same sub dimensions, 12–15. the same sub dimensions, 16–19. the same sub dimensions and 20–22 were found. The items were collected in the same subdimension. The items on the first subdimension are called “constructive strategies” because they involve cooperation, reconciliation, compliance, and mediation strategies. The items on the second subdimension are called “destructive strategies” because they cover the domination and compelling strategies. As the names imply, the items in the third subdimension are called “avoidance strategies,” and the items in the fourth subdimension are called “strategies based on getting support from others” (Bal 2008). Our research has been carried out through these conflict management strategies.

19.3.3 Data Analysis

In the study, the data were analyzed using SPSS 24.0 software package. In the first stage, reliability and validity of survey form have been made by computerized data. For data analysis, simple linear regression analysis was used. The predictive powers of mathematical thinking of the conflict management strategies were determined using simple linear regression analysis. One-way ANOVA has been used to examine whether the level of use of conflict management strategies by school administrators shows significant differences according to the school-level factor. And independent t-test has been used to examine whether the level of use of conflict management strategies by school administrators shows significant differences according to gender factor.

19.4 Findings

The findings obtained in the direction of the sub-objectives of the research are as follows:

As Table 19.1 displays, the school managers mostly use constructive strategies ($\bar{X} = 4.17$), strategies based on getting support from others ($\bar{X} = 3.16$), avoiding strategies ($\bar{X} = 2.66$), and destructive strategies ($\bar{X} = 2.59$), respectively.

As Table 19.2 shows, the mathematical thinking skills associated with the success of school administrators in past mathematics classes are as follows: bad (f, 27), medium (f, 71), and good (f, 142).

As Table 19.3 illustrates, the differences in “constructive strategies” and “strategies based on getting support from others” averages of school managers are significant in favor of males for gender [$t(238) = 9641, p < 0.05; 5128, p < 0.05$]. There is no statistically significant difference among “destructive strategies” and “avoidance strategies” scores in terms of gender [$t(238) = .926, p > 0.05; .260, p > 0.05$] (Table 19.4).

Table 19.5 shows the results of ANOVA tests done in order to examine whether there is a significant difference among the scores of school managers in terms of

Table 19.1 Findings on the use of conflict management strategy types by administrators

	Ss	\bar{X}	N
Constructive strategies	.59	4.17	240
Destructive strategies	.95	2.59	
Avoidance strategies	.93	2.66	
Strategies based on getting support from others	.73	3.16	

Table 19.2 Findings related to managers’ level of mathematical thinking skill

	Level	f	%
Mathematical thinking	Bad	27	11.3
	Medium	71	29.6
	Good	142	59.2
	Total	240	100.0

Table 19.3 Distribution of managers’ use of conflict management strategy types by gender factor

	Gender	N	\bar{X}	S	sd	t	p
Constructive strategies	Female	60	3.63	.59	238	9641	.000
	Male	180	4.35	.47			
Destructive strategies	Female	60	2.69	1.31	238	.926	.355
	Male	180	2.56	.80			
Avoidance strategies	Female	60	2.64	.74	238	.260	.795
	Male	180	2.67	.98			
Strategies based on getting support from others	Female	60	2.76	.66	238	5128	.000
	Male	180	3.30	.70			

Table 19.4 Averages of managers' use of conflict management strategy types by school-level factor

		<i>N</i>	\bar{X}	Sd
Constructive strategies	(A) Kindergarten	18	3.70	.432
	(B) Primary school	132	4.23	.617
	(C) Secondary school	41	4.49	.313
	(D) High school	49	3.90	.552
Destructive strategies	(A) Kindergarten	18	1.75	.647
	(B) Primary school	132	2.64	.957
	(C) Secondary school	41	2.24	.616
	(D) High school	49	3.06	.986
Avoidance strategies	(A) Kindergarten	18	3.23	.200
	(B) Primary school	132	2.57	1.00
	(C) Secondary school	41	2.31	.873
	(D) High school	49	3.00	.735
Strategies based on getting support from others	(A) Kindergarten	18	3.20	.167
	(B) Primary school	132	3.04	.838
	(C) Secondary school	41	3.10	.449
	(D) High school	49	3.53	.630

Table 19.5 Distribution of managers' use of conflict management strategy types by school-level factor

	Sum of squares	sd	Mean square	<i>F</i>	<i>p</i>	Significant difference
Constructive strategies	Between groups	12.063	4021	13.228	.000	A < B, A < C, B > D, C > D.
	Within groups	71.741	.304			
	Total	83.804				
Destructive strategies	Between groups	29.158	9719	12.127	.000	A < B, A < D, C < D.
	Within groups	189.152	.801			
	Total	218.310				
Avoidance strategies	Between groups	17.550	5850	7271	.000	A > B, A < C, B < D, C < D.
	Within groups	189.866	.805			
	Total	207.416				
Strategies based on getting support from others	Between groups	8933	2978	5869	.001	A < D, C < D.
	Within groups	119.733	.507			
	Total	128.667				

school level. As Table 19.5 illustrates, a significant difference was found among “constructive strategies,” “strategies based on getting support from others,” “destructive strategies,” and “avoidance strategies” scores of teachers according to school level. We can summarize the table according to Scheffe test results as follows. In terms of constructive strategies, averages of kindergarten school administrators are lower than the average of primary school and middle school administrators. The average of primary school administrators is higher than the average of

high school administrators. The average of secondary school administrators is higher than the average of high school administrators. In terms of destructive strategies, we can say that averages of kindergarten school administrators are lower than the average of primary school and high school administrators. Averages of primary school administrators are lower than the average of high school administrators. Averages of secondary school administrators are lower than the average of high school administrators. In terms of avoidance strategies, it can be observed that averages of kindergarten school administrators are higher than the averages of primary school administrators. Averages of kindergarten school administrators are lower than the averages of secondary school administrators. Averages of primary school administrators are lower than the averages of high school administrators. Averages of secondary school administrators are lower than the averages of high school administrators. In terms of strategies based on getting support from others, it is easily understood that averages of kindergarten school administrators are lower than the averages of high school administrators. Averages of secondary school administrators are lower than the averages of high school administrators [kindergarten ($\bar{X} = 4.17$), primary school ($\bar{X} = 4.17$), secondary school ($\bar{X} = 4.17$), and high school ($\bar{X} = 4.17$)].

Table 19.6 described the simple linear regression analysis for determining the impact of mathematical thinking on conflict management strategies of the school managers. Results showed that mathematical thinking had a significant impact on “constructive strategies,” “destructive strategies,” and “strategies based on getting support from others” of the school managers. Mathematical thinking as predictor accounted for 49% variance in the “constructive strategies” and “destructive strategies” of the school managers showing the beta value. Mathematical thinking as predictor accounted for 17% variance in the “strategies based on getting support from others” of the school managers showing the beta value. Results showed that mathematical thinking had no significant impact on “avoidance strategies” of the school managers.

Table 19.6 Findings of simple linear regression analysis of managers’ use of conflict management strategies according to the predictive variable of mathematical thinking skill

Model	B	Se	β	p	R
Constant	2414	.201		.000	
Constructive strategies	932	.105	.499	.000	0.499
Constant	5404	.326		.000	
Destructive strategies	1487	.170	.493	.000	0.493
Constant	2369	.364		.000	
Avoidance strategies	159	.190	.054	.405	0.054
Constant	2392	.283		.000	
Strategies based on getting support from others	410	.148	.177	.006	.177

R: 0.499, R^2 : 0.249, $F(1, 238) = 78,718, p < 0.05$
 R: 0.493, R^2 : 0.243, $F(1, 238) = 76,289, p < 0.05$
 R: 0.054, R^2 : 0.003, $F(1, 238) = 0,696, p > 0.05$
 R: 0.177, R^2 : 0.031, $F(1, 238) = 7706, p < 0.05$

19.5 Discussion and Conclusion

After the analysis of the gathered data, the following results were found out: the directors mostly use constructive strategies, strategies based on getting support from others, avoiding strategies, and destructive strategies, respectively. Bal (2008) achieved the same result in his thesis study with the school administrators. Arslantaş and Özkan (2012) stated that school principals mostly use “integration and reconciliation” styles in conflict resolution and occasionally use “concession and avoidance” styles and use a little “dominance” style. Özmen (1997) reached the conclusion that the managers used less of the “ruling” style in the survey. Koçak and Baskan (2013) reached the conclusion that the highest level of solution level of the methods they used in the conflict between teachers was in the order of compromise, compliance, avoidance, and lowest governance, respectively.

Looking at the mathematical achievements of the school administrators in the higher education institution they graduated most recently, it can be said that their mathematical thinking skills are often good. Despite many studies in the field of mathematical thinking (Zeynivandnezhad et al. 2013; Long and Jiar 2014; Beng and Yunus 2015; Gadanidis 2004; Zhou and Bao 2012; Mrayyan 2016; Edward et al. 2005; Harel and Sowder 2005; Jordan and Hanich 2000; Lutfiyya 2001), a study by school administrators was not found.

In terms of “destructive strategies” and “avoidance strategies,” there is no significance between the used conflict management strategies and gender. But, the average scores of male school managers are higher than the average scores of female school managers in subdimensions of “constructive strategies” and “strategies based on getting support from others.” In other studies, it was concluded that there was no significant difference between the opinions of the male and female managers related to the level of use of conflict management strategies (Bal 2008; Arslantaş and Özkan 2012; Uğurlu 2001; Oğuz 2007; Gümüşeli 1994). The school level of school administrators’ work has created different averages in different subdimensions. Significant differences were mostly in high school, kindergarten, secondary, and primary school level, respectively.

Results showed that mathematical thinking had a significant impact on conflict management strategies of the school managers.

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Chapter 20

Complexity in Management: Problems and Strategies



İlknur Maya

Abstract In this research, it aims to determine the issues which mid-level managers meet in the context of complexity theory and how they manage them with the strategies in the management of educational institutions. In addition, Çanakkale Provincial Directorate of National Education is analysed as a selected education organisation in the light of complexity theory. In the study, the interview method was used. The working group constitutes a total of ten education administrators working in Çanakkale Provincial Directorate of National Education. The data, given in the research, were written by the researcher in the direction of the sub-problems of the research. These data are grouped according to the theme determined in the direction of the subordinate problems. In the analysis of the data, inductive analysis technique, one type of content analysis, was applied. According to the education administrators, the institution demonstrates the open system feature. In this context, environment (parent, press, public opinion) dimension, student input dimension and output/result dimension are leading issues. The issues that education administrators see most important in the planning, implementation and supervision dimensions of the institution are behaviours showing resistance to change, lack of communication, confusion of decision-makers and repressive behaviour of the local press. In addition, the lack of sufficient and qualified personnel is also a problem. Educational administrators state that the system is chain-bound and that it is not always possible for the institution to be in balance.

20.1 Complexity in the Management of Educational Organisations: Problems and Strategies

Even though complexity theory is a theory emerging in physical sciences, it has found areas of application in social sciences in recent years. Several studies investigating the phenomenon of complexity are available (Fenwick 2008; Gilstrap 2005; Marion and Uhl-Bien 2001; McClellan 2010; Osborn and Hunt 2007; Schneider and

İ. Maya (✉)

Çanakkale 18 Mart University, Çanakkale, Turkey

Somers 2006; Svyantek and Brown 2000) in the literature. In simplest terms, complexity theory is against linear and mechanistic world view explaining physical and social phenomena in simplistic cause and effect relationship. Instead it holds a world view which is non-linear, organic and unpredictable (Regine and Lewin 2000). While classic science searches for order, equilibrium, familiarity and predictability in systems, complexity theorists expect systems to be very dynamic, unbalanced, unpredictable and complex even when they describe simple systems (Galbraith 2004; Prigogine 1997).

This paradigmatic transformation in science and in theories influences the science of management and leadership activities. The transformation creates a potential for considering problems encountered in studies concerning leadership. Therefore, complexity theory is against reductionist logic—which does not perceive a system from a holistic perspective and which ignores the effects of interactive dynamics. Instead, complexity theory enables us to see organisations as a structure interacting with each other, composed of very different units and revealing innovative behaviours for a system as a whole (Marion 1999; Regine and Lewin 2000).

Leaders have different roles in organisations according to complexity theory. The theory tries to explain systems which are in complex interaction. For this reason, the theory demonstrates how systems interact in terms of formation, innovation and consistency in addition to explaining the nature of interaction and adaptation in such systems. According to complexity theory, leadership has a complex structure containing behaviours as different from roles determining and orientating organisational effectiveness (Marion and Uhl-Bien 2001).

Traditional studies concerning leadership tend to ignore interactions between teams. However, there is a reality called ‘interaction effect’. This situation is also called synergy. According to complexity theory, effective leaders are the individuals who learn so as to benefit from interactional dynamics (such as relation, randomness, interaction) in their organisational teams and between the teams of organisations (Marion and Uhl-Bien 2001, p. 394).

Complexity theory suggests that leaders should consider organisational activity conditions rather than local actions. The theory claims that leaders create conditions necessary for transformational environment and innovation rather than creating innovations. Complex leaders sow seeds of innovation instead of oppressive and predetermined innovation plans. They also provide work circumstances open to interaction and to social networks instead of controlled and closed ones. Besides, complex leaders are the people who use labels and symbols rather than being guides determining the direction of an institution. Leaders are only the parts of dynamic conditions rather than being dynamic (Yukl 2002). In this context, complex leaders are just like a component of interactive networks. Leaders, according to complexity theory, can perceive social networks, but they do not make efforts to control social networks and nor do they need to do so (Boal and Hooijberg 2001).

Complex organisations are dynamic. Decisions about the present day are influenced by the events of the past, and decisions on the future are influenced by the events of present day in complex organisations (Plowman et al. 2007, p. 343). Therefore, leaders of complex organisations set up ties between the past and the

present and thus they shape organisational behaviour. According to Boal and Hooijberg (2001) and Schein (1992), effective leaders are the people who ensure transformation with the symbols they design, with the way they respond to crises, with their styles of models they employ in meeting their expectations, with the way they distribute rewards and with the way they select, hire and fire their staff.

Theorists concerned with complexity science today (Maguire and McKelvey 1999; Regine and Lewin 2000) reconsider leadership. Complexity scientists claim that leadership is composed of ability to permit rather than ability to control and lead and that leadership is an alternative focus with a perspective combining the human source in an organisation and integrating it (Knowles 2001). It is observed that the existence of ‘swarm intelligence’ in dominant team members encouraging innovation has been perceived as important for years (Bonabeau and Meyer 2001). It is widely known that social insects such as bees, ants and termites—which work also in the absence of control—can make their organisation chaotically successful (Plowman et al. 2007).

20.2 Purpose

This study is based on the thought that leadership of complex systems generates the future instead of controlling it—as suggested by Marion and Uhl-Bien (2001, p. 394). This study aims to determine what problems mid-level educational managers encounter in the management of educational institutions in the context of complexity theory and what strategies they use to manage those problems.

20.3 Method

20.3.1 Research Model

This study uses survey model since it aims to determine what problems mid-level educational managers encounter in the management of educational institutions in the context of complexity theory and what strategies they employ to manage those problems.

20.3.2 Study Group

The study group was composed of ten educational managers employed in Çanakkale provincial Directorate of National Education in 2015–2016 academic year. One of the managers was female and the others were male. The participants had 5–20-year experience in management.

20.3.3 Data Collection and Analysis

The research data were collected through an interview form developed by the researcher and containing ten questions. Literature on complexity theory and leadership was reviewed in developing the interview form. Three university lecturers were consulted for expert opinion in relation to the issue. Having received expert opinion, the interview form was given its final shape.

For the sake of validity of the interview form, sample sentences made by the educational managers themselves were included in this study to reflect their perspectives. The research data were put to writing in accordance with the sub-problems of the research. The data were grouped into themes determined according to the sub-problems. Inductive analysis—a technique of content analysis—was used in analysing the data.

20.4 Findings

20.4.1 Provincial Organisation of National Education as an Open System

Educational managers working in Çanakkale Provincial Directorate of National Education pointed out that the institution was an open system and that therefore the factors of environment (parents, public opinion), student input (readiness) and of output (TEOG examination [examination for transition into secondary education], LYS examination [examination for transition into higher education]) were the most prominent factors. An educational manager suggested that educational system was an open system in the following statement:

‘Provincial national education system is a whole with students, parents, mass media and public opinion available in it. In order for the structure to work effectively and flawlessly, environment is the most important factor. We have a high profile of parents in Çanakkale, and parents have good solidarity’.

20.4.2 Problems Encountered in Planning, Implementing and Supervising in Provincial Organisation of National Education

It was found that the educational managers working in Çanakkale Provincial Directorate of National Education stated resistance behaviour against changes, lack of communication, involvement of non-specialists in decision-making and the oppressive behaviours of local press as the most important problems in planning, implementation and supervision in the institution. They said that the quantitative and

qualitative inadequacies of the staff also caused problems. In this matter, one of the educational managers said the following:

‘We can implement many things we have planned only if I am involved in the job. Yet, if I am not involved in the implementation work, we have problems and difficulties in both implementation and control’.

20.4.3 Points Considered Most Important in Managing the Provincial Organisation of National Education Effectively

The educational managers working in Çanakkale Provincial Directorate of National Education stated that they considered such issues as assuring that all stakeholders have a voice in decision-making so that the institution could be managed effectively, being open to communication, doing preliminary work, doing Strengths, Weaknesses, Opportunities, Threats (SWOT) analysis, setting targets clearly and saying what needs to be said rather than bureaucracy very important. In this matter, one of the educational managers said the following:

‘The thing we consider the most important in the functioning of our institution is to ensure that all stakeholders are involved. We have preliminary preparations such as planning, programming and making projects before making a decision. Apart from that, we also consider the strengths and weaknesses of our activities or opportunities and threats they pose. It is our priority to do what needs to be done rather than bureaucratic structure and processes in the directorate’.

20.4.4 Continuous Equilibrium of Provincial Organisation of National Education

All of the educational managers said that they had a lot of work to do which were tied to each other like a chain and that they had a lot of stakeholders such as educators, administrators, governorship as the top-level office, local administrations and provincial directorate of agriculture; and they stated that it was impossible for the institution to stay in balance. One of the educational managers stated his/her view as in the following:

‘The job of improving the physical conditions of schools or building new schools is put out to tender in our province. In this process, cooperation with governor’s office and municipalities as local governments is very important. We sometimes have problems in tenders’.

20.4.5 Things Done When the Provincial Organisation of National Education Is Not in Balance

The educational managers working in Çanakkale Provincial Directorate of National Education said that they preferred organisational behaviours such as communicating orally face to face, developing informal relations and empathising in cases of uncertainty and crisis when the system was not in balance while fulfilling the duties. In this matter, one of the educational managers said the following:

‘Things sometimes do not go well in our institution. Especially during a tender many stakeholders are involved. In such cases, we try to solve the problems through face to face and oral communication and by empathising. We also display similar behaviours in cases of uncertainty and crisis with parents’.

20.4.6 Relations with Units Playing Critical Roles in the Provincial Organisation of National Education

All of the educational managers said that they took pains to have honest, clear, transparent and realistic communication with units playing critical roles in Çanakkale Provincial Directorate of National Education. In this matter, one of the educational managers said the following:

‘We have relations with several units in educational-instructional activities done in the provincial directorate of national education. Seen from this perspective, we need to display realistic, consistent and clear behaviours’.

20.4.7 Things That Should Be Done for Transformations and Formations in Provincial Organisation of National Education

The educational managers working in Çanakkale Provincial Directorate of National Education stated that transformation and formation would be possible in educational institutions by evaluating and rewarding the staff on the basis of performance, and in this way, it would also be possible for institutions to get restructured or to organise. In this matter, one of the educational managers said the following:

‘If I had the authority as the leader of the institution, I would implement a system which is labour-based and which has criteria in selecting the staff. For this reason, I would like to put into practice a performance-based evaluation and rewarding system’.

20.4.8 Things Done for Transformations and Formations in Provincial Organisation of National Education

The educational managers said that they always stated at any meeting with upper-level offices their views that a system of staff selection and performance-based evaluation and rewarding should be implemented in Çanakkale Provincial Directorate of National Education so that transformation and formation could be attained. In this matter, one of the educational managers said the following:

'New transformation and formation can be attained in the system of national education with qualified and hardworking staff. Therefore, I think that staff selection, evaluation and rewarding system should be based on criteria'.

20.4.9 The Roles of Leaders When Changes Occur in the Provincial Organisation of National Education

The educational managers working in Çanakkale Provincial Directorate of National Education stated that they took on roles whenever there is a change in the institution and that they focused on the change with all their energy. In this matter, one of the educational managers said the following:

If the change we face in the institution is positive, I spend all my energy for it. If it is negative and ambiguous, I focus on ways on how to get over it with minimum harm possible. Changes should be introduced in small bits. First, a difference should be created and a mark should be left'.

20.4.10 The Roles Educational Leaders Play in Shaping the Future of Provincial Organisation of National Education

It was clear from the statements made by the educational managers that they considered their roles in shaping the future of Çanakkale Provincial Directorate of National Education very important. They likened their roles in this matter to bees' work. In this matter, one of the educational managers said the following:

I liken my efforts in shaping the future of my institution to a bee's work. We learn new things from each school in our institution just like a bee takes essence from many flowers. Therefore, we visit as many schools as possible'.

20.5 Conclusion and Recommendations

A result obtained in this study was that the educational managers employed in Çanakkale Provincial Directorate of National Education had problems in the management of the system as in all other systems and that they set strategies on the basis of contemporary approaches for the solution of those problems. According to those educational managers, their institution is an open system. In this context, environment factor (parents, mass media and public opinion), the factor of student input (readiness) and the factor of output (secondary education entrance exam TEOG and exam for transition into higher education LYS) were the most prominent factors.

The problems the educational managers considered very important included behaviours of resistance to changes, lack of communication, non-specialists' involvement in decision-making and the oppressive behaviours of local press. In addition to that, the lack of qualified and adequate number of employees was also another problem. It was apparent that the educational managers attached importance to assuring that all stakeholders have a voice in decision-making, to being open in communication, to doing preliminary work, to doing SWOT analysis, to setting targets clearly and to resorting to new ways of solution.

The educational managers working in Çanakkale Provincial Directorate of National Education thought that the system is linked just like the rings of a chain and that it was not always possible for the institution to remain in balance. It was found that the educational managers conveyed their opinion that a system of criterion-based staff selection and criterion-based performance evaluation and rewarding should be used to their superiors on every occasion.

The participants likened their efforts in shaping the future of their institution to a bee's work. It may be recommended that studies to be conducted in the future analyse the concept of leadership in complex systems and relevant concepts. In this way, it would be possible to understand better how complexity theory explains leadership.

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Chapter 21

Al-Qaeda: A Model for “Sustainable Disorder”?



Derviş Fikret Ünal and Murat Demirel

Abstract The demise of the socialist camp was regarded as an end to ideological conflicts, and many claimed that there was an absolute liberal triumph over others, which implied “the end of history” indeed. However, developments following the end of the Cold War have consistently proved that not all actors of the international politics have shared liberal values. Instead, fundamentalist movements and radical organizations are increasingly becoming a serious concern today. Al-Qaeda, which offers a Salafist way of thinking, plays an important role in this respect. The article argues that al-Qaeda presents a model for other radical terrorist organizations such as DEASH, which are posing a threat to several countries causing disorder and may trigger more chaotic security environment in the future.

21.1 Introduction

Following the dissolution of the Soviet bloc, the Western camp, whose ideological formulation was based on liberal democracy and free market economy, declared its final triumph over communism, long after its victory over fascism. According to Francis Fukuyama, there is no any ideology with claim to have universality in a position to challenge liberal democracy and have legitimacy in contrast to the common consent of people. However, Fukuyama accepts that there is a remarkable resistance to liberal ideology in the form of Islam: “Islam has indeed defeated liberal democracy in many parts of the Islamic world, posing a grave threat to liberal

Derviş Fikret Ünal: Turkish Ministry of Foreign Affairs as career diplomat; however, this article reflects only his own views and analysis.

D. F. Ünal (✉)
Turkish Ministry of Foreign Affairs, Ankara, Turkey

M. Demirel
Nevşehir Hacı Bektaş Veli University, Nevşehir, Turkey

practices even in countries where it has not achieved political power directly” (Fukuyama 1992). The September 11 attacks have intensified such debates. A number of scholars have presented various approaches focusing on al-Qaeda, which is widely condemned for the attacks.

21.2 Historical and Contemporary Figures

It seems worth focusing on historical and contemporary figures, namely, Ibn Taymiyya, Sayyid Qutb, Muhammad al-Farag, Hassan al-Turabi, Abdullah Azzam, and Ayman al-Zawahiri; not all of them are militants and/or terrorists, but no doubt strongly emphasized Islamic motives for both society and political arena have been quite influential on al-Qaeda. By doing so, we might better understand the philosophy of al-Qaeda and main reasons for its violent actions.

21.2.1 *Ibn Taymiyya*

Ibn Taymiyya was born in the thirteenth century in which the Islamic world was under the Mongolian threat. His family was forced to flee Baghdad, where the Abbasid Caliph lived, when the city was invaded by the Mongolian forces in 1258. Under the circumstances, Ibn Taymiyya discussed about religious justification to wage *jihad*¹ against the Mongols. By having made a rigorous literalist interpretation of the Koran and other sacred sources, (Esposito 2002a). Ibn Taymiyya argued that there was a close connection between religion, state, and society.

On this basis, Richard Whelan considers Ibn Taymiyya had a belief that the community living in Medina of the eighth century was a perfect model for an Islamic state. In order to revive such a model, there was a need for a purification of Islam and for a return to the period of Muhammad and the first four Caliphs to restore Islam’s glory and a sharp distinction between the *Dar Al-Islam* (the land of Islam) and the *Dar Al-Harb* (the land of unbelief or war) (Whelan 2005a). Similar to Ibn Taymiyya, today’s fundamentalists use almost the same religious context to justify their own right to wage jihad against rulers, they believed, who fall into apostasy (Dennis 2002a). Therefore, Ibn Taymiyya is widely regarded by many as the spiritual father of revolutionary Sunni Islam, the wellspring of al-Qaedaism (Whelan 2005b). In particular, his separation of the *Dar Al-Islam* and the *Dar Al-Harb* offers a kind of legitimization for effort to change the existing international order.

¹The word *jihad* means a struggle or fight against the enemies of Islam (Oxford Dictionary). In a linguistic sense, the word does not mean “holy war,” but we commonly face its political use, which might cause misunderstandings or religious resentments/sensibilities. Thus, in this article, we avoid any offensive meaning of the word of *jihad*.

21.2.2 *Sayyid Qutb*

Sayyid Qutb was a radical theorist who eloquently advocated the violent overthrow of “infidel governments” in Islamic countries because, according to him, they abandoned the “true way of Islam” and were corrupted by the West (Sageman 2008a). Qutb wrote a book titled *Signposts on the Road* which focused on the *jahiliyya* (a period of the state of barbarity or unbelief in Arabia before the advent of the religion of Islam). On his book, Anthony Dennis says as follows:

Qutb speaks about *jahiliyya* which is not only present in the West but is also increasingly the condition of the modern Muslim world. Any government or society which is built upon man-made laws and criteria rather than based on the revealed will of *Allah* represents *jahiliyya*. A government founded upon any variety of secular ideologies is *jahiliyya*. Democracy is *jahiliyya* because it is based on the sovereignty of the people and not the sovereignty of God (Dennis 2006).

In this vein, Qutb also defended “the purification of Islam” of improper accretions, by implying the West indeed with its cultural and ideological impacts on the Islamic societies. Moreover, Qutb expanded Ibn Taymiyya’s teaching on jihad (Henzel 2005) and rejected “defensive jihad” – to defend Islam against external aggressors – by having criticized that defensive jihadists diminished the Islamic way of life and advocated “offensive jihad” to pursue more radical reforms for Islamic societies (Qutb 2015).

With his thoughts and writings, Qutb has left a legacy of several concepts such as jihad, martyrdom, and vanguard (Whelan 2005c). Marc Sageman asserts that Qutb continues to be a source of inspiration for young radical Muslims even long after his death (Sageman 2008b). Qutb paved theoretical way for more aggressive jihadist understanding, a strong implication for pro-jihadist groups.

21.2.3 *Muhammad Al-Farag*

Muhammad al-Farag, who was an influential jihadist ideologue, strongly supported radical Islamic movements and accordingly tried to justify their violent actions by claiming that rulers of Islamic countries were “near enemy.” To make it clear, Sageman benefits from al-Farag’s narrating that “overthrow of the ‘near enemy’ (the local ruler) was more important than fighting the ‘far enemy’ (the Israeli state) because if an infidel ruler captured Jerusalem, it would still be infidel and nothing would have changed” (Sageman 2008b, p. 38). To him, today’s governments in Islamic countries are in a state of apostasy, and they have nourished at the table of colonialism, be it crusader, communist, or Zionist (Dennis 2002b). As an alternative, a state founded on Islamic values is required. On this basis, for instance, al-Farag (Faraj 2008) argued Muslim Egyptians must engage in an armed revolt against the government.

On the other side, according to al-Farag, Western law must be replaced by Islamic law (Whelan 2005d). Moreover, he claimed that jihad was the sixth pillar of Islam, which had been forgotten or obscured by the majority of ulama (Muslim clergy) and Muslims (Esposito 2002b). On this point, John Esposito explains main reasons for al-Farag's perspective as follows: "The decline of Muslim societies was made possible by those who had lulled the community into believing that jihad was non-violent, the restoration of the Muslim world to the straight path of Islam hinged on reclaiming the true meaning of jihad, the forgotten or neglected requirement of Islam" (Esposito 2002b).

Within this context, al-Farag, with his discussion of "near enemy," justifies fighting against internal enemies, rendering the use of violence beyond non-Muslim people possible.

21.2.4 *Hassan Al-Turabi*

After the military coup of 1989 led by Colonel Omar al-Bashir, the National Islamic Front came to power in Sudan that resulted in the establishment of an Islamic regime in the country. In this transitional process, Hasan al-Turabi played an important role in developing the basic conceptual framework for the new regime and held several political positions including the Speaker of the Sudanese Parliament (Esposito 2002c).

However, al-Turabi, in line with his pro-Islamic world view, did not restrict himself to Sudan and put a lot of effort for organizing international Islamic conferences. According to him, it was the West which divided the Islamic world into artificial states in conflict with each other. For achieving the victory of Islam, they should come together and solve their problems. In this vein, al-Turabi organized a series of international conferences such as the Popular Islamic Conference (PAIC) to which al-Turabi issued an invitation to Osama Bin Laden and his followers as well in order to unite all Muslim organizations under one umbrella (Sageman 2008c). Although there were some who regarded the PAIC as part of al-Turabi's dream of a politically unified Muslim world, Anthony Dennis, for example, argued that al-Turabi, in fact, provided a platform for fundamentalist rebels, opposition groups, and terrorists operating in different countries (Dennis 2002c). In this framework, al-Qaeda found an opportunity to interact with other organizations sharing similar philosophies and purposes.

21.2.5 *Ayman Al-Zawahiri*

Ayman al-Zawahiri, one of the closest advisors of Osama Bin Laden, comes from a well-known family in Egypt. Al-Zawahiri's uncle was the first Secretary-General of the Arab League, and his grandfather was a popular moderate *Imam*. Al-Zawahiri,

one of the founders of the Egyptian Islamic Jihad, together with his followers, joined Bin Laden in the mid-1990s. On February 26, 1998, al-Zawahiri signed a joint declaration with Bin Laden and representatives of several radical groups, which announced the formation of the World Islamic Front for Jihad against the Jews and crusaders that “made the murders of Americans and their allies an individual duty for Muslims” (Lacroix 2008a). The American administration accused al-Zawahiri of involving in the planning of the 1998 terrorist bombings of US embassies in Africa. After the September 11 attacks, upon the US decision to wage war against Taliban, al-Zawahiri appeared on a tape with Bin Laden calling for “holy war” against the US-led international coalition (Pearson 2011). Following the killing of Bin Laden in May 2011, al-Zawahiri assumed al-Qaeda’s leadership (<http://www.bbc.com/news/world-middle-east-13789286>, 2018).

As for al-Zawahiri’s mindset, according to him, democracy does not fit Muslim societies: “There would be no respite for those who claimed to be ‘democratic Muslims’ or supported participation in democratic societies. This would be no different from saying ‘I am a Jewish Muslim’, or ‘I am a Christian Muslim: they are ‘apostate infidel[s]’.”² Al-Zawahiri noted that any kind of secular government and “man-made” law is contrary to the faith of Islam. He called for the freedom and liberation of Muslims from all aggressors as well. Al-Zawahiri interpreted “the liberation of human being” that people have the right to choose their rulers but also to resist and overthrow them if they violate Islamic laws and principles (Blanchard 2007). For this purpose, al-Zawahiri remarked the importance of controlling energy resources in the Middle East as a methodology. Al-Zawahiri also wrote two books, namely, *Knights Under the Prophet’s Banner* and *Loyalty and Separation*, in which he presented a strategy for the post-September 11 term and defended the dogma of loyalty among Muslims by stressing out the need for supporting Muslims under all conditions (Lacroix 2008b).

In short, al-Zawahiri, the successor of Bin Laden, offered a radical theoretical framework for fighting against “the enemies of Islam” and made strategies for al-Qaeda accordingly. In addition, al-Zawahiri put his thoughts into practice, which fed the root causes of disorder.

21.2.6 *Abdullah Azzam*

Abdullah Azzam, a Palestinian religious scholar, occupies a central role in radical interpretation of religion. He was not only a theoretician but also an active figure, for instance, in organizing several Arabs’ joining to the Soviet-Afghan War of the 1980s. While Western analysts regard Azzam as “the godfather of jihad,” radicals

²This argument is quoted from al-Zawahiri’s book: Zawahiri (1991), *The Bitter Harvest: The Brotherhood in Sixty Years*. See in Ibrahim (2007).

call him “the imam of jihad,” in consideration of his key position in the “global jihad movement” emerged with the war (Hegghammer 2008a, Holbrook 2014).

Azzam’s two best-known books, namely, *The Defense of Muslim Territories* and *Join the Caravan*, in which he preaches for a global Islamist military defense policy, are listed in the classical jihadist literature (Hegghammer 2008b). According to Thomas Hegghammer, Azzam’s influence has three dimensions. First, he moved the Soviet-Afghan conflict from regional to global scale. Second, he organized Arab volunteers for the war as “the father of the Afghan Arabs.” Third, Azzam contributed to the formation of global jihad idea (Hegghammer 2008b, p. 97).

Azzam left more than a hundred books, articles, and recorded conferences. He articulated the concept of “self-defense” and considered that “self-defense against a foreign aggressor was more urgent and important than overthrowing domestic tyrants” (Hegghammer 2008b, pp. 98–99).

Within this context, it seems possible to say that as an inspirational activist and theoretician, Azzam has been efficient enough to mobilize masses sharing almost same views and thoughts all around the world.

21.3 Al-Qaeda: Bin Laden, Purpose, Organization, and September 11

The Arabic word “Qaeda” can be translated into different meanings: “base of operation” or “foundation” or alternatively as a “precept” or “method” (Whelan 2005e). Al-Qaeda has a global network since its establishment. In this process, globalization seems to play an important role. To support this argument, Ken Booth, for example, says globalization gives space for flourishing of certain modes of political violence (Booth 2007a). Moreover, John Gray regards the organization of al-Qaeda as a perfect embodiment of globalization. Jonathan Stevenson also takes al-Qaeda’s global aspects into account: “The new terrorist threat . . . has spurred a worldwide mobilization of intellectual and material resources comparable to that required by a world war” (Stevenson 2008a). Similarly, Christopher Ankersen draws attention to al-Qaeda’s global financial structure with the following: “Al-Qaeda has cells in Africa, the Middle East, Asia, Europe, and North America and therefore, for structural and operational reasons, requires funds to be raised and delivered globally” (For more details: Christopher Ankersen (ed.) 2007). With its global features, al-Qaeda has become a model for other transnational terrorist groups. In this part of the article, we do discuss about the role of Osama Bin Laden, the purpose and organization of al-Qaeda, and September 11 attacks and afterwards.

21.3.1 Bin Laden Phenomenon

Osama Bin Laden, who was accepted as the leader of al-Qaeda, nursed a specific grievance as seen in video records in which Bin Laden held a weapon and shot at the target and then gave his message to the “enemies of Islam” (Esposito 2002d). His personal ability to organize a worldwide network and authority has created the so-called “Osama Bin Laden phenomenon.” Hüseyin Bağcı explains this phenomenon as follows: “The ‘Osama Bin Laden phenomenon’ became a symbol of ideological resistance against the West by millions of people who cannot change their regimes via democratic means, like many Arab regimes, or lack sufficient opportunities to express themselves in their societies” (Bağcı 2008).

In fact, Bin Laden had close connections with the West, predominantly with business world. His father’s firm had won the right to refurbish the Holy Sites at Mecca and Medina in Saudi Arabia in 1973, which brought prestige, respect and wealth to Bin Laden family of Yemeni extraction. The family strengthened its business ties in Saudi Arabia and many other Muslim countries. Similarly, the family was well-known in the Western business circles. After the September 11 attack, one of the most immediate precautions taken by the American security forces was to guard the family members who lived in the United States and to transfer them to Saudi Arabia in safe. (Jacquard 2002 and Woolf 2004).

As for the formation of Bin Laden’s world view, Muhammad Qutb, the brother of Sayyid Qutb, played an important role. Muhammad Qutb, with his writings, contributed to radical ideological narrating. Bin Laden took lectures on Islamic studies given by Muhammad Qutb at King Abdulaziz University in Jeddah of Saudi Arabia where Bin Laden studied management and economics from 1974 to 1978. According to Muhammad Qutb, the West had moral hunger, and this belief was shared by Bin Laden as well (Gray 2004a).

In this vein, Bin Laden supported the restoration of Sunni version of the Sharia law and rejected pan-Arabism, socialism, communism, and democracy. To him, the state of Israel should be eliminated, and the United States must be compelled to withdraw from the Middle East. Thus, he actively participated in the Islamic resistance groups to the Soviet invasion of Afghanistan in 1979. In Afghanistan, Bin Laden and his close friend Abdullah Azzam founded Maktab al-Khidamat to finance the Afghan resistance and recruit new Muslim fighters. At that time, it was not a secret that the American government supported the Taliban forces in Afghanistan against the Soviets. Accordingly, Bin Laden had, direct or indirect, relations with the Americans. After the end of the Soviet invasion and the triumph of Afghan resisters, Bin Laden returned to Saudi Arabia as a “hero.” See also Jacquard 2002, Woolf 2004, Loehfelm 2004.

Following the war, for this time, Kuwait was invaded by the Iraqi forces in 1990. As a response to the Iraqi aggression, the US-led coalition was formed. On this point, the Saudi position was critical. The Iraqi forces might have entered the Saudi lands as well. This possibility urged Saudi rulers to give permission to the American forces to set up a base in Saudi Arabia. Grand Mufti Sheikh Abdul Bin Baz reluctantly decided to approve of the decision but only after being given assurances that the

kingdom could not defend itself without such aid and on the condition that Western troops would leave the kingdom after the crisis had passed (Dennis 2002d).

From Bin Laden's part, it was an insult to use of the holy sites by non-Muslims who had an intention to invade the Muslim lands. For now, it was the United States which was perceived as "the main enemy" and "the root of the problem" which must be wiped out (Dennis 2002d, p. 70). Hence, Bin Laden radicalized against the Western camp, particularly the United States.

Parallel, Bin Laden developed a two-step political strategy: "the overthrow of the current, ostensibly Muslim governments located throughout North Africa and the Middle East" and "the reunification of the vast Islamic *ummah* (community of believers) into one Islamic nation" (Dennis 2002d, p. 17). Bin Laden announced jihad against the Americans and ordered twice in 1996 and 1998 to kill them wherever al-Qaeda militants could find them.

There was no doubt that Bin Laden became a serious threat to the West that had considerable impacts on world politics. The September 11 attacks became a turning point. After that, Bin Laden and al-Qaeda more moved to the forefront of the political agenda. Anthony Dennis believes that Bin Laden enjoyed a wide reservoir of sympathy and support as indicated by the reaction of many Arabs and Muslims in the days and weeks after the September 11 attacks which proved that Bin Laden possessed more influence and authority than those in formal positions of power do in some quarters of the Muslim world (Dennis 2002d, pp. 12–13). As a matter of fact, the United States gained the support of Russia, China, France, and Germany in its fight against terrorism.

21.3.2 *What Is the Purpose of Al-Qaeda?*

Al-Qaeda explicitly not only aims to create a common sense of fighting against "evil and derailed West" under the flag of Islam but also offers a radical motivation for militarized movements including violent actions against both non-Muslim and Muslim communities as seen in London, Madrid, and Istanbul. Stevenson summarizes the purpose of al-Qaeda as follows: London (2003), Madrid (2004) and Istanbul (2005)

First, al-Qaeda seeks to overthrow Arab regimes- in particular Egypt's and Saudi Arabia's, whose close relationships with the United States render them 'apostate' and thus inimical to true Islam. These are the 'near enemies'. Second, it wants to debilitate the US- al-Qaeda's prime 'far enemy'- as a superpower and purge Muslim states of all American and Western political, economic and cultural influences. Third, and less centrally, al-Qaeda would like to eliminate the state of Israel (another 'far enemy' and liberate the Palestinian people (Stevenson 2008b).

Whelan adds the elimination of the separation of church and state, the destruction of democracy, the ending of women's liberation, the elimination of Christians and Jews, and the destruction of the secular Turkish republic. First, Qutb accepts the separation of church (mosque in Islamic societies) and state as "hideous

schizophrenia.” In this vein, the separation of mosque and state in Turkey is considered to be an attempt to exterminate the impact of Islam in society. Second, the end of democracy will prevent the seduction of Muslim communities from the true path, “pure Islam” of Qutb indeed. Third, today’s liberation of women especially in the West is seen as moral degeneracy and contrary to religious values. Fourth, Christian and Jewish religions are erroneous; therefore, the religion of Islam came to the world to let people find the path to the God. So, they are under the threat to be killed if they do not accept this reality. Last, the modernization of the Republic of Turkey established on the legacy of the Ottoman Empire, which once upon a time held the caliphate since the sixteenth century, is perceived by Qutb and his followers seen as a source of resentment for the Islamic world; hence, the destruction of the secular Turkish republic is acknowledged as one of the basic aims (Whelan 2005g).

21.3.3 *Organization of Al-Qaeda*

Al-Qaeda has a worldwide connection linked to each other as a unit which works like a cell. It is too difficult to define the borders of its organization, though it is generally known in which country al-Qaeda has militants. Al-Qaeda has blurred relations with other sister organizations such as Egyptian Islamic Jihad, Islamic Movement of Uzbekistan, Abu Sayyaf, Armed Islamic Group, Al-Ittihad Al-Islamiya, Ansar Al-Islam, Jemaah Islamiyah, and Taliban and so on (<http://www.bbc.com/news/world-asia-36138554>) and (<http://web.stanford.edu/group/mappingmilitants/cgi-bin/groups/search?q=al+qaeda>).

However, it seems not possible to say that al-Qaeda has a horizontally unique structure within itself. Whelan categorizes al-Qaeda members broadly into three groups: The first group, which composes from the militant core of al-Qaeda, is the most dangerous and cannot be negotiated with. Their war is against almost the entire world, including Sunni Muslims who do not agree with them, all Muslim minorities including the Shiites in addition to Jews, Christians and members of all other religions in the world, and, of course, atheists.

The second group is al-Qaeda’s affiliations which broadly share al-Qaeda’s perspective. They can be negotiated with, and a mixture of “hard” and “soft” power can be used to focus them on national and local issues and to detach them from the core of al-Qaeda and thereby reduce the threat they pose.

The third group – local “walk-ins” and those who support the broad ideology of al-Qaedaism but have not yet become activists (there are millions of them) – can only be detached from the core by soft-focused power such as a “Marshall Plan for Islam,” which is applied over a lengthy period (Whelan 2005h).

Within this context, al-Qaeda has a complex structure since its birth, and ongoing developments have contributed to the evolution of its organization which cannot be predicted before and brings global security matters first on the agenda of world politics, which implies insecurity for the Western societies as well.

21.3.4 *September 11 and Aftermath*

According to many scholars, the September 11 attacks remarked that the post-Cold War era came to a shocking end with the terror attacks on the heart of US power (Booth 2007b). In the attacks, one of the most horrific examples of *suicide bombings*³ against the World Trade Center and the Pentagon was witnessed. In the immediate aftermath of the attacks, there was loud talk by some global leaders of reordering world politics and rebuilding global security. In response, President George W. Bush announced a “War on Terror” and invited the international community to join the United States in this venture (For more details Ankersen 2007).

Accordingly, as a first step, the US government pursued a military operation against Taliban in Afghanistan because of al-Qaeda’s well-established and deep-rooted position there. On this point, it is noteworthy to remember that for the first time in its history, NATO invoked Article 5 of the Washington Treaty, which stipulates that an armed attack against one or more members of the alliance is considered as an armed attack against all (NATO Handbook 2006).

After the military operation in Afghanistan, the Taliban regime was ousted and replaced by an administration committed to peaceful relations and cooperating with the United States to rebuild the country, and the large parts of the extensive al-Qaida network in Afghanistan were disabled (NATO Handbook 2006, p. 169). Besides military operations, the United States launched a massive global intelligence effort to destroy al-Qaeda’s broad fiscal and manpower resources (Moghaddam and Marsella 2004a).

After Afghanistan, the next target for the United States was Iraq under the rule of Saddam Hussein. In fact, the Bush administration aimed at redesigning the Islamic world and argued that all authoritarian and totalitarian regimes throughout the geography of Islam must have been overthrown and replaced by democratic governments. This argument was formulated “the Great Middle East Project” and “the Greater Middle East Project” afterwards. Iraq was one of those regimes which made war with Iran and then invaded Kuwait. Saddam was regarded as a dictator, the only person responsible for defining the fate of Iraqi people, and under his dictatorship, many people suffered a lot from the lack of food, shelter, and drugs. Furthermore, al-Qaeda found a breeding ground to have militants and local support

³John L. Esposito, who is a professor of religion and international affairs and founding director of the Center for Muslim-Christian Understanding, Walsh School of Foreign Service, Georgetown University, gives information on the history of suicide bombing in his book entitled “*Unholy War: Terror in the name of Islam*”: “On February 25, 1994, Dr. Baruch Goldstein, a Jewish settler who had emigrated to Israel from the United States, walked into the Mosque of the Patriarch in Hebron and opened fire, killing twenty-nine Muslims worshipers during their Friday congregational prayer. In response, Hamas (Islamic Resistance Movement) introduced a new type of warfare in the Palestinian-Israeli conflict, suicide bombing. Promising swift revenge for the Hebron massacre, the Hamas militia, the Qassem Brigade, undertook operations within Israel itself, in Galilee, Jerusalem, and Tel Aviv. In Israel-Palestine, the use of suicide bombing increased exponentially during the second (al-Aqsa) *intifada* (uprising), which began in September 2000” (Esposito, 2002e).

especially after the Gulf War of 1990–1991. Under the conditions, the United States claimed that Iraq had weapons of mass destruction (https://www.washingtonpost.com/news/fact-checker/wp/2016/12/13/the-pre-war-intelligence-on-iraq-wrong-or-hyped-by-the-bush-white-house/?utm_term=.c45c02f2298c).

However, for this time, there was not a global consensus to attack on Iraq as seen in the Gulf War. Except for the United Kingdom and Israel, other great powers such as Russia, China, France, and Germany were suspicious of the operation. Political division was particularly among the EU members: France-Germany-Belgium bloc was on one side, and the United Kingdom-Spain-Italy bloc was on the other. (For detailed information Pauly and Lansford 2005).

But the US-led forces attacked Iraq in March 2003. The result was, similar to Afghanistan, the removal of the existing regime, and the coalition powers tried to achieve security all over the Iraqi lands. However, the question of security remained as a serious problem. Brzezinski commented on the situation in Iraq as follows:

The war in Iraq became a geopolitical disaster. Resources used for fight against terrorism and attention drawn to attention were attracted to other directions; thus, the rebirth of Taliban in Afghanistan and creation of new potential sanctuary for al-Qaeda in Iraq have happened. Similarly, a situation has emerged in Somalia. Stability in Pakistan is suspicious and radical groups having close ties to the U.S. are exploiting their current relations (Brzezinski 2008).

In this framework, in his words of former US Secretary of Secretary Donald Rumsfeld, Iraq remained the central place for fighting al-Qaeda⁴. Except for Iraq, al-Qaeda continues to exist in a wide range of areas indeed.

The September 11 attacks increased American awareness of terrorism for daily life in which Americans had never been the target of such destructive attacks, in their own land, by al-Qaeda. If the purpose was to cause a global psychological state of fear, uncertainty, and terror, it could be claimed that the attacks achieved the goals. The September 11 attacks also served to the purpose of humiliating the United States in the eyes of many all around the world and showing its vulnerability (Moghaddam and Marsella 2004b).

Ken Booth defines the September 11 attacks as a “wake-up call” to the United States but warns the alarm is faintly heard (Booth 2007c). Moghaddam and Marsella add that Bin Laden gave voice to the perceived indignities the West committed against the Muslim community; some of them cheered the September 11 attacks, although several Muslim governments condemned it (Moghaddam and Marsella 2004c). On this point, Bernard Lewis explains why Bin Laden and al-Qaeda made such kind of attacks with the following:

The triggers for bin Ladin’s actions, as he himself has explained very clearly, were America’s presence in Arabia during the Gulf War – a desecration of the Muslim Holy Land – and America’s use of Saudi Arabia as a base for an attack on Iraq. If Arabia is the most symbolic location in the world of Islam, Baghdad, the seat of the caliphate for half a millennium and the scene of some of the most glorious chapters in Islamic history, is the second (Lewis 2003).

⁴Hüseyin Bağcı is quoting from Donald Rumsfeld who gave a speech at the 42nd Munich Conference on Security in Munich, Germany on February 5, 2006. (From Hüseyin Bağcı 2008).

Within this context, Lewis underlines that al-Qaeda and the consecutive declarations of war by Bin Laden marked the beginning of a new and ominous phase in the history of both Islam and terrorism (Lewis 2003, p. 137).

21.4 Conclusion: Al-Qaeda as a Model for “Sustainable Disorder”?

Despite long-lasting and still ongoing fight against al-Qaeda, there is no final victory yet. The killing of Bin Laden did not result in the end of the story. In contrast, al-Qaeda, which adopts the use of terror against selected domestic and foreign enemies and invaders, (Fuller 2010) still struggles for complete disorder, in other words, chaos. Its negative impact goes beyond regional focus as seen in the September 11 attacks and afterwards. In addition, al-Qaeda offers a model for other radical groups and organizations causing deeper disorder, which may have globally serious consequences.

In fact, this model reproduces itself because several militant entities share al-Qaeda’s philosophy and purpose. For instance, DEASH, with its affiliations and supporting groups, has recently been the most violent terrorist organization, which currently operates in many countries and causes terror in a wide range of area. Like al-Qaeda, DEASH does not regard current states legitimate to be the point of departure for an international system, and jihadists have a duty to transform the *Dar al-Harb* (Kissinger 2015). On this basis, DEASH aims to establish a caliphate in Sunni regions of Iraq and Syria. However, its military defeats have made DEASH militants spread to other neighboring and regional countries. This situation consolidates DEASH’s transboundary position, another similarity to al-Qaeda in terms of organization. Hence, it seems possible to claim al-Qaeda presents a model producing and reproducing a sort of a vicious circle that causes “sustainable disorder.” If not found a proper way to solve this problem permanently, international community might face more challenges, which implies “chaos” indeed.

In conclusion, by sharing Karen Armstrong’s view “what happens in Gaza, Iraq, or Afghanistan today, is likely to have repercussions in New York, Washington or London tomorrow,” (Armstrong 2002) this article argues that al-Qaeda offers a model to others continuously generating “sustainable disorder” which may trigger more chaotic global security environment in the future.

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Chapter 22

Examination of Working Women's Self-Esteem



Şefika Şule Erçetin and Deniz Görgülü

Abstract Self-esteem which is closely correlated with self-conception states the positive attitude that people develop toward their own personality. Self-esteem can determine the attitudes of an individual, being an important part of his personality and affecting all aspects of his life. Self-esteem which plays a significant role in personality development and is a collection of perceptions, emotions, and thoughts that are important for the individual has significant roles in situations like socializing and making decisions. Women's going out to work caused them to face a certain number of problems. These problems caused women to go through a chaos. Determining working women's self-esteem is crucial to take required measures by indicating the chaotic situations they face in working life. In this research, Rosenberg Self-Esteem Scale was conducted on 153 working women living in the province of Konya to determine their self-esteem. Since the parametric test hypothesis (normality) did not work to detect the differences between groups while analyzing the data, Kruskal-Wallis test was utilized. At the end, the research showed that working women's self-esteem is high. While the working women's self-esteem changed depending on their income and educational level, age, number of children, and marital status did not make remarkable changes on their self-esteem.

22.1 Introduction

Employee is a term defined as somebody working in a workplace with a fee (TDK 2017). As it can be understood from the meaning of the word, for somebody to be defined as employee, he/she needs to be paid for the act of working. Even though, the act of working has been regarded as a man thing for centuries due to the lexical meaning of the word, today it has regained a natural and common attribution for women also (Koray et al. 1999).

Women taking place in the economic life since the very beginning eras of history usually labored in agricultural sector at first times. Women, taking in charge of

Ş. Ş. Erçetin · D. Görgülü (✉)

International Science Association-Ankara, Turkey, Hacettepe University, Ankara, Turkey

breeding and caring for their families and houses in a traditional frame, contributed to the family budget for their family companies or agricultural areas except the war times (Kuzgun and Sevim 2004; Erdal 2008). After the Industrial Revolution, women got the opportunity to work as salaried employees outside of their houses by gaining the right to be educated. At that time, women participated in the working life in the status of employees, as we know what it means today. In this way, the term of “labor force of salaried females” occurred. At those times, most of the employees working in weaving sector consisted of female labor force (Kocacık and Gökkaya 2005). Nevertheless, due to unqualified female labor force, long work times of this period, and low salaries, men’s reign in working life went on (Çolak 2003).

When the situation of the working women in world countries is examined in the course of time, it is seen that women in England mostly worked in gas, electricity, and health-care services and also got the same salaries as men in the 1950s. It is also seen that women manifesto including topics like equal pay, ease of education, and getting back to their jobs after marriage was prepared in 1962. In 1975, “The Law of Sex Discrimination” was approved by the British Government. As a result of vigorous efforts of women’s movement, policies of equality in opportunity such as rights of equal pay, birth, child care, and social security were put into practice in working life (Peker and Kubar 2012). When today’s industrialized and developed countries are observed, it is realized that the number of working women is high, and they mostly work in industry sector and service industry (İlgar 2001).

In the case of Turkey, the active presence of females in working life reaches to the 1950s. It is stated that industrial working was not regarded as prestigious as service industry by society and was not much preferred by women unless they were obliged to do it during that period (Kocacık and Gökkaya 2005). In the 1970s, the number of women demanding to work in cities drastically increased along with urbanization. However, in the 1980s, they could not get the adequate employment opportunity in the industry sector even though they wanted to work. Although service industry offered more employment opportunities for women than industry sector did, these opportunities were inadequate in those times (Ecevit 1995). It is seen that one fourth of the women worked in the 1990s. This is because most of the employed women used to labor in agricultural sector free of charge. It is also detected that 69.5% of working women labored in agricultural sector, 10.8% labored in industry sector, and 19.7% labored in service sector (Gönüllü and İçli 2001). By the 2000s, even though women’s labor force participation rate, which was 27.1% in 2001, regressed to 23.6% till 2007, it grew to 27.5% until 2015 by showing insignificant increases. When the employment rates of the members of the European Union are observed, it is seen that the country in which women employment rate was the highest in 2015 was Sweden by 74% and the lowest was Greece by 42.5%. The average women employment rates of the member countries of the European nation (28 countries) is determined to be 60.4% (TUİK 2017).

Working is one of the means of meeting the people’s needs of prestige, desire, honoring, and statute besides being the source of income. Thus, all humankind is in the act of working to meet these desires and needs (Fidan and İşçi 2004). Thus,

attaining to these mentioned desires and needs is important for women in terms of their self-respect.

Self-esteem which is closely correlated with self-conception states the positive attitude that people develop toward their own personality (Ulusoy 2013). According to Coopersmith (1967), self-esteem involves a manner of approval or disapproval and indicates the degree to which the individual believes himself to be capable, significant, successful, and worthy. In short, self-esteem is a personal judgment of worthiness that is expressed in the attitudes the individual holds toward himself. Chrzanowski (1981) defined self-esteem as a positive image of oneself based on a fair judgment of one's assets and liabilities. Rosenberg (1979) defined self-esteem as an individual's positive or negative attitude toward himself. According to him, self-esteem is a result of self-evaluation. Yörükoğlu (1986) described self-esteem as a state of spirit which provides an individual to be satisfied with himself without regarding himself superior or inferior than he is, to regard himself worth admiring or loving, to approve himself as he is or he seems, and to trust his own self, while Yavuzer (2012) defined self-esteem as an individual's feelings about what he is at present and what he wants to be in the future, opinions related to his own value, and satisfaction of the perceived self-conception.

Self-esteem is the difference between an individual's self-conception and ideal self. This difference provides us with the information of the individual's self-esteem level. The way an individual interprets this difference and how this difference affects his emotional realm is significant in this process (Ceylan 2013). It is seen that the community people live in has a big share in the development of self-esteem. Social expectations force people to act according to a certain role by overimpressing them. Whether he acts according to a certain role or not affects the individual's judgments on his self-value (Kabalıcı 2008).

People whose self-esteem is high expect more from themselves. Because these people have positive attitudes toward themselves, they accept and believe in their opinions and also trust the results they obtain. This situation gives them the strength to defend their thoughts (Ulusoy 2013). However, people with low self-esteem have quite little trust in their selves. For this reason, they worry that they might exhibit different or unacceptable opinions and cannot express themselves. They prefer being a listener in a group rather than being an active participant. These attitudes of them limit their social relations and decrease the probabilities to have intimate relations with others (Knightleya and Whitelock 2007).

Self-esteem can determine the attitudes of the person, being an important part of his personality and affecting all aspects of his life. Self-esteem which plays a significant role in personality development and is a collection of perceptions, emotions, and thoughts that are important for the individual has significant roles in situations like socializing and making decisions (Dilmaç and Ekşi 2008). In this context, examining self-respects of the working women who occupy important places in societies is thought to be important in terms of revealing their opinions which direct their attitudes. Furthermore, detecting the effects of the traits of the working women on their self-respects is vital for the research.

Women's going out to work caused them to face a certain number of problems. International Labour Organization (ILO) examined the hardships women face under three titles. These are glass ceiling (preventing improvement), sex discrimination in salaries, and working women ill-paid (Çağlayan and Etiler 2009). Being exposed to long work time, regarded as lower payed and uninsured alternatives to male workers, ignoring principle of equality while employing, restricting and limiting of working life by maternity or home life, sexual harassment, etc. are some of the problems women encounter in working life in Turkey (Küçük 2015). These problems cause women to go through a chaos. This chaos environment needs to be dealt with skillfully to integrate the women to working life successfully. Dealing with the chaos can be accomplished by taking measurements to prevent it and seeking the solutions in a calm and rational way, while it is in existence (Çavuş et al. 2016). For this reason, determining self-esteem of working women is essential to detect the chaotic situations they face in working life and take necessary measurements.

22.2 Purpose of the Research

The purpose of the research was to find out the level of working women's self-respects. The answers of the questions below were sought in accordance with this purpose:

1. Which levels are the working women's self-respects on?
2. Do the working women's self-respect levels change according to the variances of:
 - (a) Age.
 - (b) Marital status.
 - (c) Number of children.
 - (d) Education level.
 - (e) Income state.

22.3 Method

Datum of methods of the research is in this section.

22.3.1 Model of the Research

Scanning model was used in this research conducted to find out on which levels the working women's self-respects are. In the scanning models, the situation which is studied in the research is tried to be depicted as it is in its own circumstances. An effort to affect or change them is not made (Karasar 2009). An information form

Table 22.1 Information about participants

		<i>f</i>	%
Age	20–29 years old	71	46
	30–39 years old	58	38
	40–49 years old	24	16
Marital status	Single	70	46
	Married	66	43
	Divorced	17	11
Education level	High school	19	12
	University	114	75
	Postgraduate	20	13
Number of children	None	83	54
	1	31	20
	More than one	39	26
Income state	0–1000 TL	7	5
	1000–2000 TL	32	21
	2000–3000 TL	34	22
	3000–4000 TL	57	37
	4000 TL and above	23	15
Total		153	100

including personal and social traits of the participants and Rosenberg Self-Esteem Scale (RSES) abridged by Tukuş (2010) was used in this research.

22.3.2 Participants

The information belonging to participants who took part in the research conducted in order to figure out on which levels the working women's self-respects was given on Table 22.1.

According to the information given in Table 22.1, it was observed that 46% of the participants was between ages 20 and 29, 38% was between ages 30 and 39, and 16% was between ages 40 and 49. It was found out that 46% of participants was single, 43% was married, and 11% was divorced in terms of marital status. Twelve percent of the participants graduated from high school, 75% of them graduated from university, and 20% of them had the postgraduate education. Fifty-four percent of the women who participated in the research had no children, 20% of them had one child, and 26% of them had more than one child. Five percent of the participants earned 0–1000 TL, 21% of them earned 1000–2000 TL, 22% of them earned 2000–3000 TL, 37% of them earned 3000–4000 TL, and 15% of them earned 4000 TL and above.

22.3.3 *Collecting the Datum*

Rosenberg Self-Esteem Scale (RSES) obliged by Tukuş (2010) was conducted on 153 women having different occupations in Konya province aiming to find out their self-respect levels. The internet address of the scale was sent to the women living in Konya province after having confirmed they were working at that moment. Internal consistency coefficient was calculated to determine the reliability of the scale and was found (Cronbach Alpha) 0.85. Thus the scale is reliable and consistent.

22.3.4 *Analyzing the Datum*

Four-point Likert scale was used to detect the self-respects of the working women. The 1, 2, 3, 4, 6, and 7 items consisted of positive expressions; 3, 5, 8, 9, and 10 items consisted of negative expressions. Positive expressions were graded as (4) totally accurate, (3) accurate, (2) inaccurate, and (1) totally inaccurate; negative expressions were graded as (4) totally inaccurate, (3) inaccurate, (2) accurate, and (1) totally accurate. As a result of the grading, score intervals used to detect participants' self-respect levels were as follows: 1–1.74 extra low, 1.75–2.49 low, 2.50–3.24 high, and 3.25–4.00 extra high.

To analyze the datum program of SPSS 24 was used. Defining statistics were found in analyzing the datum. Since the parametric test hypothesis (normality) did not work to detect the differences between groups, Kruskal-Wallis test was conducted.

22.4 Findings

Related information about the findings was given in this section.

22.4.1 *Findings About Subproblem*

In the first subproblem of the research, the question of “which level is the working women’s self-respects on” was tried to be answered. The defining statistics of the working women’s self-esteem were shown in Table 22.2.

When Table 22.2 was examined, it was seen that the mean of working women’s self-respects was 3.30. Looking at this result, we could say that the women’s self-respects were high. It was seen that the item of “I think that I have some favorable features” had the highest mean (3.65). The expression of “I would love to respect myself more” attracted attention as the item with the lowest mean (2.55).

Table 22.2 The defining statistics of working women’s self-respect levels

Items	\bar{x}	s
1. I regard myself, at least, as much valuable as other people	3.64	0.728
2. I think that I have some favorable features	3.65	0.672
3. I usually tend to see myself as an unsuccessful person	3.25	0.506
4. I can do as much as most of the other people can do	3.54	0.848
5. I can’t find much to be proud of me	3.26	1.111
6. I have a positive attitude toward myself	3.29	0.635
7. I am pleased with myself in general	3.29	0.519
8. I would love to respect myself more	2.55	0.691
9. I sometimes think that I am totally useless	3.32	0.573
10. I sometimes think that I am not sufficient at all	3.25	0.759
Total	3.30	0.656

Table 22.3 The results of the Kruskal-Wallis test about the examination of the self-respects of the working women depending on their ages

	n	Mean rank	sd	χ^2	p
20–29 years old	71	68.59			
30–39 years old	58	83.78	2	4.819	0.09
40–49 years old	24	85.48			

Table 22.4 The results of the Kruskal-Wallis test about the examination of the self-respects of the working women depending on their marital statuses

Marital statuses	f	Mean rank	χ^2	df	p
Single	70	75.83			
Married	66	78.07			
Divorced	17	77.68	0.09	2	0.95
Total	153				

22.4.2 Findings About Subproblems

In the second subproblem of the research, the question “do the working women’s self-respect levels change according to the variances of (a) age, (b) marital status, (c) number of children, (d) education level, and (e) income state?” was tried to be answered.

To find out if the self-respects of the working women change according to their ages, Kruskal-Wallis test which is one of the nonparametric tests was conducted. The results were given in Table 22.3.

It was concluded from Table 22.3 that the working women’s self-respects did not change according to their ages.

Kruskal-Wallis test, which is one of the nonparametric tests, was applied to participants to examine whether the self-respects of the working women change according to their marital statuses. The results were given in Table 22.4.

The fact that the working women’s self-respects did not change depending on their marital statuses drew attentions when Table 22.4 was examined.

Table 22.5 The results of the Kruskal-Wallis test about the examination of the self-respects of the working women depending on the number of children they have

Number of children	<i>f</i>	Mean rank	χ^2	df	<i>p</i>
No child	83	74.90			
One	31	78.16			
More than one	39	80.54	0.46	2	0.80
Total	153				

Table 22.6 The results of the Kruskal-Wallis test about the examination of the self-respects of the working women depending on their education levels

Education level	<i>f</i>	Mean rank	χ^2	df	<i>p</i>
High school	19	66.71			
University	114	72.98			
Postgraduate	20	109.68	12.9	2	0.002
Total	153				

Table 22.7 The results of the Kruskal-Wallis test about the examination of the self-respects of the working women depending on their income statuses

Income statuses	<i>f</i>	Mean rank	χ^2	df	<i>p</i>
0–1000 TL	7	16.5			
1000–2000 TL	32	66.16			
2000–3000 TL	34	80.01	20.13	4	0.00
3000–4000 TL	57	80.82			
4000 TL and above	23	96.57			
Total	153				

Kruskal-Wallis test, which is one of the nonparametric tests, was used to figure out if the working women's self-respects change according to the number of children they had. The findings were given in Table 22.5.

By examining Table 22.5, we came to a conclusion that working women's self-respects did not change according to the number of children they had.

Kruskal-Wallis test, which is one of the nonparametric tests, was used to figure out if the working women's self-respects change according to their education levels. The findings were given in Table 22.6.

When Table 22.6 was examined, it was noticed that the working women's self-respect levels altered according to their education levels. It was found out that women with postgraduate degrees had the highest self-esteem levels, while the high school graduates had the lowest.

Kruskal-Wallis test, which is one of the nonparametric tests, was used to figure out if the working women's self-respects change according to their income statuses. The findings were given in Table 22.7.

When Table 22.7 was examined, it was realized that the working women's self-respect levels changed according to their income statuses. It was found out that the working women earning 4000 TL and above had the highest self-esteem; on the other hand, the working women earning between 0 and 1000 TL monthly had the lowest self-esteem levels.

22.5 Discussion

In a broad sense, self-esteem is an individual's regarding of his own self as valuable, successful, and honorable (Kohut 1971). As a result of the problems they have been exposed to in working life, the working women are obliged to work in a chaotic environment. That is why, regarding themselves valuable and successful is important for working women. In order to enhance self-esteem levels of the working women and to obtain maximum efficiency from their work, this chaotic environment needs to be managed well. Thus, determining the self-esteem levels of the working women can be effective in terms of turning chaotic situations into opportunities (Ertürk 2012).

In this research carried on finding out on which levels the working women's self-esteem levels are, it was seen that their self-esteem levels are rather high. This finding shows parallelism with many researches conducted in Turkey (Tekirgöl 2011; Biroğul 2015; Irmak 2015; Tüysüz 2015; Teke 2017). The fact that similar findings were obtained from these researches conducted on various occupational groups shows that the self-esteem levels of working women who work in Turkey are high.

When the body of literature is examined, it can be said that there are a lot of researches on self-esteem levels of working women in the world. Azar and Vasudeva (2006) with Maryam, Bakhshipour, and Ebrahimi (2013)'s research on employed and nonemployed women in Iran reveals that employed women's self-esteem levels are higher than that of nonemployed women. Nabila and others (2013) through a research they conducted on women working in Dow University found out that most of the participant's self-respects are at normal or higher levels. In a research conducted in Pakistan, Zeab and Ali (2015) stated that the self-esteem levels of working women are at higher levels.

When the items of Rosenberg Self-Esteem Scale were examined, it was seen that the working women successively had the highest mean rank in the items of "I think that I have some favorable features," "I find myself, at least, as much valuable as other people," and "I can do as much as most of the other people can do." It also attracted attention that women had the lowest mean in the item of "I would love to respect myself more." Therefore, it can be concluded that working women would love to have more self-respect.

Another finding shows that self-esteem levels of the working women did not change according to their ages. This finding shows parallelism with the finding "The variable of age does not have an effect on working women's professional self-esteems" obtained by Akçagöz (2017); on the other hand, it contradicts with the finding "As the working women get older, their self-esteem levels also gets higher" obtained by Tüysüz (2015).

It was also found out that the self-esteem levels of the working women did not change according to their marital statuses. This finding shows parallelism with Hasnain, Ansari, and Sethi (2011)'s finding of "Marital statuses do not affect working women's self-esteem levels." It can be concluded from this finding that "their marital statuses do not affect working women's self-esteem levels."

According to the research, we can also say that self-esteem levels of the working women did not change in accordance with the number of children they have. This finding shows parallelism with the finding obtained from Akçagöz (2017)'s research. According to the finding, the variable of the number of children doesn't make remarkable changes in the working women's self-esteem levels.

The change in the self-esteem levels of the working women depending on their educational levels attracted attentions in the research. It was found out that working women with postgraduate degrees had the highest self-esteem levels, while high school graduates had the lowest. This finding shows parallelism with Tüysüz (2015)'s finding of "According to the scores of self-esteem sub-scales, there is a remarkable difference to the detriment of highschool graduates and below. It's found out that highschool graduates and below have lower self-esteem levels than others."

At the end of the research, it was found that the self-esteem levels of the working women changed depending on their income statuses. The fact that women earning 4000 TL and above had the highest self-esteem levels while women making 0–1000 TL monthly had the lowest self-esteem levels attracts attentions. This finding contradicts with Akçagöz (2017)'s and Tüysüz (2015)'s researches.

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Chapter 23

Discussion on Erçetin’s Quantum Leadership Paradigm in Terms of the School or Classroom Management



Aynur Saran

I learn how ignorant I am when I learn

Anonymous folk culture

Abstract N. Copeland says that: “Leadership is the art of being able to affect people mentally, physically, emotionally.” Management is what it means to manage people, to convince them that what you want to do is what people actually want to do. As the leader of education, it can be considered as the necessity of our time to be the “leader-manager” by providing trust, open communication, and effective communication between the school administrator and the staff and the environment. In this study, firstly, from the classical physics theory which advocates the linearity that Newton put forward by the movement of quantum theory in physics, the quantum physics theory of the scientists such as Planck, Einstein, and Broglie has brought about our everyday life, our relationships, and ourselves. It has been emphasized that it has proposed new conceptual constructions that illuminate our perspective of the world. In addition, this study examines the uncertainty of quantum theory, especially the chaos, the principles of discontinuity, and the arguments raised by it, which affect the management and educational sciences.

23.1 Introduction

Warren Bennis: Leadership is similar to beauty, it is difficult to define. But you know when you see it.

Many years ago, people thought, “You cannot be leader, leader is born.” Strict rules between social classes made it impossible for talented people who want to be a leader. At that time, people thought that leadership is legacy through inheritance.

A. Saran (✉)
Hacettepe University, Ankara, Turkey

However, after the demolition of these barriers, social scientists began to investigate the accepted common characteristics of the leaders. The main development has begun after sociologists have looked at leadership as an interaction between leader and followers.

Leadership has attracted the attention of scientists since the nineteenth century. Sociologists entered an intensive work in the twentieth century. Leadership has been one of the most prevalent topics for both theorists and practitioners who have been engaged in the field of literature the most. This intensive study has entered more than 5000 bibliographies and more than 350 definitions in the literature. In this context, leadership-related approaches have been developed, and leadership has been described with definitions. However, when it comes to the literature, we can say that the concept of leadership is considered to be the most studied, disputed, but uncompromising concept.

In 1902, C. Cololey said, "Leadership is in the nature of social movements." In 1942, N. Copeland defines leadership as "Leadership is the art of being able to affect people mentally, physically and emotionally" Bass (1990: 11). "There is as much leadership as the number of people who want to define," by saying that there is no consensus in the relevant literature. However, guiding principles can be determined by examining at the common characteristics of the definitions. It seems that leadership has a managerial conceptual feature that is aimed at realizing a specific aim, including guiding, motivating, and influencing organization and followers (Özdemir 2013). However, while expressing an individual leader, leadership is seen as a form of behavior (Aydın 1998).

Leaders initiate and control change by challenging the current situation in order to differentiate the organization, direct the targeted future, and trigger change and development. Your key of leadership is to be positive, courageous, enthusiastic, optimistic, constructive, and creative (Barutçugil 2014). Leadership is an art not a science.

Research has shown that the best leaders are the ones who build bridge with the audience. Leadership is the work of the heart; leaders are to spread positive energy in their organizations, even under chaos, under high stress.

Nowadays, the natural constructions, the world, the change of human structure, the dizzying speed in ecological and technological developments ... literally "second creation" process has been happening (Erçetin 1999). The semimonomical evolution is in the process of realization. In this process, it is seen that everything is changing and that the younger generations have objections to "managing" in their understanding of leadership. Therefore, leadership in the new understanding is now perceived as "managing people by directing people" rather than "managing people." Today's leaders should have features that can communicate more, to be more participatory, more flexible, able to manage conflicts properly, to be flexible and alive, to keep the organization at the edge of chaos, and to keep the organization together and keep the energies together (Uzunçarşılı and Soydaş 2007).

23.2 The Birth of Quantum Theory and Fundamentals of Quantum Theory

The quantum theory that emerged as a new paradigm at the beginning of the twentieth century emerged from the need of the physicists to explain the universe of subatomic particles. Quantum theory has revealed the world at the atomic level, which has not been seen by the naked eye; science has created new debates in philosophy and theology. One of the most important discoveries of the quantum theory is uncertainty and the other is the concept of probability.

In 1985, Max Planck took the first step in explaining the coalescence of the black body by showing that the radiation was spread or absorbed in packets called quanta. This meant that the spread was absolutely certain and it was a step that destroyed the known Newtonian thought structure through the mechanics of physics and its definite conclusions. In this context, two different order and physics conception were born that attain a deterministic appearance at the subatomic level of the indeterminist atom. It is accepted that Newtonian classical mechanics examines only the macroscopic universe, while quantum mechanics is the presentation tool used to express both the microscopic and macroscopic universe. Niels Bohr has contributed to quantum theory with scientific work on hydrogen atoms, but he stood out more with the philosophical evaluation. Following these, Louis De Broglie's material-wave theorem and Werner Heisenberg's uncertainty theory have gained new dimensions.

23.3 Basic Principles of Quantum Theory

The basic principles of quantum theory can be summarized as follows:

23.4 Wave-Particle Duality

In quantum physics, objects show both wave and particle properties. However, this ensures that only one of them is observed according to the focus feature of the prepared observation/experiment setup. Thomas Young's double-slit experiment proved it. In some events, the wave behaves as a particle. However, two characters do not show at the same time.

23.5 Disconnectedness of the Energy Principle

In quantum physics, energy is in a “quantized” (interrupted) form that does not show continuity. An atom’s energy cannot be zero, but it can be at different values. As can be understood from these expressions, the particle can jump from one fixed orbital to another without discontinuity. In this respect, precise boundaries do not exist.

23.6 Uncertainty principle (Heisenberg)

In the quantum physics, it is not possible to measure the position of an electron or an atom exactly and precisely, because atoms and momentum are not independent of each other. For this reason, any desired observation cannot be determined with the desired accuracy. These uncertainties arise not only from the measurements but also from the characteristic feature of the particle. According to this principle, future situations are unpredictable.

23.7 Pauli Exclusion Principle

This principle means that two electrons cannot be at the same energy level at the same time. In other words, since atoms are everywhere, changes made to an atom affect the configurations of other atoms.

We can briefly quantify the principles of quantum in the following way.

- Everything is particle in the universe. Each particle is also a wave.
- We look at the universe as quantum stance or quantum behavior.
- Uncertainty principle.
- Superposition principle: When situations in a system are overlaid, other possibilities arise.
- Objective probability: Everything is coincidence.
- Correlation.
- Delayed selection: Each particle can select and use one of its properties through a tunnel.
- Indicates the presence of a tunneling particle between the superconducting ring quanta.

23.8 Butterfly Effect

“Everything is related to other things.” “Little changes in the initial conditions give rise to great and unpredictable consequences.” Lorenz says: “A butterfly wing in the Amazon forests can cause a storm to break in the US.” The butterfly effect is the clearest example given to the theory of chaos. Koneko and Tsuda describe the concept of “Chaos” as unpredictable movements in systems (2001: 4). Displacement of the system brings the dynamic of the new order for the system. This example demonstrates not only the initial dependency but also the conceptualization of the dependency of the states within this integrity.

Therefore, the butterfly effect emphasizes that an individual, an event, an event that is initially ignored can make ultimately a major effect, so that individuals, leaders, and especially organizations have to make full use of the different abilities and reactions of educational institutions (Gunter 1995 cited in Çobanoğlu 2008). However, Lorenz, in his own words, explains that the magnitude of the consequences cannot always be predicted: “I have no doubt that it is not possible to predict in any physical system that exhibits non-periodic behavior.” Butterfly effect is technically defined as “sensitive dependence on initial conditions”.

23.9 Tunneling Effect

According to classical physics, kinetic effect of an object cannot be zero. The throwing ball cannot cross the wall. According to quantum theory, a quantum particle without enough energy to overcome an energy barrier can still overcome the obstacle, and this possibility is not zero. This effect, which describes phenomena such as radioactivity, is called “tunneling.” It was noticed by Friedrich Hund in 1927. When human beings are examined from the physical point of view, it means energy as a whole.

When human beings are examined from the physical point of view, it means energy as a whole. The thought is created by brain cells, which are microparticles, so thought must be governed by the micro-universe law and must be quantized. In reality, life means the formation of thought quantities in our brain and the directing of our body. Management of the quantas of thought ensures that positive and constructive thoughts are generated. Tunneling effect is utilized in education. In everyday life or in our educational life, we pass through tunneling by making quantum leaps, thinking positively from the problems that we think we cannot overcome with our knowledge and skills, because that seems so big.

The quantum leap is explained as “If a free electron collides with an electron returning to orbit, the electron in the orbit is a top energetic splatter, this is an instantaneous event and unpredictable” (Berkmen).

23.10 Organization and Management in the Context of Quantum Theory

Organizations are structures that established to meet the needs of communities in modern life that surround people. It can be thought of as specialized individuals who come together in the face of the complexity of what we need and as a whole of interrelated, complementary activities (Özdemir 2013). Dictionary meaning of organization is that the institutions or people who have come together to carry out the action or to realize a common purpose. According to Schein (1984), the organization is a rational coordination of the activities of a group of people to achieve some common goals through the business division authority and responsibility hierarchy.

Newtonian mechanics has dominated to the world of science from eighteenth century to the twentieth century. The effects of this theory have also been reflected in social areas and have led the working systems and organizations to think mechanically. This view has been thought of as a box isolated world that functions independently of closed and environmental factors. It is assumed that there is a deterministic and orderly world in which the same causes have the same consequences (Erçetin 2001: 8). In the twentieth century, the effects of quantum theory and quantum mechanics began to be felt in all areas. This new scientific thought, which lost its significance to the old science, puts forward a new paradigm. This new paradigm has changed our management style, our organizational theories, our understanding of education, our economic trends, our organizations, our global perspective, and our understanding of leadership. In this regard, Wheatley (2006) states that “the Newton organization type is no longer working ... and that leaders can revitalize their organizations and their institutions only from the point of view of quantum physics.” The main thing in self-organizing quantum organizations is to ensure that all employees are fed from the organization’s vision. Power and control have changed with confidence in the ability to self-organize (Şenyılmaz 2012).

According to Zohar, this phenomenon that we refer as quantum is both wave and particle. These two sides of quantum meet each other, just like the right and left lobes of the brain. Each lobe contains information that has not found in the other lobe.

According to Shelton and Darling (2001), organizations are not mechanical entities but are interactive and lively organizations. On the other hand, Pellisier describes the quantum organizations as “the organic link of a dynamic and evolving network of relationships,” and Malherbe (2011) lists the fundamental principles as:

- Integrity
- Balance
- Connectivity
- Acting jointly
- Creativity
- Openness to probabilities

Shelton and Darling have drawn attention to learning organizations/organizational learning in quantum organizations, and Dargahi (2003) says that continuous

learning is a part of organizational culture and has also described quantum organizations as organizations that have stakeholders/members who can reach endless potentials.

Deardorf and Williams (2006) characterize quantum organizations as:

- Trust
- Dialogue
- Common thought
- Values
- Learning
- The unity spirit

23.11 Quantum Leadership

Quantum physics and the theory of relativity descend into the subatomic world, revealing that everything in the world is interconnected and identical and that there are no single objects in the world. It is told that nothing is disconnected and separate and that they are related. Hologram theory also supports this and suggests that the essences of each of them are identical in the sense that all existing ones are parts of the same whole.

- Quantum leaders approach their organizations in such a way that the world is a kind of living organism rather than an automatic apparatus.
- Quantum leadership also has the ability to self-organize and live just like organizations.
- Quantum leaders are aware that what they can do in the future is now unpredictable, considering how things have been done in the past.
- Quantum leaders believe in the effective outcome of team power rather than more flexible, self-governing individuals.
- Quantum leaders are aware of the importance of the role of communication as a success. They know that “Inadequate communication is the biggest enemy of organizations.”
- Quantum leaders are leaders who can balance the stability and chaos, which can be easily and quickly adapted.
- Quantum leaders are in interaction with everything in the organization. Quantum leaders know that leadership is an area of interaction between followers and themselves.
- Quantum leaders help the organization to find its own identity.
- Quantum leaders know that leadership is an unstructurable and unpredictable process.
- The common values of quantum leaders are knowledge, respect, trust, and high expectations.

Quantum leaders use their power to influence their organizations (Erçetin 2000):

- Quickness in action and behavior.
- Adapt to changing situations.
- Flexibility and convenience.
- Efficiency in relationships.
- Vitality.
- Open-mindedness.
- Using their imagination.
- Gives renewal qualities.
- Quantum leaders keep their organizations on the edge of chaos as organizations are living systems.
- Quantum leaders create a rewarding system that encourages risk taking, thus providing organizational learning and information flow.
- Quantum leaders form a flexible decision-making system and strategies based on structured value systems, based on the nature of the situation.
- Quantum leaders can go beyond the limits of habit in opportunities and crises because they have the capacity to question themselves and the environment. Crises can turn into opportunity.
- Quantum leaders are people with high energy and imagination.
- Quantum leaders take the negative energy into the discussion environment and create potential energy in order to remove the conflicts of the organization from the negative influence of the unity spirit.

23.12 Basic Assumptions of Quantum Leadership Paradigm

After the emergence of change and transformation as a feature in the twenty-first century, these concepts expanded to include different disciplines of influence. When interaction between disciplines has intensified, the main theme has been initiatives to redefine approaches in scientific study. According to Erçetin (2000), the assumptions of the quantum leadership paradigm are as follows.

1. *Leadership is an area of interaction in leader and follower dilemma.* When we move from the assumption that quantum physics carries both wave and particle properties, leadership can be seen as a field of interaction in leader and follower dilemmas. Individuals within the same energy field can be affected by the energy of other individuals. In the organizations considered as quantum fields, the interaction between the leader and followers contributes both to the formation of the integrity and team spirit and to the social and psychological satisfaction of the followers.
2. *Leadership cannot be structured and estimated.* The quantum leadership paradigm coincides with the uncertainty principle of quantum theory and suggests that

leadership is regarded as an indefinable, uncertain, and undefined “nondeterministic” reality. According to the uncertainty principle, leadership is surrounded by risks and probabilities and beyond what these risks can be predicted. The future is unpredictable and cannot be left to chance; the fluctuations in the future environment emerge as a sensitive response.

3. *Discontinuity of leadership is fact.* Especially when we look at leadership, leadership characteristics, and leadership principles from a quantum point of view, we can see the discontinuity of leadership. Combinations, breaks, and hand changes can be seen in different time spans due to spontaneous situations. When leadership is perceived as advancing on the slippery ground, the principle of discontinuity ensures that relationships with followers are conducive to behavior, which empowers more authority than single authority, gives opportunity for future leaders, and keeps the organization healthy and alive.
4. *Impact of leadership depends on interaction.* The positive or negative development of the interaction between the leader and the followers decreases or increases the influence of the leadership.

However, with the assumption that the quantum physics, the effect of the coercive leadership can be applied up to a certain extent, no one will be forced to follow anyone else, the result will be transparency, learning with respect and mutual tolerance towards authority and coercion increase the interaction of the learning. The human brain which is shown as a quantum organization metaphor is a matrix of systems that are housed in a layered form but at the same time integral and internal (Degirmenci and Utku, 2000). Quantum leaders are in communication (Zohar 1997):

- Select ideas and beliefs that aim to achieve positive mental models.
- They know themselves, and they trust their wisdom.
- They are brave to be true and sincere.
- Take responsibility of their feelings, not blame others.
- Know their own boundaries; they do not exceed the limits of others.
- Listen to words behind feelings.
- They are curious, but they cannot judge.
- They follow the change in the patterns.
- They create a feeling of trust and belonging.

23.13 Quantum Management in the Context of Quantum Leadership in Educational Organizations

According to Erçetin (1999), as in other branches of science, management is a scientific discipline that develops and enriches with the knowledge and findings obtained in other fields of science. Leaders and managers are products of organizations and/or societies. However, the concepts of manager and leader are handled

differently. There is no agreement in the literature in this regard. According to Keçecioğlu (1998), the differences can be classified as follows:

- Managers manage; leader is innovative.
- The manager is a repeater; the leader is original.
- The manager resumes; the leader is the developer.
- Manager focuses on the construction of the system; leader focuses on people.
- Manager trusts supervision; leader trusts correctness.
- The manager has a short-term view; leader has long-term view.
- The manager asks “how” and “when”; “leader” asks why.”
- The manager runs his eyes on the base, while the leader moves his eyes in the horizontal plane.
- The manager is a good soldier and the leader is himself.
- -The thoughts of the manager are correct; the leader is in right thinking.
- The manager accepts the current situation; the leader challenges current situations.

In terms of the role of the managers and the leadership qualities in the position they are in must make it inevitable to lead in every field and every field to the organizations/employees (Koçel 1998). Education can be defined in many ways (Aydın 2010):

- Education is a process in which people deliberately, actively, and permanently pursue behavior through their own experiences.
- Education is a process in which people develop skills, attitudes, and other forms of behavior that are of value in society.
- Education refers to the systematic development of the knowledge and skills that are necessary for life for individuals through institutions.
- Education is planned effect process.

Atatürk says on this subject: “The most important problem is education, education is to live a nation as a free, independent, glorious society, or a nation will abandon it as a sacrifice,” and “ To bring our society to the goal of happiness, two armies are needed; The military army, which saved one’s country’s life, is the army of science, which kneads the future of the other nation.

Education is the fact that it affects people, organizations, institutions, and countries, and education is a dynamic system. Zahar (1998) states that the fundamental in quantum organizations is to provide a self-organizing working environment that is holistic and integrated with holistic understanding.

To sum up, the spirit of the time must be understood well in order to bring continuity change in education and the formation of learning organization structure (Hudson 2004). As educational institutions are open to learning and development, the quantum organization emerges as a concept that contributes significantly to the organization structures of the future.

When it comes to educational organizations, schools that come to mind first do not only feature organizational characteristics but also reflect the characteristics of society (Şişman and Turan 2002).

When we think of schools as social systems in our education system, these systems have to adapt to the changing conditions and keep up with the new construction. Those who will provide this situation will be school administrators and teachers as training leaders. In this regard, the training manager should consider the staff, the students, and all the individuals involved in the training activities in an integrated manner (Erçetin 1999).

As an effective school leader, the school manager creates positive, healthy, interactional, and human-centered organizations, so they can be active in their organizations and create synergies (Tengilimoğlu 2005). Good relationships of school managers with students and teachers increase the performance of teachers and students (Helvacı and Aydoğan 2011).

Educational organizations are complex systems. According to Caldwell and Spinks, qualities and skills that school administrators need to possess reflect many aspects of the quantum perspective (cited Dean 1995). These qualities are:

- Sharing of tasks and resources so that they can be used effectively.
- Check whether resources respond to educational needs.
- Be sensitive to the needs of teachers.
- Supporting and encouraging the professional development of the staff.
- Be aware of changes in the environment and in the school.
- Flexible management.
- Take risks when needed.
- Providing feedback to teachers.
- Controls to ensure that the objectives of the program are realized.

When we look at the quantum leadership in terms of school administrators, we can see that school administrators should be future-oriented and vision-conscious people who know how to integrate themselves with their surroundings and use technology to adapt to the present and future. Education leaders will provide effective services with the new management concept that has gained continuity (Erçetin 1999). The school manager and staff, who make up the wave-particle dilemma schoolwork of quantum theory, form organization together and feed each other with their interactions.

Quantum school managers organize the school and its environment accordingly by knowing that this situation is part of a normal order when they encounter an unpredictable situation. This theory presents a new management paradigm to school managers, in which there are a lot of unknowns, so managers need to look at events from different frames for effective management and to adapt to sudden changes through learning if data accumulation is not sufficiently known.

Quantum school managers are aware of the importance of feedbacks in school management and realize that they provide significant contributions to the development of a positive feedback system in nonlinear systems. According to Gunter (1995), feedbacks in chaos environments are complex. In fact, feedback is the mechanism for making a difference between the initial and final conditions. There may not be direct links between cause and effect. For this reason, managers use equilibrium, fragmentation, and instability within closed boundaries. Successful

organizations are governed between equilibrium and disintegration, because the fluctuations in the unpredictable future environment emerge a delicate response (Değirmenci and Utku 2000).

School managers in the quantum school system should pay attention to the impact of school feedbacks, because these feedbacks are echoed by the butterfly effect and spread by waves. This creates radical consequences. In this context, it is necessary to know that the effect to be made to the system in order to obtain the expected result is a long-term and correct effect. The school manager should establish a network around the educational organization to increase the quantum interaction and communication between the environment and the organization and add a new dynamism to the school. It states that the classes are nonlinear, chaotic, and nondeterministic systems. Despite this uncertainty principle, teachers tend to accept coincidences and mistakes as coincidences, but errors are the factors that give the necessary information in the analysis and restructuring of the system. The teacher takes this information as feedback in order to correct misconduct.

In the classrooms where quantum principles are applied, it is known that the poorly managed small factors will evolve into big and negative results, and the well-managed small factors will evolve into big and positive results. The change process of the system is controlled by moving internal dynamics with smaller energies and quantum touches. Teachers should give more attention to the butterfly effect of Lorenz. A small, unexpected event originating from teaching affects the class system.

The school manager who will demonstrate quantum leadership behavior should apply a method from the top to bottom and from the center to out to achieve the change and development of the system. The employment of decision-making mechanisms from top to bottom or from center to out brings about better opportunities for students, teachers, and administrators. The development and change that were seen in education trigger the development in many systems. Through these processes, learning capacity is increased by focusing on possibilities. Quantum effects in terms of management are:

- Flexible structuring during uncertainty period.
- Holistic, not self-centered.
- Mutual interaction.
- Self-directed teams.
- Teamwork, not hierarchy.
- Organization from top to bottom and center to out.
- Motivational and unity perception and individualized awards.
- The richness of effective management of differences.
- Proactive solutions as result of holistic evaluations.
- A holistic view of the possibilities.
- More communication.

The quantum leader gives luck to leaders and allows them to use their potential (Erçetin and Kamacı 2008). Providing a common spirit between them and their followers will also contribute to the school's ability to provide better services and the school manager to feel more free (Erçetin 1999).

The school manager as a quantum leader can build a strong network in organizations by using the abilities of quantum energy and the concepts of quantum and chaos theories to enhance leadership effectiveness and improve leadership skills. These talents and skills are:

- * Quantum seeing \Rightarrow seeing purposeful
- * Quantum thought \Rightarrow think with paradox
- * Quantum feeling \Rightarrow feel alive
- * Quantum knowing \Rightarrow know intuitively
- * Quantum behaviour \Rightarrow behave responsible
- * Quantum trust \Rightarrow trust life process
- * Quantum being \Rightarrow be in relationship

Finally, leadership is distributed; communication is powerful and multifaceted in quantum organizations. Risk taking is encouraged; confidence is high. Managers who work as a quantum leader try to provide development by establishing networks of passions and goals between school managers and their followers in these organizations (Şenyılmaz 2012).

Different ideas in the context of quantum learning should be supported in schools as educational institutions. Observation; experiment; scenario-supported, project-based practices; and doing learning methods should be applied. It should not be forgotten that unsuccessful students should not be eliminated because the leap time in individual achievement in education is variable and that they can leap at an unpredictable time.

Teachers/students should be in constant effort to improve themselves. An open, flexible mind structure must be developed. The student should be moved to the position of producing knowledge, not loaded with knowledge. Students should gain critical thinking skills and ability to question what they have learned in the scientific framework. It should be ensured that the learner realizes himself as a whole, acquires a subjective point of view, and creates a flexible-wide understanding of avoiding sharp judgments.

23.14 Conclusion and Recommendation

In the twenty-first century, the winds of change are blowing. This wind requires the development of a new paradigm in educational organizations. Against the static dominance that does not require the change of mechanical understanding, organizations in today's unpredictable, uncertain, and chaotic environments, especially educational organizations, and managers of these organizations must show the leadership and management behaviors appropriate to keeping organization at the

edge of the chaos to manage change and to make the system live, flexible, mobile, and interactive.

Being independent from environment prevents the living creativity and brings the weakness of the organizational functions. In today's school environments, in today's complexity and uncertainty in educational organizations, and the anxiety about not being able to prepare in this chaotic environment with a linear understanding tomorrow, the multiplicity of stimuli around the students has necessitated the changing of the roles of school administrators and teachers. Today, the information is everywhere, and it is easily accessible. Today, the wide spread of educational technologies, increasing sharing, and constantly changing educational materials have made expectations different from educational organizations. This situation has revealed that the transformation of schools into "quantum fields" needs to think infinitely in this area paradoxically and beyond the boundaries.

Guidance role of teachers and managers should be in the context of how the student will get the most accurate information, how to learn, and how to use this information. In order to reach the goals of quantum physics and quantum worldview in the twentieth century, the students should not be satisfied with the information that they have in their hands. In this context, our quantum organizations, especially educational organizations, must play infinite in order to be able to raise individuals who will bring forth the sounds of the century with flexible structures that adapt to the various conditions that are constantly expanding. Stephen Hawking says "There is no final theory. There are sequences of infinite theories."

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Chapter 24

Relationship Between Quantum Leadership Behavior of School Principals and Levels of Creativity of Teachers



Rezzan Uçar and Fatma Köseoğlu

Abstract The aim of this study is to determine the relationship between quantum leadership behavior of school principals and teachers' creativity. The research, which is based on general and relational screening model, was realized with the attendance of 385 teachers who worked in secondary schools in Van province's center, Edremit, İpekyolu, and Tuşba districts in 2017–2018 academic year. Arithmetic mean, standard deviation, and correlation analysis were applied in research data analysis. It was determined in the research that school principals frequently performed quantum leadership behavior, teachers found their own creativity levels high, and there was a positive and medium level significant relationship between school principals' quantum leadership behavior and teachers' creativity.

24.1 Problem

In today's rapidly developing and changing environments, organizations have to adopt multiple, dynamic, and brand-new leadership approaches and show appropriate leadership behaviors in order to adapt into changing social order, to contribute to the development and progress of the society, and to achieve its goals.

Quantum leadership, defined as the field of interaction that forms the same entity in the ensuing duality, differs from traditional leadership in that it sees leaders and followers as separate entities (Erçetin 2000). Quantum leadership is a leadership approach that relies on feelings and intuitions about the creative potential of stillness and uncertainty, and not control, explaining the most powerful levels of energy, leading the employees to act on energy productivity in an organization (Uzunçarşılı et al. 2000).

R. Uçar (✉)

Van Yüzüncü Yıl University, Van, Turkey

e-mail: rezzanucar@yyu.edu.tr

F. Köseoğlu

Doluca Elementary School, Erciş, Van, Turkey

e-mail: koseoglu.fatma17@gmail.com

Quantum leadership is matured by being influenced by physics as concept and approach. Based on the assumptions of the equilibrium quantum physics, Erçetin (2000) has synthesized the assumptions of quantum leadership in four groups. In this context, the first hypothesis of quantum leadership states that leadership is an area of interaction in the leader-following dilemma. Here, for leadership, it is thought that the leader and followers are members of a common and contributing part of leadership at the same time.

In this case, it is impossible to think of the leader and the audience separately. The leader is seeking answers to questions such as “what is the need of others” and “how can I integrate with others.” The second hypothesis of quantum leadership states that leadership is not able to be structured and that it is unpredictable. It is emphasized here that leadership is uncertain and unpredictable. It is argued that the quantum leadership constantly needs to take risks in an area of unknown and unpredictable action in today’s complex and dynamic world.

The third assumption of the quantum leadership expresses the absence of leadership concept.

According to this, in the concept of leadership, events progress in a discrete way.

In other words, the leader and the followers may sometimes come together themselves, or sometimes they may break apart. In addition, the leader may come together with new followers, and sometimes in different everyday events, different people may emerge as leaders. The fourth hypothesis of quantum leadership points out that leadership influence is based on interaction. Here it is stated that the effect of the leadership will emerge as a consequence of a growing commitment based on the nature of the leading interaction of the leader.

In quantum leadership, employees and communities are motivated to make positive changes in their lives; conscious decisions are made through the establishment of relationships, listening, and observation that will nourish both society and individuals; and information is shared with other leaders and employees. Here leadership leaves itself to the flow of the group, supports the tendency to self-organize, works with ambiguity, looks at events from a broad perspective, provides creativity and mutual support, and acknowledges that the fundamental problems between members are rooted in the interaction (Shuster 2012). As the leader sets the path, the followers help him to continue on his path. This support the leader gets from the audience is not from the power of the status quo but from trust, commitment, and mutual respect (Akçakaya 2010).

In quantum leadership, personal versatility, integrated effort, and cooperation can be expressed as the partnership of creativity of members (Fris and Lazaridou 2006), reinforcing the assumption that quantum leadership behaviors may be related to creativity. According to Amabile (1997), creativity is the production of original ideas in any field of human activity from science to arts, education, business, and daily life. In other words, creativity is finding original solutions to perceived problems (Daft 1991). In this sense, creativity includes rescue from the molds, interrogating the present and common, not afraid of being different, developing new relationships, presenting different perspectives, perceiving ways of depicting, and making new experiments (Memduhoğlu et al. 2017).

Creativity is not exactly a logical process (Robinson 2008). For this reason, creativity is not a phenomenon that can be defined as existent or absent but a form of thought with varying degrees and dimensions according to the person or circumstances (Yıldırım 1998). According to Amabile (1997), creativity consists of three main components. One of the basic components of creativity is expertise. The second component of creativity is creative thinking skill. The last component of creativity is business motivation. According to this, expertise covers all knowledge and his capacity in his field of work (Amabile 1998), and it reflects the accumulation of the technical process (Luecke 2011). Creative thinking is the ability of an individual to understand a problem clearly, such as using imagination, animating it in the mind, putting assumptions, and then introducing a different view or concept by following new or traditional ways (Yıldırım 2007). Business motivation reflects the difference between what an individual can and will be able to do. Business motivation unifies expertise and creative thinking skills and provides creative performance (Amabile 1997).

Creativity can be seen as a feature, ability, an emotional process, and a way of life (Petty 1997; Rawlinson 1995; Yavuzer 1989). The fact that the ability of creativity is enhanced by education and the necessity of such training is now an important task that should be undertaken by educational organizations (Aynal 2012). In this context, creativity in education is regarded as a part of teaching in schools, and teachers play a key role in this process. Teachers have an important influence on increasing or diminishing students' creativity with their learning environments and behaviors. In order for teachers to be able to cultivate creative thinking individuals, they also need to have creative personalities (Summak and Aydın 2011; Yenilmez and Yolcu 2007).

The creative teacher is the person who can create different learning environments according to the contents of the courses, who can apply his/her own methods and techniques, produce original activities according to the readiness of the students, overcome the problems in the class or school by looking at them from a different point of view, and produce answers from different windows to the questions of the students (Uçar and Dağlı 2017). Teachers can be considered creative if they can present existing knowledge to new or different learners (Reilly et al. 2011). Teacher creativity can therefore be regarded as testing authenticity, using imagination and problem-solving abilities (Lapeniene and ve Bruneckiene 2010).

In this sense, it can be argued that creativity is one of the most important elements of the teaching profession.

As a result of changes experienced, creativity has become a very important success factor in educational settings, while school administrators have to improve teachers' creativity and creative thinking skills and make them an element of organization culture (Taş 2002). Teachers demonstrating their creativity require effective training leaders who can use the capital they own (Schwartz 1997). In this era, where educational organizations are adopting approaches to shift traditional managerial roles toward organizational and environmental leadership, it is stated that the quantum leadership paradigm may facilitate (Erçetin 1999) the search for the answer to the question "what kind of leadership" in the school and education.

As a result of today's progress, the development problem of schools with a certain capacity leads to a focus on leadership at all levels of the education system (Hallinger and Heck 2009). Quantum leadership, when examined in depth in the dimension of school leadership, can help distinguish the behavior of the education manager from the traditional management role in finding the level of attainment of behavior, as well as directing viewers to a different perspective (Kayman and ve Erçetin 2011). In this regard, it is important that individuals should be given the freedom of education without limiting their ability to look at educational leadership differently (Ertürk 2016) and that the creativities of individuals should be directed to organizational goals. In this respect, it has become one of the main problems for leaders today to motivate employees to pursue creativity (Darvish and Farzane-dokht 2011). In the studies conducted, it was found that leadership support is one of the most important elements in the business environment in terms of creativity (Çekmecelioğlu 2002; Küçükaslan 2005), that leadership can facilitate creative problem-solving (Reiter-Palmon and Illies 2004), and that different leadership styles can increase and prevent the creativity of employees (Cengiz et al. 2006; Mumford 2000; Yılmaz and Karahan 2010; Zhou and Su 2010).

From this point of view, it has been evaluated that there may be a relationship between quantum leadership behaviors of school managers and creativity levels of teachers. In this study, the relationship between the quantum leadership behaviors of school principals and the creativity levels of teachers was investigated since there was not any research that investigated the relationship between the quantum leadership behaviors of school principals and the creativity levels of teachers in the related literature.

24.2 Aim

The main aim of this research is to determine the relationship between school managers' quantum leadership behaviors and teachers' creativity levels. In this purpose, answers were sought to the following questions:

1. According to teachers, to what extent do school principals perform quantum leadership behaviors?
2. What is the level of teachers' views on their level of creativity?
3. According to teachers, is there a significant relationship between school managers' quantum leadership behaviors and teachers' creativity levels?

24.3 Method

In this research, which is a screening and relational screening model, the relationship between the quantum leadership behaviors of school principals and teachers' creativity levels is examined. In this context, the following research universe and sampling, data gathering tools, data gathering, and analysis are included.

24.3.1 Universe and Sampling

The target universe of the research is the teachers who work in the secondary schools in Edremit, İpekyolu, and Tuşba districts of Van province in 2017–2018 academic year. Taking into account the difficulty of reaching all the teachers at the universe, representing the universe according to the districts, 20 teachers from each of the 24 schools selected by simple random sampling, representing 8 secondary schools from each province, were determined by simple random method, and a total of 480 teachers were reached. The forms of the 385 teachers that were filled in accordance with the guideline through the 432 measurement tools handed in were taken into consideration. Personal information about the teachers participating in the survey is given in Table 24.1.

As seen in Table 24.1, 182 (47.3%) of the teachers who participated in the survey are female, and 203 (52.7%) are male. One hundred three participants (26.8%) are science course (mathematics, science, and technology) teachers, 194 (50.4%) are social course teachers (social studies, religious culture and ethics, Turkish, English), and 88 (22.8%) are applied course teachers (visual arts, technology design, physical education, information technology, music). Three hundred fifty-four (91.9%) of the teachers are undergraduate, and 31 (9.1%) are graduate students.

24.3.2 Data Gathering Tools

The “teacher creativity scale” developed by Uçar (2015) and “school administrators’ quantum leadership behavior scale” developed by Erçetin et al. (2017) were used as data gathering tools in the research.

School administrators’ quantum leadership behavior scale consists of four dimensions – “leadership is an area of interaction in the leader-follower dilemma,” “leadership is not configurable and it is unpredictable,” “discontinuity of leadership,” and “leadership is based on interaction” – and 38 items in total. The construct

Table 24.1 Personal information related to participation

Variable	Level	<i>N</i>	%
Gender	Female	182	47.3
	Male	203	52.7
Branch	Science courses	103	26.8
	Social courses	194	50.4
	Applied courses	88	22.8
Educational background	Undergraduate	354	91.9
	Graduate	31	9.1
Total		385	100.0

validity and reliability of the scale was made by Erçetin et al. (2017). According to this, it was determined that the factors in the scale were gathered in four independent factors, and the factor loadings of the items changed between 0.63 and 0.91. The Cronbach alpha values of the tool were found to be 0.97, the second dimension 0.96, the third dimension 0.96, the fourth dimension 0.95, and the reliability coefficient for the whole scale 0.98. As a result of the analysis, compliance values of the scale were found $\chi^2 = 2246.82$, $sd = 658$, $\chi^2/sd = 3.42$, $RMSEA = 0.066$, $RMR = 0.043$, $CFI = 0.99$, $NFI = 0.99$, and $GFI = 0.82$.

The teacher creativity scale is composed of three subdimensions as “expertise,” “creative thinking skill,” and “motivation” and a total of 28 items. The construct validity and reliability of the scale was made by Uçar (2015). According to this, it was determined that the items included in the measurement tool were collected in three independent factors, the factor loads of the items changed between 0.51 and 0.85, and the declared total variance was 53.73%. Cronbach alpha values for the “specialty” subdimension were determined 0.87, 0.88 for the “creative thinking skill” subdimension, 0.92 for the “motivation” subdimension, and 0.92 for the safety coefficient for the entire scale. Calculations of conformity values for model conformity were determined as $\chi^2 = 661.06$, $sd = 347$, $(\chi^2/sd) = 1.90$, 0.97 for CFI, 0.88 for GFI, 0.073 for SRMR, 0.064 for RMSEA, and 0.96 for NNFI.

24.3.3 Data Gathering and Analysis

The research data were collected by the researchers. The mean and standard deviation values of the research data were determined first. A correlation analysis was conducted to determine the relationship between school principals’ quantum leadership behaviors and teachers’ creativity level.

24.4 Findings

Here, analyses were included to determine arithmetic mean and standard deviation values of the relationship between school principals’ quantum leadership behaviors and teachers’ creativity level dimensions and the relationship between quantum leadership and dimensions and teacher creativity and dimensions of school principals.

Table 24.2 Average scores of participant opinions regarding quantum leadership and subdimensions

Scale/dimension	<i>N</i>	\bar{X}	ss
Quantum leadership behaviors of school principals	385	4.12	0.645
Leadership is an area of interaction in leadership, leader-follower dilemma	385	4.24	0.661
Leadership is not configurable and it is unpredictable	385	3.97	0.712
Discontinuity of leadership	385	4.18	0.720
Leadership is influenced by interaction	385	4.07	0.694

Table 24.3 Average scores of participant opinions on teacher creativity and subdimensions

Scale/dimension	<i>N</i>	\bar{X}	ss
Teacher creativity	385	3.98	0.489
Expertise	385	4.12	0.645
Creative thinking skills	385	3.87	0.574
Motivation	385	3.68	0.718

24.4.1 Findings Related to Quantum Leadership and Subdimensions

Findings related to the school principals' quantum leadership behaviors and the subdimensions of "leadership is an area of interaction in leadership, leader-follower dilemma," "leadership is not configurable and it is unpredictable," "discontinuity of leadership," and "leadership is influenced by interaction" are given in Table 24.2.

As seen in Table 24.2, teachers stated that school principals exhibited quantum leadership behaviors "mostly" ($\bar{X} = 4.12$). Teachers replied "always" ($\bar{X} = 4.24$) to "an area of interaction in leader-follower dilemma" subdimension of school principals' quantum leadership behavior scale and "mostly" to "leadership is not configurable and it is unpredictable" ($\bar{X} = 3.97$), "discontinuity of leadership" ($\bar{X} = 4.18$), and "the effect of leadership is based on interaction" ($\bar{X} = 4.12$).

24.4.2 Findings Related to Teacher Creativity and Subdimensions

Findings related to teacher creativity and "expertise," "creative thinking skills," and "motivation" subscales are given in Table 24.3.

According to Table 24.3, the teachers stated their opinions as "totally agree" to the entire teacher creativity scale ($\bar{X} = 3.98$), "expertise" subdimension of teacher creativity scale ($\bar{X} = 4.12$), "creative thinking skill" ($\bar{X} = 3.87$), and "motivation" ($\bar{X} = 3.68$).

Table 24.4 Correlation analysis for determining the relationship between quantum leadership and dimensions and teacher creativity and dimensions

Scale/dimension	1	2	3	4	5	6	7	8	9
1. Quantum leadership behaviors of school principals									
2. An area of interaction in leader-follower dilemma	0.894 ^{***}								
3. Leadership is not configurable, and it is unpredictable	0.923 ^{***}	0.784 ^{***}							
4. Discontinuity of leadership	0.933 ^{***}	0.782 ^{***}	0.840 ^{***}						
5. The effect of leadership is based on interaction	0.887 ^{***}	0.721 ^{***}	0.735 ^{***}	0.782 ^{***}					
6. Teacher creativity	0.542 ^{***}	0.472 ^{***}	0.520 ^{***}	0.503 ^{***}	0.477 ^{***}				
7. Expertise	0.444 ^{***}	0.412 ^{***}	0.407 ^{***}	0.405 ^{***}	0.388 ^{***}	0.819 ^{***}			
8. Creative thinking skill	0.344 ^{***}	0.288 ^{***}	0.344 ^{***}	0.320 ^{***}	0.297 ^{***}	0.866 ^{***}	0.641 ^{***}		
9. Motivation	0.589 ^{***}	0.501 ^{***}	0.573 ^{***}	0.559 ^{***}	0.520 ^{***}	0.826 ^{***}	0.515 ^{***}	0.545 ^{***}	

*** $P < 0.01$

24.4.3 Findings Related to Relationship between Quantum Leadership and Teacher Creativity

Findings for determining the relationship between quantum leadership and dimensions and teacher creativity and dimensions are given in Table 24.4.

In Table 24.4, a positive and moderate significant relationship in positive direction is seen between the total scale scores of the quantum leadership behaviors of school principals and teacher creativity ($r = 0.542$; $p < 0.01$). total scale score and “expertise” ($r = 0.444$; $p < 0.01$), “creative thinking skill” ($r = 0.344$; $p < 0.01$), and “motivation” ($r = 0.589$, $p < 0.01$) subdimensions of teacher creativity.

There is a “moderate” level significant relationship in a positive dimension between school managers’ quantum leadership’s “leadership is an area of interaction in leader-follower dilemma” subdimension and teacher creativity ($r = 0.472$; $p < 0.01$) total scale score and teacher creativity’s “expertise” ($r = 0.412$; $p < 0.01$) and “motivation” ($r = 0.501$; $p < 0.01$), and there is a “low”-level significant relationship in a positive dimension between “creative thinking skill” ($r = 0.288$; $p < 0.01$) subdimension.

There is a “moderate”-level significant relationship in a positive dimension between school managers’ quantum leadership’s “leadership is not configurable and it is unpredictable” subdimension and “teacher creativity” ($r = 0.520$; $p < 0.01$) total scale score and teacher creativity’s “expertise” ($r = 0.407$; $p < 0.01$), “creative thinking skill” ($r = 0.344$; $p < 0.01$), and “motivation” ($r = 0.573$; $p < 0.01$) subdimensions.

There is a “moderate”-level significant relationship in a positive dimension between school managers’ quantum leadership’s “discontinuity of leadership” subdimension and “teacher creativity” ($r = 0.503$; $p < 0.01$) total scale score and between “expertise” ($r = 0.405$; $p < 0.01$), “creative thinking skill” ($r = 0.320$; $p < 0.01$), and “motivation” ($r = 0.559$; $p < 0.01$) subdimensions.

There is a “moderate”-level significant relationship in a positive dimension between school managers’ quantum leadership’s “the effect of leadership is based on interaction” subdimension and “teacher creativity” ($r = 0.477$; $p < 0.01$) total scale score and “expertise” ($r = 0.388$; $p < 0.01$) and “motivation” ($r = 0.520$; $p < 0.01$), and there is a “low”-level significant relationship in a positive dimension between “creative thinking skill” ($r = 0.297$; $p < 0.01$) subdimension.

24.5 Result and Discussion

The research has reached the conclusion that school principals often exhibit quantum leadership behaviors. This finding is consistent with the results of school managers’ research on quantum leadership behaviors (Kayman and ve Erçetin 2011; Turan and Erçetin 2017).

In this case, it can be considered that school principals exhibit quantum leadership behaviors.

In quantum leadership, leadership is not configurable, and it is unpredictable; the discontinuity of leadership and the influence of leadership are based on interaction subdimensions; it was found that school principals often exhibit quantum leadership behaviors.

In contrast, leadership is an area of interaction in the leader-following dilemma subdimension; school principals were always seen to perform quantum leadership behaviors.

Similar results were obtained in the research conducted by Turan and Erçetin (2017).

These results can be interpreted as the fact that school principals exhibit behaviors such as appreciation of teachers' efforts and creating an area of interaction shared with teachers.

Teachers have participated at a high level in the expertise, creative thinking skills, and motivation subdimensions of teacher creativity. In other words, they considered themselves creative. In the researches conducted by Karacabey (2011), Eroğlu (2014), and Uçar (2015), the teachers have found that they evaluate themselves creatively in an individual sense. In another research (Uğurlu and Ceylan 2014) it was determined that teachers had a value above the median of individual creativity perceptions. It has been determined that the level of creativity of teacher candidates is very high in researches (Yıldız et al. 2011; Zeytun 2010) conducted on teacher candidates. Likewise, it has been determined that the individual creativity of the instructors is "very much" (Balay 2010). These results can be explained by the tendency of individuals to compare themselves with others and to be more positive in terms of creativity as well as in many other directions, because each individual tends to see his or her personality in the psychological direction different from the others and superior in a sense (Yahyagil 2001). When it comes to creativity, it can be considered that individuals have similar attitudes and tendencies, and therefore their opinions on creativity levels have been positive.

On the other hand, different research results are also found in the literature. For example, Şahin (2010) suggests that teachers' creativity levels are "very low," and Polat (2017) and Kurnaz (2011) have reached the "low" level. Likewise, Gülel (2006) also found that teacher candidates evaluated creativity levels as "very low."

A positive relationship between quantum leadership behaviors and teacher creativity of school principals was found to be "moderate" and significant. Likewise, a "moderate" and significant relationship was found positively between quantum leadership, leadership is not configurable and it is unpredictable, the discontinuity of leadership subdimensions and the expertise, creative thinking skill, and motivation subdimensions of teacher creativity.

There was found a "moderate" level significant relationship in a positive dimension between quantum leadership's leadership is an area of interaction in leader-follower dilemma and the effect of leadership is based on interaction subdimensions and teacher creativity's expertise and motivation subdimensions, and there was

found a “low” level significant relationship in a positive dimension between thinking skill subdimension.

Quantum leadership emphasizes associations, which are far from dynamic without static. It is based on a holistic understanding rather than a hierarchical (Shuster 2012). The quantum leadership consists of three key characteristics: leadership relationships, the source of leadership effectiveness, and uncertainty. In leadership relations, quantum leadership is described as a field of mutual interaction. It is the foundation value-based, leader, and audience link of the source of the leadership effect. Common values in this are values like knowledge, trust, respect, and high expectations. The uncertainty feature, as predicted by quantum theory, suggests that no matter how much information one might have about the events, the future cannot be predicted. Quantum leaders play a leading role in these uncertainties. Uncertainty and the inability to have certain truths here are parts of the truth. Quantum leaders do not pursue a certain path in these uncertainties but lead others in places that do not have paths (Uzunçarşılı et al. 2000). In this sense, because the uncertainties in quantum leadership are thought to be reduced to a certain point, the followers are offered more action options than definite orders and rules (Erçetin 1999). In this respect, the relationship between the quantum leadership behaviors of school principals and teacher creativity is understandable.

Creativity is a potential power in the person who has to meet appropriate conditions to manifest themselves (Rouquette 2007). Creativity is primarily concerned with creative individual; it is individual. However, the creative behavior of the individual is also related to the surroundings as well as to the individual characteristics (Çekmecelioglu and Eren 2007). In this context, organizational climate encouraging creativity (Çekmecelioglu 2006) enhances creativity by supporting the working environment, rewarding, and providing resources for creativity (Eren and Gunduz 2002; Robbins and Judge 2012; Yeloglu 2007). However, factors such as being open to different ideas; focusing on exploring opportunities, tolerance, and flexibility; accepting differences; accepting failures and taking lessons from them; taking risks; and focusing on business associations and mutual winnings (Luecke 2011) are among the factors that reinforce creativity. In quantum leadership, leadership cannot be predicted, but everyone can assume leadership role at any moment. It is therefore possible to share leadership. Sharing leadership ensures that everyone makes the most out of their potential and enriches their choices of ideas and actions (Erçetin 1999). Thus, supported individuals have the ability to uncover and develop their creative powers (Turaşlı 2012). It can therefore be argued that in quantum leadership, the emphasis on communication, cooperation, and support between the leaders facilitates the creativity of teachers. In this context, establishing a creative working environment based on interaction and cooperation, in which school principals are supported by different views and approaches, where change is open, leadership is shared, and assumptions of quantum leadership at school can help to reveal the hidden powers of teachers and students.

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Chapter 25

Scale Construction for Revealing the Happiness Perception of Secondary School Students



Şefika Şule Erçetin and Hakan Topaloğlu

Abstract The objective of this study is to construct a valid and reliable scale to measure the happiness perception of secondary school students (SHPS). The scale constructed as 28 items was applied to high schools of all different types in İlkadım, Samsun. The scale was applied to a total number of 305 (179 females, 126 males) students. Among the scale construction methods, item analysis, exploratory and confirmatory factor analysis, and reliability analysis were conducted in the study. The results yielded a 22-item scale of 4 factors with a 46.352 variance. As in line with their contents, the dimensions of the scale were named as social happiness perception, self-esteem, personal opposition, and psychological satisfaction. Cronbach's alpha reliability test, conducted to provide evidence for the scale reliability, resulted in 0.787. The results of analysis showed that the scale is adequate for revealing the happiness perception of the students.

25.1 Introduction

“Happiness” that is one of the discussion concepts of the contemporary world has been in the focus of both sociological and psychological studies (Jacobsen 2007). Happiness is the intense living of well-being in individuals' lives, totality of life pleasures, and the indicator of the state of well-being (Kangal 2013). Happiness in school, on the other hand, comprises the factors that result in the emergence of positive feelings as a result of coherence between all environmental factors, students' personal needs, and their expectations from school (Engels et al. 2004). In positive psychology, the concept of happiness is studied through the examination of state of “subjective well-being.” Subjective well-being is also called as happiness.

Ş. Ş. Erçetin

International Science Association-Ankara, Turkey, Hacettepe University, Ankara, Turkey
e-mail: sefikasule@gmail.com

H. Topaloğlu (✉)

19 Mayıs University, Samsun, Turkey
e-mail: hakant@omu.edu.tr

Both concepts refer to positive thoughts and feelings in an individual's life being more than negative thoughts and feelings (Diener 2000). Subjective well-being or happiness in general terms is important as considered to indicate life quality of both individuals and society. Since the well-being of an individual affects the well-being of the society, subjective well-being must also be included in economical and social indicators of social life quality (Kangal 2013). Wilson (1967) defined the general profile of happy individuals as young, healthy, well-educated, well-incomed, extroverted, secure, religious, modest, and optimistic individuals. According to Michalos (1991), on the other hand, happy individuals are the ones who are energetic, alive, healthy, socially competent, self-confident, emotional, and optimistic and have low feelings of fear, hate, stress, guilt, and anger.

In the literature, especially in health and education fields, there are various studies on the concept of happiness and its causes, predictors, effects, and levels (Diener 2000; Engels et al. 2004; Wilson 1967; Lyubomirsky 2001; Eryılmaz and ve Öğülmüş 2010; Kangal 2013). Happiness is an indicator that makes students to feel themselves better and more self-confident and provides them a positive public image. Factors such as school, family, and media also affect feelings and perception of happiness of students (Engels et al. 2004).

School must provide a happy education medium and social environment to students to increase their success. So it must be administered via an adequate system and persons who are competent with this system. Contemporary educational institutions and especially schools face with chaotic situations. If chaotic situations are managed well, then important opportunities can be created for change and transformation (Demirtaş 2006). To this aim school leaders must wholly understand and manage this chaotic and social system (Erçetin 2014). Trying to find straight solutions for the problems of contemporary educational organizations is insufficient. Trying to analyze through different perspectives and multiple variables will lead to success in solving these problems and managing the chaos (Çobanoğlu 2008).

25.2 Method

25.2.1 Participants

Participants of this study were the students of different high school types in İlkadım, Samsun. Thirty-five surveys were distributed to each school. Surveys with missing answers were not included in analysis, and a total number of 305 student surveys were analyzed.

25.2.2 Construction of Happiness Perception Scale

Several actions were taken for item development. Initially, a literature survey was conducted on happiness levels and perception (Eryılmaz and ve Öğülmüş 2010). Then, open-ended questions on happiness perception were asked to 150 students in Samsun. Answers were gathered, and a survey consisting of 46 questions was constructed from the mostly used expressions. This survey form of 46 questions was examined by 5 academic experts and reduced to 28 items. Students gave their answers on a five-category scale ranging from “totally agree” (5) to “totally not agree” (1). The survey was conducted in 2017–2018 fall term in the mentioned schools through voluntary participation of students in single sessions. In the application process, verbal directions were given to students.

25.2.3 Data Analysis

Exploratory and confirmatory factor analysis was applied to test the construct validity of Student Happiness Perception Scale (SHPS) . Principal component analysis with varimax rotation was conducted for exploratory factor analysis. Criteria such as elimination of items that did not measure the same construct, common factor variance, item eigenvalues being larger than 1, and representation of institutional structure were also considered in exploratory factor analysis.

The adequacy of data for principal component analysis was tested by Kaiser-Meyer-Olkin (KMO) constant and Barlett sphericity test, and factor analysis was conducted for the construct validity.

Cronbach’s alpha internal consistency constant was measured for scale reliability.

SPSS 24.00 software was used for validity and reliability analysis. LISREL 8.7 software was used for exploratory factor analysis.

25.3 Findings

25.3.1 Validity of Student Happiness Perception Scale

Constructed validity of the scale was tested by “rotated principal component analysis.” The adequacy of data for principal component analysis was tested by Kaiser-Meyer-Olkin (KMO) constant and Barlett sphericity test. KMO value was measured as 0.789. Barlett sphericity test conducted to test the normality of distribution was resulted in a significant chi-square value of $X^2 = 1636.012$ and independence of 231 ($p = 0.00, p < 0.05$). Since a KMO value larger than 0.60 has been accepted as an indicator for the usability of factor analysis in behavioral sciences, 28-item scale was taken as suitable for factor analysis.

As a result of factor analysis, 6 items (4, 5, 12, 16, 18, 27), which were not in accordance with the scale construct or had weight on more than 1 factor, were excluded from the scale and further analysis. The remaining 22 items yielded a 4-factor construct with the eigenvalue larger than 1. First sub-factor consisted of 6 items (1, 2, 3, 6, 14, and 15), and the eigenvalue, which gives information on the weight of importance of a factor in the construct, was found as 4.553. This factor explained 20.697% of the variance. This factor was named as “social happiness dimension” since it included items like “happiness is to love life” and “happiness is to have responsibility.”

Second sub-factor consisted of 6 items (8, 9, 10, 17, 19, and 22) and had an eigenvalue of 2.673. It explained 12.151% of the variance. The second factor was named as “self-esteem” dimension since it included expressions such as “happiness is to have your thoughts appreciated” and “happiness is to receive love and respect.”

Third sub-factor consisted of 5 items (7, 11, 13, 20, and 28) and had an eigenvalue of 1.561. It explained 7.097% of the variance. This factor was named as “personal opposition” dimension since it included expressions such as “happiness is to have break rules” and “happiness is to live as you want without rules.”

Fourth sub-factor consisted of 5 items (21, 23, 24, 25, and 26) and had an eigenvalue of 1.410. It explained 6.408% of the variance. This factor was named as “psychological satisfaction” dimension since it included expressions such as “happiness is to not being excluded from your friends” and “happiness is to not face with criticisms.” As a result, it was found that all factors together explained 46.352% of the variance. The factor weight values of the scale ranged from 0.477 to 0.756. . . . (Table 25.1)

25.3.2 Student Happiness Perception Scale Confirmatory Factor Analysis

Confirmatory factor analysis Student Happiness Perception Scale was conducted via LISREL that is one of the structural equation software. Figure 25.1 shows the values of confirmatory factor analysis. According to analysis results, RMSEA value was 0.072, chi-square value was 517.45, and independence was 231. The resulting value of division of chi-square value to independence was 2.23. Values that indicate the model fit, i.e., goodness of fit, were also calculated. The results were found as GFI = 0.87, CFI = 0.88, AGFI = 0.83, IFI = 0.88, RFI = 0.80, and NNFI = 0.87.

Table 25.1 Results of exploratory factor analysis

	Dimensions			
	Social happiness perception	Self-esteem	Personal opposition	Psychological satisfaction
Happiness is to have time with family	0.756			
Happiness is to be cared by your family	0.692			
Happiness is to be a person wanted by your parents	0.649			
Happiness is the love to god	0.593			
Happiness is to have responsibility	0.513			
Happiness is to love life	0.477			
Happiness is to have your thoughts appreciated		0.609		
Happiness is to be without worries		0.581		
Happiness is to live the moment		0.577		
Happiness is to have an optimistic view to future		0.556		
Happiness is to receive love and respect		0.533		
Happiness is to be able to dream		0.532		
Happiness is to break rules			0.678	
Happiness is to live as you want without rules			0.667	
Happiness is to get rid of homework, not doing homework			0.656	
Happiness is money			0.598	
Happiness is to have physical beauty			0.540	
Happiness is to play games				0.688
Happiness is to participate social activities				0.647
Happiness is to not being excluded from your friends				0.637
Happiness is to not face criticisms				0.629
Happiness is to share your feelings without boundaries				0.516
Explained variance	20,697	12,151	7097	6408
Eigenvalue	4553	2673	1561	1410

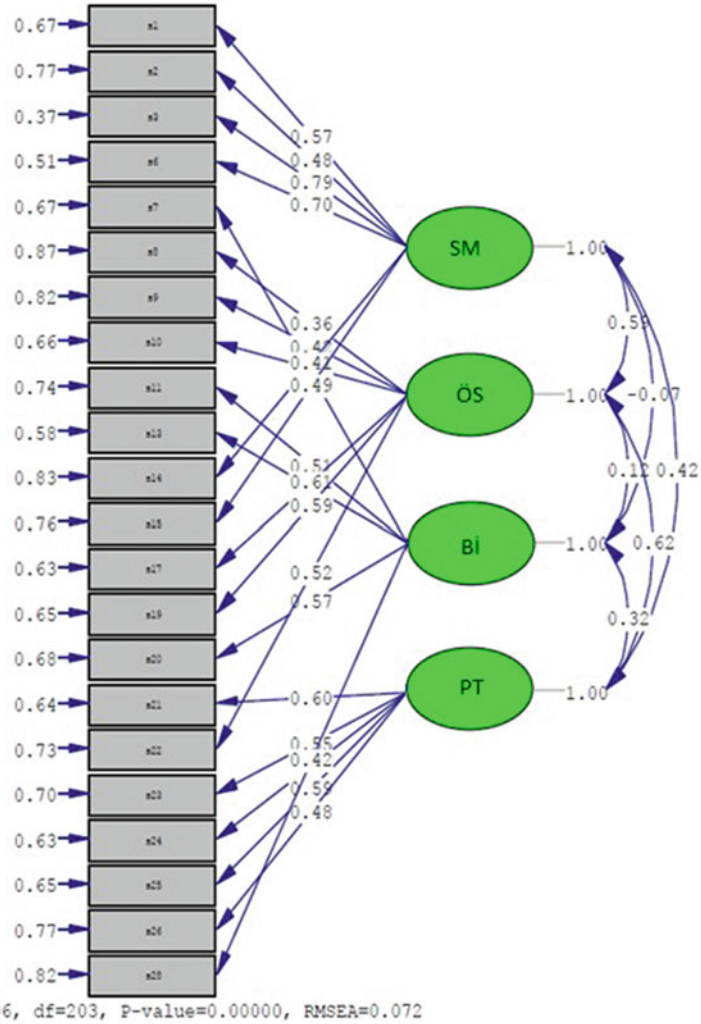


Fig. 25.1 Confirmatory factor analysis results. Note: SM social happiness perception, ÖS self-esteem, Bİ, personal opposition, PT, psychological satisfaction

25.3.3 Student Happiness Perception Scale Reliability Analysis

CRA (Cronbach’s alpha) test reliability was measured for the reliability of the scale. Cronbach’s alpha reliability constant of the scale consisting of 22 items and 4 sub-factors was calculated as 0.787. Reliability constant being larger than 0.70 indicates the reliability of the scale (Büyüköztürk 2002). The reliability constant

for the dimensions of the scale was 0.727 for social happiness, 0.690 for self-esteem, 0.680 for personal opposition, and 0.701 for psychological satisfaction.

25.3.4 Result

The objective of this study was to construct a valid and reliable scale to measure the happiness perception of students. SHPS was a 5-point Likert scale. The scale consisted of 22 items under 4 factors. Items were graded through “totally agree” (5) to “totally not agree” (1). Exploratory and confirmatory factor analysis was conducted to provide the scale validity. Exploratory factor analysis showed that scale consisted of four sub-factors. Proportion of the variance explained by factor eigenvalues and item weights in factors showed that the scale had the construct validity. Items in SHPS having factor weight values larger than 0.30, and explaining 40% of total variance, are agreeable with the current state of art in behavioral sciences.

As a result, the scale constructed in this study can be taken as a valid and reliable scale to reveal the happiness perception of students. Participant students of this study were from different state high schools. Scale may also be applied to primary or private schools. In such a case, a new validity and reliability study is also needed.

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Chapter 26

Teacher Views on Increasing the Quality of Life in School



Nursel Yardibi

Abstract This study aims to determine views of teachers on the quality of life in school and to develop recommendations on increasing the quality of life in school. Descriptive survey model from quantitative research methods was used in this research. The research sample consisted of 256 primary school teachers who have been working in Ankara. A 32-itemed questionnaire which was developed by authors was used as a data collection tool. As the total scores of the teachers' views on increasing the quality of life in the school were normal distribution, t-test was used to compare the independent two-group averages, and one-way ANOVA was used to determine whether the mean of the two groups was the same. According to research results, there is no significant difference in the 95% confidence level according to sex, marital status, seniority of teachers, and working time of teachers in school in terms of increasing the quality of life in school. When managers and organizational staff first learn to manage their own feelings, they can more easily understand the feelings of other occupations and managers and can empathize and understand others' feelings. Therefore, since there is a synergy in the organization, burnout and organizational conflicts can leave the place to peace and productivity in the organization.

26.1 Introduction

Quality of life phenomenon includes all dimensions of life of individuals both private life and also work life. In this study we examine quality of life in school environment. Firstly, we focus on what the quality of life is. According to the business dictionary, quality of life is the measure of energy and strength that enables an individual to cope with obstacles and difficulties of life (URL1 [n.d.](#)).

Generally, quality is well-being level of individuals. Quality of life includes well-being beyond personal health. While Mendola and Pelligrini (1979) defined quality

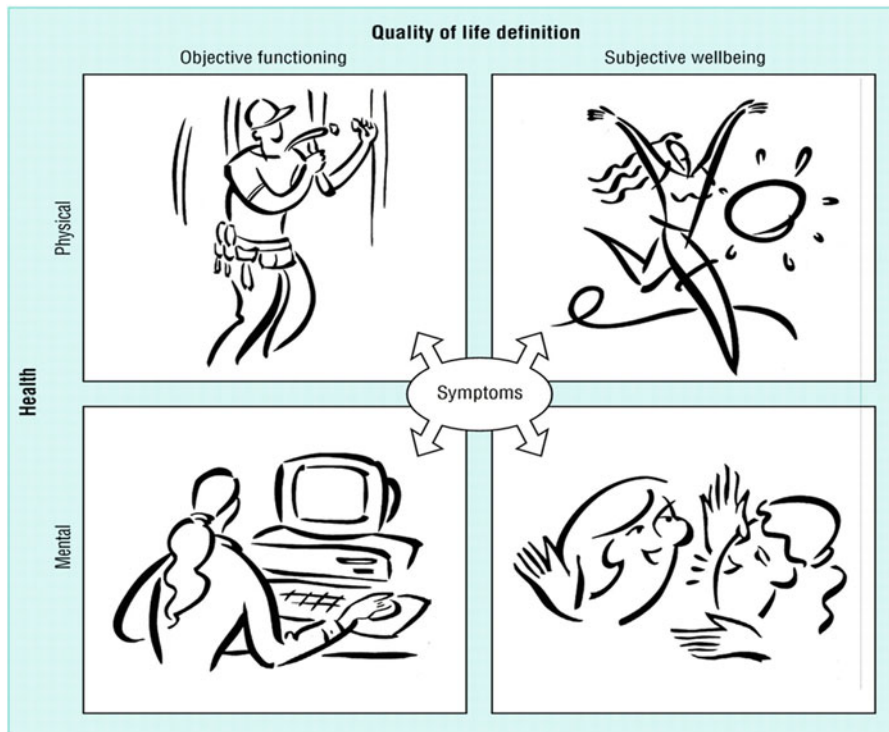
N. Yardibi (✉)
Hacettepe University, Ankara, Turkey
e-mail: dryardibi@gmail.com

of life as “an individual’s achievement of a satisfactory social situation within the limits of perceived physical capacity,” quality of life can be defined as a personal response to discomforts with physical, emotional, and social effects in certain living conditions (Bowling 1993).

During the last quarter, quality of life concept and its application have attracted much interest and attention in the world of health and social services. It has been experience that throughout the world the quality of life concept is being used as (Schalock and Verdugo Alonso 2002):

- A concept that sensitizes the idea that focuses on a good quality of life from the core areas, which gives us a sense of reference and guidance with the point of view of the individual
- A social structure that provides model to assess the basic quality of living areas
- A convergence theme providing systematic framework for implementing policies and practices with a focus on quality of life

Regardless of our age, we can maintain a healthy lifestyle, take control restraints, and make an impact on quality of life as we age. As always, healthy lifestyle is important. In Fig. 26.1 we can see classification scheme.



Source: Muldoon, Barger, Flory, Manuck, 1998

Fig. 26.1 A classification scheme of quality of life measures. (Source: Muldoon et al. 1998)

Figure 26.1 shows that assessing physical functioning (top left) involves measuring the ability to perform specific tasks (e.g., activities of daily living or climbing stairs) as well as less easily defined concepts that are related to the role (e.g., the ability to continue employment). Mental functioning (bottom left) is reflected in the patient's ability to rise to life's cognitive and social challenges, ranging from specific tasks to complex social interactions.

An alternative or complementary perspective to the quality of life has a centralized presumption in the subjective assessment of the individual's health status. This definition implies that the quality of life is at least partially independent of the state of health and "is a reflection of the way that patients perceive and react to their health status and to other non-medical aspects of their lives" (Muldoon et al. 1998).

Quality of life has been constructed by some as an "inner sense" (Taylor and Bogdan 1996) or as a product of interaction between person and environment (Rapley 2000). Quality of life is important to all people (Schalock and Verdugo Alonso 2002).

26.2 Meaning of Quality of Work Life

Camman and Ledford (1985) had defined an integrated approach to analyze the major components in the quality of work life process which is composed of three distinctive steps:

- (a) Programs
- (b) Practices
- (c) Outcomes

Programs were representing certain objectives, principles and values, strategies, resources, and people underlying the whole process, while practices were related with forming participative groups, job redesign, reward systems, guaranteed jobs, and safe conditions. These both were said to lead to improved working conditions and organizational effectiveness (Aşkun 2007). In this context, the meaning of quality of work life is extended to also include the following concepts:

- The overall climate of the work life including a climate of trust and climate of support (Bodek 2003) especially from the top down
- Higher task motivation (Shamir and Salomon 1985)
- Innovative and more effective design of jobs and organizations, influence and control of work, stimulus from the job itself, optimal workload, and optimal work hours (Dagleish 2005)
- Integration of jobs and job involvement (Igbaria et al. 1994)
- Both extrinsic and intrinsic rewards
- Lessened or minimized job stress (Shamir and Salomon 1985)
- Reduced/minimized role conflict and role ambiguity
- Positive changes in physical conditions

Related to personal development needs of employees, it means opportunity for growth (Igbaria et al. 1994), more employee involvement as especially in terms of recruitment, improving relationships, better cooperation, diversity training, and managing diversity (Kirby and Harter 2001), fulfilling social relations at work, managing and valuing individual differences rather than managing them, and more open and flexible system of communication (Aşkun 2007).

Further argued during the last 30 years, the term quality of work life has frequently occurred in discussions as interdisciplinary field of inquiry and action of industrial engineering, organization theory and development, motivation, leadership, industrial relations, and about techniques for facilitating change, reducing stress, and evaluating the nature of working environment. However, it is often difficult to determine what the term means and that the term has been defined by various scholars and management practitioners but did not find unanimous approach toward the definition (Aşkun 2007). So, we aimed to determine views of teachers on quality of life in school and to develop recommendations on increasing the quality of life in school.

26.3 Method

Descriptive survey model from quantitative research methods was used in this research. The research sample consisted of 256 primary school teachers who have been working in Ankara. One hundred twenty-four of teachers are male, and 132 of them are female. Teachers participated to research voluntarily, and research sample was selected by random sampling method. A 32-itemed questionnaire which was developed by authors was used as a data collection tool.

26.4 Findings

As the total scores of the teachers' views on increasing the quality of life in the school were normal distribution, t-test was used to compare the independent two-group averages, and one-way ANOVA was used to determine whether the mean of two groups was the same.

According to Table 26.1, 51.56% of participants are female, and 48.44% of participants are male.

Table 26.1 Frequency and percentages by sex

Sex	Frequency	%
Female	132	51.56
Male	124	48.44
Total	256	100

Table 26.2 Frequency and percentages by marital status

Marital status	Frequency	%
Married	96	37.5
Single	72	28.1
Divorced	88	34.4
Total	256	100

Table 26.3 Frequency and percentages by seniority

Seniority	Frequency	%
1–5 years	51	19.9
6–10 years	40	15.6
11–15 years	63	24.6
16–20 years	45	17.6
21 years and over	57	22.3
Total	256	100.0

Table 26.4 Frequency and percentages according to working time at school

Working time	Frequency	%
1 year	57	22.3
1–2 years	51	19.9
2–3 years	62	24.2
3–4 years	63	24.6
4 years and over	23	9
Total	256	100

Table 26.5 T-test according to sex

	Sex	N	Av.	S.S.	t	<i>p</i> -value
Total	Female	132	4.2946	0.40759	0.902	0.376
	Male	124	4.2363	0.46021		

$p < 0.05$

According to Table 26.2, 37.5% of participants are married, 28.1% of participants are single, and 34.4% of participants are divorced.

According to Table 26.3, seniority of 19.9% of participants is 1–5 years, seniority of 15.6% of participants is 6–10 years, seniority of 24.6% of participants is 11–15 years, seniority of 17.6% of participants is 16–20 years, and seniority of 22.3% of participants is 21 years and over.

According to Table 26.4, working time at school of 22.3% of participants is 1 year, working time at school of 19.9% of participants is 1–2 years, working time at school of 24.2% of participants is 2–3 years, working time at school of 24.6% of participants is 3–4 years, and working time at school of 9% of participants is 4 years and over.

When Table 26.5 is examined, there is no significant difference in the 95% confidence level according to sex of teachers in terms of increasing the quality of life in School.

Table 26.6 ANOVA according to marital status

	Sum of square	sd	Av. of square	<i>F</i>	<i>p</i> -value
Groups	0.006	3	0.003	0.016	0.988
Error	101.938	492	0.207		
Total	101.944	494			

$p < 0.05$

Table 26.7 ANOVA according to seniority

	Sum of square	sd	Av. of square	<i>F</i>	<i>p</i> -value
Groups	0.643	4	0.161	0.782	0.537
Error	101.414	493	0.206		
Total	102.057	497			

Table 26.8 ANOVA according to working time in school

	Sum of square	sd	Av. of square	<i>F</i>	<i>p</i> -value
Groups	1.062	3	0.354	1.721	0.162
Error	102.829	500	0.206		
Total	103.891	503			

$p < 0.05$

When Table 26.6 is examined, there is no significant difference in the 95% confidence level according to marital status of teachers in terms of increasing the quality of life in school.

When Table 26.7 is examined, there is no significant difference in the 95% confidence level according to seniority of teachers in terms of increasing the quality of life in school.

When Table 26.8 is examined, there is no significant difference in the 95% confidence level according to working time of teachers in school in terms of increasing the quality of life in school.

26.5 Discussion and Recommendations

This study's aim is that determining views of teachers on quality of life in school and to develop recommendations on increasing the quality of life in school. Descriptive survey model from quantitative research methods was used in this research. The research sample consisted of 256 primary school teachers who have been working in Ankara. 51.56% of participants are female and 48.44% of participants are male, 37.5% of participants are married, 28.1% of participants are single, 34.4% of participants are divorced, seniority of 19.9% of participants is 1–5 years, seniority of 15.6% of participants is 6–10 years, seniority of 24.6% of participants is 11–15 years, seniority of 17.6% of participants is 16–20 years, seniority of 22.3%

of participants is 21 years and over, working time at school of 22.3% of participants is 1 year, working time at school of 19.9% of participants is 1–2 years, working time at school of 24.2% of participants is 2–3 years, working time at school of 24.6% of participants is 3–4 years, and working time at school of 9% of participants is 4 years and over in this study.

According to research results, there is no significant difference in 95% confidence level according to sex, marital status, seniority of teachers, and working time of teachers in school in terms of increasing the quality of life in school. If we examine studies on increasing the quality of life of the students in the school environment, according to the researches made in this regard, Smith and Sandhu (2004) argue that the individual is supported, will feel happier and better, will perform better in school, will be less inclined to negative antisocial behaviors, and will be more likely to participate in social activities based on cooperation and philanthropy (Sari and Cenkseven 2008).

Life satisfaction is also the most important indicators of quality of life. If an individual is an architect of his or her own life, and if she/he takes his or her decisions in a healthy manner, the quality of life and the pleasure and satisfaction she/he has received from his or her life will also increase. When managers and organizational staff first learn to manage their own feelings, they can more easily understand the feelings of other occupations and managers and can empathize and understand others' feelings. Therefore, since there is a synergy in the organization, burnout and organizational conflicts can leave the place to peace and productivity in the organization.

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Chapter 27

Development Plans in Turkey in the Context of Lifelong Learning (1963–2018)



Emel Terzioğlu Barış

Abstract The aim of this study is to evaluate ten development plans which are in practice between the years 1963 and 2018 in Turkey for 54 years from educational dimension in the context of lifelong learning. Document analysis technique from the qualitative research methods was used in this research. Lifelong learning has not been addressed in all development plans. However, scientific analysis of problems in lifelong learning in development plans has not been done, problems have not been examined in depth, and what kinds of problems are experienced is not clarified. From all these, it can be said that there is no good planning for lifelong learning in development plans in Turkey and that the existing goals and problems still continue in various forms since 1963. Development plans made in Turkey should be prepared on the basis of scientific data, reachable targets should be set, and the situation of reaching the targets should be addressed.

27.1 Introduction

Traditional education methods are not enough to providing people with the skills they need in this century. With the beginning of the twenty-first century, lifelong learning programs become an important EU-wide regulating and policy tool (Singai et al. 2016). Lifelong learning also means providing a second opportunity for the person through the updating of basic skills and offering further learning opportunities (Soran et al. 2006). The learning system needs to include a multitude of players, such as learners, families, employers, providers, and the state, and governance in the lifelong learning framework therefore involves more than just ministries of education and labor (World Bank 2003).

Lifelong learning is emerging as an important tool in raising the quality of human resource which is the most important asset of the countries in earning the economy and employability (Aksoy 2013). Of course lifelong learning is so important for the

E. Terzioğlu Barış (✉)
Karabük University, Karabük, Turkey
e-mail: emelterzioglu@gmail.com

development of any country. In today's world, the development of a country, a society, an organization, or an individual is all about planning. An effective plan is the first step of development. In Turkey, educational planning applications are determined by firstly educational policies that were identified by governance. So, lifelong educational policies and applications are also identified with some policy documents such as development plans and national education council decisions in Turkey.

Planning can be defined as evaluation of future, taking necessary precautions and choosing necessary politics and methods to reach goals of organization (Şimşek 2005). First applications of planning in Turkey are industrial plans that cover the years of 1930–1950 (Sezen 1999). After these first planning experiences, there was an unplanned period between the years of 1950 and 1960, and preparation and implementation of development plans have been started again with the 1961 Constitution (Küçüker 2012) in Turkey.

Development plans can be defined as identifying problems in many areas and also creating future projections by determining objectives (Altundemir 2012). Ten development plans between the years of 1963–2018 have been prepared and implemented. Development plans in Turkey have been prepared as macro, central, and progressive with economic, social, and cultural fields (Hesapçioğlu 1994). In this sense, the purpose of this study is to evaluate ten development plans which are in practice between the years 1963 and 2018 in Turkey for 54 years from educational dimension in the context of lifelong learning.

27.2 Method

Document analysis technique from the qualitative research methods was used in this research. Data sources of the research consist of ten development plans which were published by Turkish Republic Prime Ministry State Planning Organization between the years of 1963 and 2018. We can see the research sample in Table 27.1.

Table 27.1 Research sample

Development plans	Years
First five-year development plan	1963–1967
Second five-year development plan	1968–1972
Third five-year development plan	1973–1977
Fourth five-year development plan	1979–1983
Fifth five-year development plan	1985–1989
Sixth five-year development plan	1990–1994
Seventh five-year development plan	1996–2000
Eighth five-year development plan	2001–2005
Ninth five-year development plan	2007–2013
Tenth five-year development plan	2014–2018

According to Table 27.1, we can say that First Five-Year Development Plan covers the years of 1963–1967, Second Five-Year Development Plan covers the years of 1968–1972, Third Five-Year Development Plan covers the years of 1973–1977, Fourth Five-Year Development Plan covers the years of 1979–1983, Fifth Five-Year Development Plan covers the years of 1985–1989, Sixth Five-Year Development Plan covers the years of 1990–1994, Seventh Five-Year Development Plan covers the years of 1996 and 2000, Eighth Five-Year Development Plan covers the years of 2001–2005, Ninth Five-Year Development Plan covers the years of 2007–2013, and Tenth Five-Year Development Plan covers the years of 2014–2018.

Data was analyzed as three stages: description, analysis, and interpretation. Development plans in order to evaluate education dimension from the context of lifelong learning, place of the lifelong learning in development plans, have been reported in detail.

27.3 Findings

In the First Five-Year Development Plan which covers the years of 1963–1967 and in the Second Five-Year Development Plan which covers the years of 1968–1972, there is no goal for lifelong learning, and current situation analysis has not been included. In the Second Plan, lifelong learning is defined as extracurricular education given to adults to teach literacy, to develop the knowledge and skills of adults at the end of their last education, or to acquire new skills, and lifelong learning will be considered as complementary to formal education and will not be considered independently of the formal education.

The analysis and objectives for lifelong learning have been started in the Third Five-Year Development Plan that covers the years of 1973–1977. In the Third Plan, “Vocational Technical Non-formal Education Institution will be established to cooperate in all vocational technical non-formal education activities and to be guided by the needs of the production process. The institution will be organized in such a way as to maintain the same structure from the center to the local level based on the contributions of the Ministry of National Education...” objectives are located, but when the Fourth Five-Year Development Plan that covers the years of 1979–1983 was examined, the foreseen developments in the Third Plan have not been realized for the regulation of occupational and in-service training activities, which is an important element of non-formal education, through professional centers set up by the production units.

The expression can be perceived as a self-criticism of the fact that the stated goals in Third Plan cannot be achieved. In the Fourth Plan which is about lifelong learning, “... Education will be dealt with as a whole because it is a process that involves all life. For this purpose, formal and non-formal education will be developed to complement each other and the gap between the levels in the education system will be reduced ...” objective has been determined.

In the Fifth Five-Year Development Plan that covers the years of 1985–1989, “In order to create employment opportunities for the unemployed in agriculture, the necessary professional knowledge and skills through short courses of 150 thousand people will be provided in the rural area... In order to increase efficiency in public services and administration, training programs will be organized for public officials at every level and 800 thousand public servants will be trained through short-term public relations training... In-service training programs will be encouraged in pre-job and on-the-job training in private organizations in order to increase productivity and to understand the meaning of work done...” objectives have been determined, and objectives for in-service training of agricultural workers, public service servants, and private sector workers have been determined, and it has been aimed to increase productivity in the workplaces.

However, in the Sixth Five-Year Development Plan that covers the years of 1990–1994, any objective on lifelong learning was identified, and no analysis was made on. In this sense, when we consider the six plans between the years of 1963 and 1994, it can be said that there is no stability in terms of educational policies determined for lifelong learning and goals that determined.

In the Seventh Five-Year Development Plan that covers the years of 1996–2000, “Informing and awareness-raising activities for the protection of the environment will be related to the needs of the target group; a lifelong education policy will be implemented, taking into account the strategic priority of the protection of the environment” objective has been determined. There are also no prior analysis of the objectives, the analysis of these objectives, the realization of the objectives, and any reasons for not realizing them. For the first time, an objective on the lifelong education in the protection of the environment has been included in this plan.

In the Eighth Five-Year Development Plan that covers the years of 2001–2005, “...education will be dealt with as a whole, because of the process that includes all life” objective in the Fourth Plan is repeated with a different expression with the “National education will be reorganized in a systematic system that considers equal opportunities for all students in which teaches the ways and methods of accessing information with lifelong learning approach for everyone, which includes effective guidance services, enables horizontal and vertical transitions in all phases of education” objective.

In the Eighth Plan, vocational training dimension of lifelong learning has become vital with the objective of “. . .Short-term skills and vocational training activities for young people who cannot enter the university will be enhanced and activities of local administrations, voluntary organizations and the private sectors will be encouraged...”

Objective of addressing the education as a whole has been continuing in the Ninth Five-Year Development Plan that covers the years of 2007–2013 and the Tenth Five-Year Development Plan that covers the years of 2014–2018. In this sense, since 1979, having the same target with different expressions in the plans has made the issue controversial.

In the Ninth Plan, with the objective of “In order to adopt a lifelong education approach in society, the non-formal education opportunities, including e-learning,

will be developed, encouraging the use of e-education opportunities by those who are out of the education age, and improving their skills and profession,” ensuring compliance with the world’s developing and changing conditions to determine goals for the dissemination of e-learning is remarkable.

In the Tenth Plan, the objective of “The harmony between the education system and the labor market; through the strengthening of the skills and competencies required for business life, the adoption of entrepreneurial culture, the strengthening of the school-business relationship in vocational and technical education to take into account the mid- and long-term sector projections from the perspective of lifelong learning” is important in terms of encouraging vocational training and employment of individuals who have been continuing vocational training.

27.4 Results, Discussion, and Recommendations

When development plans that cover between the years 1963 and 2018 have been analyzed according to education dimension in terms of lifelong learning:

- The lack of stability in determining the objectives for lifelong learning negatively affects non-formal education in Turkey.
- It should be emphasized that the regulation should be taken in order to consider education as a whole.
- Increasing industrial cooperation in vocational education was emphasized.

However, scientific analysis of problems in lifelong learning in development plans has not been done, problems have not been examined in depth, and what kinds of problems are experienced is not clarified. On the other hand, lifelong learning has not been addressed in all development plans. Moreover, in the three development plans, education has never been addressed in terms of lifelong learning.

From all these, it can be said that there is no good planning for lifelong learning in development plans in Turkey and that the existing goals and problems still continue in various forms since 1963. A lifelong learning framework encompasses learning throughout the life-span, from early childhood to retirement, and in different learning environments, formal, non-formal, and informal (World Bank 2003). So, especially development planning in lifelong learning should be effective and applicable, because we emphasize that lifelong learning is about all people and about all working sectors in any society or country.

All in all, development plans made in Turkey should also be prepared on the basis of scientific data, reachable targets should be set, and the situation of reaching the targets should be addressed.

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Chapter 28

Palestinian Postgraduate Students in Turkey: Faced Challenges, Provided Supports and Proposed Solutions



Sait Akbaşlı and Shadi Albanna

Abstract This study sought to investigate the Palestinian postgraduate students' perception of the challenges they face during their study in Turkey, the provided support and proposed solutions. To achieve this goal, semi-structured interviews with 16 Palestinian postgraduate students who study in Turkey were conducted. The findings revealed that the most prominent Palestinian student challenges in the social field are the dormitory and provided food. The academic challenges faced by Palestinian students in Turkey focused on the academic load, the system of teaching and the language of study as well. In terms of economic challenges, they did not pose a fundamental challenge to many students other than married students and a student who is not granted a particular support. As for the provided support for Palestinian students in Turkey, the study found a significant support by the Turkish state in general and university teachers as well as by Turkish and Palestinian colleagues, but there were a lack of provided support by the Palestinian state as the students said. With regard to the proposed solutions, the students presented a number of solutions that can be used by them and others to overcome many of the challenges that may be encountered during the academic journey.

28.1 Introduction

Deciding to join a foreign higher education institution is an important life event that is experiencing the complex nature of higher education with little knowledge and understanding. For international students, a foreign cultural transition, social changes and a new education system can be very difficult. Perhaps one of the most disturbing aspects of this transition is the need for the first time to address a number of cultural, social and educational changes for students who are continuing their education in different cultures than their own countries (Mwaura 2008, p 1). It can be said that it is difficult enough when the newcomer is aware of the differences in

S. Akbaşlı (✉) · S. Albanna
Hacettepe University, Ankara, Turkey
e-mail: sakbasli@gmail.com; shadielbanna1@gmail.com

advance but even more difficult when the newcomer is unaware and falsely assumes that the new society operates like their home country (Zhou et al. 2008, p 63).

According to the report published by the OECD in 2017, the increase in the number of international students worldwide, which reached 4.5 million in 2016/2017, has led researchers to address the topics of international students (Mullins et al. 1995; Kılıçlar, Selected 2012; Ward and Masgoret 2004; Mwaura 2008; Zhou et al. 2008; Kıröğlü et al. 2010; Smith and Khawaja 2011; Özçetin 2013; Talebloo and Roselan 2013; Garza 2015; Özkan and Güvendir 2015; Akbaşlı et al. 2017).

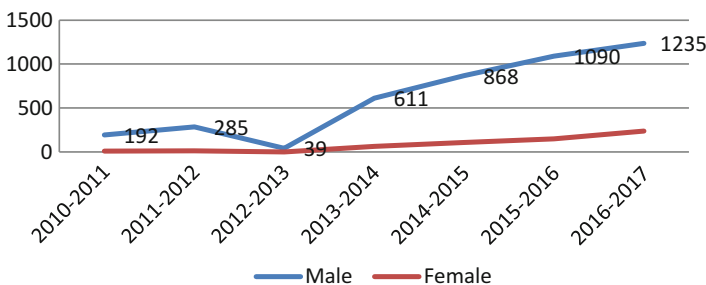
This article reviews the importance of providing the necessary knowledge to the increasing number of Palestinian international students and the difficulties that may arise in their academic journey in Turkey. The researchers believe that it will be of great help to improve the academic, social and economic conditions via examining the experience of international students, the challenges they have encountered, the proposed solutions and provided support which help them continuing their academic journey. This study provides observations that will prevent students from falling into difficulties and provide them with solutions and alternatives which help them to reach their goals and complete their learning as well as possible.

28.1.1 *Palestinian Students in Turkey*

In the 1980s, there were a few dozen Palestinian students. These numbers began to increase significantly, especially after 2012. The researchers estimate the increase in the number of Palestinian students in that time due to regularly supplied scholarships from the Türkiye Bursları, or Turkey Scholarship programme, which was established in the previous mentioned date (YTB 2018; YÖK 2017).

Table number 28.1 shows the increase in the number of Palestinian students (BA, MA and PhD) in Turkey during the last 8 years of students.

Table 28.1 Palestinian students in Turkey



Source: YÖK & ÖYSİM (2017),

Data collected from YÖK and ÖYSİM websites according to different year's statistics.

Source: YÖK and ÖYSİM (2017)

Data collected from YÖK and ÖYSİM websites according to different year's statistics.

28.1.2 Purpose of the Research

The purpose of the research is to determine the perceptions of Palestinian postgraduate students about their social, academic and economic challenges, provided support and proposed solutions during their study in Turkey. In this regard, the study tried to answer the following questions:

1. What are the perceptions of the interviewed Palestinian postgraduate students regarding their social, academic and economic challenges during their study in Turkey?
2. What are the perceptions of the interviewed Palestinian postgraduate students regarding to the provided support for them during their study in Turkey?
3. What are the proposed solutions that can help Palestinian postgraduate students to overcome the challenges during their study in Turkey?

28.2 Method

28.2.1 Model of the Research

This study examines the social, academic and economic challenges faced by Palestinian postgraduate students in Turkey, the provided support and the proposed solutions. For this reason, a qualitative approach consistent with the nature of the research has been used. Qualitative research is characterized by the aims of understanding some aspects of social life and to describe life experiences and give them meaning (Patton and Cochran 2002, p 2).

28.2.2 Participants

The study population consisted of 499 Palestinian postgraduate students in Turkey in the academic year (2016/2017) (262 Masters and 237 PhD) (YÖK 2017). Because of the difficulty of accessing and interviewing the entire population, the researchers limited the participation of 16 students interviewed. The researchers were satisfied with this number after noting that the responses of the sample began to recur. The distribution of the sample according to the demographic characteristics is given in Table 28.2 below.

Table 28.2 Demographic distribution of the participants

Participant	Gender	Study level	Academic year	Specialization	City
S1	Male	PhD	4	Natural science	Gaza
S2	Male	PhD	3	Human science	Gaza
S3	Male	PhD	3	Human science	Gaza
S4	Female	PhD	2	Human science	West Bank
S5	Female	PhD	2	Natural science	West Bank
S6	Female	PhD	1	Human science	Gaza
S7	Female	PhD	2	Human science	West Bank
S8	Female	PhD	4	Human science	Gaza
S9	Male	Master	3	Natural science	Gaza
S10	Male	Master	2	Human science	Gaza
S11	Male	Master	2	Natural science	Gaza
S12	Male	Master	2	Natural science	Gaza
S13	Female	Master	2	Human science	Gaza
S14	Female	Master	2	Natural science	West Bank
S15	Female	Master	2	Human science	West Bank
S16	Male	Master	2	Human science	West Bank

28.2.3 Data Collection Instrument

Semi-structured interviews were used as an instrument to gather the needed data. The researchers asked the Palestinian postgraduate students for some personal information and then about their social, academic and economic challenges they have experienced during their study in Turkey, later he asked them about the strategies they used to overcome the challenges and the provided support for them during their study in Turkey. The interview is extensively used as a tool in qualitative research and is divided into three types: structured interviews, unstructured interviews and semi-structured interviews, the last type to be used in this study. Therefore, the researchers can prepare the interview questions that he/she thinks to ask beforehand in order to provide the flow of the interview depending on the side questions (Patton 2002; Berg and Latin 2008).

28.2.4 Data Analysis

The data obtained from the semi-structured interviews were analysed according to the study targets. The researchers has repeatedly read and reconstructed the data; later they summarized them according to the research questions, described in Table 28.3.

Table 28.3 Summary of data obtained by the interviewer

Challenges	Social	Dormitory, food, transportation and social relations
	Academic	Teaching system, academic load, language, facilities
	Economic	Living costs and house rental costs
Provided support	Turkey	Turkey scholarships, transportation support, tourism support, international events, credit cards, popular views
	University instructor	Moral support, academic support
	Friends	Moral support
Proposed solutions	Social	Dormitory, food, transportation and social relations
	Academic	Teaching system, academic load, language, facilities
	Economic	Cost list

28.3 Findings and Discussion

The results of this research were divided into three sections based on the above-mentioned research questions. The first section dealt with the challenges faced by students in the social, academic and economic fields. The second part dealt with the provided support to the Palestinian students at different levels. The third and final section addressed the proposed solutions from the examined sample comments and formed one of the researchers' experience as an international student.

28.3.1 Challenges Faced by Palestinian Students in Turkey

In this section, the challenges faced by the Palestinian students at the social, academic and economic levels were addressed.

28.3.1.1 Social Challenges

According to the results obtained by the researchers, he divided the social challenges faced by students into four sections: (dormitory, food, transportation and social relations).

This study revealed a number of social challenges faced by Palestinian students in Turkey related to dormitory. The most notable challenge is the lack of age consensus among students. Many of them found themselves among the bachelor students, and of course the students experienced social challenges in building and maintaining relationships with these bachelor students. The age difference caused many problems among students which made students to leave the dormitory and to rent an independent house with other students.

In this regard, one student stated that: "When I entered my allocated room, I was shocked by the presence of four bachelor students in their first year. As a PhD

student, the difference between us was more than 10 years, which was a very big challenge to me in terms of social consensus”.

Among the other challenges that the Palestinian students in Turkey have observed in terms of dormitory is the high mobility between dormitories, especially in the first year. One of the students mentioned that he had changed his residence in the first year for more than five times and that his residence was closed on holidays and had to leave the dormitory and stay in another place until the dormitory be open again.

Palestinian students staying in private dormitories suffered from the internet access in their residence, which necessitates them to purchase additional internet packages that cost them a lot of money.

It was noted that some Palestinian postgraduate students who study in Turkey leave their dormitories after 1 or 2 years, explaining that their lifestyle has already begun to change, their habits have begun to be lost, and they become more nervous and aggressive and being exposed to lack of privacy. Some students stated, “I was forced to wake up at 11:00 PM in order to prove my existence in the dormitory by signing in the attendance list”.

Two students reported that they had suffered a lot from the policy of managing the private dormitory they are staying in, based on the separation between the Turkish students and foreign students, noting that this caused many challenges for them during dealing with Turkish colleagues; they felt a clear discrimination in treatment. One of the students says: “I’ve suffered a lot in my dormitory, in which there was a separate floor for foreign students and another one for the Turkish students, and there was a discrimination between us in terms of treatment and provided services; this helped Turkish students to create a perception in their minds that we are less than them”.

The other main challenge is the provided food in dormitories. Most of the interviewed students faced challenges in adapting to Turkish food. Some student stated that: “Although there was a convergence of many foods, the difference in the method of cooking and the amount of materials and spices have made a new completely different taste that we were not able to adapt with”. Some students stated that Turkish food caused them health problems, claiming that the food provided in the dormitories is not controlled and that amount of oil used during cooking is too much. In addition, other students mentioned that the amount of provided food is not enough, which in general forced them to buy additional food to feel full; in addition, they said that the allocated time for food is not commensurate with all students, and in general, it does not exceed 2 h at breakfast as well as at dinner.

The problems that characterized the private dormitories were the lack of food variety offered throughout the day, students do not have the right to choose among the available foods as in governmental dormitories. In addition to repeating the same meal more than once a week private dormitories.

With regard to transportation, many students showed a challenge in the distance between the dormitory and their university. Although they admit that the transportation is available, they mention that they have to spend more than 2 h daily to go and come back from their university. Nevertheless, they have to wait for buses because of

overcrowding, which leads to exhaustion and the need of more time to get some rest to be able to start studying again.

With regard to forming friendships with the Turks, the students showed no great challenge other than the challenge of language, which was at the beginning of their arrival to Turkey. Most of Palestinian postgraduate students stated that: "The Turkish society is of the highest social and emotional community. This has helped us to overcome too many challenges we faced, such as the longing for parents and homeland, but it took us a long time to realize this because of the language barrier".

Some of the students, at the beginning of their arrival to Turkey, mentioned that they were exposed to a degrading treatment and were being ridiculed by their roommates and the dormitory's staff. One student stated that: "When I arrived to Turkey and entered my room, my roommates started talking with me in Turkish. I did not know anything. They were unhappy about my lack of Turkish language. When they were talking to me, they were talking very quickly and because I am new and I could not understand them, therefore they were shouting and being unsatisfied. The same thing happened when the dormitory's secretary asked me for some papers to complete my registration".

28.3.1.2 Academic Challenges

The academic challenges faced by the Palestinian students in Turkey varied depending on the teaching system, the student's study load/burden and the Turkish language as a foreign language for them.

The challenge of the teaching system focused on the inadequacy of the practical side during teaching. Some of the interviewed students in scientific fields say that most of the courses they have studied do not care much about practical side. One student recalls: "Although I am studying in Computer Engineering Department, I rarely find a teacher who implements what we have learned in practice, they just focusing on the theoretical sides, but when I was in my country we often be found at the computer lab with our teachers to apply what we have learned". On the other hand, some students said that the practical aspect of their studies took a great deal of time, as they spent many hours in scientific laboratories, but in general, many students said they had insufficient practicalities during their academic studies.

In addition, a number of students stated that the courses they received might not cover the future professional they need, most of the courses are based on the theoretical and historical sides. On the other hand, others predicted that after graduating, they could be able to compete for jobs in the US and Britain. In this regards one student stated that: "As a student who finished his master degree in Britain. Frankly, I can say that the courses I am receiving here in Turkey makes it possible for me to do my job perfectly if I get a job there in Britain"

Another aspect of the challenges faced by the Palestinian students in Turkey is the load of the study. This challenge can be addressed from two aspects: first, the load of required coursework during one semester, and the other, the load of required tasks/assignments per course as a requirement to complete the courses successfully.

In terms of the load of required courses during one semester, it is noted that the student, in some universities, is obligated to enrol all the offered courses for the semester, which in some universities up to six courses. The interviewed Palestinian postgraduate student mentioned that this quantity of courses is too much to afford especially for those who studying in Turkish language. One student stated that: "I have tried with the university administration to reduce this amount but my attempts were not crowned with success, which forced me to deal with the 6 courses which caused me so many obstacles and challenges during my first academic year, most notably the inability to keep up with the required duties". In addition to the expected scientific outcome which was minimal because of the suffering that they had with the language, one of the students said: "Honestly, I was not dealing with important scientific materials for my future professional life. But I was dealing with a new language I am trying to decipher and understand the phrases inside the books, actually I was learning language".

On the side of the load of required tasks/assignments per course, many students mentioned that the amount of required assignments is too many. One student stated that he did not find a challenge to complete the assignments insofar as there was a challenge to complete them on the allotted time. "There was a lot of time wasted trying to decipher the language codes to understand the scientific material and to choose the appropriate information and writing in the required academic language, I always needed more than the allotted time for required assignments".

When students asked about the Turkish language if it is an academic challenge or not, they said that it was the biggest challenge they faced during their academic studies. Some of them mentioned that the challenge of studying load and other challenges would not have been appeared if we had studied in English language or in our mother tongue. All students noted that there is a big difference between the Turkish language they received in the first year in the language education institutes, which were limited to simple aspects that qualify the student only for the daily life interaction, and the academic Turkish language.

All students stated that the first academic semester was a great dilemma for them. It was an unexpected shock because they could not understand what was said in the lectures and not understand what goes on inside the textbooks and not even understanding of the required assignments in a proper way. Nevertheless, this challenge began to fade away over time. The students said that after the end of the first semester, the dilemma began to diminish and we were more able to deal with the teachers, students and the scientific material. PhD students reported that the challenge of the language during study was great because of the comprehensive exam "comps" after completing the required coursework. The students remind that the comprehensive exam was a cause of horror for them and they are always thinking about how to overcome it just in term of the language difficulty.

As for the adequacy of the facilities, there was a lack of English books in the libraries. The students mentioned that they did not find much of the books they needed in university libraries, especially foreign ones, which forced them to buy them through the Internet at high prices. They also mentioned that the content of the

Turkish books was not rich with some modern international issues. Students stated that in many Turkish books they did not find what they were looking for.

Regarding to the degree of teacher understanding, there have been rare cases described as harsh on students and a slight form of racism.

Some mentioned that some teachers forced them to leave the subject due to the inability of the student to keep pace with their requirements and needs. But when we asked how rampant this problem was, they mentioned that it is very rare and there were a lot of teachers, especially those who received graduate studies in foreign countries, providing help to their students, as they went through the experience of studying abroad.

28.3.1.3 Economic Challenges

In terms of economic challenges, they did not pose a fundamental challenge to many students other than married students and a student who is not granted a particular support.

The challenges were confined to the married student due to the high cost of living and high prices compared to his country.

The economic challenges faced by the non-scholarship students are that the rising cost of living in Turkey is not helping them to depend on the money they get from their parents, so they had to look for jobs.

The students argue that the economic challenges in Turkish tourist cities, such as Istanbul, are greater than in the rest of the cities because the prices that traders and sellers deal with are not local prices.

28.3.2 Provided Support for Palestinian Postgraduate Students in Turkey

According to the interviewed Palestinian students in this study, the provided support varied to different types. Some of them have a scholarship from the Turkish Scholarship Department, which provides all the scientific and living needs of the students, including what the state provides in general to all students. One student stated that: "As an international student Turkey, I enjoy the full rights of a Turkish student. I can benefit from price cuts in many aspects, such as transportation. In addition, I got a museum card and I have visited so many museums for free. In addition, I opened a bank account and I did have a credit card. This made me feel home and I did not suffer from alienation".

In addition, students noted that the Turkish popular view for the Palestinian in general is very emotional because of the Palestinian cause. Most of the interviewed Palestinian students noted that: "Once people know our nationality, words like: "We are brothers", we are proud of you, we are one blood" and other emotional

expressions start to be on their mouths, “sometimes they hug us and invite us to have a cup of coffee to talk about the situations in Palestine”. Some students added: “when we see such a sense we feel proud of being Palestinian”. Nevertheless, some students stated that there were few cases whose responses were completely counterproductive due to misperceptions about the Palestinian cause.

The result of this study revealed that a number of university teachers provided moral and academic support to their students. Some students said that because they had difficulties in writing in Turkish, their teachers have allowed them to write in English, and some others noted that their teachers support them by giving them the opportunity to participate in international conferences with a paper, which has been a strong incentive for them. One of the students who was able to publish one of her articles in an international scientific journal said that: “I was very proud to be able to participate in an international scientific conference. This was only by the support of my professor, which I am very thankful for him. This has encouraged me a lot and I have become more active and willing to participate in more international conferences and to publish more scientific articles”.

In addition to the support of the university teacher, the support of the Turkish colleagues also provided an important aspect of support. Many students mentioned that friendships with their Turkish colleagues were another world in which they were able to ease the longing for parents and homeland. One student stated that: “My friendship with the Turks was another world that always stood beside me, we often go out together and spend leisure time together”; another one said: “My friendship with the Turks made me develop my Turkish language a lot and this was a precious opportunity for me”.

Another aspect of the provided support is the support of the old Palestinian students through facilitating most of the new coming students’ procedures in their first days: by providing them with needed information about Turkey’s facilities and how to use the transportation and helping them to enrol in their dormitories and universities.

As for the support provided to the Palestinian postgraduate student from their own country, all of the students agreed that the support they received is almost zero; they received no physical support or moral support. Some students even said that as a government employee we suffered a lot of the way the state dealt with us when we wanted to go out to complete our studies in Turkey.

28.3.3 Proposed Solutions to the Challenges Faced by Palestinian Students in Turkey

In this section, the researchers present the proposed solutions by the Palestinian student in Turkey in addition to the solutions suggested by the researchers from his experience as a Palestinian student in Turkey.

The solutions were presented in two forms: tactical solutions to deal with the current challenges and strategic solutions, which include a series of workshops and lectures that aim to identify the challenges faced by the Palestinian international students.

28.3.3.1 Proposed Solutions to Social Challenges

Students did not develop meaningful solutions to the social challenges faced by students in the dorm. Therefore, the researchers are likely to have discussions and workshops with the officials and institutions, which offer scholarships to students to discuss dorm challenges related to the age discrepancy and student density within the room and the frequent mobility between housing and the other during the year as well as the separation between Turkish students and foreign students. So that to work to overcome them to let the student feel comfortable within the dorm in addition to a sense of stability, especially in the first academic year and provide the needed tools to facilitate the possibility of reviewing the lessons within the dorm'a kadar silinmelidir.

With regard to the solutions provided by students in terms of dormitory they recommend patience, endurance and not to rent an independent home, especially in the first year; otherwise, he/she will lose the opportunity to develop his/her Turkish language significantly, because it is easier for students to practice the language daily with their colleagues.

Students note that the food provided in the dorms must be subject to supervision and follow-up, as in the food provided in universities. They point to the need to provide a number of different meals during the day so that the student can choose among the foods that he prefers; they add that the amount of food provided should be increased and that the hours of serving in the dining room should be increased so that the students returning from their university can get their share of the food. The researchers see that as long as the challenge of food in private dorms was more apparent than in the governmental ones, it is necessary to review the applied procedure of private dorms, kitchens and follow-up matters beyond the challenge that all of the students agree with.

As for the transportation challenge, one of the students mentioned several solutions. Among them, the student should take into consideration the distance between the dormitory and the university. This should be done through coordination between the institutions that provide scholarships and the Higher Education Student Loan and Housing Board in Turkey. Another solution is the need to introduce students to the types of transportation and how to use them in an appropriate way.

On the level of language barrier in forming friendships with the Turks, students see that the student should be very patient and bear the criticism they may face until the language is mastered.

28.3.3.2 Proposed Solutions to Academic Challenges

The researchers believe that there are some lack in the practical part of the academic courses and that some students have difficulties in meeting the future needs of the scientific material presented to them. Therefore, it is necessary to review the subjects provided in the various study programmes to be supported and attached to the new developments and increase the practical side.

Some students recommend, in order to get rid of the challenge of the academic burden, that the student should not be charged in the first semester for more than three courses and that the required assignment in each course should not exceed one per course; so the first semester is seen as a preparation for the student.

As for the Turkish language challenge, the researchers suggest that training programmes should be offered to teach the student how to write in the academic language and how to prepare and present their scientific material through the PowerPoint presentations. The researchers believe that to control the process, all foreign students should study an academic Turkish language as an additional compulsory requirement during their academic studies, 1 year later, in which they receive the Turkish language in general.

In terms of the lack of foreign books in libraries, students recommendede that libraries must make a complete inventory of their English scientific books to identify deficit in their libraries and to update it. They also recommended the need to obtain permissions in a number of international electronic journals that help students to access researches and scientific books for free. They also recommended the need to carry out an introductory lessons on how to search for resources in the library at the field level as well as technical one.

Students note that a teacher who has a studied in a foreign university is more capable of understanding the challenges and difficulties faced by international students. Therefore, some students suggest that other teachers should be alerted to the needs and challenges faced by international students, especially when they are taught in a language other than English. The researchers also propose here to conduct a study that measures the relationship between the degree of teacher understanding of the student in terms of the variable of the teacher's place of study, local or international.

28.3.3.3 Proposed Solutions to Economic Challenges

Although the students did not face serious economic challenges, they offered a range of solutions that help to guide the expenses to save some money for shopping and small trips both within the city itself and to another city. The most important of these is to save a portion of the amount by making a monthly cost list to adjust the monthly salary. Along with this, they identify shops that offer discounts by capturing opportunities to buy with cheaper prices.

At the level of the married student, they mentioned that they need part-time jobs to help them in providing material burdens by allowing them to work inside the Turkish state officially.

28.4 Recommendation

- Providing an academic Turkish language course as a compulsory requirement for international students in addition to their academic studies
- Conducting workshops for new students to discuss the experiences of previous students and to present the challenges they may face and how to overcome them
- Conducting workshops for institutions that deal with international students with the aim of discussing challenges and other topic that is important in improving the international student academic life

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Chapter 29

Consumer Buying Behavior and Perception toward Shopping Malls with Special Reference to the City of Kolkata, West Bengal, India



Debojyoti Roy and Nilanjan Ray

Abstract Indian retail sector has seen a drastic transformation and rapid growth since the last decade. Till date it is being dominated by small and unorganized entrepreneurs like Khirana shops, standalone stores, boutiques, traditional family business stores, etc. In this present study, researchers concentrate on three selective questions: predictive modeling, dimension reduction, and visualization modeling. The population consisted of random shoppers who have visited shopping centers. The survey was conducted in year 2015, and all of the surveys were conducted in person. The questionnaire consisted of 150 items. The majority of participants completed the survey between 10 and 12 min. This present study indicates that the atmosphere of a retail setup has a major impact in the minds of mall consumers reflecting their behavioral response and the role of experiential value in determining these behavioral responses.

29.1 Introduction

Nowadays shopping malls play a prime role in the lifestyle of people living in cities/towns which has particularly changed the patterns of shopping behavior. At the present time, people believe that the malls are the most excellent place to shop. Shopping malls are not only a place to shop but also a place for social and recreational activities. This predisposition may be clearly visible in buyer's decision-making process which includes patterns of information search, alternative, evaluation, and product selection. According to Michon et al. (2005), atmospheric stimuli including smell, music, decoration, or layout and temperature are either actively or passively used by retail and mall managers. These factors have a strong impact on consumer's perception of the shopping mall's appearance as well as their behavior. The impact of the physical environment on consumer behavior has received significant attention from researchers (Gilboa and Rafaeli 2003). Physical

D. Roy (✉) · N. Ray
Adamas University, Kolkata, West Bengal, India
e-mail: debojyotiroy3333@gmail.com; dmilanjanray@gmail.com

environment of a mall includes elevation, lighting, air conditioning, washrooms, layout, aisle placement and width, carpeting and architecture. The atmosphere of a retail setup has a major impact in the minds of mall consumers reflecting their behavioral response and the role of experiential value in determining these behavioral responses.

29.2 Literature Review

The evolution of shopping malls happened not with a motive of growing a new retail format but with the basic idea of developing a community center for people where they could converge for shopping, cultural activity, and social interaction. According to Dennis (2005), over a three-year period, of four UK shopping centers focused in finding out the role of attributes such as transport links, parking, choice of major stores, attractiveness of malls, basic facilities, seating areas, helpfulness of staff, friendly atmosphere, quality of products, etc. Above study also concluded that the people are attracted to different shopping centers for different reasons not only that there is a need to understand shopping as a fundamental feature of modern society.

According to Sharma (2012), research carried in Mumbai also assessed the overall customer satisfaction. The researcher analyzed the response of customers with regard to the availability and quality of products and services offered at shopping malls and the comfort level of the respondents toward shopping in the shopping malls.

Applebaum (1951) argues that the buying behavior of customer is influenced by the needs and preferences of the consumers for whom the products are being purchased. Sohail (2015), in his empirical research study, compared men and women for differences in mall shopping. According to his research based on 513 shoppers across Saudi Arabia, it has been suggested that factors such as value perceptions, lifestyles, and shopping orientation differ across genders and have a significant impact on mall patronage.

Customer satisfaction is defined as “the number of customers, or percentage of total customers, whose reported experience with a firm, its products, or its services (ratings) exceeds specified satisfaction goals” (Farris et al. 2010; Tse and Wilton 1988; Oliver 1999). Brennan and Lundsten (2000), in their study on the consumer shopping habits, identified that consumers shop at discounts for low prices and large variety and stores for the unique items they cannot find elsewhere.

According to Wong et al. (2012), there is a relationship between shopping mall attributes and customer satisfaction. In order to investigate the personality of the retail store, two different Martineau (1958) categories of retail store attributes, i.e., functional and psychological which directly and indirectly to customer satisfaction. The functional category includes attributes like location, assortment of products, and store layout. The psychological category represents the feelings generated by the functional elements of the store. While research into store choice by the customers has gained more attention former attributes than the latter.

Customers are individuals with likes and dislikes. When the people in a particular group feel one way or another about a product, service, person, place, entity, or thing, it is said to be a generalized consumer attitude that could affect the marketing of that person, product, or entity in positive or negative ways. Marketers try to influence consumer attitudes, and understanding the prevailing attitude is the first step to changing it if needed. According to Bloch et al. (1994), there are seven dimensions identified which affect the consumer's motives for visiting and shopping at malls. The first one is esthetics dimension. The second one is convenience dimension. The third dimension is escape dimension. Shopping malls, because of their exciting, generous, and stylish environments, tender a sense of relief and break to the customers from the same monotonous and routine work of job and personal works. Exploration dimension is the fourth one. Fifth dimension is flow dimension. If mall experience is good, the customers will not mind the time which they have spent inside the mall while shopping or enjoying. Another dimension is role enactment dimension. People behave in manner which is socially accepted or expected depending on the cohort they belong to. Consumers enact their social roles by shopping or visiting a mall. Last one is social dimension. Shopping offers an individual an opportunity to socialize.

Past research study shows that how characteristics of the retail environment affect consumers' emotions is managerially relevant; only two studies have examined the effect of environmental characteristics of stores on in-store emotions. Both focused on characteristics of the store's atmosphere and facility—its design, space, layout, lighting, color, and music (Donovan and Rossiter 1982; Ridgway et al. 1994). While important, other controllable characteristics of the retail environment (e.g., product assortment, sales help, etc.) may also affect in-store emotions. Thus, more work is needed to identify the variables in the retail context which may affect consumers' emotions.

29.3 Research Questions

- (i) Predictive modeling: Can we predict spending habits of a person from his/her interests?
- (ii) Dimension reduction: Can we describe a large number of human interests by a smaller number of latent concepts?
- (iii) Visualization: How to effectively visualize a lot of variables in order to gain some meaningful insights from the data?

29.4 Research Methodology

29.4.1 Hypothesis Development

H1: People who are conscious about their looks visit shopping centers more often than others.

H2: Females are more interested in shopping clothes and looks but are not attached to brands whereas males spend more on clothes, entertainment, and gadgets.

H3: Education has a significant effect on visit to shopping centers.

H4: People from rural background tend to visit shopping centers more often than their urban counterparts.

H5: House owners visit shopping centers more often than people who live in apartments.

29.4.2 Setting and Sample

The population consisted of random shoppers who have visited shopping centers. The survey was conducted in year 2015, and all of the surveys were conducted in person. All the survey questions were asked in English. The sampling frame selected shoppers from all age group. Respondents who have said that they are constrained by time were given an URL to complete the survey. Survey is random in nature as respondents who were visiting malls all over Kolkata were requested to fill up the survey. As the data initially contained missing values, data imputation method was used for cleaning up the data.

We used Python to predict the consumer behavior when shopping at a shopping center. Logistic regression, random forest, and extreme gradient boosting matrix were used to compare the confusion matrix and prescribing the best possible model. We have tested for seven different variables and were successful in gathering response from 1010 shoppers. All the scales are tested for reliability.

29.4.3 Questionnaire

The questionnaire consisted of 150 items. The majority of participants completed the survey between 10 and 12 min. The questions contained within each of the scales were randomized to control for common method bias (Podsakoff et al. 2003).

29.4.4 Control Variables

Several control variables were used in the present study including the age, height, weight, number of siblings, gender, highest education achieved, childhood origin, and place of living as a child. Interestingly we have also asked for participant dexterity. The level of childhood origin and place of living was important to understand as each variable may influence consumer purchase behavior (Graen and Scandura 1987). We controlled for height and weight because this may be related to the quality of product the consumer is willing to purchase. We controlled for educated employees as educated shoppers may be more aware of their choices

premeditatedly and will make repeated purchase. We controlled for education because brand loyalty derived from higher education levels may impact purchase pattern. We also controlled for number of siblings as we presume that number of siblings may influence their affluence and span of attention from their parents.

29.5 Analysis and Interpretations

Survey was completed by 2000 respondents. But among them, only 1010 responses were considered for the study. Around 50% of the responses have no missing data. Therefore they were incorporated for study.

The demographic classification of the data is as below (Fig. 29.1).

The population of the study is dominated mainly by subjects who lived in the city and have had siblings. The subjects are predominantly college educated. The correlational diagram of the data collected can help us in explaining the relation between awareness of looks and visit to shopping centers. Those who spend on gadgets are the ones who spend on branded clothing, entertainment, and parlors (Fig. 29.2).

The survey results show that although women folks predominantly visit shopping mall more often and are aware of taking care of their looks, they tend to avoid branded clothes. Whereas men seem to be more interested in entertainment and branded clothing. They also seem to have an inclination on using gadgets (Fig. 29.3).

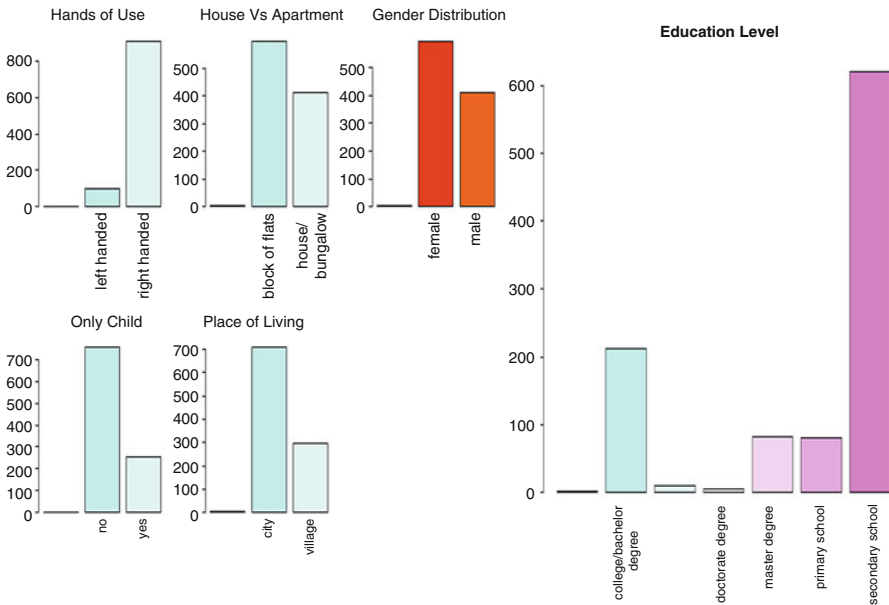


Fig. 29.1 Demographic distribution of the sample population

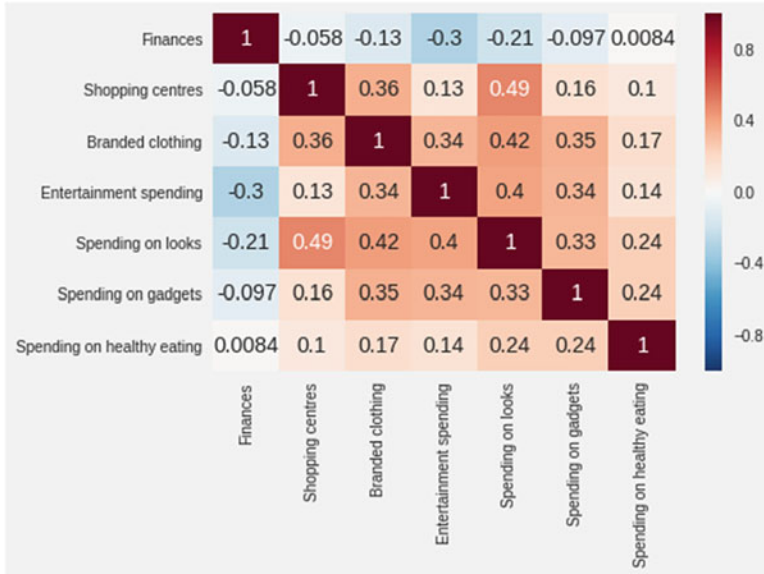


Fig. 29.2 Correlational diagram between all the variables

Education seems to have a significant effect on the visit to shopping centers and entertainment spending. It is also a no-brainer to find that educated people are more gadget friendly.

There is also a stark urban rural divide in the study which shows that people from urban area visit shopping mall less than their rural counterparts. But the preference for branded clothing in urban populace is way more significant to rural sample. It may be due to brand awareness. But it is surprising to learn that although rural subjects visited shopping centers more, they are not big on entertainment spending and spending on their own looks.

We have also controlled for their living place. It is quite evident that people who live in a bungalow rather than an apartment have higher means. Results showed that although house owners visit shopping centers more than the apartment living crowd spending on entertainment and branded clothing is almost similar. This anomaly can be due to the fact some people who although lives in a house do not have the means and they are living in a bungalow on account of inheritance.

29.5.1 Predictive Modeling

We ran comparative modeling on our data set to ascertain the predictability of our hypothesis. The models namely that are used are logistics regression, random forest, and extreme gradient boosting. The predictability can be ascertained with precision recall and F1 score value. To understand the predictability of the data, we have to

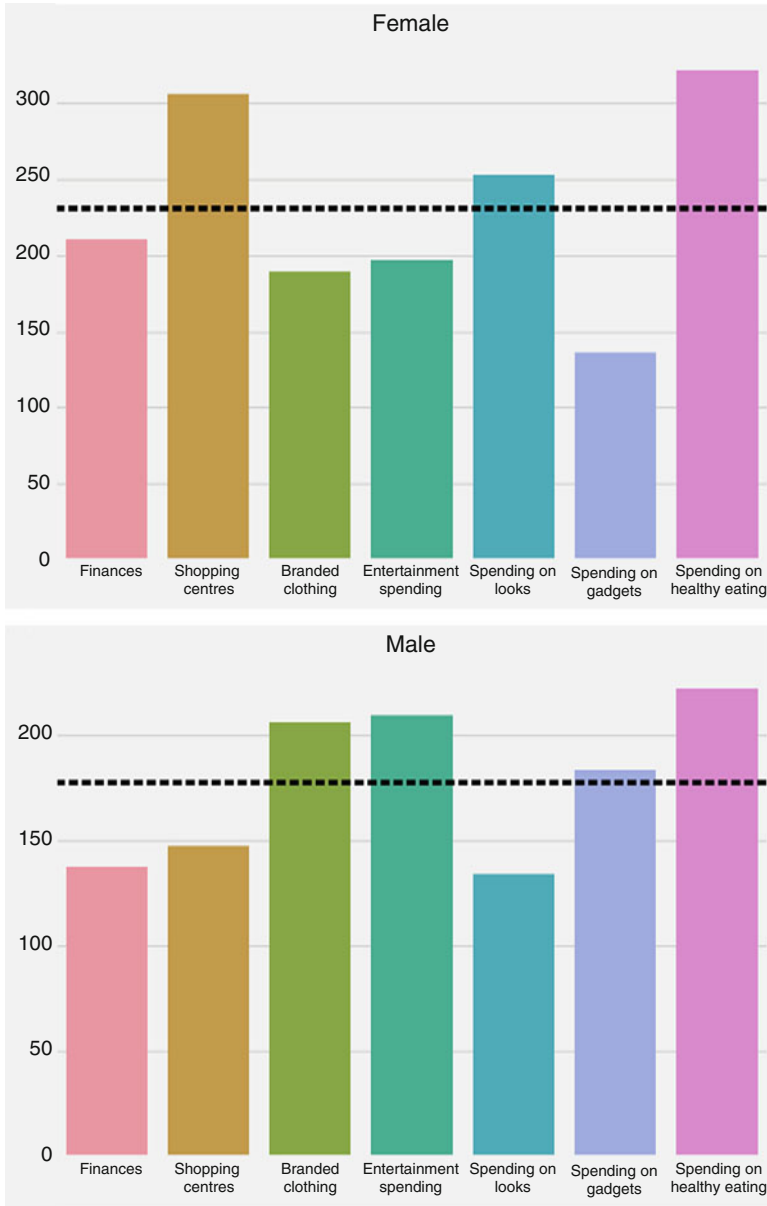


Fig. 29.3 Variable distribution by gender

clearly understand terms like true negative, true positive, false negative, false positive, precision, recall, and F1 score value. True negative signifies (denoted tn) samples in our data, which we have classified as not belonging to our class correctly. False negative signifies (denoted fn) samples in our data, which we have classified as

not belonging to our class, incorrectly. True positive signifies (denoted tp) samples in our data, which we have classified as belonging to our class correctly. False positive signifies (denoted fp) samples in our data, which we have classified as belonging to our class incorrectly.

Precision is defined as the ratio of the samples which are actually positive among all the samples which we predicted positive.

Precision = number of true positives/number of predicted

$$\text{Precision} = \frac{tp}{tp + fp}$$

Recall is the fraction of relevant instances that have been retrieved over the total amount of relevant instances.

$$\text{Recall} = \frac{tp}{tp + fn}$$

To understand the concept better, let's take an example. Suppose an algorithm for recognizing males in photographs identifies 8 males in a picture containing 12 males and some females. Of the 8 males identified, 5 actually are males (true positives), while the rest are females (false positives). The program's precision is $5/8$, while its recall is $5/12$.

The F1 score provides us the harmonic mean of precision and recall. The scores corresponding to every class signifies the accuracy of the classifier in classifying the data points in that particular class compared to all other classes. The support is the number of samples of the true response that lie in that class.

$$\text{F1 score} = 2 \times (\text{recall} \times \text{precision}) / (\text{recall} + \text{precision})$$

Looking simultaneously at the confusion matrix and three different modeling techniques, we can assume that extreme gradient boosting matrix is best suited to assume that hypotheses pertaining to shopping centers are 75% accurate. As the correlation diagram pointed out with a factor of 0.49 that people who do spend on looks visit shopping centers. Hence H1 can be concluded as true. From the Manhattan diagram depicted in Fig. 29.4, we have seen people with low education level have visited shopping centers way above average. Figures 29.5 and 29.6 portray that people from village or those who own a house visit shopping centers more than average. Concluding from the above figures and our predicted accuracy percentage of shopping centers, we can argue that H3, H4, and H5 are true and will have a high level of accuracy (Figs. 29.7 and 29.8).

Logistic regression can only reach for the best possible accuracy when we talk about branded clothing, entertainment, and gadgets. The accuracy percentages are 54%, 55%, and 39%, respectively, which are typically low when we are talking about goods. Similarly hence we cannot conclude H2 as generic.

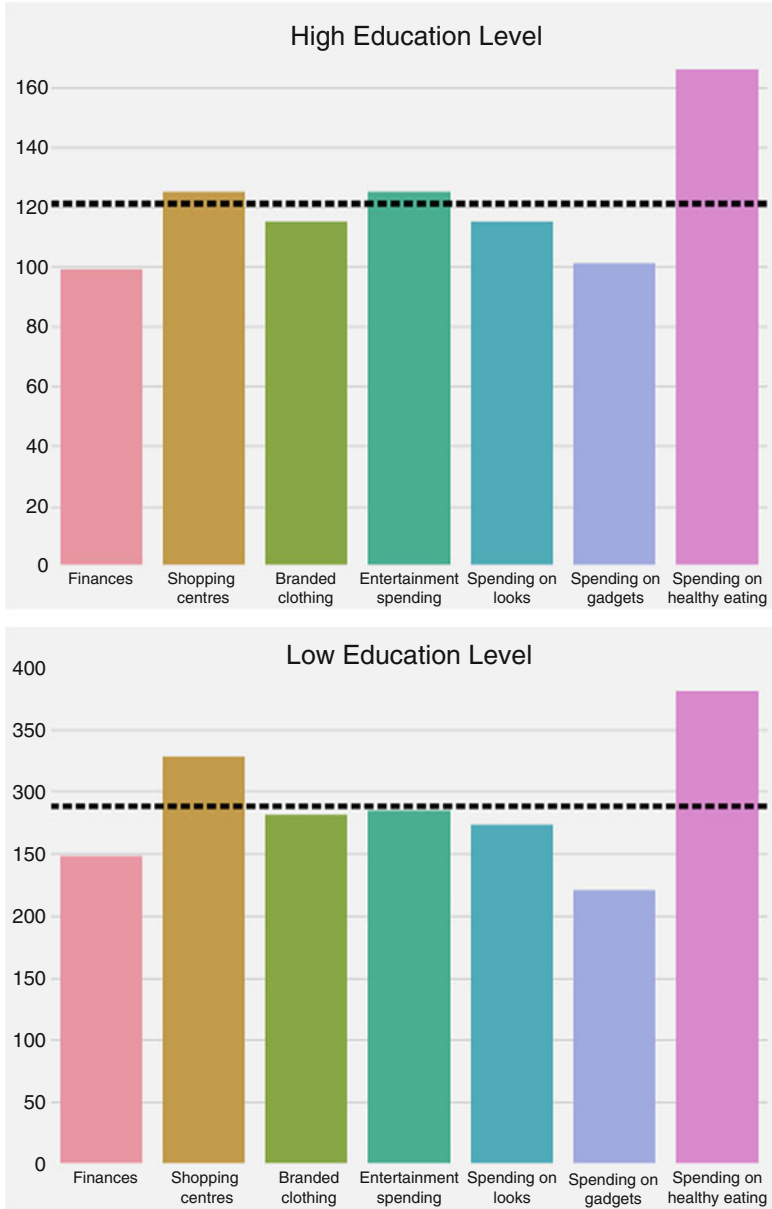


Fig. 29.4 Variable distribution by education level

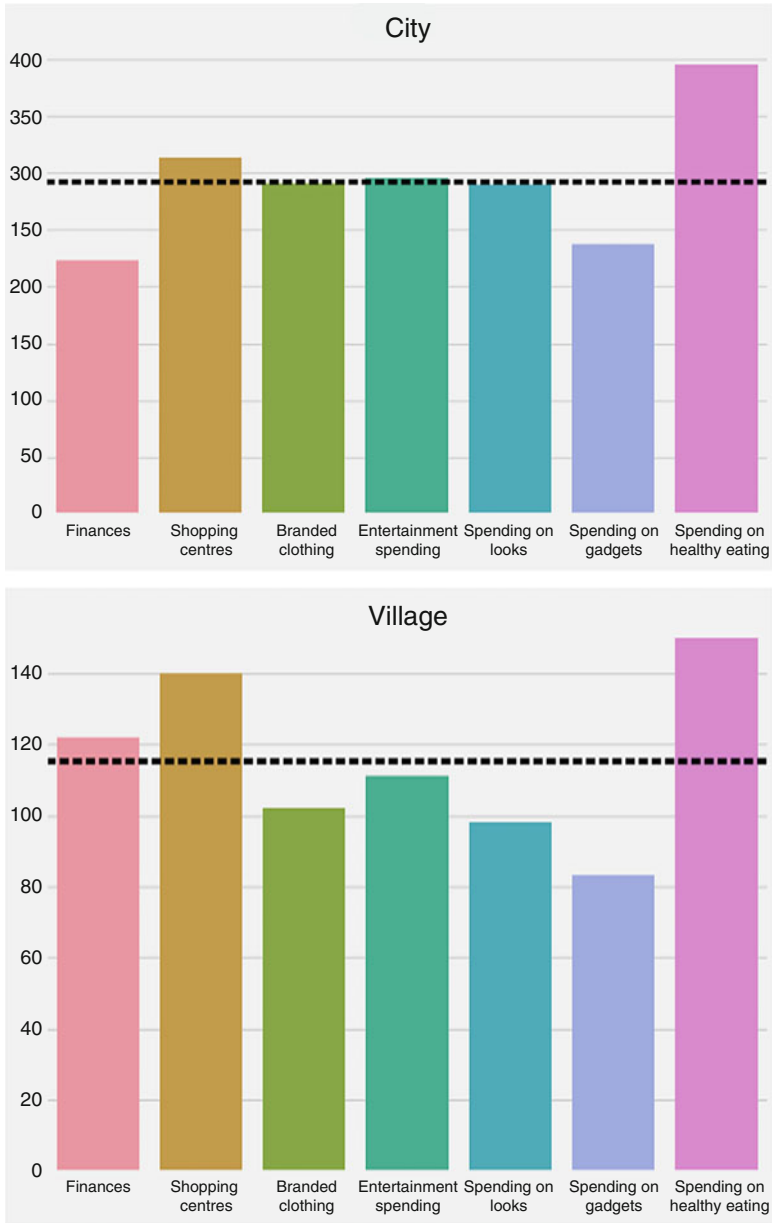


Fig. 29.5 Variable distribution by place of origin

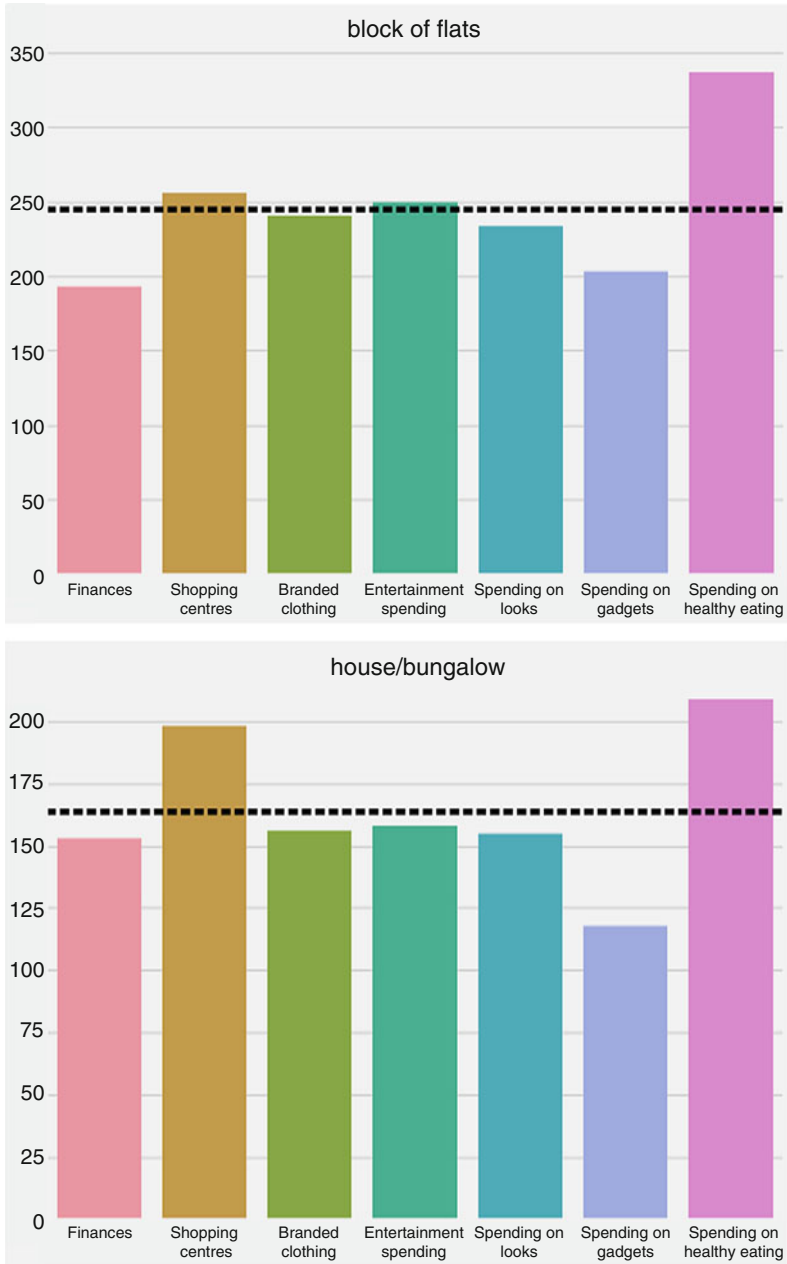
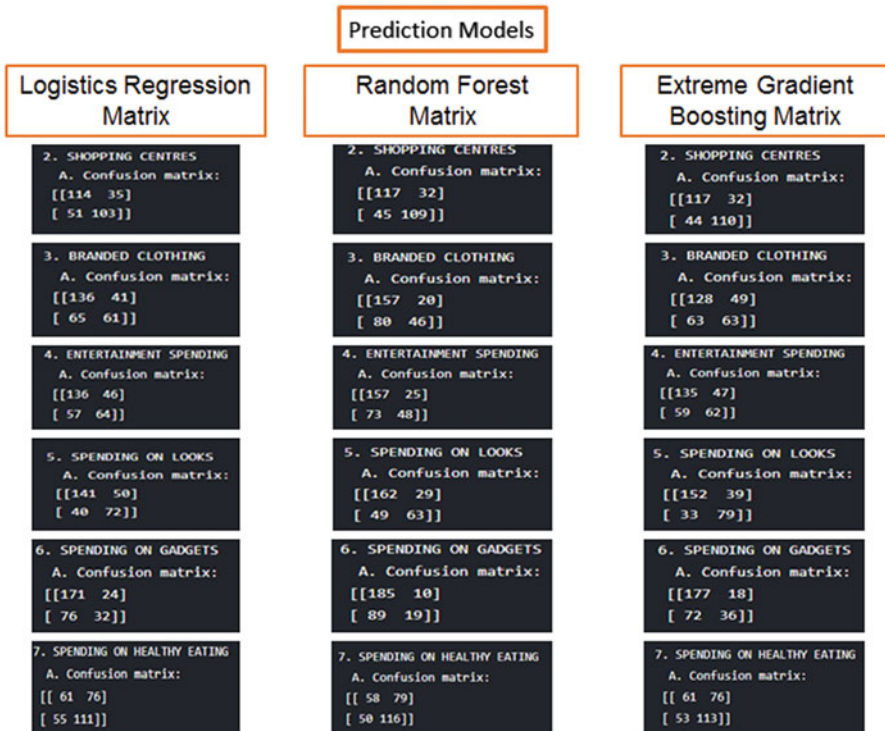


Fig. 29.6 Variable distribution by place of living

	Predicted class		
Actual Class		Class = Yes	Class = No
	Class = Yes	True Positive	False Negative
	Class = No	False Positive	True Negative

Fig. 29.7 Confusion matrix



Elements	Logistic Regression				Random Forest				Extreme Gradient Boosting				
	Precision	Recall	f1-score	Support	Precision	Recall	f1-score	Support	Precision	Recall	f1-score	Support	
Shopping Centres	0	0.69	0.77	0.73	149	0.72	0.79	0.75	149	0.73	0.79	0.75	149
	1	0.75	0.67	0.67	154	0.77	0.71	0.74	154	0.77	0.71	0.74	154
Average	0.72	0.72	0.72	303	0.75	0.75	0.75	303	0.75	0.75	0.75	303	
Branded Clothing	0	0.68	0.77	0.72	177	0.66	0.89	0.76	177	0.67	0.72	0.7	177
	1	0.6	0.48	0.54	126	0.7	0.37	0.48	126	0.56	0.5	0.53	126
Average	0.64	0.65	0.64	303	0.68	0.67	0.64	303	0.63	0.63	0.63	303	
Entertainment Spending	0	0.7	0.75	0.73	182	0.68	0.86	0.76	182	0.7	0.74	0.72	182
	1	0.58	0.53	0.55	121	0.66	0.4	0.49	121	0.57	0.51	0.54	121
Average	0.66	0.66	0.66	303	0.67	0.68	0.66	303	0.65	0.65	0.65	303	
Spending on Looks	0	0.78	0.74	0.76	191	0.77	0.85	0.81	191	0.82	0.8	0.81	191
	1	0.59	0.64	0.62	112	0.68	0.56	0.62	112	0.67	0.71	0.69	112
Average	0.69	0.68	0.77	195	0.74	0.74	0.74	303	0.77	0.76	0.76	303	
Spending on Gadgets	0	0.57	0.3	0.39	108	0.66	0.18	0.28	108	0.67	0.33	0.44	108
	1	0.57	0.3	0.39	108	0.66	0.18	0.28	108	0.67	0.33	0.44	108
Average	0.65	0.67	0.64	303	0.67	0.67	0.61	303	0.67	0.7	0.67	303	
Spending on Healthy Eating	0	0.53	0.45	0.48	137	0.54	0.42	0.47	137	0.54	0.45	0.49	137
	1	0.59	0.67	0.63	166	0.59	0.7	0.64	166	0.6	0.68	0.64	166
Average	0.56	0.57	0.56	303	0.57	0.57	0.57	303	0.57	0.57	0.57	303	

Fig. 29.8 Model fit

29.6 Conclusion

The customers' attitude toward shopping mall depends on various variables. Among them, shopping center, branded clothing, entertainment, convenience, price, quality, availability, etc. are more important to influence consumer shopping buying behavior. The research findings presented in this paper can provide in-depth understanding about the variables that affect the customer's buying pattern/attitude toward shopping mall at Kolkata City of India. In addition, a direction for future research is to conduct the similar studies on other cities in India and compare the customers' attitude toward shopping mall.

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Chapter 30

Assessment of School Administrators' Views Toward Social Media



Mücella Savaş Yalçın

Abstract The goal of this study is to evaluate school administrators' views toward social media networks in the light of chaos and complexity theories. In this research, case studies, that is, qualitative research design, were used to assess the level of school administrators' use of social media. The participants of this study consist of 12 secondary school administrators selected by criterion sampling that being one of the purposeful sampling methods. The semi-structured interview form developed by the researcher was used in the data collection process. In this paper, data were analyzed using content analysis method. The paper concludes that school administrators interact with teachers, students, and stakeholders using social media and that a complex network of relationships is emerging. This complex network of relationships can lead to chaotic situations in school administration if not well administrated.

30.1 Introduction

The social media that emerged with the Web 2.0 transformation of the Internet has surrounded around today's world and has gained momentum in communication. With social media, the sharing of personal information has increased, and the transmission of information has accelerated. Social media is defined as a kind of media in which too many documents, images, sounds, and texts can be transmitted from one point to another at any time (Toğay et al. 2013). Social media allows interactivity among people by providing communication with multi-participant in a virtual platform by a group of people or friends environment who share similar agendas or interests (Fang et al. 2014; Williamson and Johnston 2012). It includes all the tools, services, and applications that enable interaction between users and allow users to create and modify their content (Boyd 2008; Kaplan and Haenlein 2011).

According to Cox and McLeod (2014a), social media tools have complemented traditional forms of communication while at the same time encouraging the use of

M. Savaş Yalçın (✉)
Atatürk University, Erzurum, Turkey
e-mail: mucella.savas@atauni.edu.tr

individuals to enable the sharing of knowledge back and forth. In addition, people with social media can discuss ideas and produce new opinions (Vural and Bat 2010). In this direction, the use of social media continues to become widespread. With the widespread use of social media, communication culture is changing, and it is said that in the future, effective communication will provide some benefits for individuals in both personal and professional fields (Ellensburg et al. 2012).

It is used in various forms by entering into the education and training process, thanks to the benefits that have provided to the individuals' social media which become widespread every day. People with social media have enriched their educational experience by creating an individual learning environment (Dabbagh and Kitsantas 2012). Sharing experiences among educators is useful for educators to enrich teaching experiences (Jones et al. 2010). In this case, it provides professional development opportunities for educators (Burden 2010). In this context, social media increasingly continues to be a part of education and other aspects of life (Ellensburg et al. 2012). According to Cox and McLeod (2014a), corporate authorities now acknowledge that their employees and the general public use them as one of the main methods of finding, sharing, and creating information to social media.

School principals encourage to use these networks to the widespread use of social media tools in the public domain and their introduction into educational settings. Ideas and stories that school principals can give through social media tools can strengthen and sustain relationships among all stakeholders, including students too (Cox and McLeod 2014a). Social media to enter classrooms and students' homes and to cross physical boundaries, school administrators also are given the responsibility to help in the use of social media by educators (Nidiffer 2010). In addition, social media can also provide benefits such as improving school, increasing opportunities (e.g., going to collaborations with businesses) and sharing resources to school administrators (Muijs et al. 2010; Menteşe 2013).

The educational system is chaotic because it has a complex structure and exhibits nonlinear properties (Bülbiül and Erçetin 2010). For schools can creat a nonlinear structure to widespread of the social media in the social processes and the education process and can cause unpredictability of its outcomes, it can create a chaotic situation for schools. However, it can be a complicated structure that school administrators are constantly interacting with students, teachers, and various stakeholders. In this context, the present research is important in terms of revealing school administrators who direct and lead the education, and training process will determine their opinions toward social media and how they will influence and direct the use in education. Setting school management's views on social media can create some alternatives for the use of social media in school management and in the education process, and school managers can turn chaotic situations into opportunities. For this reason, it is aimed to evaluate the opinions of the school administrators on the social media networks in the light of chaos and complexity theories.

30.2 Methodology

In order to determine the views of school administrators on social media networks in the light of chaos and complexity theories, case studies, that is, qualitative research design, were used. Qualitative research is used to provide in-depth information about an event or phenomenon by referring to participants' opinions (Creswell 2012). The case study aims to reveal by asking questions how and why by observing the information obtained by deeply examining the factors and causes that affect them based on current events in real life (Cohen et al. 2007; Yin 2002).

30.2.1 Working Group

The participants of this study consist of 12 secondary school administrators located in Erzurum province center. In the study, criterion sampling that being one of the purposeful sampling methods was used. School managers have been selected as the criteria for using multiple social media accounts. In the survey, school administrators were searched and asked whether they were using social media networks. In the study, school administrators are coded as Y1, Y2, Y3, Y4, Y5, Y6, Y7, Y8, Y9, Y10, Y11, and Y12.

30.2.2 Collection of Data

The semi-structured interview form developed by the researcher was used in the data collection process. In the interview form, five questions were prepared after examining the literature. Following the examination by the field specialist, piloting was conducted at a school, and the final form of the questions was given. The talks were held between 13 and 24 November 2017. During the interviews, information about the research was given and negotiations were recorded. The talks lasted about 40 minutes. In the interviews, the school administrators were asked the following questions.

1. Which social media networks are you using? Which are the most time you spending?
2. For what purposes do you use social media that you use?
3. What do you think are the positive sides of using social media?
4. What do you think are the negative sides of the use of social media?
5. What do you think about the use of social media environment and tools in education? Is there any practice at your school for this?

30.2.3 Data Analysis

In this study, data were analyzed using content analysis method. Content analysis is a systematic approach that combines concepts and themes that are similar between data (Yıldırım and Şimşek 2013). Purpose in content analysis includes summarizing the messages that the datas contain (Cohen et al. 2007). The available data is first conceptualized and then organized in a systematic way to create appropriate themes (Yıldırım and Şimşek 2013). In this research, the questions asked in the direction of the managers' opinions were determined as the theme, and then the raw data were coded and categorized. The theme, code and categories created by the researcher were examined by the experts of the field and then they are tabled. A direct citation from the negotiations was provided to ensure the validity of the survey.

30.3 Findings

In this research, five questions were asked in order to determine the opinions of the school administrators about the social medias, and the themes, categories, and codes were presented in response to the answers given by the administrators. However, there are examples of responses from school administrators supporting the findings.

30.3.1 Findings Related to Social Media Platform Used by School Administrators

Information on the social medias used by school administrators is given in Table 30.1. School administrators use social media networks such as WhatsApp, Facebook, Twitter, Instagram, and YouTube. The categories and the codes that make up these are given in Table 30.1.

In Table 30.1, it is stated that WhatsApp is the social media that school administrators use the most when they look at social medias. Secondly, it is expressed as Facebook. The social media used later indicated that they use networks like

Table 30.1 Social media networks used by school administrators

Theme	Code and categories
Social media networks used by school administrators	WhatsApp (Y1,Y2,Y3,Y4,Y5,Y6,Y7,Y8,Y9, Y10,Y11,Y12)
	Facebook (Y1, Y2, Y3, Y4, Y5, Y6, Y7, Y8, Y9, Y10, Y11, Y12)
	YouTube (Y1, Y5, Y6, Y7, Y10, Y11, Y12)
	Twitter (Y2, Y5, Y10)
	Instagram (Y2, Y9)

YouTube, Twitter, and Instagram. School administrators use in communication process the WhatsApp network; in school information, event sharing, and announcement purposes the Facebook network; and in following a team of people and news in addition to sharing their thoughts the Twitter network. The number of managers using Instagram is low, while YouTube is for personal interests.

The Provincial Directorate of Education stated that they established the WhatsApp group to communicate quickly and effectively with school principals. The provincial national education director can ask some directors to share some writing jobs from WhatsApp group. Apart from this, it is also stated that there are groups established among school principals among themselves. School administrators are hurt by WhatsApp to act together in the common affairs of schools. However, school principals have established their own WhatsApp group to communicate with teachers. All 12 school administrators interviewed have a Facebook page. They often expressed that they shared school presentations and activities.

We have to constantly communicate because of our work, I use it constantly because of social media facilitation. (Y1) Current administrative affairs are shared from the Whatsapp networks of provincial and district national education directorates, and we share these shares with our own Whatsapp group to inform teachers. (Y7)

30.3.2 Findings About How School Administrators Use Social Media for Purposes

The categorization and coding schemes that are formed by the opinions of the school administrators about the purpose of use to social media are stated in Table 30.2. Shares of school administrators about social media, school work, personal and professional development, rapid and effective communication, sharing with teachers, and other categories and the codes that make up these are given in Table 30.2.

The opinions of the school administrators on purpose of use to social medias are given in Table 30.2. In Table 30.2, school administrators often expressed their sharing of school work from Facebook pages. They expressed that other school administrators were also involved in sharing their work and trying to adapt the activities to their schools. The views of some of the relevant managers are:

Our school has a project that it runs with a foundation. With this project, an orphaned gambar was created in every class. Classes are throwing money every week in the gambling, and at the end of each month we open these gambars to the class, counting the collected money. We are willing to accept the receipts collected. For example, we have an orphan in Palestine, and this orphan came to school, I paid for his expenses, I shared this beautiful example with his stomach, on Facebook, to be an example to other schools. Apart from this project, we are also encouraging students to share this experience with our students. (Y4)

We share activities about the school in general, even from the ministry and approved, for example we have made a book collection campaign and shared it, the school has a website

Table 30.2 Purpose of use to social media of school administrators

Theme	Code and categories
Purpose of use to social media of school administrators	Sharings about the school's works
	Sharing to school activities (Y1, Y3, Y4, Y7, Y9)
	Promotion or advertisement of the school (Y1, Y4, Y7, Y12)
	Shares made for example to other schools (Y4)
	Announcements of school (Y1, Y5, Y7, Y10, Y11)
	Personal and professional development
	Sharing to feelings (Y2, Y5, Y10)
	React to events (Y5, Y6, Y9)
	Supporting good things done (Y1, Y5)
	Sharing memories (Y6, Y10)
	Sharing things you liked (Y2, Y4, Y8)
	Follow family relationships (Y3)
	Being aware of innovations (Y1, Y6, Y12)
	Learning from others' shares (Y7)
	Fast and effective communication
	Fast and effective communication (Y1, Y2, Y3, Y4, Y5, Y6, Y7, Y8, Y9, Y10, Y11, Y12)
	Shares made with teachers
Information exchange with problem students (Y1, Y4, Y5, Y6, Y8)	
Providing guidance services to teachers (Y5, Y8)	
Reminding duties and responsibilities of teachers (Y3, Y5, Y7, Y9, Y11, Y12)	
Warning teachers (Y4)	
Providing motivation for employees (Y2)	
Others	
Because such communication is required in the current time period (Y1, Y12)	
Following the news (Y2, Y9)	
Getting last-minute news (Y3, Y10, Y11)	

but the scope is narrow, and the teacher who is not in school is not heard from the website. (Y7)

I share one of my studies. There is activity we have with the walks, I share it, we can share it for announcement purposes. (Y3)

All 12 school administrators interviewed emphasized that social medias support traditional communication by performing quick and effective communication. However, school administrators expressed intensive sharing with teachers. These include the sharing of reminders of tasks and responsibilities to teachers as well as to problem students. Some opinions of the administrators related to the subject stated as follows.

I have a Whatsapp group with my teachers at my school. I share from here with any problems with the school. For example, when a problem arises about a student,

I immediately notify Whatsapp immediately, and we choose students at the school every day. I write from here. (Y8)

I want to hold a meeting with teachers of science group immediately and announce from Whatsapp group. (Y4)

30.3.3 Findings of School Administrators' Views on the Positive Sides of the Use of Social Media

The categorization and coding schemes created by school administrators' views on the positive sides of the use of social media are specified in Table 30.3. School administrators' positive views on social medias (fast and effective communication, practicality and convenience, and interaction with stakeholders and multiple participation) and the categories and the codes that make up them are given in Table 30.3.

School administrators' positive views on social media are mentioned in Table 30.3. The school administrators first stated that social media has a positive effect on effective and rapid communication. The views of some school administrators are presented below.

Thanks to the Whatsapp groups established by the provincial national education, we can hear the writings before they come from Ministry of Education. I open the news in my pocket, I look. (Y6)

Table 30.3 School administrators' views on the positive sides of the use of social medias

Theme	Code and categories
School administrators' views on the positive sides of the use of social medias	Fast and effective communication
	The fact that information can be spread very quickly (Y1, Y3, Y5, Y6, Y7, Y12)
	Easy communication (Y2, Y4, Y6)
	Practicality and convenience
	Knowing who is doing what (Y6, Y9)
	To be able to intervene immediately in the event (Y5, Y8, Y11)
	Instant access to people (Y3, Y4, Y12)
	Easy to use (Y3, Y5, Y6, Y11)
	Business facilitation (Y6)
	Saving time and space (Y4, Y5)
	Allowing new ideas to be produced very quickly (Y8)
	Interaction with stakeholders and multiple participation
	Establishing communication network (Y1, Y2, Y4, Y8, Y10, Y12)
Communicating with many people at the same time (Y2, Y5, Y6, Y7, Y9)	
See examples of other administrators (Y7)	
Learning what you are not aware of (Y10)	

I think the only positive side of social media provides a fast flow of information. (Y12)

You get instant news with social media, everything is very easy, being under your hand makes it easy to use. (Y3)

Along with these, it has been stated that social medias provide many benefits and facilities in working life.

With social medias, you save both field and time. Let's say that the district will come from national education and want to hold a meeting, we immediately announce from Whatsapp the meeting to teachers. Otherwise, collecting will take time. (Y4)

Thanks to the social media, information can be spread very quickly, you can intervene in the events instantly, you can communicate with everyone at the same time. You save time, you do not take the time of anyone, you can tell the events in a few seconds. (Y5)

You can see that the person reads the message, which adds a very important feature. The teacher can hear, even if he is in school or not. (Y7)

Everyone is not following the announcements shared on the school's Web site, but social media is not that everyone can follow. It is easier to reach people from here. (Y9)

School administrators have indicated that social media is increasing interaction with other stakeholders and providing multiple participations and reaching many people at the same time. A school administrator has voiced that other administrators take the example of sharing and adapting it to school.

I can think of how we can use the examples of other administrators from our Facebook page at our school. New ideas can be produced very quickly. We have also been arguing between yourself that it is official. (Y8)

You can learn what you do not know about social media, such as additional tutorials, regulations, changing applications, and so on. We also know what people are doing as they are shared. (Y10)

30.3.4 Findings of School Administrators' Views on the Negative Sides of Using Social Media

The categorization and coding of school administrators' opinions on the negative sides of using social media are given in Table 30.4. The negative opinions of school administrators about social media (to create addiction, to weaken human relations, to reduce student success, and to control the uncontrollable) and other categories and codes that constitute them are given in Table 30.4.

In Table 30.4, creating addiction and weakening human relations among school administrators' negative views toward social media have been expressed. Some school administrators' views are:

We are very poor at using technology as a country, and our school is starting to work by the more negative. Use the internet but do not be addicted. Unfortunately, It is addictive. (Y1)

It weakens human relations, nobody is making friends anymore, people used to be disturbed and shared anciently but now relationships have become virtualized. (Y4)

Table 30.4 School administrators' views on the negative sides of using social media

Theme	Code and categories
School administrators' views on the negative sides of using social media	Addiction
	Addiction creation (Y1, Y4, Y8, Y9, Y10)
	Human relationship
	To make people impatient (Y1, Y4, Y7, Y12)
	Individualizing people (Y2, Y4, Y9, Y11)
	Alienating people (Y1, Y4, Y8)
	Selfishness of people (Y3, Y6, Y7)
	Disadvantages for students
	Student trails (Y4)
	Students cannot express themselves (Y2, Y3, Y6)
	Student achievement falls (Y1, Y3, Y4, Y10, Y12)
	Time
	Time kill (Y1, Y2, Y3, Y4, Y8, Y9, Y12)
	Uncheckable
	Nonmoral publications (Y1, Y4)
	No filter event (Y1, Y6)
Others	
Causing negatives related to health (Y2)	
Ability to share unfounded information (Y5, Y6, Y9, Y11)	
Too much information is caused by pollution (Y4, Y7, Y11)	
It is killing Turkish (Y2, Y3, Y4)	
Misunderstandings cause (Y4, Y5, Y6, Y10, Y11)	

The social media is been impatient to people, we can't wait in the traffic, we can not wait in the traffic, in the hospital, at the stop because we are doing our jobs in the middle of the second and the social media has adjusted to speed us. (Y12)

I think the negative side is more. First of all, it weakens social relations. Especially among young people there is a very negative side. He is killing the Turkish language, creating a new language with short short letters. He kills time when he gets himself into social media. According to opinion, human beings are individualized and alienate. The biggest problem is that 4-5 people come together and instead of talking between them, they prefer talking to people on the phone. (Y2)

As one of the negative parties of the social media, they also expressed their complaints about this issue, especially the parents who dropped the student success.

I observe that the success of student using social media have fallen. There are also complaints on this matter by parent. For example, a parent stated that the the day the student took the phone dropped of success. (Y4)

Apart from these, there are some expressions from negative opinions of school administrators toward social media.

Unfounded information can be shared, for example we can share information that we do not know about precisely, it can been misunderstandings in some cases because there is no gesture or mimicry in Whatsapp, the event can take on a different dimension. You can break what you like, for example, political events, the opinion of the one we do not like. (Y5)

Technology should be used ethically so that it is useful, technology is using us, we are not it. (Y1)

30.3.5 Findings of School Administrators' Views on the Use of Social Media in Education

The categorizations and coding schemes created by the school administrators' opinions on the use of social media in education are specified in Table 30.5. The positive and negative categories of school administrators' use of social media in education and the codes that make up these are given in Table 30.5.

School administrators suggest generally using of social media in the educational process but in a controlled way. Some positive comments from school administrators on the using of social media in education are presented:

I find it useful to use social media in education. For example there are educational sites like EBA (Education Information Network). It works for the student classroom. Such web sites should be used widely. However, I do not see appropriate applications like Facebook. (Y4)

There are many social media networks related to school. With some social media networks, teachers can create course streams, from where students can follow, and students can work on their own. I think it's a very useful program. (Y5) There are many networks for teachers and students. Teachers have access to many documents related to their lessons and can benefit from the experiences of other colleagues. It makes it easier for the student to access these resources and allows the student to learn individually. (Y11)

School administrators stated that the use of social media in education would create some team negativities.

Social media negatively affects the success of students, for example, they become sleepy students, their mothers complain about it, they cause time for the student, and they engage the students' minds. (Y3)

It would be useful if you are in control. but it would be better if it was limited. Sometimes students are punished with audio and video recordings, students are unhealthy. (Y6)

Should be used in education if used in a controlled manner. It should be used when needed. However, this training should not cover the whole. Education does not affect work,

Table 30.5 Views on the use of social media in education

Theme	Code and categories
Views on the use of social media in education	Positive
	Attending classroom for student (Y4)
	Creating opportunities for professional development to teachers (Y4, Y5, Y6, Y7, Y12)
	Individual teaching opportunities (Y5, Y11)
	Increasing student motivation (Y2, Y8)
	Making teaching effective (Y1, Y4, Y5, Y6, Y9, Y11, Y12)
	Negative
	Adversely affect students' success (Y3, Y8, Y9, Y11)
	Reducing interaction of teacher and student (Y1, Y2, Y3, Y7)
	Causing object deviation (Y8, Y11, Y12)
Decreasing the expression power of the learner (Y1, Y6)	

educators and educators must build relationships together and must be in constant contact. Technology should only facilitate this. I do not say that it is not entirely in education, but it should be used in part of education. (Y1)

30.4 Conclusion, Discussion, and Suggestions

With this research, it is aimed to determine school administrators' views on social media. Social media platforms are used by school administrators. Cox and McLeod (2014b) emphasized that social media tools provide stronger links with local stakeholders, other educators, and the world and allow more interaction between school principals and stakeholders. It appears that school administrators interact with teachers, students, and stakeholders using social media and that a complex network of relationships is emerging. This complex network of relationships can lead to chaotic situations in school management if not well managed.

School administrators use social media for various purposes. The school administrators interviewed expressed that they are sharing the work of the school firstly. Schools seem to prefer to communicate with stakeholders and parents in terms of promotion of schools, activities, and announcements. Cox and McLeod (2014b) say that school managers can strengthen and sustain relationships among all stakeholders, including students, with ideas and stories they can give through social media tools. They also stated that they can contribute to personal and professional development areas as well. In addition, all school administrators expressed that they use social media to provide fast and effective communication. Especially WhatsApp provides fast communication. However, thanks to these networks, teachers can share many things about schoolwork and students. School administrators' sharing can have unexpected consequences. In this case, it supports the theory of chaos and complexity.

All school administrators have expressed that the flow of information is very fast and that an easy communication process takes place between the parties that they see positively toward social media. Besides, it provides practicality and convenience; thanks to these networks, it is possible to find out what people are doing, to intervene instantly when things happen, to be able to reach people instantly, to use easily, to facilitate their work, to save time and space, and to be able to produce new ideas very quickly. People can share various things, allowing to people to write what they think daily; they can live in a virtual environment to a real world (Vural and Bat 2010). They also stated that they increased the interaction with the stakeholders and made multiple participation.

School administrators have said that the negative side of social media is more than positive. In an investigation by Papandrea (2011), some school administrators and parents claimed that despite the widespread use of social media in society, the use of social media in schools is much more harmful than good. School administrators stated that they saw social media as negative because of social media's dependency on individuals and students, weakening human relations, dropping student

success and being unable to control. In a research conducted, students with low self-regulation skills have come to the conclusion that smartphone use affects their academic performance. Another study found a negative relationship between social media use and academic performance (Giunchiglia et al. 2017). These surveys support the views of school administrators. It has emerged that school managers should lead students and other stakeholders at the point of using social media.

It seems to have some hesitations of school administrators about using social media in education. He emphasized that a number of social media networks support student learning and allowing for individual learning. It has also been mentioned that teachers can benefit from professional development. Negative ones are among the voices that may adversely affect student success. In a study conducted by Alican and Saban (2013), social media found that they could not spend enough time on their friends, their family, and their social experiences, causing time lost to students. In another similar study, Erçetin and İli (2012) found that social media reduces social communication and family communication with students and does not fulfill many responsibilities. School administrators have also pointed out that controlled use of social media is used in education. Wang (2013) emphasized that social media can turn into a forest fire when it is used improperly because everyone is open. From the perspective of chaos and complexity theory, the positive and negative aspects of social media create a chaotic situation in terms of the use of managers. However, school administrators' sharing can have unexpected consequences, and school management can be chaotic. In this case, it supports the theory of chaos and complexity.

In this study, interviews with school administrators using many social media were preferred. In other studies, interviews with school administrators who do not use social media can be held and trainings and seminars can be given to encourage their use by revealing reasons for not using them. Other than secondary school administrators, they can also be interviewed and found out how they are used at these levels. School administrators also use popular social media such as WhatsApp, Facebook, Instagram, and Twitter. They do not use networks like blogs, portals, and LinkedIn. These networks should be expanded and used.

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Chapter 31

How Do Different Groups Conceive Primary School English Language Education? A Sample of Cono Tribe



Lütfi Üredi and Ömer Gökhan Ulum

Abstract It is crystal clear that we can count several reasons to learn English language. People all over the world learn English as a second or foreign language. Authorities contain English language in their school syllabuses, and students begin learning it at a very young age. It is the language of science, technology, trade, diplomacy, and many other fields. Competency in using English enhances the possibility of having a good job in home country or abroad. It is simply the magic wand of several opportunities. However, how different groups like Cono tribe regard English is an intriguing issue that needs to be investigated. Considering all these dimensions, this study investigates the attitudes of a diverse group, in our case Cono tribe, towards the importance of English language education at early ages. Based upon a descriptive research design, an interview designed by the researchers was directed to the members of the mentioned group. The findings of the study bring diverse views of the studied group. Besides, the results obtained from this descriptive study may prove to be of some help for the researchers in the related research area.

31.1 Introduction

Several countries have given importance to English language education for a long time (Adamson 2001; Hu 2002, 2005; Jin and Cortazzi 2003). Competency in English may provide several financial, social, and academic facilities by supplying the speakers with moral and material support (Bourdieu 1991). For instance, it is the requirement of university education or academic carrier in both homeland and other

L. Üredi (✉)
Mersin University, Mersin, Turkey
e-mail: lutfuredi@gmail.com

Ö. G. Ulum
Adana Science and Technology University, Adana, Turkey
e-mail: gokhanulum@adanabtu.edu.tr

countries, the gate to a high ranking job in public and private fields, a chance for professional empowerment, and the determinant of social status (Jiang 2003). As a result of the prestige or advantage of using English language, or the rising requirements of English competency, extensive national and individual practices and supplies are utilized to improve the language proficiency (Niu and Wolff 2003). In the *Longman Dictionary of Applied Linguistics*, a language attitude is described as the attitude which speakers of diverse languages own towards each others' languages or to their own language. Additionally, good or bad attitudes towards a language may cause consequences such as language hardship and easiness. Language beliefs may also mirror the attitudes of people towards the speakers of that language. Language learning motivation is supported by the attitudes towards language. In other words, motivation points out the blend of endeavors and the ambition to reach the aim of learning the language through approved attitudes towards learning the language. The motivation required for learning a foreign language is simply established through willingness and the characteristics of an individual such as perspectives towards foreigners, the target society, and specifically the language (Gardner 1985). As Wenden (1991) states, attitudes are composed of three ingredients. Initially, they are likely to bear a cognitive feature, which may contain beliefs or views with regard to materials or cases based on the attitude. Next, they bear an evaluative feature which indicates that materials or cases based on attitudes may cause enjoyment or dislike. Lastly, human attitudes bear behavioral features; for example, specific attitudes are inclined to lead people to choose peculiar learning behaviors. The factors affecting the attitudes are studied deeply in the related field. Bernat and Gvozdenko (2005), for instance, debate on the current related issues, related pedagogical suggestions, and current trends as to the beliefs on language learning hinting on sociocultural, contextual, cognitive, affective, and individual dimensions among which attitudes have a significant position. In a similar vein, Csizér and Dörnyei (2005) see attitude as a significant element in language education, and they mention it in their investigation of the internal layout of language learning motivation and its relation with language selection and learning endeavor, which was previously stated as the process model of L2 motivation (Dörnyei and Ottó 1999). Furthermore, Dörnyei (2000) puts forward a process-oriented perspective on the comprehension of learner motivation which classifies motivational phase as distinct compounds arranged throughout the development which defines how first hopes are initially transformed into objectives and then into plans, as well as how these plans are realized. Second or foreign language learning is affected by several compounds such as attitudes, motivation, anxiety, aptitudes, age, intelligence, and personalities (Lehmann 2006). Brilliant language acquisition is a multidimensional formation in which compounds represent a complicated link with each other (Norris-Holt 2001) and own the power to affect a learner's motivation, likes, and dislikes and correspondingly could increase or decrease their anxiety levels during language learning (Dörnyei and Otto 1998). These constituents support a learner's interests, attitudes, and actions in language atmosphere, fostering or stopping their language

learning achievement (Salim 1996), and are shown diversely by those presenting their values and norms (Mertens 1998). Inadequacy of contentment or concern that a learner may face may affect his/her production of language tasks which necessitate concentration and conscious endeavor (Horwitz Horwitz and Cope 1986), and may also lose self-esteem in his or her learning attitude if language education practices do not satisfy his or her demands, and consequently language success may be improper (Horwitz 1987). Looking at the issue from all these mentioned points of view, this study specifically focuses on the following research question:

- How do the people of Cono tribe see primary school English language education?

31.2 Methodology

In this paper, views of Cono people were measured by means of an interview. Based upon a qualitative research design, this study was conducted having resource to descriptive research design with a view to identify the perspectives of the mentioned group. In the study, the participants were reached to be interviewed, and the interview was directly administered to the target group by the researchers.

31.2.1 Instruments

In this study, a semi-structured interview was administered to gather the necessary data. The semi-structured interview questions maintained a number of instructions for the interviewers and supplied reliable. A semi-structured interview, as Bernard (1988) suggests, is best used when there is only one chance to interview someone, as in our situation in which we had just one opportunity to make an interview with the respondents as a result of their peculiar lifestyle.

31.2.2 Participants

The participants of the study were 6 adults living in Kabaktepe, Sinanpaşa, and 19 Mays neighborhoods of Adana city, Turkey. In other words, the sample consisted of six Cono individuals who voluntarily participated in the study.

31.3 Discussion of the Interview Results

As discussed earlier in the methodology part, interviews were implemented with six volunteers. Compared to surveys or inventories, the interview can provide more chance to put forward opinions freely and wholly. Here in this study, the interview data were recorded by the interviewers. The interviewer tried to stimulate the interviewees to state their ideas properly. To display different perspectives with regard to the opinions of the participants on the requirement of English education in primary school level, the data were tabulated accordingly under each question in the interview. The questions and some main comments were summed up and introduced in Table 31.1. Additionally, quotations, codes, and frequencies from the answers of the participants to the interview questions were given in the table.

By looking at the interview results, we can easily see that 50% of the respondents speak Turkish and sometimes Teber language at home, while the other 50% of them speak only Turkish language. Besides, while 50% of the participants speak Turkish and sometimes Teber language with their friends, the rest of them (50%) speak only Turkish language with their friends. Regarding the importance of English language, 67% of the respondents state that English is important for business, while 33% of them indicate that it is important for education. Additionally, with respect to the attitudes toward English, 67% of the interviewees feel forced when using English, while 33% of them feel good and comfortable. In terms of the reason behind learning English, 67% of the participants suggest that they learn it for education, while 33% of them state that they learn it for business issues. Furthermore, regarding wishing their kids to learn English, 67% of the participants put forward that they must certainly learn it, while 33% of them indicate that they want their children to learn English a lot, specifically for business issue. With regard to helping their kids do their homework, all the respondents (100%) express that they do not help their kids since they don't know English. Moreover, regarding what their kids do after school to learn English, 83% of the respondents declare that they do nothing, while 17% state that they try to practice with their siblings. With regard to the kids' opportunities to learn English, 67% of the participants claim having no opportunity, while 33% indicate having opportunities to some extent. As to the significance of English for the future of kids, 67% of the respondents put forward that it is important for business, while 33% suggest that it is important for going abroad. Concerning the need of English in daily life of the kids, 67% of the participants stress there is no need, while 33% declare having not much need. With reference to the anxiety levels of their kids while learning English, 100% of the respondents affirmed anxiety. Besides, with regard of English- being a waste of time for their kids, whole (100%) of the respondents state that it is never a waste of time. Finally, in terms of the importance of English for the individual development of their kids, 100% of the respondents state that it is important for their kids.

Table 31.1 Interview results

Codes	Frequency	Percentage	Quotations from remarks of students
Language spoken at home	3	50	Turkish (sometimes Teber language)
	3	50	Turkish
Language spoken with friends	3	50	Turkish (sometimes Teber language)
	3	50	Turkish
The importance of English language	4	67	Important for business
	2	33	Important for education
Attitudes toward English	4	67	Feeling forced
	2	33	Feeling good and comfortable
The reason for learning English	4	67	For education
	2	33	For business
Wishing my own kids to learn English	4	67	Yes, sure.
	2	33	Yes, a lot, specifically for business.
Helping my kids do their homework	6	100	No, because we don't know English.
What my kids do after school to learn English	5	83	Nothing
	1	17	They try to practice with their siblings.
My kids' opportunities to learn English	4	67	Nothing
	2	33	To some extent
The significance of English for the future of kids	4	67	Important for business
	2	33	Important for going abroad
The need of English in daily life of kids	4	67	No
	2	33	Not much
The anxiety level of my kids with respect to learning English	6	100	Yes
English – a waste of time for my kids	6	100	Never
The importance of English for individual development	6	100	Important for my kids

31.4 Conclusion

Pedagogical suggestions and modern assumptions in terms of beliefs on language learning which is based on social, contextual, cognitive, affective, and individual facets, as well as the attitudes that bear an important role in language acquisition have been investigated by Bernat and Gvozdenko (2005). A high number of nations valued English language learning for long (Adamson 2001; Jin and Cortazzi 2003). As Bourdieu (1991) states, proficiency in English may supply individuals with many

financial, social, and academic chances. Whereby English language is currently regarded as the universal language and day by day its users are extensively rising up, attitudes towards it have a significant place in the related research area. Therefore, an attitude is regarded as an important determinant affecting English language production and evokes much interest among language researchers. With this in mind, this study investigated how different groups such as Cono tribe conceive primary school English language education. The study is exploratory in nature in that it inquires the attitudes of Cono tribe towards English language learning at early ages. It was found that being a unique society, Cono people perceive English language education as a required issue which is driven by occupational and educational aims. Although they want their children to learn English, they are not able to help them improve English at home as a result of their lack of English language competency. Besides, the kids of Cono society cannot practice English as they are exposed to mainly Turkish and a little Tiber language in daily life. Cono people see English language as an important tool to acquire for the future of their kids.

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Chapter 32

Organisational Trust in Schools: A Critical Review of Empirical Research in Turkey



Mahmut Polatcan and Ramazan Cansoy

Abstract The aim of this study was to conduct an in-depth analysis of the articles focusing on organisational trust in Turkish schools published between 2005 and 2017 and systematically review the findings, results and suggestions reported in these articles. A total of 46 articles were examined in the study in which thematic content analysis, a qualitative research method, was used. This systematic review showed correlational model, which is a quantitative research method, and was often employed in the literature. The correlational studies mostly focused on the relationships between organisational trust and the concepts of organisational commitment, organisational justice, organisational citizenship and school culture. Organisational trust was reported to be above moderate level based on the perceptions of the sample. Organisational trust in schools were examined mostly in the dimensions of trust in administrator, trust in colleagues, trust in student and parents, trust in staff, communicative environment and openness to innovation. In the studies, researchers were suggested to conduct further studies with different school types and samples and use qualitative research methods. As for practitioners, administrators were suggested to exhibit fair behaviours, determine and eliminate the elements that reduce trust in school, and implement open-door policies in communication. Since trust among individuals is embedded and implicit in the structure of interpersonal or organisational relationships, qualitative and longitudinal studies can be conducted to examine the concept of organisational trust in detail in the future.

32.1 Introduction

Trust is one of the primary elements that influence the mutual relationships among people in daily life. It plays a significant role in individuals' formation of self-respect (Lewicki et al. 1998) and the development of cooperation and solidarity among them (Mayer et al. 1995; Van Maele and Van Houtte 2015). Establishing and developing

M. Polatcan (✉) · R. Cansoy
Karabük University, Karabük, Turkey
e-mail: mahmutpolatcan78@gmail.com; cansoyramazan@gmail.com

trust among individuals can facilitate the operation of organisations. Thus, it is more important to develop relationships based on trust rather than supervision in enhancing individuals' productivity in organisations (Handy 1995; Starnes and 2010).

Psychologists, sociologists, economists and political scientists have focused on the concept of trust to understand interpersonal relationships (Lewicki et al. 1998). Although trust is a notion that individuals know intuitively and acquire as a social motive, it is difficult to define due to its multifaceted construct and complexity. This is because trust is embedded in interpersonal relationships (Tschannen-Moran and Hoy 2002). Hoy and Tschannen-Moran (1999) state that definitions of trust develop at two levels that are basic trust in colleagues and trust in clients. In this regard, trust is the state of being vulnerable based on the expectation that one would not perform behaviours that harm the other depending on the desire to take risks (Mayer et al. 1995). More clearly, it is a group's willingness to be vulnerable by having confidence in that the other group is helpful, trustworthy, competent, honest and open (Hoy and Tschannen-Moran 1999). In other words, as McAllister (1995) asserts, it is about an individual's or a group's being sure of other individuals' or groups' statements and behaviours and positive expectations that they would not be harmed. Therefore, trust can be explained as the emphasis on expectations or common beliefs that are based on individuals' mutual relationships and that are related to how they should behave in these relationships.

In the literature, trust is addressed at individual and organisational levels. Individual trust refers to the trust that administrators in the organisation have towards their employees and that employees have towards their administrators (Mishra and Morrissey 1990). Here, employees having trust in their administrators depend on elements such as consistency, honest, loyalty, openness to communication and being fair in one's behaviours (Hoy et al. 2006). Trust in the organisation, on the other hand, is about individuals' support to each other and fair distribution of organisational resources and rewards. Support and fair distribution of resources and rewards enhance organisational trust (Greenberg 1990). However, a low level of organisational trust affects job performance, employees' stress and their participation to decision-making processes (Sonnenberg 1994). Moreover, early research on trust suggests that risk-taking is emphasised by considering harmful behaviours. In recent research, personal characteristics such as honesty, loyalty and respect are also taken into account, and the complexity and multidimensional structure of trust are focused (Van Maele and Houtte 2015). In general, its multidimensional structure is described to include characteristics such as helpfulness, competence and integrity (Mayer et al. 1995); ability, helpfulness, reliability, honesty and openness (Hoy and Tschannen-Moran 1999); competence, respect to others, respect and integrity (Bryk and Schneider 2002); and respect, ability, honesty and self-respect (Schneider et al. 2014).

Since effectiveness and efficiency are important features for organisations, the role of trust in achieving smoothness and effectiveness cannot be denied for schools that are also organisations (Bryk and Schneider 2002; Tschannen-Moran and Hoy 1998). Social relationships in schools are formed as a result of communication and cooperation among the school staff (Bryk and Schneider 2003). As Tschannen-

Moran (2014) states, school administrators, teachers, students and parents should behave in a way that is in accordance with the norms accepted at school and in line with their responsibilities to each other. Stanton-Salazar (1997) argues that one of the primary issues that inhibit the development of social capital at school can be the lack of trust among individuals. According to Schneider et al. (2014), the mutual understanding of expectations, obligations and roles at individual and organisational levels corresponds to the concept of relational trust. Bryk and Schneider (2002) suggest that a school environment in which relational trust is dominant contributes to implementing the changes towards enhancing student achievement. They argue that trust in schools is determined by elements such as respect, competence and self-respect. Respect refers to listening to other sincerely; self-respect is about individuals' desire to take themselves beyond professional relationships; and competence reflects individuals' professional training and skills.

Trust-based relationships within the school community play a key role in schools fulfilling their duties (Bryk and Schneider 2003). At the same time, the trust between teachers and administrators is affected by many factors such as relationships among teachers, school-family cooperation and school size (Brewster and Railsback 2003). The concept of trust has been comprehensively analysed in educational research as in other areas of scientific study (Goddard et al. 2001; Hoy & Tschannen-Moran, 1999). In the educational literature, studies focused on the relationship of trust in schools with teachers' and students' performance (Goddard et al. 2000; Hoy and Tschannen-Moran 1999), cooperation among teachers (Tschannen-Moran 2001) and teacher leadership (Muijs and Harris 2006). As is seen, the notion of trust is primarily focused with regard to interpersonal relationships at school.

Studies on organisational trust in Turkey seem to have developed in line with the literature across the world (Yılmaz 2005; Yılmaz 2006). On the other hand, research on organisational trust in Turkey has mostly been concentrated on empirical studies as of the 2000s. In this respect, the dimensions of trust including reliability, helpfulness, mastery, honesty and openness (Yılmaz 2006); sensitivity to employees, trust in administrators, openness to innovations and communicative environment (Yılmaz 2005); and trust in colleagues, trust in parents and students and trust in the principal (Özer et al. 2006) have been widely used in these empirical studies.

In the Turkish context, most studies of organisational trust in schools are in the form of correlational and descriptive survey studies. While descriptive studies aimed to determine the level of trust in schools (Ercan 2006; Ertürk 2016a, b; Gören and Özdemir 2015; Öksüzoğlu 2012; Öztürk and Aydın 2012; Taşdan 2012), correlational studies were conducted to examine the relationship of trust in schools with distributed leadership (Adıgüzelli 2016), organisational cynicism (Akın 2015; Polat 2013), organisational commitment (Altunay 2017), administrative values (Ayık et al. 2015), organisational loyalty (Babaoglan 2016; Yılmaz 2008), organisational justice and citizenship (Baş and Şentürk 2011; Polat and Celep 2008; Yıldız 2013; Yılmaz and Altinkurt 2012b), ethical leadership (Cemaloğlu and Kılınç 2012a), cooperation (Cerit 2009), culture of teacher leadership (Demir 2015), organisational support (Eğriboyun 2013), mobbing (Ertürk 2016a, b), school culture and organisational

citizenship (Koşar and Yalçınkaya 2013; Terzi 2016), administrative evaluation and conflict management (Özer and Akbaş 2016), administrative silence (Sağlam 2016), social support (Taşdan and Yalçın 2010), shared leadership (Titrek 2016), organisational identity (Uğurlu and Arslan 2015), job satisfaction (Yılmaz and Altınkurt 2012b) and being prepared to change (Zayim and Kondakçı 2015).

Evaluating the ways organisational trust is addressed by researchers in the field of educational sciences is of significance for making a synthesis of their suggestions for further research. As can be inferred from the research results cited above, organisational trust in schools seems to develop interpersonal relationships and, thus, affect shareholders' commitment, job satisfaction, performance, organisational justice and organisational support. In this context, the aim of this study is threefold; it aims to reveal the current state of research on organisational studies in schools as well as the gaps existing in the literature, to offer suggestions to practitioners and policymakers towards practice based on the common findings reported in the studies and lastly to identify the characteristic differences in such studies in the Turkish context and determine directions and tendencies for studies that would be conducted in the future. Consequently, the following research questions are addressed:

1. What is the distribution of methods and designs in the studies?
2. What is the distribution of groups included in the research samples?
3. What is the distribution of measurement tools used?
4. What is the distribution of research topics focused?
5. What are the suggestions offered to researchers and practitioners?

32.2 Method

The present study is a systematic review since it includes the analysis of quantitative and qualitative studies on organisational trust in schools conducted between 2005 and 2017. Systematic review involves a comprehensive analysis of studies carried out regarding a certain topic by field experts (Karaçam 2014). The history of systematic compilation studies goes back to works in the field of medicine. Burns and Grove (2007) describe it as making a synthesis of studies on a certain topic and reaching a piece of evidence to find a solution to a clinical question or problem based on inclusion and exclusion criteria.

The systematic review approach has recently been closely probed to determine its suitability for the administrative domain. The fact that systematic review provides data to practitioners/administrators in terms of their results has led to the further development of this method (Hemsely-Brown and Oplatka 2006). Similarly, Hemsley-Brown and Sharp (2003) hold that systematic compilation studies started to be adopted in different disciplines of social sciences including educational sciences. Evans and Benefield (2001) state that systematic compilation has benefits such as determining the methodology and quality of studies, retrieving common pieces of proof from different studies and performing detailed analyses. Since the present study aims to identify the tendency of the studies examined, it also has the

characteristic of thematic content analysis (Çalık and Sözbilir 2014). Thematic content analysis refers to explaining common points that arise because of summary and interpretation by means of themes (Tranfield et al. 2003). The first step of thematic content analysis involves carefully reading and summarising the studies that are under examination. In the second step, codes are revealed by grouping the summaries under subcategories. Lastly, these codes are then combined into themes following their interpretation (Oplatka 2012). All in all, this study addressed and discussed the topics, methods, samples, results and suggestions of research studies, which are systematically selected, on organisational trust in schools. Therefore, this study is a systematically compiled thematic content analysis.

32.2.1 Criteria for the Selection of Studies

The studies that were examined in the present study were conducted on organisational trust in schools between 2005 and 2017 and were obtained through computer-aided search engines. This search was done with the query *trust in schools and organisational trust in schools* in the databases including Web of Sciences, ERIC, Scopus, EBSCO Education Index and Google Scholar. Additionally, a similar search was also done with the query in Turkish *okullarda güven, okullarda örgütsel güven* [trust in schools and organisational trust in schools] in the national databases including ULAKBIM Social Sciences Index and Google Scholar. The search was limited to the studies in the Turkish context. While the search yielded a total of 281 articles, 46 articles were included in the analysis (Fig. 32.1).

According to the data provided in Table 32.1, the titles of the articles on organisational trust in Turkish school were firstly examined ($n = 281$). Of these

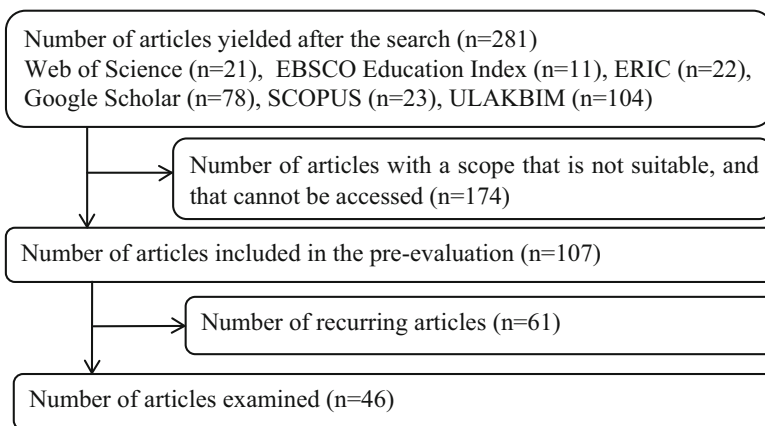


Fig. 32.1 Study attrition diagram

Table 32.1 Distribution of studies based on methods and designs

Method	Design	<i>f</i>
Quantitative (relational survey)	Yücel and Samancı (2009), Yılmaz (2009), Altinkurt and Yılmaz (2011), Özgan (2011), Polat (2013), Polat (2010), Polat and Celep (2008), Sağlam (2016), Taşdan and Yalçın (2010), Ertürk (2016a, b), Gülbahar (2017), Kalkan (2016), Lesinger et al. (2016), Koşar and Yalçınkaya (2013), Özer and Akbaş (2016), Eğriboyun (2013), Eğriboyun (2013), Terzi (2016). Uğurlu and Arslan (2015), Yılmaz (2008); Yıldız (2013), Zayim and Kondakci (2015), Adıgüzzelli (2016), Akın (2015), Altunay (2017), Babaoglan (2016), Ayık, Şayir and Yücel (2015), Baştug et al. (2016), Cemaloğlu and Kılınç (2012a), Cemaloğlu and Kılınç (2012b), Cerit (2009), Çağlar (2011), Demir (2015), Demirdağ (2017), Yangin and Elma (2017), Titrek (2016), Ertürk (2010), Camgöz and Karapınar (2016), Karapınar et al. (2016), Eğriboyun (2014), Yılmaz and Altinkurt (2012a)	38
Quantitative (descriptive survey)	Taşdan (2012), Baş and Şentürk (2011), Bökeoğlu and Yılmaz (2008), Ercan (2006), Öztürk and Aydın (2012), Ertürk (2016a, b), Gören and Özdemir (2015)	7
Qualitative	Öksüzöğlü (2012)	1
Total		46

articles, those with a score that was not suitable and that could not be accessed were excluded ($n = 174$). The articles that were compatible to the aim of the study and included in the pre-evaluation were determined ($n = 107$). These articles were reviewed in detail, and those that were recurring in the databases were eliminated ($n = 61$). Following these steps, all remaining articles were examined in detail in accordance with the aim of the study ($n = 46$). The method sections were also reviewed in the selection of the articles. Theoretical works were excluded from analysis.

32.2.2 Procedure

The studies that were retrieved from the databases were downloaded and renamed as S1, S2, S3.....S46. By using Microsoft Office Excel, codes were formed based on research topics, participants, data analysis, significant differences in terms of certain variables, related concepts and suggestions. The codes that have common aspects were then combined into themes, and frequencies were retrieved with regard to the themes that are lastly reported in tables. The studies that were examined were marked with an asterisk (*) in the references.

32.3 Findings

In this section, the research topics, methods and designs, samples, measurement tools, demographic variables, common findings and common suggestions of the studies towards practitioners and researchers are presented, respectively.

The studies that examined the relationships of organisational trust or trust in administrator with organisational and individual variables through quantitative methods outnumbered those that adopted general survey and qualitative methods ($f = 40$). In this regard, the specific topics that were studied included organisational culture ($f = 4$), organisational identity ($f = 2$), organisational loyalty ($f = 6$), leadership behaviours that school administrators exhibit ($f = 7$), organisational justice (5), organisational cynicism ($f = 2$), organisational silence ($f = 2$), organisational citizenship ($f = 4$), social support ($f = 3$), mobbing ($f = 3$), burnout ($f = 2$) and being prepared to change, commitment, administration based on values, cooperation, bureaucratic, professional learning communities and job engagement ($f = 1$). The concepts the relationships of which were examined with organisational trust the most were administrators' leadership behaviours, organisational loyalty, organisational justice, organisational citizenship and school culture, respectively. The studies that examined organisational trust according to other individual and organisational variables were limited ($f = 8$). In these studies, the perception of organisational trust were focused with relation to variables such as seniority, major, school type, school stage and the state of being a union member or not. On the other hand, there was only a single qualitative study on the research phenomenon. That qualitative study investigated school administrators' and teachers' views on organisational trust ($f = 1$).

As is seen in Table 32.2, different variables related to administrators' leadership behaviours and organisational behaviours predicted organisational trust and were important premises for ensuring such trust. Therefore, administrators' leadership behaviours that are inclusive and supportive, emphasise values and feature cooperation at school were of importance in ensuring organisational trust. Besides, fair behaviours, strong school culture, organisational loyalty and effective management of human relationships within the organisation were potations variables that influence organisational trust.

Table 32.2 Findings regarding the predictor variables of organisational trust

Predictor variable		Dependent variable
Administrators' leadership behaviours	Distributed leadership, ethical leadership, leadership styles, shared leadership, supportive leadership, administrative skills, administration based on values, bureaucratic structure	<i>Organisational trust</i>
Variables related to organisational behaviours	Organisational justice, mobbing, organisational support, school culture, organisational loyalty, organisational identity, organisational cynicism	

Table 32.3 Findings regarding the variables predicted by organisational trust

Predictor variable	Dependent variable	
Organisational trust	<i>Variables related to organisational behaviours</i>	Organisational citizenship, organisational cynicism, organisational silence, organisational loyalty, organisational commitment, teacher cooperation
	<i>Organisational learning</i>	Level of being a professional learning community, being prepared to change

As is seen in Table 32.3, organisational trust was found to be a predictor of variables regarding organisational behaviours and organisational learning. In this respect, organisational trust seems to be a potential variable in improving issues related to organisational behaviours and organisational learning. According to these common findings reported in the studies, as organisational trust increases, it is expected that organisational citizenship, commitment and loyalty would also increase, while behaviours such as organisational silence, mobbing and burnout would decrease. Besides, organisational trust is seen as an important premise for organisational learning.

In some of the studies, organisational trust and organisational and individual variables were examined only in terms of their relationships. Organisational trust was found to have a significant relationship with organisational trust, organisational citizenship, perceived social support, job engagement, organisational culture, educational leadership and organisational loyalty. These findings reveal certain potential cases related to the variables that organisational trust can affect or by which it can be affected. On the other hand, some studies reported findings which show that organisational trust can be a mediator variable. Organisational trust was found to be a mediator variable between the effectiveness of school structure and the school's level of being a professional learning community. In another study, trust in administrator among the dimensions of organisational trust was reported to be a mediator variable between psychological strengthening and organisational identity. In this respect, organisational trust or the dimensions that constitute trust seem to have indirect effects on enhancing organisational or individual variables at school.

In the studies, the characteristics that were examined the most for identifying organisational trust were trust in administrator, trust in colleagues, trust in student and parents, trust in staff, communicative environment and openness to innovation. Additionally, limited research also focused on sharing goals and values, environment of trust and affective and cognitive trust in administrators.

The three scales that were most commonly used in the studies are presented in Table 32.4. These are *organisational trust scale* developed by Yılmaz (2006) and consisting of the dimensions of trust in administrator, trust in colleagues and trust in shareholders; *school organisational trust scale* adapted to Turkish by Yılmaz (2005) and included the dimensions of sensitivity to employees, trust in administrator, openness to communication and openness to innovations; and *multipurpose T scale* adapted by Özer, Demirtaş, Üstüner and Cömert (2006) and had three dimensions that are trust in colleagues, trust in students and parents and trust in the

Table 32.4 Distribution of measurement tools employed in the studies

Measurement tools employed		f
Organisational trust scale (Yılmaz 2006)	Development	17
Adaptation of school organisational trust scale (Yılmaz 2005)	Adaptation	11
Multipurpose T scale (Özer et al. 2006)		10
Other scales (Cummings and Bromiley 1996; Demircan 2003; Erdoğan 2012; Kamer 2001; McAllister 1995)	Development or adaptation	7

principal. In three studies, the revalidation study of the multipurpose T scale was performed by the researchers. Apart from these, the organisational trust inventory developed by Cummings and Bromiley (1996) was used in a study, the trust culture in the organisational environment scale developed by Erdoğan (2012) was employed in a study, cognitive and affective trust scale developed by McAllister (1995) was preferred in two studies, the organisational trust inventory adapted by Demircan (2003) was used in two studies, and, lastly, the school organisational trust inventory adapted by Kamer (2001) was utilised in two other studies.

32.3.1 Findings Regarding the Dimensions of Organisational Trust Perceptions in the Studies

Different measurement tools were employed in the studies to identify organisational trust perceptions. Through these instruments, it was aimed to identify different organisational trust perceptions in similar or different dimensions. Some of the common findings are as follows:

- The level of trust in administrator based on teachers' perceptions was found to yield higher and above-average values compared to the other dimensions of organisational trust including trust in colleagues, trust in shareholders, sensitivity to employees, trust in the principal, openness to innovations and openness to communication ($f = 12$).
- There are findings which show that the dimensions of trust in shareholders or family and students were at a lower level compared to other dimensions based on teachers' perceptions ($f = 9$).
- In some studies, organisational trust was examined with the dimensions of sensitivity to employees, trust in the principal, openness to innovations and communicative environment depending on the dimensions used in the scale. These studies reported that the dimensions that were perceived at the lowest level were sensitivity to employees ($f = 4$) and openness to innovations ($f = 4$).
- In some studies, organisational trust perceptions were examined with the dimensions of sensitivity to trust in colleagues, trust in administrator and trust in shareholders depending on the dimensions used in the scale. While trust in

administrator were perceived by teachers at a more positive level, trust in colleagues was in the second place, and trust in shareholders was the last ($f = 9$).

- The mean scores of organisational trust levels based on teachers' perceptions were examined in the studies. The mean scores obtained through different scales were evaluated within their specific analyses, and then, the arithmetic means of the mean scores in 25 studies were recalculated. In this way, it was aimed to reveal the level of organisational trust in the studies as well as to yield the common findings. Consequently, the mean score of the teachers' perceptions of organisational trust was found to be 3.73 in the studies. According to different samples, organisational trust in schools was above the moderate level.

32.3.2 Examining Organisational Trust Perceptions in Terms of Different Variables

- The teachers' perceptions of organisational trust were examined based on gender. Six of the studies examined did not reveal a difference in terms of this variables ($f = 6$). However, in five studies, organisational trust perceptions differed based on gender. This difference was in favour of the male teachers, and their perceptions were at a higher level compared to the female teachers ($f = 4$).
- The teachers' perceptions of organisational trust were examined based on seniority or year of service in the profession. In four studies, there was no difference in the level of organisational trust based on seniority ($f = 4$), while four studies reported a difference in this regard ($f = 4$). The studies showed varying findings regarding the difference of organisational trust perceptions based on seniority.
- The teachers' perceptions of organisational trust were examined based on teaching major. In four studies, there was a difference in the level of organisational trust based on major ($f = 4$), while three studies reported no difference in this regard ($f = 3$). In general, there were differences in the teachers' organisational trust perceptions, and the elementary school teachers' perceptions were at a higher level compared to subject matter teachers.
- The teachers' perceptions of organisational trust were examined based on the educational stage. However, these studies and findings were limited. The common findings showed differences based on the school type. For example, the dimension of trust in colleagues in the middle school stage were perceived at a higher level compared to the elementary school stage ($f = 1$). In another example, organisational trust was perceived more positively in vocational high schools than in regular high schools ($f = 1$). Moreover, there was a difference in favour of the vocational high schools in some of the dimensions ($f = 4$).
- The teachers' perceptions of organisational trust did not differ based on their state of being a union member or not ($f = 2$).
- Findings were reported with regard to a difference in teachers' perceptions of organisational trust in favour of those who worked in their schools for a longer

time. In two studies, on the other hand, it was reported that as teachers' duration of work in the same school increased, their perceptions of organisational trust also increased ($f = 2$). In another study, it was found that as the duration of work increased, organisational trust perceptions decreased ($f = 1$).

32.3.3 Findings Regarding the Suggestions for Further Studies

The suggestions for further studies on organisational trust perceptions focused on research sample, methodology and variables. The researchers mostly suggested that in order to generalise results related to organisational trust or compare different findings, studies should be replicated with different samples and in various school types and stages ($f = 14$). They called for conducting qualitative studies mostly so as to better understand organisational trust perceptions ($f = 8$). On the other hand, they also stated that investigating variables that might be potentially related to organisational trust perceptions would contribute to the literature ($f = 6$). Besides, they suggested to carry out studies towards understanding how trust is built in schools ($f = 2$). Lastly, no suggestions were offered to researchers in many of the studies ($f = 14$).

32.3.4 Findings Regarding the Suggestions to Practitioners and Policymakers

The suggestions offered to practitioners in studies on organisational trust touched upon the dimensions of administrators' behaviours, human relationships in administration and administrative processes. Accordingly, the researchers mostly suggest the following for ensuring organisational trust in schools: provide administrators trainings on improving and changing their organisational behaviours ($f = 12$), creating a physically or psychologically supportive atmosphere in schools ($f = 9$), ensuring a communicative environment and adopting an open-door policy ($f = 12$), developing any type of cooperation at school and ensuring teachers' participation in decision-making processes ($f = 11$), organising social events that would build trust ($f = 5$) and exhibiting fair behaviours and determining issues that reduce trust ($f = 19$). No suggestions to policymakers were offered in the studies with regard to organisational trust.

32.4 Results and Discussion

In this study, content analysis was performed on the method, findings and suggestions sections of 46 research articles on organisational trust published between 2005 and 2017. The study focused on, along with the method and designs employed in the studies, the variables that predicted organisational trust or the variables related to organisational and individual behaviours that organisational trust predicted. Furthermore, the common findings of these studies were reviewed with respect to the characteristics related to organisational trust that were perceived at a low or high level, the differences in the perceptions based on demographic variables and suggestions to researchers and practitioners.

Quantitative methods were often employed in the studies on organisational trust. Among the quantitative methods, correlational model was preferred the most, which was followed by survey model. However, there was only a single qualitative study on the research phenomenon. The correlational studies mostly investigated the relationships of teachers' perceptions of organisational trust with administrators' leadership behaviours, organisational loyalty, organisational justice, organisational citizenship and school culture. In the survey studies, teachers' perceptions of organisational trust were examined through causal comparison based on different variables. These findings show that the studies that measured organisational trust perceptions set out to understand potential variables that can affect organisational trust on the basis of the positivist paradigm. Nevertheless, no sufficient research is available which would help better understand the concept of trust in schools.

The studies that were examined in the present study reported on the variables that can predict teachers' perceptions of organisational trust. Administrators' leadership behaviours and the variables regarding organisational behaviours were found to be predictors of organisational trust. In this respect, it can be argued that positive leadership behaviours of administrators as well as teachers' and administrators' organisational behaviours have an important role in building trust in schools. Additionally, teachers' perceptions of organisational trust were found to predict organisational learning. In other words, as organisational trust is ensured in schools, a strong school culture would be developed, teachers would embrace their institution, and there would be more collaboration and learning.

In the studies, positive and significant relationships were reported between organisational trust and the concepts of organisational justice, citizenship, social support, job engagement, organisational culture, loyalty and educational leadership. From this perspective, administrators' behaviours that are encouraging and supportive as well as that strengthen organisational belonging and providing teachers any kind of support are important factors in enhancing organisational trust. At the same time, it can be expected that as organisational trust develops, teachers would feel more responsible of their duties, prioritise cooperation and contribute to a strong school culture. It can then be concluded that these are mutually related on a causal basis.

As the studies reported, organisational trust perceptions had indirect effects on schools being structured as professional learning communities and teachers gaining an organisational identity. Accordingly, it can be stated that as organisational trust perceptions increase, teachers would get more involved in collaboration and focus on student learning and get more attached to their schools socially and psychologically. On the other hand, there are limited findings showing that organisational trust in schools can be a mediator variable. However, existing studies reported that organisational trust perceptions can be an important mediator variable.

The studies focused on different characteristics that constitute organisational trust. Besides, similar scales were mostly employed in these studies. Organisational trust in schools were investigated mostly in the dimensions of trust in administrator, trust in colleagues, trust in student and parents, trust in staff, communicative environment and openness to innovation. Considering the frameworks drawn up for organisational trust in the literature, it seems that these characteristics can be used to identify the level of organisational trust in schools. However, it can also be argued that it would be more useful to develop measurement tools which can reveal organisational trust more comprehensively. In this way, it can be possible to see the perceptions of trust in different areas of the school more clearly.

In the studies, teachers often perceived trust in administrator as one of the dimensions of organisational trust at the highest level. The dimension of trust in family and students was perceived mostly at lower levels. In this respect, trust in administrator can be regarded as a positive aspect. However, the fact that the dimension of trust in family and students was perceived at a lower level is an issue that is interesting and needs further attention. There seems to be a need to understand the reasons behind this finding. Similarly, the characteristics of sensitivity to employees and openness to innovations were also perceived at low levels compared to other dimensions. This can be due to that teachers cannot participate in the decision-making processes sufficiently, suggestions are not put into consideration to the extent they should be, adequate cooperation cannot be enabled at school, and the workload may not be distributed equally. According to the common findings of 25 studies examined, teachers perceived organisational trust at about moderate level, which can be regarded as a positive finding. However, considering that organisational trust is indeed important for organisations, the dimensions that constitute trust and are perceived at a low level should be revealed, and effort should be made to improve these dimensions. In this way, the environment of trust would be strengthened.

In the studies, teachers' perceptions of organisational trust were examined based on variables such as gender, seniority, major and school stage. Yet, no common findings were reported with regard to the differences in teachers' perceptions based on these variables. Some studies found that gender, seniority and major led to differences in the perceived levels of organisational trust, while some reported opposite findings. However, there were common findings showing that organisational trust perceptions did not differ based on school state and type, but these findings were limited. As can be gathered, it is difficult to say that these

variables are influential in organisational trust perceptions. The conflicting results show that there is a need for reliable and valid studies with larger samples.

In the studies, researchers were offered certain common suggestions for further research. They mostly suggested the replication of their studies on organisational trust in different school stages and types and with different samples. Besides, they also suggest that qualitative studies should be carried out to better understand organisational trust and investigate the variables that might potentially be related to this concept. The suggestions seem to be rather repetitive. Moreover, most studies did not even offer any suggestions for further studies although such suggestions towards further research topics can contribute to the literature. In this regard, the current state can be regarded as a missing or limited aspect.

In the studies, researchers offered suggestions to practitioners as well. With respect to practitioners, it was suggested that school administrators should act fairly, the elements that reduce trust should be eliminated, administrators should be given trainings on improving and changing their organisational behaviours and they should ensure an environment of open communication at school and adopt an open-door policy. It was also suggested that any kind of cooperation should be developed, teachers should participate in decision-making processes, school administrators should create a physically or psychologically supportive environment and social events should be organised to enable trust. The suggestions to practitioner are also recurring around similar issues. Despite this, these suggestions can be said to be concrete and applicable and yield useful results when implemented. However, there were no suggestions offered to policymakers, which can also be regarded as a missing aspect.

32.5 Suggestions

32.5.1 Suggestions for Further Research

- Qualitative or mixed-method studies can be conducted to fully understand the notion of organisational trust.
- Correlational studies can be carried out to address the relationships between organisational trust and administrators' leadership behaviours and the behaviours regarding different organisational variables.
- New concepts that might be potentially related to organisational trust can be examined.
- Since the findings regarding variables such as seniority, gender, major, school type and stage are not consistent, studies can be conducted with larger samples.
- In the studies, organisational trust was examined from the perspective of teachers, and the views of students and parents were not asked. In this respect, further studies can focus on school shareholders' views.
- New scale development studies can be performed so as to measure organisational trust more comprehensively.

- In the studies, teachers' perception of trust in parents and students was at a low level. Large-scale studies can be designed to address the reasons behind.
- In the studies, teachers stated that they found their administrators' *levels of sensitivity* inadequate compared to other dimensions. Therefore, the reasons behind this finding can be probed into.
- No suggestions to policymakers were offered in the studies with regard to organisational trust. Researchers can be suggested to devote a separate section to state their suggestions. Besides, the reasons for not having suggestions in general can be investigated.
- In order not to repeat the same suggestions in a narrow sense, researchers should perform a thorough review of literature.

32.5.2 Suggestions to Practitioners and Policymakers

- In order to ensure organisational trust in schools, administrators should be fair, be open to communication and inclusive, do activities towards improving cooperation with teachers and pay attention to human relationships in their administration.
- Administrators should also ensure teacher participation, organise activities that would enhance morale and motivation and solve the conflicts within school quickly.
- The perceptions of organisational trust in schools seem to be low in trust in parents and students compared to other dimensions. In this regard, administrators should organise in- and out-of-school activities that would enable parents' support and strengthen communication through students' participation.
- The perceptions of organisational trust in schools were the highest in trust in administrator. On the other hand, organisational trust perceptions were generally above the moderate level. Therefore, school-based problems should be identified to enhance organisational trust beyond the current level.
- Teachers perceived administrators' sensitivity to employees at lower levels compared to other dimensions of trust. Consequently, administrators should create a fair work environment and pay attention to the staff's needs while setting principles and distributing responsibility (e.g. preparing schedules, participation to decisions).
- There are varying findings regarding the differences in organisational trust perceptions based on gender, seniority, major, school type and school stage. However, administrators can be suggested to perform trust-related behaviours depending on the type of school they work in and their staff's profile.
- Considering the suggestions to practitioners offered in the studies examined, provincial directorates can collaborate with universities in providing school administrators trainings on improving and changing their organisational behaviours.

- Policymakers can make facilitative decisions within the bureaucratic structure towards administrators ensuring organisational trust in schools. In this way, administrators can strengthen the environment of trust at school by being flexible and taking initiative in the bureaucratic functioning towards the teachers.
- Policymakers can enhance the cooperation between teachers and administrators through various improvements in the administrative processes of schools.
- Policymakers can adopt more innovative approaches so as to facilitate human relationships in administration.

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Chapter 33

Teachers' and Educational Administrators' Opinions About Adolescents' Cyber Bullying/Cyber-Victimization Experiences



Hüseyin Serin

Abstract The purpose of this study is to investigate teachers' and educational administrators' awareness about adolescents' cyber bullying/cyber-victimization experiences. The study was conducted with 727 educational administrators and 916 teachers working at 74 public schools. In addition to Demographic Information Form, participants were asked to complete Cyber Bullying Awareness Scale developed by the researcher based on the related literature. Findings of the study indicate that while 53.2% of educational administrators and 47.6% of teachers had heard the concept of cyber bullying, 58.7% of educational administrators and 58.3% of teachers had known the concept. 51.7% of educational administrators and 65.4% of teachers did not conduct any kind of preventive activities against cyber bullying. Also, it was found that 6.3% of educational administrators and 7.6% of teachers were exposed to cyber bullying.

33.1 Introduction

Among the most debated concepts in the world in recent years are digital resources such as technology and the Internet. Individuals interact continuously with these concepts and are affected positively or negatively from the results of this interaction.

Rapid developments in technology are reshaping the world. Today's young generations prefer using information and communication tools that are faster and easier to use rather than traditional communication tools (Derks et al. 2008; Akt: Barret 2009).

The development of the Internet and information technologies has brought a number of innovations to our personal and social life while facilitating the communication between people. These innovations are opportunities to facilitate the lives of

This study was derived from the doctoral dissertation.

H. Serin (✉)
İstanbul University, İstanbul, Turkey
e-mail: huseyin.serin@istanbul.edu.tr

people, such as providing information and accelerating information exchange, revitalizing the economy and commerce, increasing educational opportunities, making friends and bringing a different dimension to sense of entertainment. The rapid progress in the Internet and mobile phone technology has opened many new areas for young people. Today, computers, the Internet, mobile phones and other technological tools have become part of their lives. In fact acquiring and maintaining new friendships and creating common and social relations and norms bring about with these technological tools (Yaman et al. 2011).

More than a billion people in the twenty-first century use the Internet to create social relationships, and a large part of them are popular websites of which especially young people become members. Today, a large percentage of young people in North America use popular websites such as [facebook.com](https://www.facebook.com), [myspace.com](https://www.myspace.com), [xanga.com](https://www.xanga.com), etc. to create a social network (Arıcak 2011). According to 2016 statistics by TUIK in Turkey, the Internet was used mostly by the individuals between 16 and 24 years old (TUIK 2016). According to data from [statista.com](https://www.statista.com) (Statistica 2018), it seems that the global utilization rate of the social networking site [facebook.com](https://www.facebook.com) in Turkey is eighth in the world and the first in Europe.

Developing electronic communication networks bring new problems as well as facilitating human life. Undoubtedly, the benefits of these technological developments in education and teaching are indisputable. The development of technology and the widespread use of technology by young people have led to the implementation of bullying behaviours that students have shown in schools by using technology. The malicious use of information and communication technologies has led to the observation of a new type of tyranny, known as “cyber bullying”, among the types of bullying already experienced by the students in the schools. Cyber bullying is all harmful behaviours that are deliberate and repetitive, technical or relational manner against an individual or group through computer, mobile phone and other communication technologies (Arıcak 2011; Belsey 2007; Hinduja and Patchin 2009; Li 2005a, b, 2006; Yaman et al. 2011).

In the research conducted in Turkey, it is demonstrated that the students who are exposed to cyber bullying are facing with serious problems in their social life and school life. Students who are exposed to cyber bullying can exhibit behaviours such as cooling from school; skipping school; falling in school success; failing to focus on classes; having problems in their relations with friends; being nervous and anxious; feeling bad, helpless and alone; and bringing guns to school. At the same time, the students who suffer from cyber bullying live with the situations such as fear, sadness, depression, stress, deterioration of sleep patterns and anxiety, which can affect their mental health adversely and suffer from attempting suicide (Agatston et al. 2007; Arıcak 2011; Beran and Li 2005; Hinduja and Patchin 2009; Raskauskas and Stoltz 2007; Ybarra et al. 2007; Baştürk-Akça et al. 2015).

It is no exaggeration to say that the cyber bullying starts to become a highly disputed issue in educational systems. The fact that the Ministry of National Education is providing electronic education tools to schools and distributing tablet computers to teachers and students within the scope of the Opportunities and Technological Improvement Movement (FATİH Project) that are carried out in

order to increase the use of technology in education suggests that the rate of cyber bullying can reach a worrisome dimension. Cyber bullying is a multifaceted problem, which makes it necessary to address the problem with an interdisciplinary understanding.

Research has also shown that bullying behaviours are beginning to cause important and serious problems for elementary school students at the beginning of adolescence. Most adolescents who are cyber bullying victims may choose not to inform adults about these behaviours as they are afraid of being restricted for their use of computers and mobile phones. For this reason, the actual prevalence of cyber bullying in primary schools can be much higher than those reported in the research literature (Hines 2011).

It is thought that the programs and regulations to be prepared to prevent bullying behaviours and win students who are exposed to cyber bullying can be developed and implemented effectively based on primarily researches on cyber bullying.

33.2 Research Design

In this study, which is designed with relational patterns in which two variables are observed together and in relation to each other (Fraenkel et al. 2012), the level of awareness of education administrators and teachers about the victims of bullying and cyber bullying experienced by students and whether the demographic characteristics of the participants lead to a significant difference or not are examined.

33.2.1 *Universe and Sampling*

The official primary schools in the province of Istanbul under the Ministry of National Education constitute the universe of the research. As a result of the selection made by using the appropriate sampling method, 727 administrators and 916 teachers constitute the sample of the study in which the applications were made.

First of all, when the characteristics of the participants were examined, 727 directors and assistant managers participated in the survey, 230 of whom were women and 497 of whom were men. The ages of the managers ranged from 26 to 69 with an average age of 40.77 (SD = 9.01). The total duration of managerial professional life varies between 11 months and 41 years, and the average duration is 10.90 years (SS = 8.68). In the school where they are working, the time they worked as a manager ranges from 10 months to 29.4 years, and the average duration is 4.14 years (SS = 4.17).

When the characteristics of the teachers are examined, a total of 916 teachers, 506 females and 410 males, participate in the research. Teachers' ages ranged from 23 to 61 years, with an average age of 36.41 (SS = 8.40). The total duration of the teachers' professional lives varies between 10 months and 41 years, and the average

duration is 12.50 years ($SS = 8.43$). In the school where they are working, the time they worked as a teacher ranges from 2 months to 34 years with a mean duration of 5.46 years ($SS = 4.82$). When we look at the most recent higher education institution where teachers were graduated, 9.7% ($n = 89$) of them have pre-license, 76.1% of them ($n = 697$) have licenses, 13.2% of them ($n = 121$) have master degree, and 1% of them ($n = 9$) seems to have graduated from a doctorate.

33.2.2 Measuring Tools

Within the scope of the study, the Personal Information Form and the Cyber Bullying Awareness Questionnaire developed by the researcher were applied to the participants.

Personal Information Form: The form was prepared to obtain demographic information about the participants such as gender, age, seniority, branch and marital status.

Cyber Bullying Awareness Scale: With this questionnaire, which was prepared by taking the relevant literature and taking expert opinion, it was aimed to determine the awareness levels of the education administrators and the teachers about the bullying which the students were exposed to. In order to ensure reliability and validity of the questionnaire, which is composed of 15 items, member control was applied at the same time.

33.2.3 Operation

The participants in the working group were asked to read the definition presented first as “What is Cyber Bullying?” and asked to answer the questions according to this definition. Later on, they were asked whether they heard the concept of bullying, whether they witnessed such behaviour in their schools and what measures they took against such situations. At the last stage, the scales at issue were applied to the participants.

33.3 Results

In this section, the results of analysis of variance obtained from data are included. In this study SPSS 17 program was used in the analysis of data. Data were commented using descriptive statistical analyses (f and %).

33.3.1 Awareness of School Administrators on Students' Cyber Bullying/Cyber-Victimization Behaviours

In the analysis results, it is seen that 53.2% ($n = 387$) of the school administrators had already heard the concept of “cyber bullying” and 58.7% of them knew the definition of this concept.

53.2% ($n = 387$) of school administrators had witnessed their students bullying at school; 44.2% ($n = 321$) of them stated that they had witnessed their students exposed to cyber bullying behaviours (cyber victims) in their schools. When the school administrators were asked to predict how many students between the fourth and eighth grades in their schools were doing cyber bullying, except those witnessed by them, this ratio was found to be 15.08% ($SS = 16.60$) for all administrators. Similarly, when managers were asked to estimate the proportion of students of cyber victims in their schools, it was found as an average 15.83% ($SS = 16.92$). As stated in the descriptive analyses for the students, the percentage of students only bullying was 9.42% in all schools; the percentage of the students of cyber victims were found as 11.79%.

When school administrators were asked to write the most seen first three behaviours of the cyber bullying behaviours they witnessed to the students, they declared as “abusive correspondence” (16.09%), “mocking” (11.42%) and “unauthorized photo and video sharing” (11.42%), respectively.

Likewise, when they were asked to write the most seen first three behaviours of the cyber-victimization cases that they witnessed to the students, they declared as “abusive correspondence” (10.59%), “mocking” (10.32%) and “unauthorized photo and video sharing” (9.22%), respectively, as in the bullying.

As seen in Table 33.1, school administrators reported that cyber bullying behaviours were seen in the eighth grade (71.5%). A large proportion of school administrators (52% and 55.6%) stated that there were students of both sexes, regardless of gender, who bullied or were exposed to such behaviour (cyber victims).

School administrators responded “yes” with 48.3% ($n = 351$) and “no” with 51.7% ($n = 376$) to the question “Do you have any preventative work against bullying as a manager?”

Table 33.1 Frequency of cyber bullying according to grades based on opinions of administrators

		<i>f</i>	%	Valid %	Cumulative %
Grade	5	26	3.6	3.6	3.6
	6	48	6.6	6.6	10.2
	7	133	18.3	18.3	28.5
	8	520	71.5	71.5	100.0
	Total	727	100.0	100.0	

33.3.2 Teachers’ Awareness Levels Regarding Students’ Cyber Bullying/Cyber-Victimization Behaviours

In the analysis results, it is seen that 47.6% ($n = 436$) of the teachers had already heard the concept of “bullying” and 58.3% of them knew the definition of this concept. 50.5% ($n = 463$) of the teachers stated that they witnessed their students bullying in their schools, and 37.7% ($n = 345$) of them stated that they witnessed their students in their schools being exposed to cyber bullying behaviours (cyber victims).

Apart from they had witnessed, teachers were asked to estimate how many children between the fourth and eighth grades were doing bullying at the school, and this rate was found as 24.43% ($SS = 19.89$) on average for all teachers. Similarly, when teachers were asked to estimate the proportion of cyber victims in their schools, it was found that this ratio was 24.45% ($SD = 19.47$) on average. As stated in the descriptive analyses for the students, the percentage of students who only bullied was 9.42%; and the percentage of the students who were only cyber victims was found 11.79% in all schools.

When teachers were asked to write the most seen first three behaviours of the cyber bullying behaviours they witnessed to the students, they declared as “abusive correspondence” (16.59%), “mocking” (12.55%) and “gossiping” (11.03%), respectively. Similarly, when teachers were asked to write the first three behaviours most likely to be seen from their students in terms of the cyber-victim status, they stated as “abusive correspondence” (9.93%), “mocking” (9.50%) and “gossiping” (7.31%), respectively, as they were in bullying.

As seen in Table 33.2, teachers stated that bullying behaviours were seen at most among eighth grade (72.9%). As can be understood from Tables 33.3 and 33.4, a large proportion of teachers (53.4% and 60.8%) stated that there were students of both sexes, regardless of gender, who bullied or were exposed to such behaviour (cyber victims). Nevertheless, 38.2% of the teachers who declared sex stated that “bullies” were mostly “boys” and 29.4% of the teachers who declared sex stated that cyber victims were mostly “girls”.

Table 33.2 Frequency of cyber bullying according to grades based on opinions of teachers

		<i>f</i>	%	Valid%	Cumulative%
Grade	5	58	6.3	6.3	6.3
	6	52	5.7	5.7	12.0
	7	138	15.1	15.1	27.1
	8	668	72.9	72.9	100.0
	Total	916	100.0	100.0	

Table 33.3 Frequency of cyber bullying according to gender based on opinions of teachers

		<i>f</i>	%	Valid%	Cumulative%
Gender	Female	77	8.4	8.4	8.4
	Males	350	38.2	38.2	46.6
	Total	916	100.0	100.0	

Table 33.4 Frequency of cyber victimization according to gender based on opinions of teachers

		<i>f</i>	%	Valid%	Cumulative%
Gender	Female	269	29.4	29.4	29.4
	Male	90	9.8	9.8	39.2
	Total	916	100.0	100.0	

Teachers responded “yes” with 34.6% ($n = 317$) and “no” with 65.4% ($n = 599$) to the question “Do you have any preventative work against bullying as a teacher?” When the teachers were asked to write two of their most prevalent preventive work, it was seen that the first two ranks were informing the students (21.83%) and the parents (4.91%).

7.6% ($n = 70$) of the teachers reported that they had suffered from cyber bullying, and 92.4% ($n = 846$) of them did not experience cyber bullying when they were examined whether they were exposed to cyber bullying by their students or not as a teacher. When looking at what kind of behaviours teachers who had suffered from cyber bullying were exposed to in the first three ranks, it was found that they were as “receiving abusive e-mails” (1%), “playing on and publishing their photographs” (1%) and “suffering an affront” (0.8%), respectively. When the school administrators were asked to write two of their most prevalent preventive work, it was seen that the first two ranks were informing the students (19.39%) and the parents (18.02%).

As a school manager, 6.3% ($n = 46$) of the administrators had been exposed to cyber bullying, and 93.7% ($n = 681$) of the administrators did not experience cyber bullying when they were examined whether they were exposed to cyber bullying by the students or not. When looking at what kind of behaviours the administrators who had experienced cyber bullying were exposed to in the first three ranks, it was found out that they were as “getting abusive e-mail” (2%), “taking insulting messages (1.4%)” and “getting disturbed by mobile phone and receiving disturbing messages (0.4%)”, respectively.

33.4 Discussion Conclusions and Recommendations

In this study, the levels of teachers' and administrators' awareness about adolescents' cyber bullying and cyber-victimization experiences were examined. When the prevalence of cyber bullying was examined in the study, it was found that 26.52% of the students confronted cyber bullying. It was found that 9.42% of the students were bullied, 11.79% were victims of cyber bullying and 5.31% were both bullying and cyber victims. It was found that girls were both less bullied and less victimized than boys in other studies (Arıcağ 2009; Arıcağ et al. 2008; Bayar 2010; Çetinkaya 2010; Çifçi 2010; Dilmaç 2009; Erdur-Baker 2010; Erdur-Baker and Kavşut 2007; Eroğlu 2011; Katzer et al. 2009; Li 2006; Serin 2012; Topçu et al. 2008; Topçu and Erdur-Baker 2007; Kocatürk 2014).

It is seen that 53.2% of the school administrators and 47.6% of the teachers had already heard the concept of “bullying” and 58.7% of the administrators and 58.3%

of the teachers knew the definition of this concept. These results are consistent with the results of the research conducted by Ipsos/Reuters (2012). According to the survey, the proportion of those who have read or heard something about cyber bullying issues in Turkey was found to be 50%. 53.2% of the school administrators and 50.5% of the teachers stated that they witnessed the students' cyber bullying in their schools; 44.2% of the administrators and 37.7% of the teachers stated that the students in their schools were exposed to cyber bullying behaviour (they were victims of cybercrime).

Apart from the witnesses of the school administrators, when we wanted to estimate how many students between the fourth and eighth grades in their schools were doing cyber bullying, this ratio was found to be 15.08% for all managers and 24.43% for all teachers. Similarly, when administrators and teachers were asked to estimate the proportion of students who were cyber victims in their own schools, it was seen that this ratio was 15.83% for managers and 24.45% for teachers on average. As stated in the descriptive analyses for the students, the percentage of students who only bullied was 9.42% in all schools; the percentage of the students who were only cyber victims were found 11.79%. Thus, the average rate estimate of all school administrators and teachers appears to be above the rate we have obtained from students.

When school administrators were asked to write the most seen first three behaviours of the cyber bullying behaviours they witnessed to the students, they declared as "abusive correspondence" (16.09%), "mocking" (11.42%) and "unauthorized photo and video sharing" (11.42%), respectively. Similarly, when teachers were asked to write the most seen first three behaviours of the cyber bullying behaviours they witnessed to the students, they declared as "abusive correspondence" (16.59%), "mocking" (12.55%) and "gossiping" (11.03%), respectively. When the school administrators were asked to write the most seen first three behaviours of the cyber-victimization cases that they witnessed to the students, they declared as "abusive correspondence" (10.59%), "mocking" (10.32%) and "unauthorized photo and video sharing" (9.22%), respectively, as in the bullying. Similarly, when teachers were asked to write the first three behaviours most likely to be seen from their students in terms of the cyber-victim status, they stated as "abusive correspondence" (9.93%), "mocking" (9.50%) and "gossiping" (7.31%), respectively, as they were in bullying.

School administrators (71.5%) and teachers (72.9%) stated that cyber bullying behaviours were seen in eighth grade at most. When examining during the research whether the level of cyber bullying/cyber victimization of primary school students differ in compared to their grade levels or not, the students in the sixth and eighth grades of primary education schools show more cyber bullying behaviours than the students of fifth grade. This result is parallel to some research results in the literature (Burnukara 2009; Smith et al. 2006; Williams and Guerra 2007).

A large proportion of school administrators (52% and 55.6%) stated that there were students of both sexes, regardless of gender, who bullied or were exposed to such behaviour (cyber victims). Nevertheless, 34.9% of managers who declared sex

stated that “bullies” are mostly “boys”, and 34.1% of them stated that cyber victims are mostly “girls”.

Similarly, a large proportion of teachers (53.4% and 60.8%) stated that there were students from both sexes, regardless of gender, who bullied or were exposed to such behaviour (cyber victims). Nevertheless, 38.2% of the teachers who declared sex stated that “bullies” were mostly “boys”, and 29.4% of them stated that cyber victims were mostly “girls”.

The school administrators responded “yes” with 48.3% ($n = 351$) and “no” with 51.7% ($n = 376$) to the question “Do you have any preventative work against bullying as a manager?” and the teachers responded “yes” with 34.6% ($n = 317$) and “no” with 65.4% ($n = 599$) to the question “Do you have any preventative work against bullying as a teacher?” When the school administrators were asked to write two of their most prevalent preventive work, it was seen that the first two ranks were informing the students (19.39%) and the parents (18.02%). When the teachers were asked to write two of their most prevalent preventive work, it was seen that the first two ranks were informing the students (21.83%) and the parents (4.91%). According to the results of the study conducted by Temel (2015), it was determined that 17.9% of the teachers and 73.3% of the school administrators had preventive studies against cyber bullying in their schools.

In schools in Turkey, activities to be performed by administrators and teachers are carried out in line with the Programs and the relevant laws and regulations published by the Ministry of National Education. Regarding the cyber bullying issue, it is thought that the administrators and teachers have a high prevalence of preventive work when thinking that the ministry has not issued any programs or regulations so far.

As a school administrator and teacher, when they were examined whether they were cyber bullied by the students, 6.3% of the administrators and 7.6% of the teachers stated that they were cyber bullied. When looking at what kind of behaviours the victim administrators of cyber bullying have been exposed to in the first three ranks, they were “receiving abusive e-mails”, “receiving insulting messages” and “getting disturbed and uncomfortable messages by mobile phone”, respectively; as to the teachers, they were found to have been exposed to cyber bullying behaviours such as “receiving abusive e-mails”, “playing and publishing their photos” and “underestimating”. Nowadays, almost all schools have websites, and communication information of administrators and teachers is on the sites. Students can make cyber bullying behaviours against the teachers and administrators through the guestbook of school websites or the administrator and e-contact addresses of the teachers.

It is thought to be useful to conduct informative studies for the school administrators, psychological counsellors and guidance specialists, teachers, students and parents on the subjects related to bullying behaviours, the causes and consequences of these behaviours, problems experienced by victims of cybercrime and suggestions for solutions to these problems. With such studies, increasing the level of awareness of this mass about the concept of cyber bullying can be useful in preventing students' cyber bullying behaviours and cyber victimization.

In Europe, Turkey is the only country without a prepared curriculum for the efficient use of ICT and avoiding the loss of these instruments. The content of the course ICT which is taught as an elective course in Turkey is focused heavily on teaching programs. Likewise, the media literacy course, which is also taught as an elective course, is insufficient in content. In this context, the information literacy curriculum should be developed, and the information technology courses should be made compulsory starting from the primary school.

We see that in Turkey, there hasn't been a special law prepared for the sanctions to be applied to cyber bullying. It is a positive development that some regulations and sanctions regarding the use of information communication technologies by the students in the course environment have carried into effect with the recent change the Ministry of National Education has made in the Disciplinary Regulations of Secondary Education Institutions. It is thought that to emphasize the importance of using communication tools effectively, efficiently and according to ethical values in primary education information technology courses and to inform the students by the teachers of information technology about what could be done against the attacks and threats from these vehicles are likely to contribute to the students to show less cyber bullying behaviours and to decrease cyber-victimization rates.

Cyber bullying behaviours generally occur outside school. This situation can cause school administrators, psychological counsellors and guidance specialists and teachers not to take on these negative behaviours. It is believed that a circular letter that the Ministry of Education will issue about cyber bullying behaviours will be more binding in maintaining preventive work and increasing the sensitivity about the subject by school administrators, psychological advisors and teachers.

It is seen that in Turkey, intervention programs for the prevention of cyber bullying behaviour have not been developed yet for the elimination of the problems faced by students of cyber victims. It is thought that the development of such intervention programs will contribute to preventing cyber bullying behaviour and reducing the problems that cyber bullying victims have experienced.

It seems that the coexistence with technology in education institutions is seen to be more intense in the framework of Increasing Opportunities and Technological Improvement Movement (FATİH Project) developed by the Ministry of National Education. It is believed that preparing urgent preventive practices and studies against cyber bullying, which is not included in the existing primary and secondary guidance programs and the student discipline regulations, and adding them to the curriculum and regulations will help to prevent these behaviours.

School administrators can communicate with expert staff working in the Computer Crimes and Systems Branches of the Provincial Security Directorates to provide seminars on appropriate use of information technology for teachers, parents and students.

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Chapter 34

A Study on Validity and Reliability of Teacher Efficacy Scale



Şefika Şule Erçetin and Mehmet Sabir Çevik

Abstract This study aims at developing a valid and reliable tool of Likert-type to measure the efficacy levels of teachers in different branches. The study group of this research involves 328 teachers working in primary, secondary and high schools in the central district of Siirt. Exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were used for data analysis. According to the results of the analysis, the scale consists of 33 items and 4 sub-dimensions. These sub-dimensions were named as self-efficacy, professional efficacy, programme and content knowledge efficacy and school-parent and community relations efficacy. The reliability of the scale was measured through Cronbach's alpha internal consistency coefficient and Spearman-Brown split-half reliability coefficient methods; and with a reliability coefficient of .93, the scale was found quite reliable. As a result of this study, it was concluded that the scale is a valid and reliable measurement tool to determine the teacher efficacy levels. Moreover, based on the results of this study, it is suggested that a similar study might be carried out with different participants such as students, parents and administrators to develop a broader and more detailed scale to reveal teacher efficacy based on their branches.

34.1 Introduction

The educational system is composed of different elements. Teachers, students, curriculum, administrators and education specialists are just some of these elements. Among these, teachers are considered to be the key element since the nature and the quality of learning and teaching process mostly depend on the qualifications and the quality of teachers (Şişman 2006). Therefore, bearing in mind that teachers have great responsibilities and duties in training qualified work force of the societies, it is essential for the individuals to be working as teachers in the future to have certain competences.

Ş. Ş. Erçetin · M. S. Çevik (✉)

International Science Association-Ankara, Turkey, Hacettepe University, Ankara, Turkey

Teaching can be regarded as a profession with a key role in terms of the formation of people and constructing a civilized world order (Polat and Arabacı 2002). Özkan and Arslantaş (2013) noted that teachers had increasingly begun to play a determinative role in transferring the social values to the future generations and enabling individuals to be satisfied and self-realized persons. The reason of this may be that the role of teachers in learning and teaching processes have diversified more and their classic role as a single transferor of knowledge has turned into a role of guiding students for learning methods. Therefore, when teachers are well trained and specialized in their relevant field, quality and qualifications of education will improve (Güneş 2016). Furthermore, each day it is more widely believed that the qualifications of teachers have a significant impact on the academic success of the students (Azam and Kingdon 2015; Boyd et al. 2008; Güçlü 2002; Hanushek 2011; Rivkin et al. 2005; Rockoff 2004; Stronge et al. 2007; Tschannen-Moran et al. 1998), and views emphasizing considerable economic and social values ensured by qualified and competent teachers are now more common (Chetty et al. 2014; Jackson et al. 2014). Accordingly, emerging and changing conditions of today require a change in the efficacy levels expected from the teachers. In other words, the views that teacher efficacy affects the learning process of a student and makes the learned phenomena permanent have become more important in the light of these changes, and it is revealed that the teacher efficacy contributes much to training of qualified students (Karacaoğlu 2008a; Mentiş Taş 2004).

Teachers build and shape the future in a sense. While teachers train students by means of their knowledge, their behaviours create an impact on their students. A sincere and understanding teacher helps students to display positive behaviours. In addition, development and civilization of a society can only be realized with the help of qualified teachers. Therefore, schools may achieve their predefined objectives by competent and efficient teachers (Güçlü 2000; Şahin 2011). Therefore, today's teachers are expected to do more than providing a speedy training on the content of the curriculum since their efficacy has a determining role in the training of the future generations (Turkish Education Association [TED] 2009).

Considering the previous researches conducted in Turkey on teacher efficacy, it is evident that the efficacy levels expected from a teacher are somewhat similar to and different from each other from various aspects. After evaluating the responses of Turkish and American students, Senemoğlu (2003) concluded that good teachers are good-humoured, witty, friendly, motivating people who help students to be more active during the course, care about the lessons, do not discriminate among the students and are able to establish positive communication with the students. In the research carried out by Gözütok et al. (2005), it was concluded that most of the teachers do not care about the students' opinions, are not able to understand the students, cannot adjust their knowledge meaningfully, cannot adapt a democratic attitude during the courses and cannot apply appropriate learning methods although they find themselves quite competent in many subjects. In the report of TED (2009), it was noted that there are certain differences between the opinions of teachers and administrators about the teacher efficacy and that teachers face serious problems during learning-teaching process in getting to know the students, establishing a

school-community relations and applying teaching programmes and in the fields such as professional development. According to the findings of a research conducted by the Ministry of National Education in 1999, teachers often find themselves quite competent in classroom management, professional development, development of students, planning the teaching method, relations with the social community and personal characteristics, while inspectors and administrators find teachers moderately competent (Ministry of National Education [MoNE] 2001). In the research of Öztürk and Genç (1997), it was found out that teachers have problems mostly in such areas as teaching principles and methods, perceiving the development processes of the students and guiding the students. Senemoğlu and Özçelik (1989) stated that faculties of education are more effective than the faculties of arts and science in terms of professional knowledge of teaching. Taşar (2012) concluded that teacher efficacy levels are “good”, and Karacaoğlu (2008b) stated that teachers are relatively competent, and they find their colleagues incompetent.

It is clear that the researches conducted abroad on teacher efficacy have recently increased much. Penney (2007) found out that teacher efficacy is an important factor in the success of students and implementation of teaching methods. Moreover, Carr (2013) concluded in his research that preliminary programmes tailored for young teachers on subjects such as classroom management, efficacy perception and time management are essential. Henson (2001) and Plourde (2001) stated that teachers with high levels of perception on teacher efficacy adapt a student-oriented approach by means of various teaching methods, whereas teachers with low levels of perception on teacher efficacy teach a lesson in classical methods and with a teacher-oriented approach. Buaraphan (2012) listed the features of a good and competent teacher as ethical features, teacher efficacy features and personality and professional features. Youyan et al. (2013) found out that the positive relation between teacher efficacy and constructivist approach is stronger than the one between traditional teaching. Dixon et al. (2014) also concluded that teacher efficacy and professional development are essential in differentiated teaching and learning process.

As is clear, the efficacy and roles expected from and attributed to the teachers in the changing and globalizing world of the twenty-first century have considerably changed. Now, teachers are expected to make students more active in every term and have the efficacy to enable them obtain knowledge rather than passively transferring their knowledge. In other words, teachers are asked to carry out activities in line with a student-oriented teaching method other than a teacher-oriented one. Therefore, it is critical that teachers bear the qualifications and efficacy required in this age. As a result, a valid and reliable measurement tool may contribute to the studies on selection and qualifications of teachers in order to identify teacher efficacy and identify their efficacy levels in different fields.

It is evident that most of the researches carried out in Turkey on teacher efficacy to develop scales aim at measuring the efficacy levels in a particular branch and identifying self-efficacy perceptions of teachers or candidate teachers, as well as being adapted to Turkish language (Akbulut 2006, 2012; Akkoyunlu et al. 2005; Bayar 2015; Ekici 2005; Gençtürk and Memiş 2009; Gerçek et al. 2006; Kahyaoğlu and Yaygın 2007; Kaya et al. 2014; Say 2005; Sünbül and Arslan 2007; Ünlü et al.

2008; Üstün and Tekin 2009; Yılmaz et al. 2004; Yavuzer and Koç 2002). Accordingly, there emerged a need to develop a national and general measurement tool to determine the teacher efficacy in all branches. This renders the newly developed measurement tool more important and different than the other measurement tools. It is expected that developing a measurement tool to measure the teacher efficacy will shed light on the educational administrators and practitioners in forming efficient and qualified schools.

34.2 Teacher Efficacy

The concept of efficacy defined as the power of possessing certain qualifications and abilities to perform an action (Turkish Language Institution [TDK] 2017) is observed to have different meanings in literature. Bursaloğlu (1975) defines efficacy as the knowledge, attitude and ability to achieve the institutional objectives, while Akbulut (2012), Konuk (2011) and Şahin (2004) define the concept as the minimum standards to carry out a certain task or profession or as the qualifications required to perform a task. As is clear from these definitions, the concept of efficacy is often perceived as “being competent for a certain action” by the public (Ağırman 2016). Accordingly, teacher efficacy may be defined as understanding, knowledge, skills, abilities and attitude required for teachers for the realization of learning and teaching processes. In literature, teacher efficacy may also be replaced by the concepts such as “standards of teachers, qualifications of teachers and features of efficient teachers”.

Teaching necessitates specialization in a particular field. Therefore, it is essential that those wishing to work as teachers have the competences required for the position (Şişman 2006). Sünbül (2002) listed the professional efficacy of teachers as “self-efficacy, field efficacy and educational efficacy”. McNess et al. (2003) identified four dimensions of teacher efficacy as “programme skills, educational planning skills, refreshing skills and skills of communicating with students”. Demirel (2004) and Erden (1999) tried to explain teacher efficacy as “personal qualifications and professional qualifications”. According to Lunenberg (2002), efficacies such as “subject efficacy, organizational efficacy, communication efficacy, pedagogical efficacy and problem-solving efficacy” are the primary ones that a teacher should have. Furthermore, Küçükahmet (2003) divides the concept of teacher efficacy in three parts as “pedagogical efficacy, field efficacy and efficacy based on general knowledge”. However, Gibso and Dembo (1984) and Woolfolk and Hoy (1990) tried to explain the concept of teacher efficacy in terms of “teaching efficacy and self-efficacy”. Davran (2006) believes that teachers should not only have general knowledge and knowledge in a certain field but also particular special abilities of knowledge, desire and creativity. Apart from the mentioned teacher efficacy, Heck and Williams (1984) listed ten different roles that teachers should have; these are humanitarian role, complementary role, supplementary role, attracting role, researching role, programme developing role, planning role, loving to be a teacher role, problem-solving role and dealing with the challenges role. The book on teacher efficacy

issued by the MoNE involves 6 efficacy fields, 31 sub-efficacy and 233 performance implications expected from teachers in terms of this sub-efficacy. Accordingly, six efficacy fields are listed as “Personal and Professional Values – Professional Development, Student Familiarization, Learning and Teaching Process, Monitoring and Evaluation of Learning and Development, School-Parent and Community Relations, Programme and Content Knowledge” (MoNE 2017).

In this research, the efficacy that a teacher should have is divided into four groups, in the light of the above-mentioned teacher efficacy. These efficacy groups have been explained in brief as follows:

Self-efficacy In general, this type of efficacy requires the teacher to have some competences such as “problem-solving skills, inquisitive thinking, working in a team, keeping up with the changes, high ethical values, personal responsibility and mercy” (Sünbül 2002). However, Thompson, Greer and Greer (2004) define a qualified teacher as a person wishing to admit his mistakes, commiserating, having positive energy and high sense of humour, creative, unique and respected by the public. Moreover, self-efficacy of a teacher may be summarized as having a strong personality, being healthy and having self-confidence, leadership features, communication skills, sense of humour, sense of justice, impartiality, patience and tolerance (Gündüz 2005). It should be noted that personal characteristics of a teacher may be taken as a model by the students. Therefore, positive personal characteristics are also important since they may represent a good model for the students.

Professional Efficacy Teacher is a behavioural engineer that creates a change in the behaviours of the students. To achieve professional success, teachers are expected to bear some competences required by their profession (Kaya 1984). Criteria for the teachers such as having “verbal skills, pedagogical education, field knowledge, experience and teaching certificate” may be considered under professional competences (Stronge 2007). In other words, the main duty of a teacher is to contribute to the learning of students. To achieve this duty, teachers should be competent with “general knowledge, specific field knowledge and pedagogical formation”. Despite his/her good personality, a teacher cannot be considered as effective in teaching if he/she is incapable of conveying knowledge and skills to his/her students (Eskicumalı 2003). In this regard, field knowledge of the teachers should be distinctive than the knowledge of other people in that field (Çelikten et al. 2005). Moreover, teachers are also expected to be competent people with their world perspectives, and comprehensive general knowledge, besides their field and professional knowledge (Gönüllü 2009). Because expertise in a specific field is not sufficient for being a teacher, a teacher should be able to realize several and various problems and to find solutions for them (Şişman 2012).

Programme and Content Knowledge Efficacy This type of efficacy refers to teachers’ competence about the main principles and values of the Turkish National Education System, as well as the objectives, approaches, principles and techniques of the training programmes (MoNE 2017). Accordingly, teachers are expected to design learning activities in line with the training programmes and the content adopted nationwide and within the framework of the acquisitions essential for the

training programme. It does not seem possible that the teachers lacking programme and content knowledge will be able to provide students with the acquisitions required under the training programmes.

School-Parent and Community Relations Efficacy Beside the students, teachers also bear responsibility to the parent and social community. Teachers' communication with the surrounding community and the parents is rather important for the success of the student. Contacting with the parents, organizing school-parent meetings, cooperating with the surrounding community and conveying his/her knowledge and experience to others may be stated among the main responsibilities of a teacher (Eskicumalı 2003). MoNE considers teachers' knowledge about their surrounding sociocultural and economic characteristics and their role to integrate the parents and the community into education processes and school development under the school-parent and community relations efficacy heading (MoNE 2017). Based on this perspective, it is understood that teachers should exert remarkable effort in ensuring school-parent and community relations.

34.3 Research Objective

This research aims to develop a valid and reliable measurement tool to measure the efficacy of teachers working in different educational stages.

34.4 Method

Research model, study group, scale development stages and techniques used in the data analysis were addressed in the following section.

34.4.1 Research Model

Research is a descriptive survey model. Descriptive survey model is a research model that aims to describe a current situation as it is (Karasar 2007).

34.4.2 Study Group

The study group of the research is composed of 328 teachers working in primary, secondary and high schools in the central district of Siirt in the 2017–2018 academic year. In developing scales, Comrey and Lee (1992) considered 100 as weak for the

Table 34.1 Personal information of the teachers participated in the research

Variable	Level	<i>n</i>	%
Gender	Female	134	40.9
	Male	194	59.1
Marital status	Single	108	32.9
	Married	220	67.1
Professional seniority	1–5 years	145	44.2
	6–10 years	63	19.2
	11–15 years	66	20.1
	16–20 years	28	8.5
	21 years and above	26	7.9
Educational background	Associate degree	8	2.4
	Bachelor's degree	294	89.6
	Master's degree	26	7.9
Educational stage	Primary school	95	29.0
	Secondary school	137	41.8
	High school	96	29.3
Total		328	100

sample size, 200 as medium, 300 as good, 500 as very good and 1000 as perfect. According to Field (2000), sample size should be 300 at least. Thus, the sample size of this research ($n = 328$) can be considered as good and sufficient. Personal information of the teachers participated in the research were given in Table 34.1.

As seen in Table 34.1, it was found out that 40.9% of the participants in the study group were female ($n = 134$); 59.1% were male ($n = 194$); 32.9% were single ($n = 108$); 67.1% were married ($n = 220$); 44.2% had a professional seniority of 1–5 years ($n = 145$), 19.2% 6–10 years ($n = 63$), 20.1% 11–15 years ($n = 66$), 8.5% 16–20 years ($n = 28$) and 7.9% 21 years and above ($n = 26$); 2.4% had associate degree ($n = 8$), 89.6% bachelor's degree ($n = 294$) and 7.9% master's degree ($n = 26$); and 29% were working in primary schools ($n = 95$), 41.8% in secondary schools ($n = 137$) and 29.3% in high schools. In other words, participants were mostly married male teachers with bachelor's degree and 1–5 years professional seniority and working in secondary schools.

34.4.3 Scale Development Stages

With the aim of developing a valid and reliable measurement tool to be used in the determination of the teacher efficacy, a draft scale of 5-point Likert-type with 96 items was designed firstly. In developing the items of the scale, performance indicators included in the MoNE's book on teacher efficacy and the domestic and foreign literature on the efficacy of teachers were taken into account. Accordingly, scale items were observed to include the dimensions of "self-efficacy, professional

efficacy, programme and content knowledge efficacy and school-parent and community relations efficacy". Items in the draft scale were reduced to 82 by excluding those irrelevant or having the same meaning according to the opinions of the field and language experts.

Draft scale form consisting of 82 items was applied randomly to a group of 80 teachers working in primary, secondary and high schools. Following the pilot application, it was determined that there are items which were left blank or not understood by teachers. During the pilot application, feedbacks and opinions of the teachers were recorded by the researcher. In this context, according to the opinions of the experts on educational administration, assessment and evaluation, items of the scale were rearranged, and the scale was finalized with 44 items for actual application. The scale was named as teacher efficacy scale. Five-point Likert-type TES was graded as "(1) I am not efficacious, (2) I am a bit efficacious, (3) I am partially efficacious, (4) I am efficacious and (5) I am very efficacious". Consequently, data obtained from 328 teachers who answered all the items in full was included in the analyses.

34.4.4 Data Analysis

In order to test the construct validity of teacher efficacy scale (TES), exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were applied. In exploratory factor analysis, principal component analysis was taken as basis; and in confirmatory factor analysis, maximum possibility analysis was taken as basis.

In the research, before EFA, Kaiser-Meyer-Olkin (KMO) coefficient and Bartlett sphericity test were realized to determine whether research data are suitable for factor analysis or not. In exploratory factor analysis, criteria such as exclusion of items that do not measure the same structure, common factor variance, item eigenvalues being 1 at least and representation of the theoretical substructure required to be measured were considered (Büyüköztürk 2014; Çokluk et al. 2010; Shevlin and Lewis 1999; Tabachnick and Fidell 2007). Moreover, varimax vertical rotation method was applied in EFA.

Confirmatory factor analysis (CFA) was carried out to assess the model-data conformity of the results obtained in EFA. In CFA, fit indices generally accepted in the literature were used. Generally, in fit indices, model-data conformity is considered to be at an acceptable level when χ^2/sd ratio is lower than 4; RMSEA and RMR value is lower than .008; NFI, NNFI, IFI and RFI values are .90 or above; CFI value is .95 and above; and AGFI and GFI value is .85 and above (Çokluk et al. 2010; Hu and Bentler 1999; Meydan and Şeşen 2011; Şimşek 2007).

In terms of the reliability of the scale, Cronbach's alpha internal consistency coefficient and Spearman-Brown coefficients were calculated. For the validity and reliability analyses, SPSS 24.00 and LISREL 8.80 programmes were used.

Table 34.2 Descriptive statistics of the scale data

Type of descriptive statistics ($n = 328$)	Value
Mean	4.07
Standard deviation	.45
Variance	.20
Kurtosis	.26
Skewness	-.32
Range	2.58
Minimum	2.42
Maximum	5.00

34.5 Findings

This section is composed of the sub-headings as descriptive analysis, exploratory factor analysis, confirmatory factor analysis and reliability analysis, related to the scale.

34.5.1 Descriptive Analysis of the Scale

Table 34.2 displays the mean, standard deviation, skewness, kurtosis, range and minimum and maximum points of the scale.

As seen in Table 34.2, mean point of the scale data was determined as 4.07, its standard deviation value as .45, variance value as .20, kurtosis value as .26, skewness value as $-.32$, range point as 2.58, minimum point as 2.42 and maximum point as 5.00. It is understood that based on the descriptive statistical analyses, the scale displays a normal distribution. Kurtosis and skewness values were between -1 and $+1$, and this proves that the data does not deviate much from the normal distribution (Büyüköztürk 2014; Huck 2008; Morga et al. 2004).

34.5.2 Exploratory Factor Analysis (EFA)

In this research, exploratory factor analysis is carried out to determine the factor structure of the teacher efficacy scale (TES). In order to test the suitability of the data obtained from the study group, Kaiser-Meyer-Olkin (KMO) and Bartlett tests were applied. As a result of the analysis for TES, KMO value was found as .93, while χ^2 value of Bartlett test was found as 4915.371 ($p < .001$). KMO value was found out to be higher than .60, and Bartlett test provided significant results, pointing that the research data are suitable for factor analysis (Büyüköztürk 2014). In other words, significance of Bartlett's value proves that the research data was derived from multivariate normal distribution. After it was determined that the data was suitable

for analysis, EFA was carried out in accordance to the varimax-rotated principal component analysis.

In the literature, it is advised that the item test correlations should be .30 and above and items should not be under multiple factors (Tavşancıl 2010). Benchmark to be taken into account with regard to item's being under multiple factors is that the difference between the factor loads of the items should be at least .10. Accordingly, among the scale items, those whose factor load values in two factors differ less than .10 are called as cyclical items and were excluded from the scale (Yavuz 2005). Moreover, although it is stated that in the development of a scale, taking items whose factor load value is .45 or above is an ideal criterion for deciding which items to include in the scale, it is also suggested that the threshold value may be decreased to .30 (Büyüköztürk 2007). In this research, items whose factor load values, common variance value and total correlations are below .30 and cyclical items whose load values in two factors differ less than .10 were excluded from the scale.

Based on the primary results of the analysis, 1 item whose common variance value was below .30, 2 items whose factor loads were below .30, and 4 cyclical items with high load values in multiple factors were excluded from the scale. By this means, cyclical items or items whose factor load values are low were excluded, analysis was repeated in some stages, and as a result of the analyses, four more items were also decided to be excluded from the scale. Based on the principal component analysis, it was found out that 33 items in the scale are compatible in terms of meaning and content and grouped under 4 subfactors whose eigenvalue is higher than 1. Figure 34.1 displays the scree plot of TES, obtained as a result of the analyses.

As seen in Fig. 34.1, slope began to disappear as of the fifth factor and that there are four sharp breaking points. Accordingly, results of the scree plot point that the scale might be limited with four factors. Distribution of scale items according to the dimensions, common variance value, item factor load values, item-total correlations, eigenvalues, variance ratios explained by factors and total variance values is shown in Table 34.3.

As seen in Table 34.3, scale items were gathered under four independent factors. Common variance values of the items vary between .35 and .68, while factor load values after rotation vary between .35 and .79 and total correlation values between .42 and .69. Accordingly, it was determined that the scale items had a good level of distinctive feature. In terms of eigenvalue, the first factor was ascertained as 11.746, second factor as 2.126, third factor as 1.468 and fourth factor as 1.271. Moreover, variance ratio explained by each factor was determined as 35.593% in the first factor, 6.443% in the second factor, 4.450% in the third factor and 3.851% in the fourth factor. Total variance explained by four factors was 50.337%. As a result of the analysis, a measurement tool of 33 items was established, with 10 items in the first factor, 13 items in the second factor and 5 items in the third and fourth factors.

Four subfactors obtained as a result of exploratory factor analysis were each identified as one dimension by considering the content of the items under the concerned factor. In this context, there are 10 items in the "self-efficacy" dimension

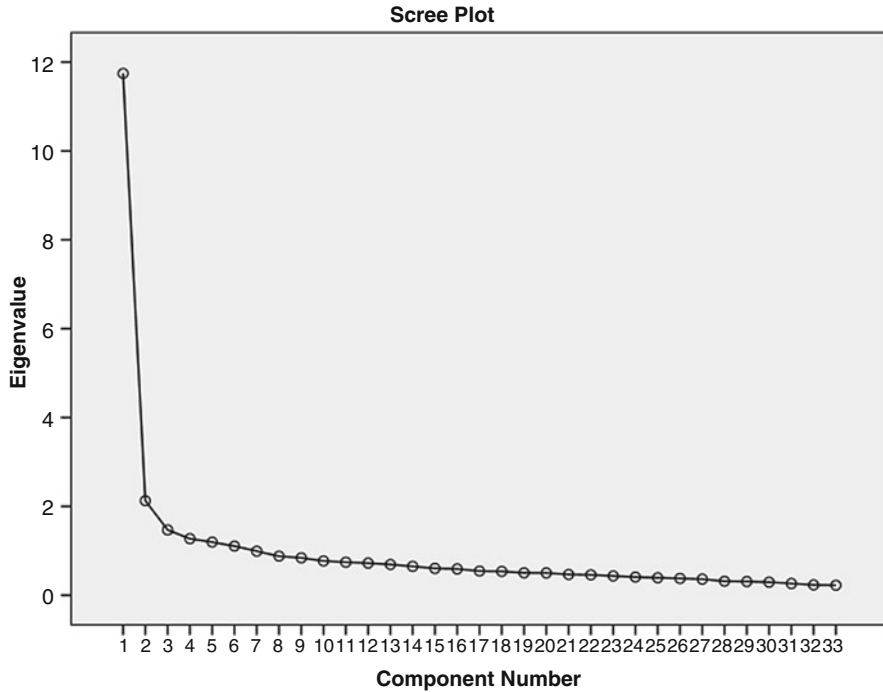


Fig. 34.1 Scree plot of the teacher efficacy scale

(items 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10), 13 items in the “professional efficacy” dimension (items 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22 and 23), 5 items in the “programme and content knowledge efficacy” dimension (items 24, 25, 26, 27 and 28) and 5 items in the “school-parent and community relations efficacy” dimension (items 29, 30, 31, 32 and 33).

34.5.3 Confirmatory Factor Analysis (CFA)

In order to determine whether the factor structure of the scale after the exploratory factor analysis can be confirmed or not, CFA was carried out with LISREL 8.80 computer software package programme. CFA is the determination of how much the collected data confirms the prespecified or designed structure (Çokluk et al. 2010; Seçer 2013; Sümer 2000). Several goodness of fit values are utilized for CFA. Values displayed in Table 34.4 with regard to goodness of fit were qualified as “perfect” and “acceptable” pursuant to the criteria generally accepted in the literature (Brown 2006; Çokluk et al. 2010; Hu and Bentler 1999; Meydan and Şeşen 2011; Şimşek 2007; Tabachnick and Fidell 2007).

Table 34.3 Exploratory factor analysis results of TES

Factor	Item	Common variance value of the items	Item factor load values after rotation	Total item correlation	Eigenvalues	Variance value (%)
Factor 1	M1	.46	.57	.52	11.746	35.593
	M2	.53	.60	.63		
	M3	.36	.45	.48		
	M4	.41	.60	.47		
	M5	.45	.57	.49		
	M6	.49	.36	.47		
	M7	.56	.69	.58		
	M8	.54	.67	.57		
	M9	.44	.54	.54		
	M10	.49	.51	.60		
Factor 2	M11	.37	.45	.54	2.126	6.443
	M12	.42	.44	.58		
	M13	.51	.59	.57		
	M14	.43	.52	.53		
	M15	.52	.64	.57		
	M16	.47	.51	.62		
	M17	.61	.69	.63		
	M18	.51	.55	.62		
	M19	.42	.37	.60		
	M20	.48	.58	.58		
	M21	.55	.35	.69		
	M22	.39	.37	.51		
	M23	.35	.48	.46		
Factor 3	M24	.53	.55	.61	1.468	4.450
	M25	.54	.67	.51		
	M26	.48	.55	.58		
	M27	.66	.74	.52		
	M28	.57	.64	.58		
Factor 4	M29	.60	.76	.42	1.271	3.851
	M30	.68	.79	.43		
	M31	.54	.67	.54		
	M32	.56	.63	.61		
	M33	.53	.62	.57		
Total variance value (%)						50.337

As seen in Table 34.4, when the goodness of fit values are examined, it may be stated that according to the data collected from the study group, the four-factor model had an acceptable level of construct validity and that the four-factor construction of the scale was confirmed. One of the fit criteria that is not included in

Table 34.4 Confirmatory factor analysis results of TES

Goodness of fit values	Perfect	Acceptable	Goodness of fit values of the research
p	>.01 or .05	<.01 or .05	.000 (acceptable)
χ^2/sd	≤ 2	2–5	1210.22/489 = 2.474 (acceptable)
RMSEA	$\leq .05$	$\leq .08$.067 (acceptable)
RMR	$\leq .05$	$\leq .08$.038 (perfect)
GFI	$\geq .90$	$\geq .85$.86 (acceptable)
CFI	$\geq .95$	$\geq .90$.97 (perfect)
NFI	$\geq .95$	$\geq .90$.94 (acceptable)
NNFI	$\geq .95$	$\geq .90$.97 (perfect)
IFI	$\geq .95$	$\geq .90$.97 (perfect)
RFI	$\geq .95$	$\geq .90$.94 (acceptable)

Table 34.4 is the critical N-CN value, which points to the sampling adequacy of the research. For this research, critical N-CN value was found out as 164.53. This value points that the research sample consisting of 328 people was sufficient. Based on the result of the analysis made under CFA, standardized path coefficients of the relation between the latent variables and observed variables, as well as the error variances of the observed variables, were displayed in Fig. 34.2.

As seen in Fig. 34.2, path diagram displays the level of effect of each item on latent dependent variable and the correlation coefficients. Correlation coefficients of the articles vary between .54 and .71 in self-sufficiency subfactor, between .48 and .74 in professional efficacy subfactor, between .66 and .70 in programme and content knowledge efficacy subfactor and between .63 and .076 in school-parent and community efficacy subfactor. Moreover, it was also determined that correlation coefficients of the items for the whole scale vary between .48 and .76 while the error variances between .43 and .77.

34.5.4 Reliability Analyses

Reliability analyses of TES were carried out through Cronbach's alpha and Spearman-Brown split-half reliability coefficient methods. Table 34.5 displays Cronbach's alpha and Spearman-Brown coefficients.

According to Table 34.5, Cronbach's alpha internal consistency coefficient of TES varies between .81 and .93, while Spearman-Brown split-half reliability coefficient varies between .75 and .88. Considering that a reliability coefficient of .70 and above for the measurement tools is sufficient in terms of the reliability of the data (Büyükoztürk 2014), it may be stated that the whole scale and its sub-dimensions are reliable.

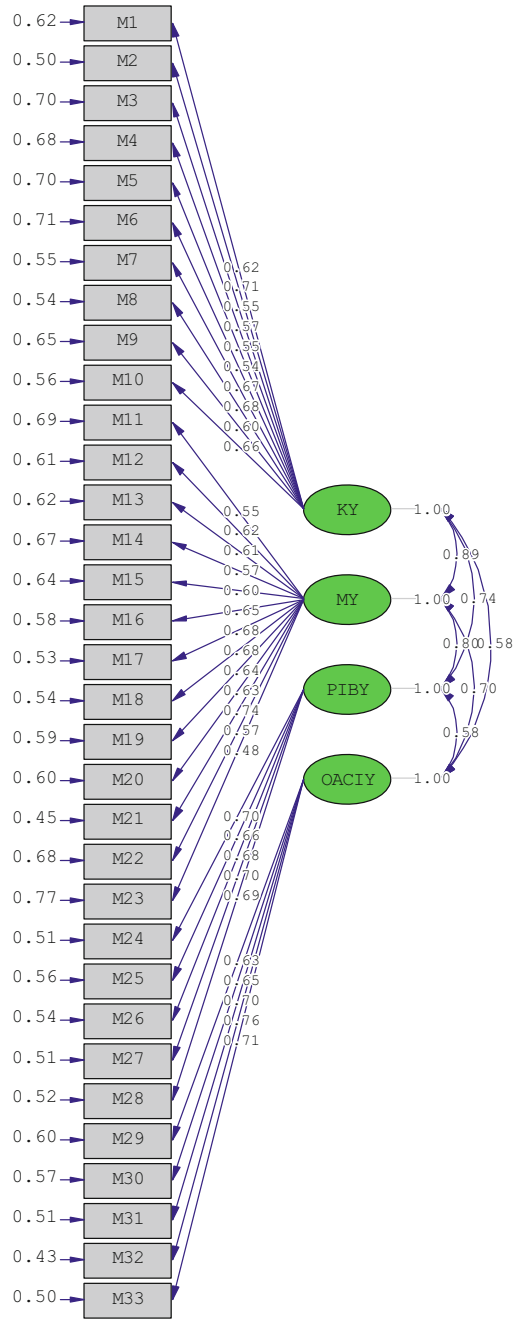


Fig. 34.2 Four-factor path diagram of TES

Table 34.5 Cronbach's alpha and Spearman-Brown reliability coefficients of TES

Factor title	Alpha internal consistency coefficient	Spearman-Brown split-half reliability coefficient
Self-efficacy	.85	78
Professional efficacy	.89	87
Programme and content efficacy	.81	76
School-parent and community relations efficacy	.82	75
Teacher efficacy scale	.93	88

34.6 Discussion, Conclusion and Suggestions

This research aims to develop a valid and reliable measurement tool for the self-efficacy of the teachers in different branches. Validity and reliability measurements revealed that the scale can be used for the measurement of teacher self-efficacy.

Before the actual application of the research, related literature was reviewed, and a draft 82-item Likert-type scale was pretested. Through this pretesting, it was determined whether the measurement tool functions in deed, whether there are questions overlooked or forgotten and what the attitude of reference people to questions is (Balçı 2015). Based on the feedback and expert opinions after the pretesting, 38 items were excluded, and it was decided to apply the scale with 44 items.

Research was actually carried out with 328 teachers working in primary, secondary and high schools. Construct validity of TES was realized through exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Based on the varimax vertical rotation principal component analysis, it was determined that the scale explains 50.337% of the total variance and has a four-factor structure composed of 33 items as self-efficacy (10 items), professional efficacy (13 items), programme and content knowledge efficacy (5 items) and school-parent and community relations efficacy (5 items). As known, in social sciences, an explained variance between 40% and 60% is sufficient for measurement tools (Luther and Adams 1988: Quoted: Tavşancıl 2010); accordingly, with regard to this research, it may be stated that the explained variance is at a statistically acceptable level. Moreover, there is no reverse item in the scale, and the total point to be obtained in the scale varies between 33 and 165. .35 was taken as criteria for the factor load values of the scale and .30 for the common variance value; and as a result of the analyses, it was determined that the factor load values of the scale vary between .35 and .79, while the common variance value varies between .35 and .68.

CFA was applied to determine whether the structure resulting from EFA is confirmed or not. It was found out that goodness of fit values obtained as a result of CFA (χ^2/sd , RMSEA, RMR, GFI, CFI, NFI, NNFI, IFI, RFI) are sufficient. Moreover, critical N-CN value was found as 164.53 for this research. This value points that this research's sample group of 328 people is sufficient. Besides, item analysis was also carried out to determine the distinctiveness levels of the items

under TES. Within the framework of item analysis, item-total correlation of the scale was examined, and it was observed that the total correlation values of the items vary between .42 and .69. Accordingly, it was determined that the items in the scale are of distinctive character.

Reliability analyses of TES were carried out through Cronbach's alpha internal consistency coefficient and Spearman-Brown split-half reliability coefficient methods. It was seen that Cronbach's alpha internal consistency coefficient of TES varies between .81 and .93 while Spearman-Brown split-half reliability coefficient between .75 and .88. Considering that a reliability coefficient of .70 and above is sufficient for the reliability of the measurement tools (Kline 2011; Nunnally and Bernstein 1994), it may be stated that the scale is reliable as a whole and in terms of its sub-dimensions.

It may be suggested that the teacher efficacy scale may be applied to broader and different sample groups such as students, parents and administrators and that new scales may be developed by making the necessary changes to determine the efficacy of teachers on the basis of their branches.

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Chapter 35

Unmasking the Ideological Stance of Political Leaders by Critical Discourse Analysis: Ahmadinejad as a Case Study



Meysam Tayebipour

Abstract This chapter is an endeavour to underscore Ahmadinejad's apocalyptic ideology. To this end, critical discourse analysis (CDA) is used by this chapter as a theoretical and methodological tool. By using intertextuality and interdiscursivity, as two CDA methodological tools, it is shown how Ahmadinejad's first speech at the UN was shaped by Islamic texts and apocalyptic ideology.

35.1 Introduction

Ahmadinejad was chosen as Iran's president in June 2005 after he could defeat all his well-known rivals, including Hashemi Rafsanjani, the former Iranian president and a well-known politician in Iran. He secured the second term in office and remained Iran's president till 2013 when he was succeeded by Hassan Rouhani.

Ahmadinejad holds a doctoral degree in engineering, but he also believes in superstitions, which made people feel that he has an incongruous character (Amuzegar 2007). For instance, after his first trip to New York in 2005, he asserted that a halo of light had surrounded him while he was addressing other world leaders at the 60th Session of the United Nations General Assembly (Naughton 2009). However, what makes Ahmadinejad more unique is his firm belief in Imam Mahdi, the final and the hidden Imam of the 12 Imams in Shia Islam. Ahmadinejad advocates that Imam Mahdi will hasten soon and the Islamic Republic of Iran has a mission to pave the way for his reappearance (Amuzegar 2007). For instance, in his 2007 speech for the Iranians in Hajj pilgrimage, he stated that "there is no mission in this time but the invitation to the [Hidden] Imam.. .. The Islamic Republic is the exercise for connection to the Imam. Without a connection to the Imam, what would remain of the Islamic Republic?" (cited in Khalaji 2008, p.28).

Investment in Jamkaran is another instance that can indicate Ahmadinejad's willingness to provide the preliminaries for the reappearance of Imam Mahdi.

M. Tayebipour (✉)
Lancaster University, Lancaster, UK
e-mail: m.tayebipour@lancaster.ac.uk

Based on some Hadith reports, the words of the Prophet of Islam and Shia Imams, Imam Mahdi will emerge from a land near the city of Qom called Jamkaran. When Ahmadinejad came to power to facilitate people's visit to Jamkaran, he spent millions on roads and tourist facilities and successfully transformed Jamkaran into a popular Shia pilgrimage site in Iran (Milani 2007). These behaviours brought the researchers such as Khalaji (2008) and Amuzegar (2007) to a conclusion that Ahmadinejad has an apocalyptic ideology. This chapter is an attempt to underscore Ahmadinejad's apocalyptic ideology through critical discourse analysis (CDA). To this end first, in the following section, CDA will be studied, and then intertextuality and interdiscursivity will be introduced as the two CDA methodological tools that will be applied in this chapter. Finally, to discover Ahmadinejad's apocalyptic ideology, his first speech at the UN (See Appendix 1) in 2005 will be chosen as the case study.

35.1.1 Critical Discourse Analysis (CDA)

To have a better understanding of the concept of CDA, first, the definition of discourse should be exposed. As Burr (2013, p.64) points out, "a discourse refers to a set of meanings, metaphors, representations, images, stories, statements and so on that in some way together produce a particular version of events". A researcher must analyse this specific way of representation. The act of analysing a specific discourse can be conducted either descriptively or critically. The descriptive way of analysing a discourse can be led by approaches such as constructivism (Warnaar 2013; Oppermann and Spencer 2016) and poststructuralism (Larsen 1997; Howarth and Torfing 2005; Hansen 2006). However, to critically analyse a discourse, a researcher needs to use CDA because CDA is capable of shedding light on the not so obvious aspects of a discourse (Fairclough, 2010). As Wodak (2013, p.40) highlights, "CDA aims to make more visible these opaque aspects of discourse as social practice".

CDA considers language as a social phenomenon and stresses on the role of "language as a power resource that is related to ideology and socio-cultural change" (Bryman 2012, p. 536). CDA is a multidisciplinary approach which is equipped with linguistic tools such as metaphor analysis, intertextuality and interdiscursivity. In other words, CDA is applied by scholars in different disciplines "more specifically to the critical linguistic approach" (Wodak, 2001, p.2). CDA provides both methodological and theoretical tools; however, in terms of methodology, CDA is very diverse (Carta and Morin 2014). In Dijk's (2015, p.446) words, "widespread misunderstanding of CDA is that it is a special method of doing discourse analysis. There is no such method: in all methods of the cross-discipline of discourse studies, as well as other relevant methods in the humanities and social sciences, may be used" (p. 466). In a similar vein, Wodak et al. (2011, p.357) stress that "CDA is not a discrete academic discipline with a relatively fixed set of research methods" (P. 358). Hence, analysts can opt for those CDA methodological tools through which they can meet the aims

and objectives of their studies. This chapter by CDA is trying to analyse Ahmadinejad's first address in the UN critically. For this reason amongst different CDA methods, intertextuality and interdiscursivity (Wenden 2005; Fairclough 2010; Wodak et al. 2011) are chosen as methodological tools in this chapter. In the following part first, these two terms, intertextuality and interdiscursivity, will be explained, and then it will be discussed why these two CDA tools are chosen for this chapter.

35.1.2 Intertextuality and Interdiscursivity

It was Bakhtin who for the first time explained how texts or utterances are influenced by the prior texts (Johnstone 2008). In Bakhtin's (1986, cited in Fairclough 1992, p. 270) view, "our speech ... is filled with others' words, varying degrees of otherness and varying degrees of 'our-own-ness,' varying degrees of awareness and detachment. These words of others carry with them their own expression, their own evaluation tone which we assimilate, rework, and reaccentuate". However, it was Kristeva who for the first time introduced Bakhtin's work to the western audience and used the term intertextuality for the first time to explain how utterances and texts are shaped by prior texts (Johnstone 2008). As mentioned before, CDA is trying to shed light on the dark aspect of the language. Therefore, intertextual analysis by showing the textual linkages of a speech/text to other text can elucidate the ideological stance of a specific text. In this chapter, intertextuality can indicate how Ahmadinejad's speech at the UN is linked to the Islamic texts such as the Quran and Hadith, as prior texts. In other words, by adopting the approach of intertextuality, this research shows how Ahmadinejad's ideology is shaped by Quranic texts (See Text 7) or traditions of the Hadith literature (See Text 10).

Interdiscursive analysis is the other CDA method that will be applied in this study. As Johnston (2008, p.182) expounds, "texts can also be interdiscursively related to prior texts". Interdiscursive refers to ways in which a discourse draws on a previous or a pre-existing discourse. Applying this method is vital for this chapter because by using these methods the author would be able to demonstrate how Ahmadinejad's discourse is interweaved with other discourses such as the discourse of Imam Zaman.

Overall, it can be said that intertextuality and interdiscursivity have two aims: (1) to reveal the strategies employed by speakers and writers to reinforce their ideology and (2) to reveal the dominant ideological current underpinning a discourse (Bloor and Bloor 2007). Similarly, in this chapter by using intertextuality and interdiscursivity to study Ahmadinejad's first speech at the UN, his ideological stance will be revealed.

35.2 A Critical Discourse Analysis of Ahmadinejad's First Speech at the UN in 2005

Ahmadinejad began his speech by mentioning the name of the God, in a way that a pious Muslim does (Text 1).

1. In the Name of the God of Mercy, Compassion, Peace, Freedom and Justice

Ahmadinejad began his speech by mentioning the name of the God, in a way that a pious Muslim does (Text 1). Starting an official speech with the name of the God is not unique to Ahmadinejad, and it can be said that all his predecessors after the 1979 revolution had similarly commenced their speeches at the UN by invoking the name of God. By doing so, Ahmadinejad and other Iranian politicians merge the two discourses of Islam and politics.

2. Oh God hasten the arrival of Imam Mahdi and grant him good health and victory and make us his followers and those who attest to his rightfulness.

Thus in Text 2, we can see a unique politician in Iran, where he starts to pray for Imam Zaman. In Text 2 Ahmadinejad not only asks God to hasten the arrival of Imam Zaman and grant him good health, but Ahmadinejad also adjures God to make him and other people the followers of Imam Zaman. No matter where, home or abroad, Ahmadinejad uses this prayer almost in all his speeches, and this indicates the importance of Imam Zaman in Ahmadinejad's discourse. This intertextual strategy indicates the importance of Imam Zaman in Ahmadinejad's belief system.

3. With the passing of the era of agnostic philosophies, today humanity is once again joined in celebrating monotheism and belief in the Creator as the originator of existence.

The influence of believing in God (Text 1) and Mahdi (Text 2) can be seen in Ahmadinejad's assumption about the world. In Text 3, for instance, he as pious Muslim claims that the world has passed the agonistic era and now the human being once again believes in monotheism doctrine. This interdiscursive assumption about the world shows how Ahmadinejad's discourse is influenced by Islam. Like the Islamic discourse in Iran, Ahmadinejad's discourse is an exclusive discourse and does not include polytheistic religion or religions such as Buddhism which is neither polytheistic nor monotheistic.

4. Although reason, experience and science are among valuable sources of knowledge, the darkness of the Middle Ages deprived major portions of the Western world from appreciating. This reactionary tendency deprived many from access to various scientific findings and knowledge and led to the exclusion of other sources of knowledge namely God and knowledge based on revelation from the life of human beings in the West; Divine knowledge that was carried and disseminated by such prophets as Noah, Abraham, Moses, Jesus, and Muhammad (peace be upon them).

The use of discursive strategy by Ahmadinejad is also apparent in Text 4. Ahmadinejad by mentioning the Middle Ages, a pride of European history that the power of Christian Church was strong, and its negative influence in the Western world, links the discourse of history and his political speech. Ahmadinejad also condemns the West to this Dark Age, which was removing divine knowledge from the public sphere, the divine knowledgewhich was distributed by prophets such as Noah, Abraham, Moses, Jesus and Muhammad (Text 4). The naming of these prophets by Ahmadinejad also can be analysed as a discursive strategy. In Islam these five prophets are considered as *Ulu'l azm* prophets, the greatest prophets (Rizvi 1989), and now Ahmadinejad in Text 4 introduces the same prophets as conveyors of divine knowledge.

5. Divine prophets teach us about proper regard for the exalted state of human beings on earth. The human being is blessed with dignity, most importantly manifested in being the viceroy of the Almighty on earth. The Almighty placed humans on earth to develop it, institutionalise justice, overcome their egoistic tendencies and praise no lord but the Almighty.

In Text 5, Ahmadinejad says that the human being is chosen as the viceroy of God on the earth. This is an intertextual use of The Quran specifically Surah 2 verse 30, which says: “Behold, your Lord said to the angels: ‘I will create a vicegerent on earth’. They said: ‘Will You place therein one who will make mischief therein and shed blood?’ – while we do celebrate Your praises and glorify Your holy (name)?’ He said: ‘I know what you do not know’”. Ahmadinejad contends that human beings are chosen by God as His viceroys to distribute justice and to worship the Almighty God, Allah.

6. Faith and good deeds can bring deliverance and the good life even in this world. Attaining this depends on human will, that is the will of each and every one of us. We must heed the call of our common primordial nature achieve the realisation of this good life.

Text 6 is another example of using intertextuality and interdiscursivity by Ahmadinejad. Ahmadinejad contends that faith and good deeds can deliver a good life for people in this world. Faith and good deed are two terms that Ahmadinejad borrowed from the Quran. In the Quran faith and good deed are used together, and they are introduced as two tools which with them people can achieve redemption. Likewise, Ahmadinejad in Text 6 uses these two words together to introduce them as a remedy for a good life in this world (Text 6). Ahmadinejad then claims that all human beings have a common primordial nature or pattern (Text 6). Again, this is an Islamic doctoring that all the people have the same nature because they have the same creator, and this doctoring is based on this Quranic verse:

“So, you set your face steadily and truly to the Faith: (establish) Allah’s handiwork according to the pattern on which He has made mankind: no change (let there be) in the work (wrought) by Allah: that is the standard Religion: but most among mankind do not understand”. (Quran, 30;30).

Now Ahmadinejad by calling on this shared nature says redemption can only be achieved by faith and by doing good deeds.

- 7. Although these challenges are very real, we believe we are not predestined to experience them. Our common will not only can change this course but in fact, can lead us to a life filled with hope and prosperity. Divine revelation teaches us that “The Almighty changes the fate of no people unless they themselves show a will for change” (Holy Qur’an, 13:11).**

If Ahmadinejad in the previous parts of his speech indirectly uses Quran, in Text 7 Ahmadinejad directly uses a verse from the Quran. Ahmadinejad, by this intertextuality use of Quran, asserts that although the world is in the challenging condition, he believes that this situation can change to good because based on the Quran, it is not God that changes human’s condition but they are human beings that can change their fate.

- 8. We believe that a sustainable order – nurturing and flourishing peace and tranquillity – can only be realised on the two pillars of justice and spirituality. The more human society departs from justice and spirituality, the greater insecurity it will face.**

So now the question is how people can change their fate for better. This is the place that Ahmadinejad introduced his main discourse, a discourse which has two main pillars: spirituality and justice. Justice and spirituality are cited in Ahmadinejad’s speech 29 and 13 times, respectively. In other words, for Ahmadinejad justice and spirituality are the only two tools that can bring back peace and tranquillity to the world (Text 8).

- 9. Unfortunately, the world is rife with discrimination and poverty. Discrimination produces hatred, war and terrorism. They all share the common root of lack of spirituality coupled with injustice.**

Indeed, in Ahmadinejad’s discourse, justice and spirituality not only can bring peace to the world, but they also can eliminate poverty and discrimination. Indeed, in Ahmadinejad’s idea, there are poverty and discrimination in the world, because of the lack of spirituality and justice (Text 9).

- 10. Justice is about equal rights, the correct distribution of resources in the territories of different states, the equality of all before the law and respect for international agreements. Justice recognizes the right of everyone to tranquillity, peace and dignified life. Justice rejects intimidation and double standards. As the eminent daughter of the Prophet of Islam has said, “justice brings tranquillity and harmony to our hearts”.**

Equality in rights, rejection of injustice, fair distribution of wealth in the world and respect for international agreements are some elements of the justice discourse of Ahmadinejad (Text 10). Then, Ahmadinejad uses a quotation from Fatimah, the daughter of the prophet Mohammad, that justice causes tranquillity in hurt (Text 10). This is another instance of intertextuality used by Ahmadinejad.

- 11. Today, the world is longing for the establishment of such justice. If humanity heeds the call of its primordial nature with firm resolve, justice will emerge. This is what the Almighty has promised, and all people of good will from all religions are waiting for. If the prevailing discourse of global relations becomes one of justice and spirituality, then durable peace will be guaranteed.**

In Text 11 Ahmadinejad claims that now the world is longing for establishing justice and this justice will emerge if people move back to their primordial nature. Then he added that this is the justice that God has promised and all the people from different religion are waiting for this. By introducing justice as a longing request in the world and as a God's promise, Ahmadinejad implies his apocalyptic discourse. Because based on Shia doctrine, when Mahdi emerges, justice will appear across the world. Likewise, Shias argue that the reappearance of Mahdi is promised by God in different religions, albeit the Mahdi is introduced with a different name in other religions.

- 12. Today, my nation calls on other nations and governments to “move forward to a durable tranquillity and peace based on justice and spirituality”.**

In Text 12 Ahmadinejad says that today Iran calls on other countries to move towards peace which is based on justice and spirituality. This is an interdiscursive use of apocalyptic discourse. This can be understood better when we know that for Ahmadinejad the Islamic Republic of Iran must prepare the preliminaries of the reappearance of Imam Zaman (see the Introduction).

- 13. All these problems emanate from the fact that justice and spirituality are missing in the way powerful governments conduct their affairs with other nations. . . . The UN must be the symbol of democracy and the equal rights of nations. If we talk about the equal rights of nations in political forums, we must talk of the same concept in this forum as well. Similarly, if we talk about the right of sovereignty, then all nations must be allowed to exercise their rights on an equal footing and in a democratic process.**

In Text 13 and Text 14, Ahmadinejad introduces antecedents of the justice discourse that Iran calls on. In Ahmadinejad's view to achieve justice, the UN's structure and world powers' attitude towards small countries should change. The powerful nations should be blamed because their relationships with other countries are not based on spirituality and justice. And the UN must be blamed because at the UN not all the countries have equal weight and some countries have more powers than others.

- 14. As the President of the Islamic Republic of Iran, I assure you that my country will use everything in its power to contribute to global tranquillity and peace based on the two maxims of spirituality and justice as well as the equal rights of all peoples and nations.**

At the end of his speech (Text 14, Text 15 and Text 16), he reiterates the three main premises of his speech: Iran's readiness for distribution of justice and spirituality in the world (Text 14); the willingness of the world for the promised justice (Text 15); and he prays for the symbol of justice, Imam Zaman (Text 16). In Text 12 it was seen that Ahmadinejad states that Iran is ready to walk in the trajectory of justice. This claim once again is recapitulated in Text 14 when Ahmadinejad stresses on the readiness of Iran to set itself in justice's path.

15. From the beginning of time, humanity has longed for the day when justice, peace, equality and compassion envelop the world. All of us can contribute to the establishment of such a world. When that day comes, the ultimate promise of all Divine religions will be fulfilled with the emergence of a perfect human being who is heir to all prophets and pious men. He will lead the world to justice and absolute peace.

In Text 15 Ahmadinejad talks about the promised perfect man, Imam Zaman, and the day he will appear. Then he claims that the day is promised by all divine religions and all the nations by distributing justice can hasten his reappearance. In Text 15 also Ahmadinejad by using words such as the perfect man and the ultimate promise links the justice discourse and the apocalyptic discourse that he believes in.

16. Mighty Lord, I pray to you to hasten the emergence of your last repository, the promised one, that perfect and pure human being, the one that will fill this world with justice and peace. O Lord, include us among his companions, followers and those who serve his cause.

The last phrases of Ahmadinejad's speech like the beginning of his speech are dedicated to Imam Zaman, and Ahmadinejad prays for his reappearance. In Text 16 Ahmadinejad once again links apocalyptic discourse and the justice discourse. As it was seen in Ahmadinejad's speech, justice was the core factor, now, and at the end of his speech, he asks God to hasten Imam Zaman's arrival because Imam Zaman as Ahmadinejad asserts will fill the world with justice and peace (Text 16).

35.3 Conclusion

This chapter was an endeavour to underscore Ahmadinejad's apocalyptic ideology. To this end, CDA was used by this chapter as a theoretical and methodological tool. By using intertextuality and interdiscursivity, as two CDA methodological tools, it was shown how Ahmadinejad's first speech at the UN was shaped by Islamic texts and apocalyptic ideology.

**Address by H.E. Dr. Mahmood Ahmadinejad, President
of the Islamic Republic of Iran before the Sixtieth
Session of the United Nations General Assembly
New York – 17 September 2005**

In the Name of the God of Mercy, Compassion, Peace, Freedom and Justice

Mr. President, Excellencies, Ladies and Gentlemen,

Today we have gathered here to exchange views about the world, its future and our common responsibilities towards it. It is evident that the future of the world is intertwined with its current state and the prevailing trends, which exhibit signs of hope and despair.

On the one hand certain hopes and opportunities exist, and this august Assembly is convened on such hopes. Today human thought reflects outstanding commonalities which provide appropriate grounds to build upon. With the passing of the era of agnostic philosophies, today humanity is once again joined in celebrating monotheism and belief in the Creator as the originator of existence. This is the common thread which binds us all. Faith will prove to be the solution to many of today's problems. The Truth will shine the light of faith and ethics on the life of human beings and prevent them from aggression, coercion and injustice and will guide them towards care and compassion for fellow beings.

Another hope is the common global appreciation of the sources of knowledge. Although reason, experience and science are among valuable sources of knowledge, the darkness of the Middle Ages deprived major portions of the Western world from appreciating. This reactionary tendency deprived many from access to various scientific findings and knowledge and led to the exclusion of other sources of knowledge namely God and knowledge based on revelation from the life of human beings in the West; Divine knowledge that was carried and disseminated by such prophets as Noah, Abraham, Moses, Jesus, and Mohammad (peace be upon them). Today, agnostic thinking is on the decline and presently humanity is equally enamored with religion, science, knowledge and spirituality. This is an auspicious beginning.

Divine prophets teach us about proper regard for the exalted state of human beings on earth. The human being is blessed with dignity, most importantly manifested in being the viceroy of the Almighty on earth. The Almighty placed humans on earth to develop it, institutionalize justice, overcome their egoistic tendencies and praise no lord but the Almighty. Faith and good deeds can bring deliverance and the good life even in this world. Attaining this depend on human will, that is the will of each and every one of us. We must heed the call of our common primordial nature and achieve the realization of this good life.

On the other hand, the prevalence of military domination, increasing poverty, the growing gap between rich and poor countries, violence as a means to solve crises,

spread of terrorism, specially state terrorism, existence and proliferation of weapons of mass destruction, the pervasive lack of honesty in interstate relations, and disregard for the equal rights of peoples and nations in international relations constitute some of the challenges and threats.

Although these challenges are very real, we believe we are not predestined to experience them. Our common will not only can change this course but in fact can lead us to a life filled with hope and prosperity. Divine revelation teaches us that “The Almighty changes the fate of no people unless they themselves show a will for change” (Holy Qur’an, 13:11).

How can we influence the future of the world?

When and how will peace, tranquility and well-being for all come about?

These are the fundamental questions before us.

We believe that a sustainable order – nurturing and flourishing peace and tranquility – can only be realized on the two pillars of justice and spirituality. The more human society departs from justice and spirituality, the greater insecurity it will face, so much so that a relatively small crisis – such as a natural disaster – leads to various abnormalities and inhuman behavior.

Unfortunately, the world is rife with discrimination and poverty. Discrimination produces hatred, war and terrorism. They all share the common root of lack of spirituality coupled with injustice.

Justice is about equal rights, the correct distribution of resources in the territories of different states, the equality of all before the law and respect for international agreements. Justice recognizes the right of every one to tranquility, peace and a dignified life. Justice rejects intimidation and double standards. As the eminent daughter of the Prophet of Islam has said, “justice brings tranquility and harmony to our hearts.”

Today, the world is longing for the establishment of such justice. If humanity heeds the call of its primordial nature with firm resolve, justice will emerge. This is what the Almighty has promised and all people of good will from all religions are waiting for. If the prevailing discourse of global relations becomes one of justice and spirituality, then durable peace will be guaranteed. Conversely, if international relations is defined without justice and spirituality and void of moral considerations, then the mechanisms for promoting confidence and peace will remain insufficient and ineffective.

If some, relying on their superior military and economic might, attempt to expand their rights and privileges, they will be performing a great disservice to the cause of peace and in fact will fuel the arms race and spread insecurity, fear and deception. If global trends continue to serve the interests of small influential groups, even the interests of the citizens of powerful countries will be jeopardized – as was seen in the recent crises and the even natural disaster such as the recent tragic hurricane.

Today, my nation calls on other nations and governments to “move forward to a durable tranquility and peace based on justice and spirituality.”

Mr. President, Excellencies, Ladies and Gentlemen,

The Islamic Republic of Iran is born out of a movement, based on the pure primordial nature of a people who rose up to regain their dignity, esteem and human rights. The Islamic Revolution toppled a regime which had been put in place through a coup, and supported by those who claim to be advocates of democracy and human rights thwarted the aspirations of the nation for development and progress for 25 years through intimidation and torture of the populace and submission and subservience to outsiders.

The Islamic Republic of Iran is the manifestation of true democracy in the region. The discourse of the Iranian nation is focused on respect for the rights of human beings and a quest for tranquility, peace, justice and development for all through monotheism.

For 8 years, Saddam's regime imposed a massive war of aggression and occupation on my people. It employed the most heinous weapons of mass destruction – including chemical weapons – against Iranians and Iraqis alike. Who, in fact, armed Saddam with these weapons? What was the reaction of those who now claim to fight against **WMDs** regarding the use of chemical weapons back then? The world is witness to the fact that the Islamic Republic of Iran, because of its humanitarian principles, even during the most testing of times and when it was sustaining the highest number of casualties, never allowed itself to use such weapons.

Thousands of nuclear warheads that are stockpiled in various locations coupled with programs to further develop these inhuman weapons have created a new atmosphere of repression and the rule of the machines of war, threatening the international community and even the citizens of the countries that possess them.

Ironically, those who have actually used nuclear weapons, continue to produce, stockpile and extensively test such weapons, have used depleted uranium bombs and bullets against tens and perhaps hundreds of thousands of Iraqis, Kuwaitis, and even their own soldiers and those of their allies, afflicting them with incurable diseases, blatantly violate their obligations under the NPT, have refrained from signing the CTBT and have armed the Zionist occupation regime with **WMDs**, are not only refusing to remedy their past deeds, but in clear breach of the NPT, are trying to prevent other countries from acquiring the technology to produce peaceful nuclear energy.

All these problems emanate from the fact that justice and spirituality are missing in the way powerful governments conduct their affairs with other nations.

After September 11, a particular radical group was accused of terrorist activities – although it was never explained how such huge intelligence gathering and security organizations failed to prevent such an extensive and well-planned operation.

Why powers that, not so long ago, were supporting the activities of such groups in Afghanistan – and thus portraying themselves as supporters of human rights and the Afghan people – have over night turned into their most fierce critic?

Are we to believe that their benefactors, i.e. the very same hegemonic powers have lost control?

If the answer is yes, would it not be better for those powers to adopt an honest and transparent approach to the international community, provide precise information about the main elements and their arms and financial support system, and accept responsibility for their inhuman actions against nations and countries, and thereby assist peoples and nations to correctly, wisely and sincerely fight the roots of terrorism.

We must endeavor to achieve stainable tranquility and peace based on justice and spirituality.

Mr. President, Excellencies, Ladies and Gentlemen,

Terrorism and WMDs are two major threats before the international community. The Islamic Republic of Iran, as one of the main victims of terrorism and chemical weapons, fully appreciates the difficulties that lie ahead in the road to combat these menaces. Today, the most serious challenge is that the culprits are arrogating to themselves the role of the prosecutor. Even more dangerous is that certain parties relying on their power and wealth try to impose a climate of intimidation and injustice over the world make bullying, while – through their huge media resources – portray themselves as defenders of freedom, democracy and human rights.

People around the world are fully aware of what is happening in the occupied Palestine. Women and children are being murdered and adolescents taken prisoner. Houses are being demolished and farms burnt down. Yet, when the people of Palestine resist these conditions, they are accused of terrorism. At the same time, the occupier, which does not abide by any principles and terror, is part of its pronounced and routine policy enjoys the support of the previously mentioned governments. Let me be blunter. State terrorism is being supported by those who claim to fight terrorism.

How can one talk about human rights and at the same time blatantly deny many the inalienable right to have access to science and technology with applications in medicine, industry and energy and through force and intimidation hinder their progress and development?

Can nations be deprived of scientific and technological progress through the threat of use of force and based on mere allegations of possibility of military diversion? We believe that all countries and nations are entitled to technological and scientific advancement in all fields, particularly the peaceful technology to produce nuclear fuel. Such access cannot be restricted to a few, depriving most nations and by establishing economic monopolies, use them as an instrument to expand their domination.

We have gathered here to defend human rights in accordance with Charter of UN and prevent certain powers from claiming that “some countries have more rights” or that “some countries do not have the right to enjoy their legitimate rights.”

We must not, at the beginning of the twenty-first century, revert to the logic of the dark ages and once again try to deny societies access to scientific and technological advances.

Mr. President, Excellencies, Ladies and Gentlemen,

The UN must be the symbol of democracy and the equal rights of nations. If we talk about the equal rights of nations in political forums, we must talk of the same concept in this forum as well. Similarly, if we talk about the right of sovereignty, then all nations must be allowed to exercise their rights on an equal footing and in a democratic process.

The UN can be the standard bearer of democracy in the world, when it, itself, is a manifestation of democratic process.

I reiterate that durable tranquility and peace can only be built on justice and spirituality.

Mr. President, Excellencies, Ladies and Gentlemen,

The Islamic Republic of Iran is a symbol of true democracy. All officials including the Leader, President, members of the Islamic Consultative Assembly, city and village councils are elected through the vote of the citizens. The Islamic Republic of Iran has held 27 national elections in 27 years. This showcases a vibrant and dynamic society in which people widely participate in the political life.

Because of its key importance and influence in the important and strategic Middle East region, the Islamic Republic of Iran is committed to contribute actively to the promotion of peace and stability in the region.

Saddam Taliban regimes were both the products of foreign powers. The people of Afghanistan and Iraq know very well who supported these two regimes.

Today, to establish peace and security in the region, foreign occupation forces must leave and completely hand over the political and economic sovereignty of these two countries to their peoples.

The Islamic Republic of Iran will continue to provide full and comprehensive support to the people of Iraq and Afghanistan and their elected governments, and will actively help them in the establishment of order and security. My country will continue and expand its sincere cooperation and interaction with them.

In Palestine, a durable peace will be possible through justice, an end to discrimination and the occupation of Palestinian land, the return of all Palestinian refugees, and the establishment of a democratic Palestinian state with Al-Quds Al-Sharif as its capital.

Mr. President, Excellencies, Ladies and Gentlemen,

Today, more than ever, nations need constructive, positive and honest cooperation and interaction in order to enjoy a dignified, tranquil and peaceful life based on justice and spirituality. Let us enter into a collective covenant to realize this legitimate aspiration of our nations.

Here, I would like to briefly talk about the approach and initiative of the Islamic Republic of Iran on the nuclear issue.

Nuclear weapons and their proliferation, and attempts to impose an apartheid regime on access to peaceful nuclear energy, are two major threats, challenging international tranquility and peace.

Keeping in mind that in past years no serious efforts – complimented by practical mechanisms – have been made to move towards full disarmament and more specifically implement the decisions and outcomes of the NPT Review Conferences of 1995 and 2000, I suggest that the General Assembly, as the most inclusive UN organ, mandate an ad-hoc committee to compile and submit a comprehensive report on possible practical mechanisms and strategies for complete disarmament.

This Committee should also be asked to investigate as to how – contrary to the NPT – material, technology and equipment for nuclear weapons were transferred to the Zionist regime, and to propose practical measures for the establishment of a nuclear-weapons-free zone in the Middle East.

Some powerful states practice a discriminatory approach against access of NPT members to material, equipment, and peaceful nuclear technology, and by doing so, intend to impose a nuclear apartheid. We are concerned that once certain powerful states completely control nuclear energy resources and technology, they will deny access to other states and thus deepen the divide between powerful countries and the rest of the international community. When that happens, we will be divided into light and dark countries.

Regrettably, in the past 30 years, no effective measure has been implemented to facilitate the exercise of the legally recognized right of NPT state-parties to have access to and use peaceful nuclear energy in accordance with article IV. Therefore, the General Assembly should ask the IAEA – in accordance with article 2 of its Statute – to report on violations by specific countries that have hindered the implementation of the above article and also produce practical strategies for its renewed implementation.

What needs our particular attention is the fact that peaceful use of nuclear energy without possession of nuclear fuel cycle is an empty proposition. Nuclear power plants can indeed lead to total dependence of countries and peoples if they need to rely for their fuel on coercive powers, who do not refrain from any measure in furtherance of their interests. No popularly elected and responsible government can consider such a situation in the interest of its people. The history of dependence on oil in oil-rich countries under domination is an experiment that no independent country is willing to repeat.

Those hegemonic powers, who consider scientific and technological progress of independent and free nations as a challenge to their monopoly on these important instruments of power and who do not want to see such achievements in other countries, have misrepresented Iran's healthy and fully safeguarded technological endeavors in the nuclear field as pursuit of nuclear weapons. This is nothing but a propaganda ploy. The Islamic Republic of Iran is presenting in good faith its proposal for constructive interaction and a just dialogue. However, if some try to impose their will on the Iranian people through resort to a language of force and threat with Iran, we will reconsider our entire approach to the nuclear issue.

Allow me, as the elected President of the Iranian people, to outline the other main elements of my country's initiative regarding the nuclear issue:

1. The Islamic Republic of Iran reiterates its previously and repeatedly declared position that in accordance with our religious principles, pursuit of nuclear weapons is prohibited.
2. The Islamic Republic of Iran believes that it is necessary to revitalize the NPT and create the above-mentioned ad-hoc committee so that it can combat nuclear weapons and abolish the apartheid in peaceful nuclear technology.
3. Technically, the fuel cycle of the Islamic Republic of Iran is not different from that of other countries which have peaceful nuclear technology. Therefore, as a further confidence building measure and in order to provide the greatest degree of transparency, the Islamic Republic of Iran is prepared to engage in serious partnership with private and public sectors of other countries in the implementation of uranium enrichment program in Iran. This represents the most far reaching step, outside all requirements of the NPT, being proposed by Iran as a further confidence building measure.
4. In keeping with Iran's inalienable right to have access to a nuclear fuel cycle, continued interaction and technical and legal cooperation with the IAEA will be the centerpiece of our nuclear policy. Initiation and continuation of negotiations with other countries will be carried out in the context of Iran's interaction with the Agency. With this in mind, I have directed the relevant Iranian officials to compile the legal and technical details, of Iran's nuclear approach, based on the following considerations:
 - 4.1 International precedence tells us that nuclear fuel-delivery contracts are unreliable and no legally binding international document or instrument exists to guarantee the delivery of nuclear fuel. On many occasions such bilateral contracts have either been suspended or stopped altogether for political reasons. Therefore, the Islamic Republic of Iran, in its pursuit of peaceful nuclear technology, considers it within its legitimate rights to receive objective guarantees for uranium enrichment in the nuclear fuel cycle.
 - 4.2 In its negotiations with the EU3, Iran has tried in earnest to prove the solid and rightful foundations of its nuclear activity in the context of the NPT, and to establish mutual trust. The selection of our negotiating partners and the continuation of negotiations with the EU3 will be commensurate with the requirements of our cooperation with the Agency regarding non-diversion of the process of uranium enrichment to non-peaceful purposes in the framework of the provisions of the NPT. In this context, several proposals have been presented which can be considered in the context of negotiations. The Islamic Republic of Iran appreciates the positive contribution of South Africa and H.E. President Mbeki personally in the resolution of the nuclear issue and cognizant of South Africa's active role in the IAEA Board of Governors would welcome *its* active participation in the negotiations.
 - 4.3 The discriminatory approaches regarding the NPT that focuses on the obligations of state-parties and disregards their rights under the Treaty should be discontinued.

As the President of the Islamic Republic of Iran, I assure you that my country will use everything in its power to contribute to global tranquility and peace based on the two maxims of spirituality and justice as well as the equal rights of all peoples and nations. My country will interact and cooperate constructively with the international community to face the challenges before us.

Dear Friends and Colleagues,

From the beginning of time, humanity has longed for the day when justice, peace, equality and compassion envelop the world. All of us can contribute to the establishment of such a world. When that day comes, the ultimate promise of all Divine religions will be fulfilled with the emergence of a perfect human being who is heir to all prophets and pious men. He will lead the world to justice and absolute peace.

O mighty Lord, I pray to you to hasten the emergence of your last repository, the promised one, that perfect and pure human being, the one that will fill this world with justice and peace. O Lord, include us among his companions, followers and those who serve his cause.

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Chapter 36

Complex Situations that University Students Came Across in University Experience and Suggested Solutions



Mehmet Küçükçene

Abstract Students who start at a university in a different city suddenly find themselves in a different academic and social environment. This new dimension of life can cause students to face complex situations in terms of education experiences, human relations, and social life. Awareness of these complex situations plays an important role for the students' social life and academic success in university life. The introduction of these situations and expectation of students can lead to a reduction of the complex situations by adaptation programs or goal-directed processes of university. The aim of this research is to determine the complex situations that university students have experienced in university life and the solutions that students have developed against these situations. A qualitative approach has been adopted in the research in the descriptive screening model. The research group consists of 18 students who have just started university in the 2017–2018 academic year. A semi-structured interview form was created by the authors in line with the purpose of the research, and the data were collected through interviews. The themes were created after the data from the interviews were recorded. According to the answers of the students, codes were created and organized according to these themes.

36.1 Introduction

In the late adolescence and emerging period, a growing number of youths get into university (Pratt 2000). One of the major life changes for many adolescents is the transition from high school to university (Tao et al. 2000). Students who go on their university education after graduation step in a new order and system. In this system, which is very different from high school life, students find themselves in a different environment. Students make circles of new academic and social environment within this system. During this process, students need to adjust themselves in order to feel comfortable. The difficult process of adaptation, students' confrontations with

M. Küçükçene (✉)
Hacettepe University, Ankara, Turkey

problems, and complexities during this process can negatively affect both academic and social aspects.

Schools are seen as significant developmental contexts for academic and socioemotional development of younger students (Eccles and Roeser 2003). In this part of life, students have the opportunity to develop them both academically and socially. Some researchers have expressed that the degree of affiliation to university that the student feels toward is related to better social adjustment (Tao et al. 2000) in addition to higher academic motivation factors and lower attrition rates (Beyers and Goossens 2002). Yet, entering the university can create stress and anxiety for students (Gall et al. 2000). New social relations are established, and the students can find academic demands difficult (Tao et al. 2000). Students may encounter problems that will wear them down in a new system. These problems may adversely affect both the academic and social order of the student.

Students who start at university leave their homes. As a result, both community support and communication are reduced. Such difficulties can both reduce the academic success of the student and lead to social and psychological problems (Dwyer and Cummings 2001). There is little attention about how different sources of social support (i.e., friends, family) and types of self-esteem (i.e., academic, social, global) differentially predict various factors of adjustment (Friedlander et al. 2007). In this context, it is important to reveal the complex situations and to take measures for these complexities in which students live in university life. Students who can manage and tackle the complexities will feel much better in both academic and social aspects. In this respect, this research aims to reveal the complex situations experienced by the students who are new to the university and to produce solution proposals by considering into the expectations of the students.

36.2 Method

36.2.1 Research Design

In this study, qualitative research was used. This research which aims to reveal the complex situations that new students of university come up with is a descriptive survey model as it targets to describe the existing. According to Creswell (2005), qualitative should be preferred when “the problems of the research need to explored in a deeper understanding.”

36.2.2 Participants and Data Collection Tool

The research group consists of 18 students who have just started university in a city in the Central Anatolia in Turkey in the 2017–2018 academic year. In the process of collecting research data, semi-structured interview form was prepared as a result of

researches by the researchers and by taking the opinions of field experts with the focus group method. The participants who were interviewed were informed about the goal of the study and the content and duration of the interview at the beginning. The interviews made with the students in the study group were recorded with a voice recording device in accordance with participants' permission. It was said to participants that their answers would be used only for scientific research and would be kept strictly confidential. During each interview made with students, coding was used to keep the identities secret. Therefore, students were coded as S1, S2, S3, and so on.

36.2.3 Analysis of Data

The data which was obtained during the interview was evaluated by using descriptive data analysis which is one of the qualitative data analysis techniques. In this study, the data were obtained with the semi-structured interview forms. The themes were created after the data from the interviews were recorded. According to the answers of the students, codes were created and organized according to these themes.

36.3 Findings

The findings of the study were presented in three themes:

36.3.1 Complex Situations at Academic Dimension and University Practices

Complex situations in the academic dimension arising from the university applications of the students who are new to the university are presented in this context. In this part, these situations are presented, and some direct statements of the participants are given as examples.

Most universities offer orientation programs for university students. In this study, it is revealed that the orientation for students is generally superficial and not useful. Students expect this program to be long-lasting and to be carried out in a friendlier environment. Students expressed the chaotic situations about insufficient orientation and university introduction they faced as follows:

A superficial orientation was conducted. S2

We could have been more helpful in the integration process. More events could be organized. That did not happen to me. Orientation was done but very superficial. It was not enough to just go to the conference room and talk for 1 hour. Orientation could be done more sincerely. S10

I could not solve the grading system in my head. BA, CA, FF or something ... S9

The students stated that physical conditions of faculties reduce their motivation and reflect negatively on the lectures because classes at the bottom of building are in bad repair. These problems also cause them to fail to understand the lesson. Here are some direct participant statements at this point:

Because the bottom is down and the class is very crowded... This causes trouble. Everyone wants to sit forward but everyone cannot stand in front of him to listen to the lecturer. We also have difficulty in hearing the lecturer when we are in the back. S2

...and there is not even a place where we can work with comfortable lessons, obviously because of physical conditions. S8

Students who were experiencing their first year in university unfortunately mentioned that they could not find the lessons in university as they hoped. Lessons did not meet expectations of students. The reason for this is that the lecturers only use the presentation technique. Besides, students also complain that lecturers cannot keep the lessons fun, interesting, and active. At this point, some direct participant statements are presented:

I think that the academicians' academic knowledge, course-processing skills, or academic skills are not adequate. They cannot actively use the table. They stand at a fixed point and couldn't control the class. Most friends are broke; they are mixing magazines, playing games, looking at the catalogs. S11

I wonder if I would really learn something after graduating from school. The department did not meet my expectations. I do not know what will happen to the future. S9

There are lecturers who cannot communicate with the student. I expected a more intimate environment between the lecturers and the students. S6

There is a great distance between students and teachers. So there is no teacher-student relationship. Only the lesson is finished and there is no continuation. The environment where students can work together can be created. S9

When the research was carried out, the students had their first examination at university. There were also some complex situations that students encountered in their first examinations. In addition, the students were disturbed by the rude behaviors of the supervisors in exam duration. These complex situations are expressed by students as follows:

There are troubles and irregularities about exams. Exam durations are not enough. We entered the first mid-term exams, but not as long as the number of questions. We have been anxious about this issue with some of our friends. After all, we take an exam in university for the first time. We got stressed before the test started and the treatment of the supervisors was very rough. S3

Exam supervisors were too rude. I was so sick of that exam. Examination guidelines must be clear and clear. The test paper should have a time limit so that we can act accordingly. Supervisors should not give time waywardly. Also, the supervisors were very harsh on mid-term exams. S1

One of the reasons for the complicated situations that students are experiencing is that their academic advisors are not interested in themselves enough. The academic advisors who meet superficially with them did not show enough interest to the students. This has prevented students from asking their colleagues for questions on

academic advisors. In short, what students are curious about the university is not answered. This is expressed by the students as follows:

I do not know what an academic supervisor is. The academic supervisor did not introduce himself to us at the beginning of the semester. I think that this kind of event should be done as a meeting tea, a cup of tea. S3

I do not know how to be informed about academic career. I have no idea about the minor and double major. I'm curious about these issues. . . S13

In this section, finally, the complex situations in which the students live due to disorders in the university are presented. New students in university are naturally forced to find their classes. But the fact that student affairs did not help them made it worse. At this point, some direct participant statements are presented:

When I first arrived, there was no order. Which classes we would be was unclear. I firstly went to the first branch 'A' and then to branch B. It had always changed. We couldn't any answerer for our questions and problems. S7

... but when I arrived to the university, I did not see any order. I think that the courses are so meaningless. S18

... student affairs is sometimes unconcerned. When I ask questions about course exemption, I get 'I do not know' answers or it is not possible to reach them by phone. S6

36.3.2 *Complex Situations in Social and Cultural Dimensions*

In this section, socially and culturally complicated situations of students who have just begun university have been handled. Likewise, firstly the situations are presented, and some direct statements of the participants are given as examples.

One of the most important complex situations that students in this dimension have experienced is that they have difficulty making friends. Students in a new environment are attracted to establish friendship relationships. This has caused them to feel lonely in the new environment. In the integration process, students who have difficulty in making new friends are attracted to an increasing family longing. Loneliness has triggered their family longing. This is expressed by the students as follows:

When I came to the school on the first day, it was difficult; it was very difficult to meet people. S6

When I first came to the school, group of friends were very cold to me. So I felt very lonely myself. I'm so bad, I even thought about leaving the school. For the first time I stay in the dormitory. For this reason, I felt very lonely. S7

When I came here, the most difficult thing I had was home longing, I could not even go on holiday because my hometown was far away. I'm leaving my family for the first time. I have a little brother, I miss him the most. That's why I'm having a lot of trouble with that. S8

Another area where students' expectations are not met is social, sporting, and cultural activities. The students also state that they have more sporting possibilities even in high school. In addition, students have trouble spending their free time. One

of the reasons is that student clubs are not active. The students expressed these complaints as follows:

I sometimes spend time on campus. There is not a big common area on campus. There is only a canteen and there is not much communication on the side. I have no contact with the class; it is more difficult to communicate with upper classes. It may be better if there is a common area. S6

In our high school, we were engaged in volleyball, table tennis in breaks. We had social and sporting activities. We did not know how time passed. Now, we are out of courses and there is no sporting activity. Nothing to do... I just come and go to the school for the courses. I wouldn't come to the school if it is not compulsory for attendance in courses. So, I do not spend time on campus. S5

As far as I can tell, the university does not have very active student clubs. For example, the university does not have a travel club. I would like the student clubs to be more active. S2

I want to make use of the time well, but I cannot find any club for it. For example, sporting activities... The student clubs would be nice if they introduced themselves better. S8

36.3.3 *Complex Situations in Accommodation and Transportation*

Finally, the complex situations in which students live in the dimension of accommodation and transportation are presented. In this section, it appears that students are more likely to suffer from difficulties in accommodation.

Students who leave their families and come to the university usually use the dormitories for accommodation. Living in a dormitory environment may cause some problems for students. The students who participated in the research mentioned the nutrition problem especially in the dormitories. Besides the fact that the dormitories are not a hygienic environment, having security weaknesses and lack of a peaceful environment are complicated situations they face. These complex situations are expressed by students as follows:

I often have to eat outside because I cannot eat at dormitory. S6

I have never eaten at dormitory for a week. S16

... I also have nutritional problems. I cannot eat every meal. I have a difficulty at dormitory. Most of the time I have to eat from outside. S8

Besides, I was expecting the rooms of dormitory to be a little more hygienic. There were footprints on the beds. S5

I'm staying in the dormitory, but the security is a bit weak. I do not know if the securities have a certificate, but I do not see enough, the floors are not circulating. I find it a bit distressing in terms of security. S6

I had to leave the dormitory. The friends of my friends in the room were constantly coming to the room. Room for 4 people, there are consistently 10 people. S5

I actually have an angry mood generally. I have experienced difficulties in the dormitory; I do not have much contact with people in the dormitory. People are also very comfortable in the dormitory. They don't feel like living in the community. They are like at home now. Noise is made every hour. I learn peace. S6

I could not understand the dormitory rules. Also, there are people I discuss. S11

Beside the accommodation, there are also some problems in transportation. Inadequate rings make transportation difficult for students. Long-term waiting rings of students cause them to live in harsh weather conditions and to be late for their classes. Here are direct statements of the students:

*The number of rings on the road is few and they do not get us when they are full. S8
Rings for transportation are full. There is not enough vehicles. They are leaving without us. We are also victims there. S5*

36.4 Conclusion and Suggestions

In this study, it has been aimed to reveal the complex situations in which students live in university life. In the direction of the data obtained, it has been revealed that the students meet with complex situations in academic dimension which stem from university applications (*insufficient orientation, physical conditions, methods and content of courses, exams and supervisors, academic supervisor and insufficient information, lack of a warm atmosphere, grading system, student affairs office, irregularity*), social-cultural dimension (*loneliness and making friends, longing for home, inadequacy of social and sportive areas and activities, inactive student clubs*), and accommodation and transportation (*nutrition problem, lack of hygiene, security of dormitory, unrestful environment, inadequate rings for transportation*).

One of the most important problems of the students at the academic dimension is that adequate orientation program is not given to the students by the universities and as a result, the students cannot have enough knowledge about the university. In addition, students did not recognize their academic advisors. It has emerged that students have difficulty in accessing information regarding academic subjects (e.g., grading system, double major, minor, etc.).

At this point, the suggestion is a process-oriented orientation program should be implemented for new arriving students. According to Gass et al. (2003), positive changes were found 17 years after participants' experiences in a wilderness orientation program. Academic advisors also need to introduce themselves to the students, communicate with the students, and share vital and necessary information with the new students to facilitate the university life. Apart from these, poor physical conditions also appeared to have a negative effect on the students' focus on the lesson and to lower their motivation.

Another complex situation faced by students is that the courses in university have not met the expectations of the students. One of the reasons for this is the way the courses are taught and the distance between the student and the instructor. The students stated that the lecturers use only the presentation method. This leads to a loss of motivation in the students. The inability of the lecturers to create a sincere atmosphere in the classroom environment causes the students to be unable to express themselves. In this context, a more creative and active lesson is suggested to the instructors. In addition, if the distance between the student and the teacher goes away, the students are expected to participate more in the class and to reach a higher

level of motivation. According to Pittman and Richmond (2008), it is really important the educators should foster the university belonging and positive friendships among students as they transition to university.

Students faced some complexities while they were taking the first mid-term exams in the university. Students have trouble with the duration because of the lack of clear guidelines of some exams. Another problem was that their supervisors at the examinations were rude and harsh. In this context, it will be useful to have an informative meeting with new students before the examinations. Also, the fact that the test papers should have clear explanations will prevent supervisor-student conflict.

One of the most important problems faced by students at the university on the social and cultural dimension is loneliness. The students have difficulties in making different friends and adapting a new environment. In the integration process, students who have difficulty in making new friends are attracted to an increasing family longing. According to Brown and Holloway (2008), most students confessed to feelings of homesickness in the first few weeks, though the intensity and duration of this feeling appeared to be mediated by friendship networks. Students who are able to establish new friendships feel less family longing. Likewise, the students who want to spend time in the new environment are willing to participate in the social, cultural, and sporting activities of student communities. However, the fact that such activities are inadequate in universities leads students to loneliness and family longing. For this reason, university administration should ensure that there are more social activities in the university. Otherwise, university students will feel themselves not belonging to university and will feel alone. For university students, the university provides a larger group in which to belong (Pratt 2000).

When the problems experienced in accommodation and transportation are taken into consideration, students are more likely to suffer from difficulties in accommodation. Nutrition problem is the most important one of these difficulties. Students cannot eat their meals and cannot eat healthy in the dormitories. This situation also causes them to eat fast food continuously. In addition, the students living in the dormitories are experiencing problems such as the lack of cleanliness of the dorms, poor security, and restless environment. This situation suggests that authorities should work more for the supervision of the dormitories. Dormitory administrations should be more interested in student problems. Beside the accommodation, there are also some problems in transportation. Inadequate rings make transportation difficult for students. Long-term ringing of students causes them to live in harsh weather conditions and to be late for their classes. For this reason, the students will be pleased to increase the number of rings especially on busy days and hours.

As a result, it is thought that this research is useful for presenting a point of view to new students at university. The study is also important in terms of framing the problems experienced by students because it is believed that proposals for university administrations that will facilitate the adaptation process of newcomers to and better adapt the students to the university are useful.

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Chapter 37

Investigation of Organizational Intelligence Level of Schools According to Teachers' Opinion



Gülşah İmamoğlu Akman and Yener Akman

Abstract In this study, the organizational intelligence perception of teachers that work in public schools of Altındağ district in Ankara province is investigated. Besides, it is examined that the organizational intelligence perception of teachers may create a significant difference according to various demographic variables. The study is carried out with the participation of 226 teachers in the 2016–2017 academic year. “Multidimensional organizational intelligence scale” has been used as a tool to gather data. Data has been analyzed with descriptive statistics, t-test for independent groups, and one-way analysis of variance. Data analysis has been carried out with SPSS 22.0 and LISREL 8.8 softwares. According to study findings, it is found out that teachers perceived their schools' organizational intelligence in a high level. Additionally, it is understood that whereas teachers' perception of organizational intelligence differs significantly according to teachers' sex and the schools' socio-economic condition, it does not differ significantly according to variables like teachers' year of service and level of education and the school's number of students.

37.1 Introduction

In our age, organizations are integrated with very various and intense social, cultural, technological, and economic changes. This situation differentiates problems that organizations may encounter. It can be thought that organizations successfully struggling with problems depend on correct determination of source of problems and developing proper solutions to problems. Most of the strategies developed to solve these problems intend to increase the organizations' flexibility and adaptability. This situation requires organizations to be structured as “intelligent organizations.” Intelligent organizations can be defined as organizations that analyze environmental data fastly, develop effective policies, and adapt with the environment. If the basics of organizational intelligence are examined, it can be pointed out that organizational intelligence generally developed depending on elements of

G. İmamoğlu Akman (✉) · Y. Akman
Ministry of National Education, Ankara, Turkey

individual intelligence. Besides, in the literature it is seen that organizational intelligence is examined around various approaches like behaviorist, cognitive, and adaptability, which are also used in individual intelligence. Whereas behaviorist approach values environmental data, cognitive approach puts mental processes out. The adaptability approach examines the development of organizational intelligence under the attraction of environmental stimulant. When organizational intelligence's definition is examined, according to Albrecht (2002), organizational intelligence is defined as the organization's mental capacity or ability to complete a mission. Courbon and Trahand (1993) defined it as an ability to put organization stakeholders in action during process of reaching organizational goals. Simic (2005) emphasized organizational intelligence as an intellectual ability that is used to solve organizational problems, focusing on the integration of technical skills and people's problem-solving potential. Erçetin (2004a) defines organizational intelligence as the organizations' ability to decide according to routine and at the same time environmental changes and their potential to use those abilities. In short, organizational intelligence can be defined as an organization's effectiveness of actions and decisions while providing continuity and transformation.

Organizational intelligence can be thought as a concept that develops inside a social structure. Interactions which effect this social structure cannot be thought independent from individual's emotions (Akgün et al. 2003; Vince 2001). When we think that individuals are the basic entries of an organization, the importance of emotions not only for the individual but also for the organization draws attention. The organization's social substructure can develop over people's emotions (Domagalski 1999). According to Yang and Mossholder (2004), social relations and complicated interactions which are effected by both individual and collective emotions create the organization's social substructure. It can be thought that the quality of human asset in an organization effects organizational intelligence level related to learning process. There is a systematic connection between organizational intelligence, organizational learning, and organizational development concepts (Lefter et al. 2008). According to Yolles (2005), organizational intelligence is an important concept that includes approaches like organizational learning and information management. Thus, it can be emphasized that intelligent organizations are organizations that intelligently learn and manage knowledge. According to Stonehouse and Pemberton (1999), intelligence and knowledge have a dynamic structure and their development depends on their learning capacities. Learning means the process of obtaining information and skills on both individual and organizational level. But, according to Lefter and others' search (2008), it is determined that there is not enough awareness about organizational intelligence. In the related search, it is seen that employees in small-scale companies and 30% of big- and middle-scale companies have no information about organizational intelligence concept. Also, organizational intelligence generally is thought to have a critical role while successfully solving an organization's problems about communication and quality.

Rapid changes that come with the twenty-first century force educational organizations to modernize themselves as they affect every organization. Changes in

methods and techniques applied in educational process, stakeholders' differing expectations, and social, economic, and technological developments force schools to modernize with a continuous learning paradigm. Schools, being educational institutions, are organizations which are always in interaction with internal stakeholders like teachers and students and external stakeholders like parents, nongovernmental organizations, municipalities, etc. These interactions may affect organizational intelligence, organizational learning, and organizational development levels. Rapidly changing conditions force the schools' approaches of productivity, performance, and strategic management to change. If the school has a successful change process, it may be related to the learning capacity of the school. Namely, Cyert and March (1963) underline that organizational learning was an effective strategy that increases the organization's productivity and especially comes up during organizational change process (as cited in Gold et al. 2001). In this direction, it can be thought that schools' being a learning organization and effectively managing change depend on the quality of organizational intelligence. In the literature it is seen that organizational intelligence is classified under different dimensions (Albrecht 2002; Erçetin 2004a; Glynn 1996; Matheson and Matheson 1999). In the researches done by Erçetin, Potaş, and Açıklan in different years (2001, 2004b, 2007, 2009), organizational intelligence is examined in seven different dimensions as "adaptation to changing situations, effective communication with stakeholders, promptness in action and reaction, being able to detect and being prudent, being able to use imagination and creativity, being flexible and convenient in operation, and adaptation to changing situations." And in this research, organizational intelligence is approached in related dimensional context.

Many studies about organizational intelligence can be seen in both national and international literature. It is seen that most of these studies were applied on private companies. In these studies, it was seen that relations of organizational intelligence concept with concepts as organizational learning (Akbari 2016), information management (Albrecht 2002; De Angelis 2013; Stonehouse and Pemberton 1999; Thannhuber et al. 2017), cybernetics (Schwaninger 2003), innovation (Glynn 1996), and making a decision (Leidner et al. 1999) were being examined. Besides, some theoretic and experimental studies were seen (Akgün et al. 2003; Erçetin 2004b; Yıldırım 2010). However, not many studies on teacher samplings on schools were seen. The ability of schools to understand and adapt to environmental changes and to create effective policies for the future point to the importance of organizational intelligence of the school. This study being carried out especially in the Altındağ district in Ankara province was based on the district's having important demographic changes in recent years. Namely, Syrian immigrants that have moved to Turkey since 2011 have settled in different provinces. In this process, Altındağ has become the district of Ankara province with the most Syrian immigrants (Directorate General of Migration Management 2016:78; Press Announcement Agency 2017). This situation has the potential to differentiate the problems by effecting demographic structure of schools in the district. In problem-solving and adapting differentiation point, the schools' organizational intelligence level can be thought as a concept that attracts attention. In this direction, defining schools'

organizational intelligence perception level depending on teachers' opinion is intended in this study. Also, it is examined if the teachers' organizational intelligence concept shows a significant difference depending on various demographic variables or not.

In this context, answers for the questions below were searched in this study.

1. How is the schools' organizational intelligence level depending on teacher's perception?
2. Is there a significant difference between teachers' organizational intelligence perception depending on their sex, year of service, and educational level?
3. Is there a significant difference between teachers' organizational intelligence perception depending on the socioeconomic level of school's district and number of students?

37.2 Method

This study, which examines schools' organizational intelligence level depending on teachers' opinions and if it creates a significant difference depending on various demographic variables or not, is described in descriptive survey model. According to Karasar (2000), descriptive survey model is described as "a model where only one variable is examined or variables are examined one by one." Study data is analyzed with quantitative research techniques.

37.2.1 Study Group

The study group of this research includes 226 teachers that work in Altındağ district in Ankara province in the 2016–2017 academic year. In the study, a specific sampling is not focused because there is not an idea of generalization to the population. The study data has been applied to volunteer participant teachers personally by the analyst. Among the teachers that join the study, 159 (70.4%) of them are women, and 67 (29.6%) of them are men. 102 (45.1%) of them have 1–10 years of service, and 124 (54.9%) have 11 or more years of service; 181 (80.1%) are graduates, and 45 (19.9%) are postgraduates. Additionally, 84 (37.2%) schools have low, 111 (49.1%) have middle, and 31 (13.7%) have high socioeconomic situation. Besides, 97 (42.9%) schools have 0–500 students, 54 (23.9%) have 501–750 students, and 75 (33.2%) have more than 751 students.

37.2.2 Data Collecting Tools

“The Multidimensional Organizational Intelligence Scale” which was developed by Erçetin, Potas and Açıklan (2001, 2004, 2007, 2009) and updated in 2015 was used. The use of the scale was taken from the developers. Detailed statistical information about the data collection tool has been presented below.

Multidimensional organizational intelligence scale This scale which is prepared in five-point Likert type to determine the schools’ organizational intelligence level has 7 dimensions and 67 items. Dimensions of scale have been named as adaptation to changing situations, effective communication with stakeholders, promptness in action and reaction, being able to detect and being prudent, being able to use imagination and creativity, being flexible and convenient in operation, and adaptation to changing situations. Reliability and validity analyses have been repeated over existing research data. It was seen that the scale had a total of 0.98 Cronbach’s alpha coefficient and the dimensions were between 0.81 and 0.96. And it was determined that 70.1% of the total variance of dimensions of the scale have been explained. Structure validity of scale has been examined with confirmatory factor analysis (CFA). According to CFA, it was seen that the scale has $\chi^2/df = 4.87$, GFI = 0.80, NFI = 0.90, CFI = 0.91, IFI = 0.91, RMR = 0.06, and RMSEA = 0.08 values. When related values are examined, all values are in acceptable standards (Çokluk et al. 2016). When scale’s validity and reliability values are evaluated as a whole, it can be said that the scale has enough qualification to be used in this research.

37.2.3 Data Analysis

In the study, t-test for independent groups and one-way analysis of variance (ANOVA) have been applied to define the significant relations between demographic variables and descriptive statistics as frequency and arithmetic mean. Before applying related analysis, it was observed if data set has a homogenous structure or not. Firstly, kurtosis and skewness values and Q-Q graphic have been examined. Kurtosis and skewness values were being between -2 and $+2$, and Q-Q graphic having items gathered in a linear way shows that the data set is homogenous (Çokluk et al. 2016). When interpreting teacher perception, “1.0–1.80” is considered very low, “1.81–2.60” is considered low, “2.61–3.40” is considered medium, “3.41–4.20” is considered high, and “4.21–5.0” is considered very high. Also, SPSS and LISREL softwares have been used during data analysis process.

Table 37.1 Value of arithmetic mean and standard deviation about teachers’ organizational intelligence perception

Variable	\bar{M}	Sd
Organizational intelligence	3.78	0.72

Table 37.2 T-test results about teachers’ organizational intelligence perception depending on their sex, year of service, and educational level

	Groups	<i>N</i>	\bar{M}	Sd	<i>t</i>	<i>p</i> *
Sex	Women	159	3.86	0.71	-2.602	0.01*
	Men	67	3.59	0.71		
Year of service	1–10 years	102	3.81	0.76	0.597	0.55
	11 years and more	124	3.76	0.69		
Educational level	Graduate	181	3.77	0.71	-0.391	0.69
	Postgraduate	45	3.82	0.76		

**p* < .05

37.3 Findings

In this section, it was examined if teachers’ organizational intelligence perception level and teacher perception show a significant difference depending on various demographic variables or not. Teachers’ descriptive analysis results about organizational intelligence have been given in Table 37.1.

When Table 37.1 is examined, it was seen that the arithmetic mean of teachers’ organizational intelligence perception is $\bar{M}=3.78$. According to this value, teachers’ perception level can be interpreted high. Besides, it is seen that “Not letting classes be empty” entry has the highest arithmetic mean and “Defining school performance criterions to make deviations easier to be detected and continuous performance evaluation” entry has the lowest arithmetic mean. Whether teachers’ organizational intelligence perception shows a significant difference depending on their sex, year of service, and educational level has been determined with t-test for independent groups. T-test analysis results have been given in Table 37.2.

In Table 37.2, it was seen that there is a significant difference in teachers’ organizational intelligence perception depending on their sex [$t_{(224)} = -2.602, p < 0.05$]. In this direction, female teachers perceive the school’s organizational intelligence level more positively than male teachers. Also, a statistically significant difference was not determined according to teachers’ year of service [$t_{(224)} = 0.597, p < 0.05$] and educational level [$t_{(224)} = -0.391, p < 0.05$]. However, while not a significant difference, teachers with postgraduate level ($\bar{M}=2.81$) and 1–10 years of service had higher organizational intelligence perception.

The organizational intelligence perceptions of the teachers were analyzed by the ANOVA for the socio-economic status of the school and the number of students of the school. ANOVA results are given in Table 37.3.

According to Table 37.3, teachers’ organizational intelligence perception showed a significant difference according to school’s socioeconomic situation

Table 37.3 ANOVA result about teachers' organizational intelligence perception according to school's socioeconomic situation and number of students

	Groups	<i>N</i>	<i>M</i>	Sd	<i>F</i>	<i>p</i> *	Meaningful difference
Socioeconomic situation	Low	84	3.59	0.61	7.48	0.00*	Low-medium
	Medium	111	3.90	0.73			
	High	31	3.90	0.85			
Number of students	0-500	97	3.78	0.65	3.97	0.67	-
	501-750	54	3.85	0.75			
	751 and more	75	3.74	0.79			

[$F_{(2-223)} = 7.48$; $p < 0.05$]. The Scheffe test, a post hoc test, has been applied to identify which groups have significant difference. According to the Scheffe test, it was determined that teachers who are working in schools with low socioeconomic situation ($\bar{M} = 3.59$) had more negative organizational intelligence perception than teachers who are working in schools with medium socioeconomic situation ($\bar{M} = 3.90$). Also, a statistical significant difference had not been determined according to the number of students variable.

37.4 Discussion, Result, and Suggestions

In this study, the schools' organizational intelligence level has been investigated according to the perception of teachers, who are working in public schools. Also, it has been examined if teachers' organizational intelligence perception has a significant difference depending on variables as their sex, year of service, educational level, socioeconomic situation of the school, and number of students. According to findings, teachers' organizational intelligence perception was determined in a relatively high level and positively. It was seen that this finding is supported by various researches carried out in teachers sampling (Çakır 2008; Ekici and Titrek 2011; Tanrıku 2014; Yörük 2006). These findings can be interpreted as teachers are pleased with positive communication at schools, doing their jobs with a flexible mentality in a relaxing working environment. Additionally, it can be assumed that there is an awareness for incidents which can happen in or around the school and permission is not given to prevent unwanted situations by interfering immediately. In short, it can be underlined that schools have the ability to efficiently adapt environmental changes.

In the study, it was questioned if teachers' organizational intelligence perceptions differ depending on demographic variables. According to findings, while significant differences were determined depending on teachers' sex and school's socioeconomic situation, significant differences were not seen depending on variables as teachers' year of service and educational level and schools' number of students. It

was determined that there is a higher arithmetic mean among female teachers than male teachers and schools with medium socioeconomic situation than schools with low socioeconomic situation. In various researches, it was seen that there was not a significant difference in teachers' organizational intelligence perception depending on their sex (Çakır 2008; Ekici 2007; Yörük 2006). Significant differences on behalf of male teachers are seen on Tanrıkulu's (2014) research. Different findings were seen in the literature when the researches were evaluated. One of the reasons behind this situation can be that the studies are applied to teachers who work in different environmental situations. Also, teachers who work in schools with medium and high socioeconomic situation have expressed their schools' organizational intelligence level more positively than schools with low socioeconomic situation. This situation can be arisen from that unwanted behaviors at schools are relatively low and directors and teachers lead most of their energy to activities for developing their schools. While density of unwanted behaviors and low success of students in schools with low socioeconomic situation increase teachers' desire to relocate (Allensworth et al. 2009; Clotfelter et al. 2004; Hanushek and Rivkin, 2007), it can cause the management to emphasize more decentralist structure and frazzle flexible working atmosphere. As another reason, it can sometimes be problematic for schools with low socioeconomic situation to be chosen by successful or experienced teachers (Rivkin et al. 2005). Similarly, according to Borman and Dowling (2006), there were evidences which show that teachers are willing to relocate to schools with better conditions from schools with insufficient conditions. Namely, this situation may lead to vacant teacher positions or filling those vacant positions with non-educationist employees. So lack or insufficiency of teachers, who have an important part of a school's organizational intelligence, may negatively affect the school's collective organizational intelligence.

When the research findings are examined as a whole, it can be stated that the teachers' perceptions of organizational intelligence are relatively high. However, the development of the organizational intelligence capacity of the schools of the county which has become more complex in recent years with its demographic structure is critically important. In this process, there is a need for schools and teachers who will be able to perceive the changing situations, solve the problems and put them at the center of the self learning system. In this complex structure, it is suggested that politics that will correct the socio-economic situation of schools be passed on. It may also be considered that the necessary arrangements are made urgently by determining the deficiencies found in the teachers' positions.

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Chapter 38

The Views of the Teachers on Their Identification with the Schools They Work



Elife Doğan Kılıç and Hatice Kılıçkaya

Abstract This study aims to determine the views of the teachers about their identification with the schools they work according to gender and experience differences. This research was conducted in the screening model of quantitative method. Eighty-two teachers participated in this study. When missing data was omitted, 80 teacher data sets were found ready for use and were analysed. The scale was analysed to choose items through factor analysis.

38.1 Introduction

Identification takes place as a two-staged term in *Sociology Terms* (1975) dictionary. First stage addresses the term as “Process during which person participates in the lives and affects of other people to the extent of interiorization with their personality”. Second stage defines as “process during which person identifies and defines their identity by this way”. In *Methodology Terms Dictionary* (1981), it is defined as “An object or a person’s incorporation of all characteristics of a group or integration with them”. Identification term was used as a psychological, sociological and rhetorical term for the first time by Harrold Laswell (1935) having done politic science studies. Laswell defined identification as a psychological process accompanied by emotional attachments with other people and a process in which a sense of resemblance occurs, and he focused on the fact that such a success could occur with the majority of the shared symbols and relationships. Identification is perceptual and cognitive concept, not about especially behaviours and emotional situations (Silva 2007).

Organizational identification is considered as a concept which describes most important behaviours and attitudes in the organization because it is seen as psychological field acting as a basic linkage or a key factor underlying the connection between the worker and the organization. Organizational identification is also

E. Doğan Kılıç (✉) · H. Kılıçkaya
İstanbul University, İstanbul, Turkey
e-mail: ekilic@istanbul.edu.tr

considered as a tool that helps workers work for the sake of the organization (Ashforth and Mael, 1989; Eker, 2015).

Identification can be defined as a form of psychological attachments that occurs when members adopt the defining characteristics of the organization as defining characteristics of themselves (Dutton et al. 1994). Organizational identification is a situation in which person is ready to identify his ego in terms of a certain organization identity. Organizational identification shows the degree of cognitive attachment between the qualifications and aims that the person uses to express themselves and the qualifications and aims that he perceives (Dutton et al. 1994). What qualifies the degree of organizational identification is the perception about organizational identity qualifications (Haslam et al. 2003).

The definition of organizational identity differs from the authors to the other authors. According to Ashforth and Mael (1989), organizational identification is the perception of oneness with belongingness to a group involving direct or vicarious experience of successes and failures. On the other hand, Tajfel (1982) defines organizational identification as a progress in which members realize their being a member of the group and create dependence to the group. While Dutton et al. (1994) describe organizational identification as “cognitive attachment of the person’s identification between himself and organization”, Dukerich et al. (2002) define organizational identification as “the commitment degree of person’s self concept with the organization’s features”. On the other hand, Pratt (2000) regards it as “organization’s individual belief about person’s personality identification”, whereas Scott and Lane (2000) describe organizational identification as “feeling the organization as a part of oneself”.

Workers identifying with their organization tend to see themselves as a representative of the organization while communicating with the people outside of the organization, and these workers give priority to organization’s profit about the opportunities for work decision (Miller et al. 2000). Identification leads organization members to act upon organization functions, and it also leads to accept decision offers. It also gives opportunity to shape organizational aims and activities by providing workers to perceive the similarity fields between organization’s aims and values (Cheney and Tompkins 1987).

This study aims to determine the views of the teachers about their identification with the schools they work according to gender and experience differences. The participants serve in the schools linked to Istanbul Provincial Directorate for National Education. It will also contribute sense of school management because it will reveal the present state of the teachers’ identification with their school. This study will also contribute further studies over organizational identification.

38.2 Methodology

38.2.1 Research Model

This research was conducted in the screening model of quantitative method. The screening model provides to be able to describe universe's tendency, attitude and views as numeric via the study on the samples chosen out of a universe. The screening model is a method that is used to determine the views of a group on a certain matter or a problem through a set of questions. It enables to state the group's present situation by selecting samples among the group members and to get information about their views, beliefs and attitudes (Creswell 2013). This model was chosen in order to get the data quickly and inclusively.

38.2.2 Research Sample

Research sample consists of 82 teachers who attended in Teacher Academy workshop organized with the aim of in-service training in April 2017 by Istanbul Provincial Directorate for National Education.

38.2.3 Data Collection Instruments

To develop teachers identification scale, organizational identification scale (OIDS) was used as base. OIDS was developed by Mael and Ashforth (1992) and involves 6-item scale. Organizational identification scale has been used in different studies (Tüzün 2006; Mael 1991). Ashforth and Mael (1992) calculated the Cronbach's alpha reliability coefficient value and found .87. Tüzün (2006) stated Cronbach's alpha reliability value as .78 in his study.

38.2.4 Data Analysis

Eighty-two teachers participated in this study. When missing data was omitted, 80 teacher data sets were found ready for use and were analysed. Exploratory factor analysis and Cronbach's alpha reliability coefficient were analysed via SPSS 16.0 (Statistics for Social Sciences) for research's validity and reliability studies.

Table 38.1 The factor analysis results of organizational identification scale

Item number	Factor 1 Loading value	Factor 2 Loading value	Communality Values
Item 3	.927		.875
Item 4	.876		.861
Item 6	.858		.768
Item 1		.927	.860
Item 5		.836	.826
Item 2		.834	.808

Table 38.2 The relation between the teachers' views about their identification with their school and gender variables

Gender	<i>N</i>	<i>X</i>	<i>S</i>	<i>Sd</i>	<i>t</i>	<i>p</i>
Woman	36	20.88	4.46	78	1.9	.056
Man	44	18.88	4.86			

Table 38.3 The multiple regression analysis results about identification regression

Variables	<i>B</i>	Standard error <i>B</i>	<i>B</i>	<i>t</i>	<i>P</i>	Bivariate <i>r</i>	Partial <i>r</i>
Constant	22.549	2.220		10.157	.000		
Gender	-2.023	1.064	-.212	-1.902	.061	-.210	-.212
Experience	.127	.517	.027	.245	.807	.011	.028

R: .212, *R*²: .045, *F*(2,77) = 1.813, *p*: .170

38.3 Results

The scale was analysed to choose items through factor analysis. At the end of the analysis, principal factors and values of measured qualification were determined. In literature, there is a common belief that base load for the factor load value must be .32 (Büyüköztürk 2010). Besides this, Büyüköztürk (2010) has stated that it is a matter of a researcher's choices to decide what value is necessary for breakpoint in order to evaluate factor load values. From this viewpoint, .32 factor load value has been accepted as breakpoint. In the factor analysis, principal component analysis and varimax rotation have been conducted to determine factors. It is seen in the items of the scale that factor loads vary from .927 to .834. Cronbach's alpha reliability coefficient was determined as .865 for the sum total of the scale. It is a scale that accounts % 60.431 of the total variance and consists of 6 items that loaded 2 factors (Table 38.1).

T-test results which were conducted to prove the relation between the teachers' views about their identification with their school and gender variable are shown in Table 38.2.

According to t-test results which were conducted to prove the relation between the teachers' views about their identification with their school and gender variable [$t_{(78)} = 1.9$ $p < .05$], it shows significant difference. Female teachers' views about

their identification with their schools ($X = 20.88$) are more positive than male teachers' views about their identification with their schools ($X = 18.88$). According to these results, it can be concluded that female teachers identify with their school more than male teachers.

The regression analysis results about identification regression according to the gender and experience variables are shown in Table 38.3

When bivariate and partial correlation between predictor variable and dependent variable is analysed, it is seen that there is a positive low degree relation ($r = .01$) between experience and identification. When gender variable is analysed, it is seen that the correlation has been calculated as $r = .03$. It is also seen that there is a negative and low degree correlation ($r = -.21$) between identification and gender. When experience variable is analysed, it is seen that the correlation is ($r = -.21$). Experience and gender variables together show low degree significant relation ($R, .212$; $R^2, .045$; $p < .017$). Two variables account %0.045 of total variance in identification.

According to standardized regression coefficient (β), relative order of importance over predictor variables are gender and experience. When t-test results' relation to the significance of regression coefficients are analysed, it is seen that gender variable is a negative and important predictor over identification. According to regression analysis results, regression equality in relation to predicting identification has been given below.

$$\text{Identification} = 22.549 - 2.023 \text{ Gender} + 0.127 \text{ Experience}$$

38.4 Conclusion

In this research, organizational identification scale was conducted to 82 teachers in order to determine teachers' views about their identification with their schools. As a result of the reliability and validity analysis, it was determined as 6 items and 2 factor scales.

Cronbach's alpha reliability coefficient was determined as .865 for the sum total of the scale. It is a scale that accounts % 60.431 of the total variance and consists of 6 items that loaded 2 factors. It is seen in the items of the scale that factor loads vary from .927 to .834. According to t-test results, it can be concluded that female teachers identify with their schools more than male teachers. As a result of regression analysis, there is low and negative correlation between identification and gender, whereas there is low and positive correlation between experience and identification. According to regression analysis, it was determined that predictor variables' relative order of importance over identification is gender and experience.

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Chapter 39

Being a Refugee University Student in Turkey from the Perspective of Syrian Female Students



Şefika Şule Erçetin and Sevda Kubilay

Abstract The aim of this study is to view higher education opportunities and problems from the point of Syrian female students. The research is designed as a qualitative research conducted with descriptive analysis. Ten volunteer female Syrian university students participated in the study. An interview form, including open-ended questions, was used as a data collection tool. The data was collected by focus group meeting. Findings indicate that Syrian students have difficulties in enrollment to higher education institutions. When they become a university student, it is not easy for them to follow courses and take notes due to lack of language skills. Financial problems are also hindrances to attend higher education. Another dimension of being a refugee student is social exclusion which prevents a healthy integration process; as a result most of the students feel alienation towards the society. Social isolation is sometimes seen as self-protection tactic for refugee students. The society should be encouraged to embrace Syrian students and show positive attitudes and empathy. In the same way, the students should be provided with optimum conditions to continue their education.

39.1 Introduction

As a societal phenomenon, migration has been affecting many countries and cultures throughout the history. It has a crucial impact on the social, cultural, political and economic dynamics of the country emigrated. Nowadays, lots of countries especially the ones in the Middle East have felt its impacts dramatically. The crisis in the Middle East has led many asylum seekers to demand international protection. To understand the effects of migration on individual lives and other countries and cultures, it is better to understand the concepts of “migrant, refugee and asylum seeker” first. In general terms, migration means moving from one country to another

Ş. Ş. Erçetin (✉)

International Science Association-Ankara, Turkey, Hacettepe University, Ankara, Turkey

S. Kubilay

Niğde Omer Halisdemir University, Niğde, Turkey

© Springer International Publishing AG, part of Springer Nature 2019

Ş. Ş. Erçetin, N. Potas (eds.), *Chaos, Complexity and Leadership 2017*,

Springer Proceedings in Complexity, https://doi.org/10.1007/978-3-319-89875-9_39

due to economic, social and political terms and to seek a better life in a new country. When individuals change their countries to improve their social and economic conditions, they are included in the status of immigrants. The concept of refugees and asylum seekers is separated from the concept of immigrants in the context of migration reasons. In international law, the term “refugee” refers to persons who fled from their home country due to armed conflicts or persecution and need international protection. Refugees are protected under 1951 Refugee Convention which defines the status and rights of refugees (UNHCR 1951). As for the concept of asylum seeker, it is used to define people who quit their countries and claim to be a refugee. Until their applications are evaluated, people are called as asylum seekers; at the end they can be recognized as refugees. These people claim asylum for the reason that they are under the threat of persecution in their countries because of their race, religion, political view, nationality, etc. Since 2011, with the beginning of civil war in Syria, the world has witnessed a massive migration from Syria. Turkey as a neighbouring country has faced with a flow of people leaving their homeland and demanding international protection. In such a chaotic environment, Turkey chose to embrace those people and help them heal their wounds. Turkish government’s interest in Syrian asylum seekers, generosity and open door policy have been praised in the international public opinion (Yıldız 2013). Particularly, migrations and immigration problems in the last century can affect the present world more deeply. This is because immigration to the target countries can affect the stability and security of the geographical region that has been migrated by changing the political, social, economic and cultural structures of the region (Deniz 2014). Turkey is one of the countries that have been affected deeply by the migration. This was a challenge for the country, because the number of people demanding protection has been getting more and more day by day. Migration would bring many strains for the country which has no previous experience to handle such a situation. At last, the number of Syrian people has reached nearly 3.5 million in Turkey, and the country was responsible for their housing, health, education and integration issues. With the increasing number of Syrians, conflicts have arisen between the Turkish people and asylum seekers due to differences in language, culture and lifestyle. The demographic structure of some cities has changed because the Syrian population is getting more and more crowded in those cities. This sometimes causes polarization in the ethnic or belief dimension. In addition, economic and social problems have prevailed in some of the southeastern provinces where Syrian population has increased dramatically. For example, home rentals are getting higher, and life is getting harder. Also, polygamy has begun to spread, and an increase in divorce rates has been observed. Women and children abuse can also be considered as another negative effect of migration (Ankaralı et al. 2017). As a consequence of this human mobility, schools and local authorities are faced with the problem of integration of asylum seeker and refugee students. Now there is a diverse population most of whom are Syrian families suffering from poverty and social marginalization. Turkey has taken many precautions to provide Syrian children and youth with educational

opportunities. In this study, we will only deal with higher education opportunities for Syrian students and the problems they face during their education. Female students were chosen on purpose because female migrants are always more vulnerable and under the threat of abuse or violence in every kind of migration. Likewise there has been a serious problem of security exploitation against women due to gender and gender differences (Aktas 2016). Women, like all asylum seekers, suffer from oppression and fear, but apart from this, women, unlike men, face gender-based discrimination, oppression and persecution due to sociocultural acceptance, physical and traditional practices that harm their mental health, sexual abuse, sexuality-based violence and domestic violence (Buz 2006).

Educational activities are of critical importance for immigrant children to get accustomed to their new home country, to feel themselves there and to be able to adapt (Taylor and Sidhu 2012). According to statistics of the Council of Higher Education, during 2016–2017 education year, more than 15,000 Syrian students enrolled at higher education institutions in Turkey. There have been some arrangements in Turkey for Syrian students who want to continue their tertiary education. In 2012–2013 education year, the Council of Higher Education declared that Syrian students would be accepted as “special students” to seven universities that are close to the border between Syria and Turkey. Then with a declaration from the Council of Higher Education in 2013, Syrian students are accepted as international students by universities, and also the students who enrolled to a university in Syria would be able to do undergraduate transfer to a university in Turkey. Along with these arrangements, there have been some practices special to Syrian students, for example, they are not obliged to pay tuition fees. Due to lack of a regular income, most Syrians suffer from financial problems, so do Syrian students. In order to help students attending tertiary education, some Turkish and international institutions have provided scholarships for them. According to reports of Hacettepe University Migration and Politics Research Center (HUGO), nearly 20% of Syrian students get the scholarship which is 1200 Turkish Liras given by the Presidency for Turks Abroad and Related Communities (YTB). The number of scholarships awarded to Syrian university students since 2011 is 4001. The 85% of the scholarship is funded by the EU, and the rest is funded by Turkey. Forty-five percent of all Syrian students enrolled to Turkish higher education institutions were already university students in Syria previously. Apart from the students who get the scholarship, 48% of the students get financial support from their families, and 24% of the Syrian students work out of school hours.

39.2 Methodology

39.2.1 Research Design

This research is a qualitative study conducted to find out educational and social problems of Syrian female students attending state universities in Turkey. In the

study, it wasn't aimed to reach generalizable results, instead the experiences and explanations of the individuals were included to provide the data for the study. The focus group discussion method was utilized in the study. Focus group discussion focuses on a defined topic. A predetermined group of participants is interviewed on a predetermined topic (Arlı 2013). Focus group interview consists of a group of people selected by the researcher and brought together to discuss and comment on the subject of the investigation (Yıldırım and Şimşek 2011). There is an interaction between participants in the focus group discussion. Participants have similar characteristics. The interview is carried out by a moderator, and the reporter gets notes. Open-ended questions are asked, and everyone in the group declares their opinions (Demir 2010). Ten Syrian female students participated in the focus group discussion. The discussion session lasted one and a half hour. Two Turkish students took part in the discussion to help the participants in terms of language barriers. After getting the data, the notes were arranged, and in order not to use the names of the participants, each student was labeled with a letter and a number as S1, S2, and so on.

39.2.2 Participants

This study was conducted with ten Syrian female students who have demanded international protection and have been attending a state university in Turkey during 2017–2018 education year. All participants have been continuing their education in the same university but in different departments. The participants were recruited for the study through the language course they regularly attend, and they became volunteers to take part in the research, so the research was carried out with voluntary basis.

39.2.3 Data Collection Tool

To get the research data, a semi-structured interview form was developed by the researcher. The interview form has basically two open-ended questions including sub-questions. Due to the fact that some of the participants couldn't speak Turkish well, the interview was done by the help of an interpreter. During the interview, the researcher took notes about the participants' answers. Firstly, some demographic characteristics of the participants were investigated. Then the questions were asked to the participants. The form consists these questions below:

1. How is academic life in Turkey for a Syrian university student?
 - In terms of access to higher education
 - In terms of ability to follow lectures
 - In terms of tuition and financial issues

2. How is social life on campus from the perspective of a Syrian student?

- In terms of relationships among students
- In terms of social acceptance and integration

39.2.4 Data Analysis

In the study descriptive analysis was applied. Descriptive analysis is based on data obtained by various data collection techniques. In this analysis, the data is summarized and interpreted according to a predetermined theme. Researcher in this type of analysis often gives direct citation in order to reflect the opinions of the participants (Yıldırım and Şimşek 2011). In this research the participants were interviewed, and the collected data were edited and organized. Direct citation is also applied. Then findings were presented and interpreted.

39.3 Findings

Firstly, participants shared their demographic characteristics, and the interview was carried out on the themes set out previously. Due to the fact that participants were volunteer students, they answered the questions willingly, and they stated that they were pleased to share their opinions. The average of the participants' ages is 22, and they came from different parts of Syria. They have been staying in dormitories, and they've been sharing their rooms with international students like them. Their families are also in Turkey, but they live in different cities. They have siblings, and the younger ones are also students, but the elder brothers are supposed to work and contribute to the family income. Families need support from their children because their household income is so low. Working permit is another obstacle for refugees to earn their life.

39.3.1 Academic Studies and Campus Life

During the interview academic life is covered under several headings such as access to higher education, attending and following courses, scholarships and financial problems.

39.3.1.1 Access to Higher Education

After the mass migration to Turkey, legal arrangements have been made to ensure Syrian students' access to higher education institutions. Admission process is rearranged for the special status of Syrian students. However the education of the students has been interrupted during the admission process of higher education. According to participants' statements, in this process some communicative problems have arisen. In the process of admission and enrollment to higher education institutions, students experienced difficulty in expressing themselves to the authorities. Participants also said that it was difficult to follow the admission requirements and that students had to keep up with the changes in order to be aware of the new regulations. Also one of the participants declared that some universities demand test scores of different international exams. In such a situation, students are supposed to make their application separately for each university, which is tiring and costly for students. To make it less complicated and more practical, the application process shall be carried out via a central and standardized system so that applicants don't lose time and energy and they get feedback from their applications.

... For me it was a bit confusing because there was no guidance. It was difficult to find right information easily because there was no such a digital platform by which we can reach all the necessary information. (S7)

At the beginning I couldn't figure it out which universities and departments are available for us. Another Syrian student explained me the whole procedure and I followed what he told me. (S3)

I applied different universities because each demanded different documents for admission. This is really tiring I wish there would be a standardisation for the admission and enrollment. (S5)

Providing Syrian young people with an access to higher education in Turkey is a big step in terms of future expectations; in other words, this generation will get skills and knowledge to get a profession and contribute to the economical development of the country, which is an example of externality of education. However the admission procedures should be more systematic and easy to follow for the students.

39.3.1.2 Attending and Following Courses

In general students stated that they haven't had problems with administrative staff or academicians who are generally understanding and helpful towards them. The students think that they are so lucky to be able to attend university, which is a unique opportunity in such a chaotic environment.

By attending higher education I've been acquiring skills and competence that I'll need in the business life. That's a real opportunity for us after escaping from a battle environment. (S5)

One of the participants emphasized the positive sides of being an international student at the university in terms of having new experiences and future expectations.

This is a kind of personal development, learning a new language, meeting new people from a different culture, making new friends, discovering customs of the local people and sometimes fighting against biases. . . I don't know how to state but I feel I'm broadening my world view, I'm getting stronger and trying to bite on the bullet. (S1)

The students think that having a diploma from a higher education institution will help them find a job and earn their life; in this respect the university degree will contribute to their freedom. However it is difficult for them to follow the lessons, and they demand special programmes for refugee students, which is also on the agenda. Most of the participants complained about their language ability, and they stated they had hardships in taking notes during the lessons and managing the time during the exams.

I need to study harder to follow the lessons because sometimes I am not able to catch the main point. I often ask help from my roommates who are also Syrians, so that's ok for now. But I definitely need extra time during the exams because I spend more time to understand the questions. If the exam is a multiple choice question type, it is easier but open-ended questions require more vocabulary and a good command of subject. (S2)

For me that's not easy to follow the lesson. I always need to revise the topic on my own to understand completely. (S3)

39.3.1.3 Scholarships and Financial Problems

Another point the participants drew attention is financial problems they experience during their education. Although there are scholarships rendered for Syrian students, the funding is limited, and this reality affects the number of students who get stipend and the duration of the scholarship. The duration and sustainability of the payment are so crucial for students that some of them can't afford their expenditure otherwise. The participants declared that there is uncertainty whether they will be able to get the scholarship till the end of their education or not.

I am attending the university with the help of the scholarship and I stay in the dormitory of the university. I am grateful for this opportunity but I feel insecure whether I will be able to get the stipend next year or not. I need support to survive otherwise I can't continue my education. (S6)

I don't have work permit so I can't work while I attend university classes. Even if I had work permit, it would be impossible for me to carry out both school and the job. However I wish we had a chance to have a part-time job in the campus, then it would be easier for me to meet my needs. (S8)

39.3.2 Social Life on Campus

Under this heading, the level of social cohesion of the participants, the human relationships within the campus, the level of social cohesion and exclusion were examined. Findings were grouped as integration problems and social exclusion

which is experienced within campus and being out of social activities and social isolation from the community.

39.3.2.1 Integration Problems and Perceived Social Exclusion

In general the statements of the participants reveal that integration problems stem from attitude and behaviour of both Turkish and Syrian individuals. As the number of Syrian people gets increased, Turkish people get anxious about the negative impacts of such a situation. At the beginning of this migration, it was thought that Syrian people would go back to their homeland after the war and conflict. They were seen as guests from a neighbouring country. However now it is more ambiguous, because they are not guests anymore and it isn't certain whether they will go back to their country or not. At this point, a healthy integration gets more and more important for the public welfare. In this part of the research, adaptability of Syrian students and social inclusion of them by Turkish peers are questioned. As it is understood from the replies, the participants prefer to stay together with refugee students especially with Syrians. They declared that they share their room with Syrian students in the dormitory, so they feel more comfortable. However this situation blocks their interaction with Turkish students. Those rooms are actually their comfort zones in which they speak in their mother tongue and interact easily.

I prefer to spend time with my Syrian friends, because I feel uncomfortable without them. Being together makes us feel stronger and it is difficult for me to adjust a new culture and environment. (S9)

I share my room with Syrians because I don't think Turkish students are eager to embrace us. Although I haven't experienced a hostile attitude, I feel we have an invisible barrier and emotional distance. (S6)

I sometimes feel nervous while I'm communicating due to my poor language skills. So till I get used to live here, I prefer to spend time with the people who speak the same language with me and from the same background. (S8)

The reactions of the participants give hints about their unwillingness to communicate with their Turkish peers. They prefer to stay with people from Syria and preserve their own cultural values. On the other hand, some of the participants don't feel they are welcomed.

There is an undeniable bias towards us, because Turkish students think that we don't deserve to be a student in their universities. For them it is not easy to enter higher education, I see their point but we also take an exam to be a student. (S1)

There is a perception that Syrian students get large amounts of money as scholarships, which isn't true. And we are blamed to take their places and make use of the opportunities that should be given to Turkish students. Not everyone but some voice their negative thoughts like this. (S4)

Some Turkish people are sarcastic towards us, for them we are uninvited guests who get unfair opportunities. It is very difficult to change their prejudices. (S2)

Turkey has provided Syrian people with opportunities, but information may be falsified by social media and may fuel these preconceived opinions. The opportunities provided to Syrian students may cause resentment on the part of Turkish students due to infollution.

39.3.2.2 Being Out of Social Activities and Social Isolation

Social facilities are so important to realize a healthy integration by which students get to know each other and biases disappear. However unfamiliar surroundings make refugee students feel insecure and lead them to isolation. Social alienation is a kind of shield for them by means of which they protect themselves from the unknown. They only get support from their Syrian peers, because they have the same experiences which establish an emotional bound among them. Differences in languages and cultures reinforce social barriers and feelings of powerlessness and meaninglessness that contribute to alienation (Sandhu and Asrabadi 1994).

The participants are asked about their daily routines, and they state that they follow their courses regularly and after that they spend time with their roommates. The assignments take most of their time, and they need to revise what they've learnt during the language courses. It is apparent that they don't have a membership in any student clubs and they don't benefit from the facilities of the university such as gym or youth centre. They have never been to a concert given by the conservatory, or they have never watched a theatre played by university students. They don't take part in social activities even though they are free for them.

I spend most of time studying because I need to keep my GPA high in order to continue to take scholarship. (S4)

I know about the social clubs in the university but I've never thought of becoming a member. Even if I want to join it, they may not take us as a member. (S10)

My priority is to be successful in my classes. I want to finish my school and graduate. Social activities are now luxurious for me. (S8)

When the lessons are over, I go to the dorm or the library. I have never thought to go to the gym or youth center. I guess I feel pressure on me in such environments so I prefer to be alone. (S2)

In the same way, the participants have almost no communication with the local people. In order to avoid problems, they prefer not to interact with the local people.

When we are in downtown and we talk in our mother tongue, people stare us with strange looks. That really bothers me. (S9)

When I am on campus, I feel safer but outer world is more dangerous for us especially for women. Unfortunately, we are likely to face harassment. (S3)

I don't communicate with people as long as I don't have to. (S1)

As seen in the statements of the participants, there is an isolation from the community. However acculturation requires foreigners contact with local people and culture. Syrian students should be encouraged to be a part of local community.

39.4 Conclusion

In this study, higher education of Syrian students is taken under two headings: academic issues and integration. Although the participants are happy with higher education opportunity provided to them, they demand a standardized system for the admission process. They find the enrollment procedure complex and difficult. This is not such a problem unique to Turkey. Felix (2016), in her dissertation “The Experiences of Refugee Students in United States Postsecondary Education”, asserts that enrollment in a college or university as a refugee is generally difficult in terms of adjustment process and legal documents. In the same way, Fricke (2016) identified five universal problems Syrian students face: these are “lack of documentation and credentials; lack of access to information; difficulty with the language of academic instruction; discrimination; and expenses, including tuition and living costs”. These identified problems overlap with our findings. Financial problems and inadequate support discourage Syrian students to continue their education. Unfamiliar learning environment and practices and alienating sociocultural structure are also burdens of refugee students (Morrice 2013). Findings in our study imply that there is a social distance between Syrian students and Turkish peers. Sometimes they feel excluded, and they prefer to be alienated to protect themselves. This result is consistent with other researches. Student et al. (2017), in their studies, emphasized that higher education could be overwhelming and alienating for refugee students. Sezgin and Yolcu (2016) in their study titled “Social Cohesion and Social Acceptance Process of Incoming International Students” found out that international students avoid interacting with the local people.

“The invisibility of asylum-seeking and refugee children within educational policy has serious consequences”. This statement summarizes the gist. Education has a crucial role to address the needs of asylum seeker and refugee students and support them in the process of adjustment to the new environment and community (Pinson and Arnot 2010). Therefore education programmes should be organized taking into account the needs of Syrian students. First of all, language skills should be acquired to enable effective communication. Activities to be developed in this context should be enriched (Biçer and Alan 2017, 14). However it shouldn't be forgotten that societies exposed to immigration experience fear and anxiety at first stage. So the policies set out by the state must be primarily internalized by local people so that those policies can reach its goal. If these internalizations cannot be realized as immediate as possible, it is very likely that there will be frequent confusion in the social sense in the future. At this point, it is only possible to overcome the problems that may arise in the future by cultivating the individuals who do not alienate, do positive attitudes towards people and empathize (Topkaya

and Akdağ 2016, 782). Because the attitude of local people is so crucial for migrants' life conditions, when there is a positive attitude, then migrants can continue their lives without any problems (Deniz and Etlan 2009). In addition, it should be reminded that higher education is important both for the long-term future of refugees and the well-being of the community that hosts refugees (Dryden-Peterson and Giles 2010).

Key Terms and Definitions

<i>Asylum-seeker</i>	A person who is forced to flee from his/her country and seeks protection from another country as a refugee, but his/her demand hasn't been assessed yet.
<i>Immigrant</i>	A person who leaves his/her native country and migrates to another country for permanent residence.
<i>Migration</i>	Leaving one's own country due to political, economic or social reasons and settling down in another country.
<i>Refugee</i>	A person who flees from one's native country due to life-threatening reasons such as war, persecution, terrorism or political pressure.

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Chapter 40

Syrian Refugees: The Demographic Impacts on the Republic of Turkey and Reflections on the Social Studies Coursebooks



Melek Körükcü

Abstract The events taking place in Syria are described as the biggest humanitarian crisis in the world today. Since April 2011, Turkey has helped the people who are running away from Syria's internal conflict. This situation has caused Turkey to experience the most serious experience of massive human mobility in its history. Syrian refugees, who were previously seen as guests, are becoming permanent as a result of the prolongation of the civil war in Syria. While 8% of the refugees in Turkey live in camps, 92% live in almost everywhere in urban centers with the citizens of Turkey. This has made the issue of refugees an important phenomenon. Syrian refugees have caused many social, economic, psychological, and educational problems in Turkey. This study focuses on how Syrian refugees have an impact on the Republic of Turkey demographically. Also, it is evaluated how the subjects of the migration and Syrian refugees are addressed in social studies coursebooks.

40.1 Introduction

Migration is the phenomenon of social mobility and is as old as human history. From the early ages, people have migrated from one place to another for various reasons such as wars, conflicts, poverty, religion, and natural disasters. Among the living things, human beings have a special place. What makes the belonging of the man important is the connection of him/her with the place he/she lives in. One of the most important elements that can damage this connection link is migration. Migration causes some changes and transformation in the meaning and value of the individual and society's world. Old places which were abandoned and new places that are settled offer people a completely different life and future.

Migration takes place from one political or social unit to another or from one place to another. This happens in the form of a permanent or semipermanent flow. Usually, the place being lived in is changed toward outside the administrative

M. Körükcü (✉)
Niğde Ömer Halisdemir University, Niğde, Turkey
e-mail: melekkorukcu@ohu.edu.tr

borders (Faist 2003). Immigrants go to another country that is not affiliated with citizenship in order to settle in. The country being the source of migration regularly or irregularly is named as the source country. The target or receiving country is the country which has a high welfare level and in which social and political conditions are good. Those are the transit countries where migration is passing transit legally or illegally (Migration Terms Dictionary 2009).

According to the “push-pull model,” which is one of the arguments explaining migration, push factors are attractive factors that drive people to leave their home country, and pull factors are which attract people toward the target country (Çağlayan 2006). In this context, factors which affect migration from foreign countries to Turkey are:

- Turkey is a center of attraction in economic way.
- Implementation of the laws that make the migration easy to accept and facilitate in Turkey.
- Turkey is a transit country (Karaca and ve Saruç 2014).

40.2 Causes of Migration

Migration has many reasons. Migrations, which include painful events for humanity, have emerged from the reasons such as famine, war, religion, events, genocide, and political exile. Repression, oppression, turmoil, and economy are the some other causes of migrations (Ünal 2014). Migrations can be classified as individual, mass, and chained migrations. Individual migration is the migration in which the individual makes his/her own autonomous decision based on his/her skills and knowledge. Mass migration is the migration that covers all layers of society in the face of the traumas caused by economic and political events. In chained migration, people take the decision of migration with the effect of the society they belong to. Such migration is not individual, and it is selective in agreement with the age and gender (Gürel 2001).

According to the macroeconomic theory of neoclassical economy, the reason for migration is economic. The reason for international migration and internal migration is the geographical difference in the emergence of supply and demand for labor. Workers migrate from countries where labor power is cheap to countries where labor power is expensive. In microeconomic theory, the individual thinks rationally. By making a cost-profit calculation, he/she decides to migrate to the country where he/she will earn more. According to the new economic theory, the decision to emigrate is not taken by an individual, but by a household, a community or the individuals who are connected to each other. The relation network theory deals with international migration in terms of time and space. The cumulative causality theory defends that the decision to migrate and to realize the action has changed the social framework (Unat 2002, p.6). According to the world systems theory, the reasons for migration are economic globalization and the international market (Massey et al. 1993).

According to United Nations' migration data, the number of migrants in the world increased by more than 2.5 times for different reasons between 1970 and 2010. While the number of migrants in the 1970s was 84 million, this number reached up to 156 million in the 1990s. Migration was seen at almost the same rate among developed, developing, and less developed countries until 1990. After this year, migration has turned its face to the developed countries. In 2017, 244 million people were exposed to migration (Anadolu Ajansı 2017).

40.3 Immigration from Syria to Turkey

Political and social events, coups, and wars in countries in the Middle East cause tens of thousands of people to leave their country in every year. Turkey has an important role in becoming a host and transit country in these abandonment processes. In Syria, there is a conflict and war that began with the process of "Arab Spring" after 2011, and it continues today. Most of the Syrians who ran away from this environment migrated to Turkey. Syrian refugees first came to Turkey in April 2011. Since then, Turkey has declared that it will implement an "open door policy" for Syrians. It was stated that 100,000 people are the critical threshold value (Orhan and ve Gündoğar 2015). The migration from Syria has continued steadily, and Turkey is still accepting refugees. Migration movements are connected to the migration policy of the target country and to the process of migrants' adaptation to society. The migration routes of refugees who ran away from his/her country by avoiding conflicts in Syria confirm this situation. While the Arabic-speaking, Sunni-denominated immigrants prefer to settle in Şanlıurfa and its districts, the Syrians living in the northeast of the country generally prefer to settle in Hatay, and the Arab population speaking Arabic prefers to settle in Mardin and its districts.

On September 2, 2015, a photograph of the lifeless body belonging to a 3-year-old child named Aylan which came ashore of was exhibited in the national and international media. This photograph brought up the human drama in Syria with its most striking and realistic form. The photograph has been a shocking symbol of the Syrian civil war since 2011. As a result of the civil war in Syria, more than half of the country's population (about 12 million) has been displaced. While about 5 million of Syrian citizens struggle to live in neighboring countries, 6.6 million have changed their places within the country to live in a safer place. Every month, about five thousand people lose their lives, and about six thousand people leave their country every day. This table is beyond the worse situation than Rwanda and Bosnia and Herzegovina's civil wars which were accepted as the greatest dramas in modern human history (Türk Tabipler Birliği 2014:8).

Turkey hosts more than 54% of people which means approximately 5.5–5.7 million Syrians who left their country by December 2016. The other countries following Turkey are Lebanon with 1 million and 17 thousand, Jordan 655 thousand,

northern Iraq 228 thousand, and Egypt 115 thousand people. In the European Union (EU) countries, there has been a serious migration from Syria and other countries. The number of refugees in EU countries is around 1.3–1.5 million. However, half of these refugees is approximately 600–700 thousand Syrian, and the other half is non-Syrian (Erdoğan 2017). Turkey also faces transit migration because of its closeness to European countries. According to the international migration data, the total number of migrants who want to migrate through Mediterranean Sea to Europe but lost their lives from 2014 to February 16, 2017, is 12,413. The readmission agreement, which contains the return of refugees who are entering to the EU or Turkey through illegal ways, was signed in Ankara on December 16, 2013, and entered into force on October 1, 2014.

40.4 The Demographic Impacts of Syrian Immigration on Turkey

The immigration of Syrians to Turkey has affected many areas of daily life including life at work, social and cultural adaptation, education, health, and accommodation, which has caused serious troubles. Syrians migrated to Turkey in large crowds rather than individually. There has been a mass immigration of Syrians to Turkey from almost every district of Syria be it a town, village, or a city center. The Republic of Turkey has put serious effort and money in order to accommodate Syrians by providing accommodation facilities both in border cities and other places.

The Ministry of Internal Affairs decided to give registered Syrian refugees “Temporary Protection Status” in October 2011. Temporary protection is a measure which is taken by the decision of the cabinet when it would not be possible to conduct the mechanism of international individual protection in the case of a mass immigration (General Directorate of Migration Administration 2017:75). Through this status, the assurance and protection are provided to Syrians in terms of “stay for good,” forcing them to return and enabling their access to arrangements which meet their needs in the case of an emergency.

Turkey has built camps for Syrian refugees in borders. However, according to the findings of 2017, only almost 8% of the Syrians in Turkey stay in those camps. The remaining 92% of them, which is a serious number, maintain their lives in other cities (General Directorate of Migration Administration 2017:75). This has caused a serious demographic change in Turkey. However, according to the data collected in 2017, only 8% of the Syrian refugees in Turkey live in these campsites and 92% of them lead their lives in various cities and districts all around Turkey (Göç İdaresi Genel Müdürlüğü, 2017:75). 300.000 of them have been preregistered and are in progress of security controls. 361.479 children at 0-4 year age group who are under temporary protection were born in Turkey. According to the findings, there are 1,002,244 children who are at the age of primary and secondary school students. Considering that the children of today will be the adults of the future, the importance

of their education will be clear. In order for a social union, parents, educators, and educational institutions should collaborate. Since educational institutions are the ideal places for education, they enable individuals to behave in a way that is appreciated by the society. Therefore, they have critical importance for creating societies that value moral education (Kubilay and Yardibi 2017).

The age group and gender of Syrians who live in Turkey capture attention. The number of Syrians who are aged between 0 and 4 is 400,000 which corresponds to 12.3%. Half of all the Syrians which corresponds to a number more than 1 billion and 600,000 is made up of children and teenagers who are under 18. Another point which captures attention is that there are more men than women, 54.1% and 45.8%, respectively. According to the findings, the number of Syrian babies who were born in Turkey is 224,750. The number of Syrian babies who were born in Turkey in 2016 only is 82,850. In fact, 227 babies on average were born in Turkey per day in 2016 and 2017 (AFAD 2017). No matter how difficult and troublesome a process will be, the integration of Syrians has been going on.

The number of children aged 5–9 is 427,527. Some of these children were born and received education in Turkey. The number of the children aged 10–14 who started going to school in Syria and had to quit is 320,771. The number of the young population who are aged 15–18 and who are supposed to get high school education is 253,946. The number of the refugees who are aged 19–24 and who are supposed to get a university degree or join workforce is 438,812. These aforementioned age groups constitute 33% of the Syrians who are under temporary protection. Education has been provided to the children both at camp areas or in other places where they live. There is a strong relationship between the possibility of these children to continue their education and raising the awareness of their parents. The schools should be in close contact with the parents. Setting up a school atmosphere which includes parents to decision-making process is critical (Erçetin and Kubilay 2017).

The most comprehensive document related to the education of the Syrians is the memorandum about “Education and Training Services for the Syrian Who Are Under *Temporary Protection*” by Ministry of Education in September 26, 2013 (MEB 2013). The activities related to the memorandum are subject to some standards. The document which aims to have union in education and training covers in-camp, out-of-camp, and university education.

A memorandum has been prepared about the education and training services for foreigners. In the document it has been made clear that Syrian children can get education from the schools of the Ministry of National Education and temporary education centers. The students are aimed to pursue their education in any level and type without missing a year when they return to their country. The education is provided in line with the curriculum of Turkey and in Arabic. Teachers who know Arabic have been assigned to give the education (Milli Eğitim Bakanlığı 2012). *Institution for Higher Education (YÖK)* has conducted some studies in order to meet the needs of Syrian refugees related to higher education. The tuition has been abolished and *internal transfer* has been put into practice (Seydi 2014).

There are 530,133 refugees aged 25–34 who make up active workforce, 307,585 refugees aged 35–44, 182,755 refugees aged 45–54, 56,386 refugees aged 55–59,

and 99,601 refugees aged 60–90+ who are under temporary protection. The number of Syrian women refugees is 1,386,133, and the number of Syrian men refugees is 1,592,862 (Migration Administration 2017). It is seen that the young make up a larger population of all Syrian refugees who can join the educational activities and workforce. Foreigners Contact Center (Y MER ALO 157) has been set up in 2015 by General Directorate of Migration Administration with the aim of providing quality service for refugees. The center answers the questions of foreigners in Turkish, English, Arabic, and Russian, for 24 h a day and 7 days a week nonstop (2016 Turkey Migration Report 2017).

The Republic of Turkey has been leading a policy about giving citizenship to “people of high quality” since July 2017. There are three problems with this policy. First, there aren’t enough “people of high quality” in Syrians. Twelve thousand refugees have been determined to have the required criteria. Together with their families, the number reaches to 50,000. Second problem is that the Syrians do not want to lose the advantages and privileges they have. Therefore, they tend not to receive the citizenship in order not to lose the possibility of migrating to another country. Third problem is that the Turkish strongly refuse to give citizenship to the refugees. Because of all these problems, the number of Syrians who have been given citizenship until November 2017 is 38,000 (Erdođan 2017).

The social impacts that Syrians have on Turkey are:

- They have trouble in adapting themselves to Turkish society because of the social and cultural differences.
- There has been an increase in house rent. It is becoming more and more difficult to find a house to live in.
- The number of children workers is on the rise, and the wages decrease.
- Marrying to more than one men/women has become more common.
- Ethnical and sectarian divergence are about to take place.
- The demography of border cities has changed.
- The fact that both of the societies value and pursue peace, serious social problems can be prevented.

40.5 Migration in Social Studies Coursebooks

Education is the main construct which enables refugees to maintain their lives in the country that they go to. The vast changes in science and technology have caused a change in the needs of the individuals and societies, too. There have been innovations and developments in teaching and learning methodologies so the expected roles of the individuals have been affected accordingly. All these changes point to an individual who is able to produce knowledge, use it in a functional way, solve problems, think critically, and make empathy; who is entrepreneur and decisive; and who has communicative skills, etc. (Sınıf Sosyal Bilgiler Ders Kitabı 2017).

There have been revisions in educational programs since 2005 with respect to the changes in educational policy and needs of the individuals. Constructivism has been adopted as the major philosophy, and the contents have been revised accordingly. Therefore, skills and values have been included in the programs (Dönmez et al. 2015). All these revisions continued in 2017. Like all the other educational programs, Social Sciences Program has also been updated.

Wars and conflicts in the Middle East countries have caused a wave of migration recently. The concept of “migration” has been a part of daily life in Turkey which has been affected by it seriously. Migration has become something which interests people from all age groups. The concept of “refugee” which has become a part of daily life should be taught to the students through Social Sciences. Thus, the learners will learn the concept in a more scientific, proven, and truth-based way rather than hearsay (Taneri ve Tangülü 2017).

A memorandum has been prepared about the education and training services for Syrians who are under temporary protection and who have the right for education.

Through the “Memorandum of Education and Training Services for Foreigners” which has been prepared in September 23, 2014, the education given to Syrian children was subjected to standards and guaranteed. Turkey agrees to the *Convention on the Rights of Children* and takes necessary precautions in order to provide the refugee children with the same rights with Turkish children. A policy which principles to meet the accommodation, protection, and social needs of refugee children together with providing right-based education has been followed. As it is the case for social arena, the benefits to children in educational arena, also, are of primary concern.

The main objective of social sciences course is to turn individuals into responsible citizens who are sensitive to the changes that occur in our country and in the world, who take effective decisions based on knowledge and who can solve problems. Based on this main objective, the 2017 Social Sciences Educational Program has got 18 subgoals. Among these, goal number 3 is “all individuals and institutions are equal legally”; number 15 is “all individuals should organize and maintain their lives considering the historical development of human rights, national independence, democracy, secularism, and republic together with their impacts on Turkey”; and number 17 is “all individuals should be sensitive to the issues concerning our country and the world.” Besides, the subject of human rights and democracy should be presented through an interdisciplinary perspective (Social Sciences Curriculum 2017).

The outcome of the unit named “people, places, and environment” in the 7th grade social sciences syllabus is “students are able to make comments on the demographic features of Turkey based on the factors that affect the distribution of the population in Turkey.” Also, in the same syllabus, the outcome of the unit named “global relationships” is “students are able to suggest solutions to global problems such as global climate change, natural disasters, hunger, terrorism, and migration to global problems together with their friends” (Social Sciences Curriculum 2017).

In the unit named “the adventure of democracy” in the 6th grade social sciences coursebook, Syria is mentioned in a topic titled “The Right to Live and the Right to Personal Inviolability.” There is web news on page 148 as follows:

“The Syrians who look forward to living in a democratic society have expressed their wish but they have been accused of violating the peace. A group of people from the government have tried to suppress and silence them by using violence. The people who performed in peaceful shows were shot down by weapons. There were children and women among them.”

The questions following the news are:

Is the government democratic?

What do you think about the actions of the government? Can you make comments from the perspective of “the right to personal inviolability”?

Make comments about the concepts of “the right to live” and “the right to personal inviolability” and personal freedom considering the people who were forced to leave their hometown, shot down, and killed (7th grade social sciences coursebook 2017).

Digital literacy and media literacy skills are the two skills that have recently been included in the Social Sciences Curriculum (Tay 2017). Presenting the topic through a web news is appropriate in terms of the outcomes in the syllabus. Choosing a news report which is up-to-date and which concerns the society enables the learners to improve their production and assessment skills.

There are citations to the related items in “the conventions on the right of the child” in the unit titled “Individual and Society” in the 5th grade social sciences coursebook. The related items are numbered from 22 to 27. These items suggest that the government is responsible for meeting the needs of the children who migrated from their country and also of the children who have physical and mental disabilities and thus need a special education (5th grade social sciences coursebook). There is a strong emphasis on the reality that the individuals who can be accepted as belonging to a disadvantaged group are equal with the others, and the Turkish government is responsible for providing this assurance.

40.6 Result

Today, immigration has become an international problem. Other than being short-term or temporary situation, it has become more and more permanent day by day. Turkey hasn’t refrained from taking responsibility since the first day of the conflict in Syria. Furthermore, Turkey has been searching for a humanitarian and political solution, has made an effort in helping, and has meticulously carried out the necessary attempts. The Syrian guests are now an undeniable reality in Turkey. The Syrian refugees have stayed for a long time in Turkey where they find it safe and close to the geography they live. They get married here and thousands of Syrian children are born every year. An important part of the refugees and these children

will continue to live in Turkey for the next years of their lives. The changes in the demographic structure in Turkey will continue to increase its effectiveness in the following years. Within this context, all of the Syrians should be recorded so as to minimize the negative demographic impacts. Growing population, especially in the border areas close to the cities and refugee camps in all parts of Turkey, has changed the demographic structure. The change has also accompanied social reaction. Precautions are being taken to reduce the reactions of the risk of its turning into a social lynch.

The efforts are made on the informative studies on the rights of Syrian immigrants and how they will benefit from their rights. However, these studies should be conducted in different languages to achieve more immigrants. Likewise, the Turkish citizens should be informed about these efforts for immigrants, the enacted laws and regulations, and practices. Turkey's humanitarian aid to Syrian and other refugees in the international arena should be announced more because Turkey is working to ensure the best conditions for all refugees.

To ensure the best possible way of the lives and the educational conditions of children shown as disadvantaged groups in migration movements in Turkey, the operations are carried out. These efforts are continuing increasingly. Necessary precautions were taken to ensure that Syrian students do not experience problems such as loneliness, exclusion, and strangeness. The Migration Management and the Ministry of National Education are conducting the necessary performance for Syrians to define a new culture, to socialize, and to establish friendships. In this context, migration and Syrian immigrants took place in the renewed Social Sciences Curriculum in detailed. Thus, the awareness in this area is tried to be increased. It is provided that students have knowledge of current and global issues and build empathy. In addition, sets have been prepared which may be suitable for the usage of migrant children aged 6–11 to contribute their language and psychosocial development. In these sets are storybooks in Turkish, English, and Arabic languages, story painting books, motif coloring book, picture book, painting pens, and pencil box (Uyum Çocuk 2018). These efforts are important in immigrants' learning of native language and acquiring the skills necessary for their new life. It enabled the establishment of a cultural bridge with social groups in society.

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Chapter 41

Anger Management at the Edge of Chaos



Hazal Takmak

Abstract Behaviors exhibited by school managers in schools that are at the center of social change and have complex system characteristics can cause unexpected large changes in any unexpected area. In this context, the strategies that school administrators use to manage their anger are crucial so that schools can continue their existence effectively. Therefore, the purpose of this study is to determine the school managers' anger management strategies according to the perceptions of school managers. Also, it has been tried to determine whether there is a meaningful difference between school managers' opinions according to gender, school type, seniority, and educational status variables. In order to collect the data for the study, "The Perceptions of Teachers on Anger Management Strategies Scale" which is a subscale of "Anger Sources, Forms of Expressing Anger and Anger Management Strategies of Teachers and Administrators in Elementary Schools Scale" developed by Demirkasımoğlu (The opinions of elementary schools administrators and teachers in Ankara province in relation to their causes of anger, anger expression styles and anger management strategies. Masters' Thesis, Ankara University, Institute of Education Science, Department of Education Science, 2007) was used. The questionnaire was administrated to 79 school managers working in Uşak Province in the 2017–2018 academic year. The data were analyzed by SPSS (Statistical Package for Social Sciences) program. In the analyses of the study, the *t*-test and one-way ANOVA test were used. According to the findings obtained from the research, strategies that school managers often use are *using empathic methods and trying to be calm instead of telling the first thing that comes to their minds when they are angered*. It was found that they never use *relaxation methods such as yoga and meditation*. In addition it was found that school managers' opinions about anger management strategies that they used didn't differ according to the gender, school type, seniority, and educational status variables.

H. Takmak (✉)
Hacettepe University, Ankara, Turkey

41.1 Introduction

Like other negative emotions, anger is among the causes and consequences of conflicts within the organization and often leaves the debate topic behind. For this reason, it is not a right approach to ignore negative feelings such as anger in organization life (Barutçugil 2004). Especially in today's organizations, where change is indispensable, and stability and certainty are rare, the responsibilities expected from the managers have changed and increased. Education is a dynamic and complex system that evolves to meet the demands of educational institutions including the community, the business community, and the schools themselves (Erçetin et al. 2015). In schools, which are a complex system, the behaviors exhibited, particularly the form of the anger expression that can cause destructive effects, by school administrators are vital to the school's health when it is thought that the obstacles in front of free interaction between each stakeholder and the individual should be removed (Özen and Turan 2017).

Averill (1982, 1993) defined the basic aspects and dynamics of the anger. According to the social cognitive approach, he suggests that the source of the anger is intentional and unjust provocations and disappointments. He foresees the social cognitive approach as an intellectual approach to anger management. Aggression is not necessarily the single and primary reaction when cognition affects our reactions to the disappointments experienced. The way people express their anger and their reaction depends on how they evaluate the current situation they are in and their previous learning on this subject. For this reason, it is expected that individuals have the ability to change their way of expressing anger and develop more constructive ways of managing anger (Averill 1982, 1993). Kökdemir (2004) defines anger management as the ability to express anger in a right way and expresses that the correct method can vary from person to person in anger management. The strategies of anger management include cognitive, effective, communication, emotional, and behavioral dimensions (Kökdemir 2004):

Cognitive methods To identify the provocation, to bring different explanations to the described incident, to use it as a warning to reevaluate the way of thinking about anger, to try to control the anger with our own sentences, to clarify anticipations, to make mental repetitions of positive incidents.

Affective methods To use the reaction of the body in anger as a warning, to create an alternative stimulus to anger (humor, relaxation, etc.), to change the direction of physical stimulation created by the anger.

Communication To use the skills of self-expression, listening, discussion, criticism, reflection, and praise correctly and effectively.

Emotional methods Being aware of emotions, expressing the emotions that are being experienced accurately, making a positive impression.

Behavioral dimension Being aware of the behaviors shown in anger, avoiding anger by avoiding provocative and destructive behavior, replacing negative

behaviors with positive ones in anger, learning the ABC of anger, in other words the reason (*anger trigger*), your behavior (*behavior*), and the consequences of the behavior (*consequences*).

The theory of complexity emphasizes that relations in a complex system are nonlinear and unpredictable. This theory suggests that simple linear relationships can lead to highly complex and unpredictable behaviors and thus to surprising patterns and examples (Bayramoğlu 2016). The theory of complexity emphasizes that the relationship is not linear in organizations, it reveals unexpected consequences, and it has a structure that creates unpredictable choices (Tetenbaum 1998). The complexity is determined by two dimensions, such as difference and relationship. The difference corresponds to diversity, heterogeneity. Different parts of the complex structure behave differently. The relationship dimension restricts them by the fact that these parts are not independent. In short, the dimension of difference corresponds to diversity and the dimension of relationship corresponds to restriction. While differences and different behaviors produce irregularities, on the other hand, the fact that these units are related puts the system in order; in this way, the order and disorder become intertwined (Gürsakal 2007).

There are no fixed rules and continuous repetitions in complex systems. Humans act by their cognitive qualities without being bound by rules (Maula 2006), so organizations with high complexity do not have linear feedback systems. The feedback systems have either negative and stable or positive and unstable equilibrium. These two simultaneous opposing forces push each other in different directions (Tetenbaum 1998). The kind of behavior that will occur in the system depends on the conditions affecting behavior and the relative strengths of positive and negative feedback mechanisms. Under appropriate conditions, organizations can operate on the edge of this region, and this is called the edge of chaos. In such a case, a small change can lock the system into a chaotic behavior or a constant behavior. The chaos border is a situation in which the change happens instantly and most easily. In such a case, the system either self-organizes itself at a higher level of complexity or disintegrates (Gürsakal 2007). It can be said the activities that remove the organizations from balance by ensuring that they live on the edge of the chaos and that bring innovation are useful and necessary in the information age, in which innovation is a tool that is used to achieve a sustained competitive advantage (Saygan 2014).

While the edge of chaos explains that a system that moves away from balance becomes irregular over time, and after a while, a new order emerges from irregularity, it suggests that the irregularity may emerge from the order created (Mitleton-Kelly 2003). The managers on the edge of chaos have responsibilities such as managing the transformation; making the system changeable; managing order and disorder, present and future; establishing learning organization; and ensuring continuity (Töremen 2000). The aim of the educational administrators should not be to consistently maintain order. Such an understanding can create an obstacle to creativity and transformation through self-repetition. Educational organizations should be able to organize themselves and search for new orders in complex and unexpected

situations. The way to achieve this is to provide an opportunity for new information and energy to flow constantly (Çobanoğlu 2008). One of the key features of the leader in complex systems is the ability to adapt. This concept expresses the ability of adaptability, in which phenomena are transformed into changing worlds and innovations. The basis of the concept consists of efforts and understanding innovation. Lifelong learning can be given as example behavior for education, innovation, and transformation adaptation concept. Adaptation is bidirectional as action, and it consists of instant and objective meaning arising from the interaction between the leader and the audience. The situation is paradoxical in school; although communication networks ties have increased, the inability to explain and the inability to understand are also increasing so much. School, which is a complex context, is of vital importance to students, teachers, and school principals in terms of understanding each other and adapting to the developing world. The most important feature of complex systems is the sharing of knowledge depending on the quality of the interaction between dynamics. It is the noise in the school that disturbs this sharing. Noise is the situation in which a word is perceived in a sense other than the meaning it is uttered. A noise source in an organization is a feature arising from the fact that the system is a complex system. The differences are in the foreground in complex organizations. The success of the leader in complex organizations depends on his or her ability to manage the noise (Özen and Turan 2017). Also, the anger management strategies used by the training managers gain importance when it is considered that education administrators should be flexible and well-adjusted and need to better meet the expectations of other individuals (Baker 1995).

Relatively, a small factor, which is manageable by spending less energy that seems unimportant, that is well managed will produce positive results (Ertürk 2012). In organizations, managers may not be effective in anger avoidance and anger management due to inadequacies such as managers' leadership styles, hierarchical structuring, organizational culture, and anger management (Allcorn 1994). However, although anger may have a destructive effect when it is well-directed, it strengthens interpersonal relationships (Soykan 2003; Kökdemir 2004; Baltaş and Baltaş 1997). It doesn't only suppress the anger; but it also may reduce motivation and good mood (Salovey and Mayer 1990). Therefore, there is a need to determine the ways of managing anger (Tjosvold 2002).

Butterfly effect is emphasized by complexity theory events seen in the functioning of educational organizations. The decisions made by the education managers are based on the experience acquired in the butterfly effect, and they affect the environment as well as the organization. Therefore, the point on which the education administrators focus should be reducing the negative side effects while revealing the positive aspects (Baker 1995). Although the butterfly effect manifests itself in education programs and works regarding the employees of the organization, the strategies of school administrators that they use in managing negative feelings, especially feelings that may have destructive outcomes such as anger, may cause major changes in any unexpected area at an unexpected rate in interpersonal relationship within the school. In this context, especially in the life of the organization, the way individuals control their anger has utmost importance in maintaining the organization's existence in a healthy way.

Therefore, the aim of this study is to determine the strategies that school administrators use anger management. In line with this general aim, the answers to the following questions were sought for.

1. What are the opinions of school administrators about the strategies they use in anger management?
2. In the opinions of school administrators regarding the strategies that they use in anger management, do they vary according to (a) gender, (b) school type, (c) seniority, and (d) learning state variables?

41.2 Method

This study is a descriptive study due to its relevance to the subject and its objectives and has been carried out through the screening model. Related to the subject, the literature has been scanned, and the scale developed by Demirkasımođlu (2007) was applied to the school administrators working at the primary schools, secondary schools, and high schools in Uşak Province. The data obtained from the scale was used in this study.

The population of the study consists of the school administrators working in the province of Uşak, in the academic year of 2017–2018. In the phase of determining the participants for the sample, the stratified random sample was applied. Firstly, they were classified as primary school, secondary school, and high school. The number of participants from the specified groups has been determined by simple random sampling method in proportion to their percentage of creating the universe creation. The sample of the study consists of 79 school administrators working at the primary, secondary, and high schools in the province of Uşak. 36.7% of the participants were female and 63.3% were male and 26.6% of them worked in primary school, 46.8% in secondary school, and 26.6% in high school. In the study, “The Survey on Teachers’ Opinions Regarding the Strategies They Use for Anger Management,” which was developed by Demirkasımođlu (2007) and is the subscale of the “Survey on Anger Sources, Forms of Anger Expression and Anger Management Strategies of the Teachers and Administrators working in Elementary Schools,” was used. During the study process, permission was taken from the necessary institutions. Cronbach’s alpha coefficients were calculated for the reliability of the measurements obtained in all of the scale and subdimensions. The results suggest that the measurements that the scale obtained are at a reliable level (>0.70). In the survey on anger management strategies, a five-point Likert scale was used. The scale consisted of never (1), rarely (2), sometimes (3), often (4), and always (5) options. While the lowest score on the scale is one, the highest score is five. The data obtained were analyzed using the SPSS program. In the analysis of the first problem of the study, the arithmetic mean (X) and standard deviation (SS) values were examined; in the analysis of the second subproblem, t-test and one-way variance analysis were used.

41.3 The Findings

In this part, the analysis results of the problem of the study were presented. The findings of the analysis were included firstly about the strategies school administrators use to manage their anger according to the views of school administrators and then to determine whether there is a difference between opinions according to various variables.

As shown in Table 41.1, school administrators mostly use the statement “M1. *Instead of saying the first thing that comes to mind, I calm down and think about what I want to say*” ($\bar{x} = 3.96$) and “*I try to be empathetic*” ($\bar{x} = 3.75$) for anger management. In addition to this, “M. the statement, *I use relaxation methods like Yoga, meditation*” ($\bar{x} = 1.64$) shows the minimum level of participation. “*I contain my anger inside me*” ($\bar{x} = 2.18$) strategy was determined to be the strategy that was used the least often.

According to Table 41.2, it is seen that the opinions of school administrators about the strategies school administrators use in managing their anger do not vary according to female ($\bar{x} = 3.28$, $SS = 0.48$) and male ($\bar{x} = 3.22$, $SS = 0.44$) ($t =$, 579, $p > 0.05$). In this context, it can be said that the strategies used by the male and female school administrators in managing their anger are similar.

According to Table 41.3, it is seen that the opinions of school administrators about the strategies they use to manage their anger do not vary according to school type variance ($F = 457$; $p > 0.05$). It can be said that school officials working in a

Table 41.1 School administrators’ opinions regarding the strategies they use for anger management

No	The views about anger management	\bar{x}	SS
1	Instead of saying the first thing that comes to mind, I calm down and think about what I want to say	3.96	.86888
2	I share the situations that cause anger with my colleagues	3.72	.84636
3	I take the opinions of my colleagues about the situation that caused my anger	3.68	.87037
4	I take a deep breath	3.24	1.08857
5	I try to be empathetic (I put myself in the place of another person and try to understand how he or she might feel)	3.75	.89464
6	I try to be tolerant by considering the positive aspects of the person who has caused my anger	3.67	.94355
7	I contain my anger in myself	2.18	1.11027
8	I use the methods of relaxation, such as yoga, meditation	1.64	.92039
9	I inculcate myself that I should be calm	3.46	.94510
10	I make jokes	3.25	1.01865
11	I direct my attention to another subject	3.64	.92039
12	I avoid any destructive problem or environment that makes me angry or provokes me	3.62	.91011
13	I immediately show my anger	2.31	1.30624

Table 41.2 The t-test results on the strategies that school administrators use in anger management according to the gender variable

		<i>N</i>	\bar{x}	SS	<i>T</i>	df	<i>P</i>
Gender	Female	29	3.28	.48	.579	77	.564
	Male	50	3.22	.44			

Table 41.3 The variance analysis results of the opinions of school administrators about the strategies they use to manage their anger according to school type variance

		<i>N</i>	\bar{x}	SS	SD	<i>F</i>	<i>P</i>
School Type	Primary school	21	3.19	.44	2		
	Secondary school	37	3.29	.54	76	.457	.063
	High school	21	3.20	.27	78		
	Total	79	3.24	.45			

Table 41.4 The variance analysis results of the opinions of school administrators about the strategies they use to manage their anger according to the seniority variance

		<i>N</i>	\bar{x}	SS	SD	<i>F</i>	<i>P</i>
Seniority	1–5	7	3.19	.27	4		
	6–10	31	3.25	.40	74		
	11–15	19	3.37	.64	78	.708	.589
	16–20	13	3.13	.44			
	Above 21	9	3.14	.27			
	Total	79	3.24	.45			

Table 41.5 The t-test results on the strategies that school administrators use in anger management according to the education status variable

		<i>N</i>	\bar{x}	SS	<i>T</i>	Df	<i>P</i>
Education status	Bachelor’s degree	59	3.25	.49	.412	77	.682
	Postgraduate	20	3.20	.31			

primary school ($\bar{x} = 3.19$), secondary school ($\bar{x} = 3.29$), and high school ($\bar{x} = 3.20$) use similar strategies to manage their anger.

According to Table 41.4, it has been determined that the opinions of school administrators about the strategies they use to manage their anger do not vary according to the seniority variance ($F = 708$; $p > 0.05$). This situation indicates that the years spent in the profession do not affect the anger management strategies use.

As shown in Table 41.5, as a result of the independent sample t-test, no significant difference has been detected between the opinions of school administrators with an undergraduate degree ($\bar{x} = 3.25$) and postgraduate degree ($\bar{x} = 3.20$) regarding the anger management strategies ($t = 0.412$, $p > 0.05$). This shows that the knowledge level that school administrators possess does not affect the strategies they use to manage their anger.

41.4 Result and Suggestions

The aim of this study is to determine the views of school administrators, who work in Uşak, about the strategies they use to manage their anger. In addition to this, it is also to determine whether the views of school administrators about the strategies they use in anger management vary according to gender, school type, seniority, and education status variables.

When the views of the school administrators on the strategies they use in anger management are examined, the strategy that school administrators most often use when managing their anger is to calm down and think about what they want to say instead of saying the first thing that comes to mind. The second strategy they often use is to try to be empathetic. The leadership is built on some basic assumptions in complex systems. Some of them are the management of the leader using empathy power, creating shared purpose unity (Torres et al. 2010) and creating effect and motivation power that will make the watchers feel as respected individuals (Ulukuş 2016). In this context, according to the findings of the study, it can be said that school administrators can fulfill leadership roles expected from leaders in complex systems. The strategy of relaxation with methods like yoga and meditation is the least used strategy by school administrators. The second least frequently used strategy by school administrators is containing their anger in themselves and the third one is showing their anger immediately. It is seen that they sometimes and often use other anger management strategies. In the study conducted by Demirkasımoğlu (2007), it was similarly revealed that the strategies that school administrators and teachers use most often are to use empathetic methods and to calm down and think about what they want to say instead of saying the first thing that comes to mind. In the same study, it is seen that the strategy that school administrators and teachers use least frequently is relaxation methods like yoga and meditation. The above study seems to support the findings of the current study.

According to the findings of the study, it is seen that the opinions of school administrators about the strategies they use in anger management do not vary according to the gender variable. The opinions of school administrators on anger management strategies that they use are similar to each other. In this context, it can be said that male and female school administrators use similar anger management strategies. In the study carried out by Ssali (2017), the opinions of school administrators on fractal leadership practices do not vary according to gender variable. In the study conducted by Demirkasımoğlu (2007), it was found that school administrators and teachers' views on the strategies that they use in anger management are based on gender variable. In the study conducted by Akmaz (2009), it was stated that school administrators and teachers' constant anger and anger expression styles did not vary according to the gender variable. The findings of the above study match with the findings of the current study.

According to the findings obtained from the study, it is seen that school administrators and teachers' views on the strategies that they use in anger management do not vary according to the school type variable. The opinions of elementary, middle,

and high school administrators on the anger management strategies are at the similar level. This situation shows that they use similar strategies in the anger management. In the study conducted by Baydilli (2015), it was found that there was no significant difference in teachers' anger style level in terms of school type variable. In the study carried out by Takmak (2016), it is seen that the opinions of teachers and school administrators about school administrators' ability to manage teacher feelings do not vary, except for the decision-making process in terms of the management processes.

According to the findings of the study, it is seen that school administrators and teachers' views on the strategies that they use in anger management do not vary according to the seniority variable. This situation can be interpreted as the years spent in the profession do not affect the anger management strategies used. Similarly, in the study conducted by Demirkasimoğlu (2007), it was found that there is no difference between the seniority variable and administrators' views on anger management strategies. In the study "The causes of anger and management of anger control of teachers working in primary education institutions" carried out by Öztürk (2012), it is seen that teachers' opinions on the causes of anger and the ways of expressing them do not change according to the seniority variable. In the study conducted by Kayman (2008), it was found that the levels of showing quantum leadership behaviors of generalizing school administrators do not change according to the seniority.

The study findings show that the views of school administrators about the strategies they use to manage their anger do not change according to the educational status variable. This situation can be interpreted as the knowledge level that school administrator has does not affect the anger management strategy used. In the study conducted by Öztürk (2012), it was determined that there was no meaningful difference between opinions according to the graduated school variable in the dimension of anger management. In the study carried out by Avcı (2014) on school administrators' emotional management competencies, it was found that there was no significant difference regarding the educational status variable. These studies are consistent with the findings of the existing study.

In line with the results of the study, the following suggestions have been determined for solving of the problem and for other researchers: In the study, it is seen that school administrators are inadequate to use relaxation methods such as yoga and meditation. Considering the destructive effects of anger in the organization, school administrators should be trained about the strategies to manage anger and about the relaxation methods in the situations of anger.

Quantitative research methods were used in the study. The research can be further elaborated by using qualitative data. A similar study can be carried out comparatively in state and private schools. It can be compared with the findings of the current study.

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Chapter 42

Perceived Uncertainty: A Study of Validity and Reliability



İnci Öztürk Fidan and Tuncer Fidan

Abstract In organizational context, uncertainty perception is associated with job insecurity and organizational change. In contemporary industrialized societies, the term change implies cost reduction, downsizing, restructuring, mergers, and acquisitions. In addition to these market-driven sources of uncertainty, governmental factors such as unsuccessful economic policies, political instabilities, and privatization can lead to a decrease in public investments and expenditures. Because of the job insecurity which is the most prominent property of new era, employees have gradually lost their control on their works and got used to work in a relatively more uncertain business life. The increase of the perceived uncertainty means the decrease in job satisfaction, commitment, and trust. Accordingly, organizational change and perceived uncertainty may have effects on the future of the organization-employee relationships. In this context, the aim of this study is to adapt the Perceived Uncertainty Scale developed by Schweiger and DeNisi into Turkish. Firstly, the scale was translated into Turkish by language experts. Then, two-stage validity and reliability process was performed. Exploratory and confirmatory factor analyses were conducted in each stage. As a result of these analyses, it was revealed that unlike the original scale, the Turkish version has two factors and consists of 15 items.

42.1 Introduction

The constantly changing business environment of today's world is compelling organizations to undergo structural and strategic changes. That an organization and its environment enter into the process of reciprocal change and adaptation causes an increase in employees' stress levels and perceptions of uncertainty. There has

İ. Öztürk Fidan (✉)
Ankara University, Ankara, Turkey
e-mail: iiozturk@yahoo.com.tr

T. Fidan
Mehmet Akif Ersoy University, Burdur, Turkey

been an increasing number of studies in the literature of organizational behavior and psychology, particularly on the nature and consequences of uncertainty during organizational change. Employees' levels of perceptions of uncertainty and negative consequences of uncertainty on personnel psychology have elaborately been addressed in those studies. However, the psychological mechanisms that explain the negative consequences of uncertainty have not adequately been addressed, yet (Bordia et al. 2004a).

Although the concept of uncertainty is frequently used in the literature, there is a confusion about its definition. The concept of uncertainty is used to describe both the existing state of organizational environment and the self-perception of individuals who lack necessary knowledge about the environment. The former states that it is possible to analyze objectively how uncertain the organizational environment is, whereas the latter implies that environmental uncertainty can be perceived from the observer's perspective; in other words, it must be examined as a perceptual phenomenon. These two perspectives have led to the emergence of different definitions of uncertainty (Duncan 1972; Milliken 1987).

For example, the information theoretician Garner (1962; as cited in Duncan 1972) defines uncertainty as "the logarithm of the number of possible outcomes of an event." On the other hand, the organizational scientist Lawrence Lorsch (1967, Act. Duncan 1972) suggests that uncertainty consists of three components, which are (1) the lack of adequate clarity in the information acquired, (2) long time periods between informative feedbacks, and (3) general uncertainty about cause-effect relationships, whereas Downey and Slocum (1975) developed a psychological definition of uncertainty. According to that definition, uncertainty refers to a state in which the individual performs an intentional behavior by relying on incomplete knowledge about (1) his current relationship with his environment, (2) cause-effect relationships between the individual's behaviors and environmental variables, and (3) possible future outcomes of the individual-environment relationship. According to this definition, psychological uncertainty emerges when the individual not only loses the control of the situation he is in but also loses his self-control (Downey and Slocum 1975). Similarly, Perminova et al. (2008), who adopt the psychological perspective, define uncertainty as a mental state emerging when the lack of information about the outcomes of any event is noticed. The definitions of uncertainty in the literature are summarized by Milliken (1987) as follows:

1. The lack of ability to assign probabilities as to the likelihood of future events.
2. The lack of information about cause-effect relationships.
3. The lack of ability to predict accurately what the outcomes of a decision might be.

42.1.1 Uncertainty and Organizational Change

Uncertainty is one of the most frequently observed psychological states in the process of organizational change. For example, in the process of organizational restructuring, employees feel uncertain about what the priorities of their

organizations in the process of change and what kind of impacts such priorities will have on their works. At this point, the sources of uncertainty for employees were listed by Schweiger and DeNisi (1991). Examples of these sources include changes in pension plans, involuntary transfers, the substitution of colleagues, loss of control over work, dismissal, obsolescence of professional knowledge, loss of control over changes, requirement to acquire new skills, and changes in organizational culture. As is seen, the diversity of sources of uncertainty in the organizational context has highlighted the need for a classification on this topic. For instance, Jackson, Schuler, and Vredenburg (1987) analyze organizational uncertainty in a triple classification as organization, group, and individual, whereas Bordia et al. (2004a, b) suggest a three-factor conceptualization for description of uncertainty in the process of change for organizations: strategic, structural, and job-related uncertainties.

Strategic uncertainty refers to uncertainties regarding issues at organizational level, such as reasons for change, planning, business environment, future trends, and sustainability of the organization. For example, uncertainty about the future of the organization is relatively high for newly established organizations. Similarly, governmental and legislative changes may cause public employees to remain within uncertainty about the future direction of public organizations. To summarize, it can be argued that strategic uncertainty is associated with environmental changes of organizations and employees' perceptions of uncertainty in general (Fidan and Balcı 2017, Bordia et al. 2004a, b).

Structural uncertainty, the second type of uncertainty, stems from internal functioning of the organization such as functions of different units. Organizational changes often require combination, restructuring, or removal of such units (Öztürk and Balcı 2014). Such changes induce uncertainty about the chain of command, statuses of units, and job-related practices. For instance, during mergers and acquisitions, services are assigned to different units and employees are appointed to different units of the organization (Bordia et al. 2004a; Sadiq et al. 2000).

Job-related uncertainty involves changes in job security, career opportunities, and job description. Such kinds of uncertainties are common in changing organizations (Schweiger and DeNisi 1991). Changes in organizational structure, adoption of new technologies, and downsizing programs cause job-related uncertainties through leading to changes in job roles (Allen et al. 2007).

42.1.2 Consequences of Uncertainty

Uncertainty has numerous negative effects on individual well-being and job satisfaction at organizational level. As the perception of uncertainty increases, the level of stress and turnover intention will also increase. Uncertainty has a negative relationship with job satisfaction, engagement, and trust. Negative effects of uncertainty rather stem from individuals' feelings of losing control over events. Lacking adequate information about current or future events negatively affects individuals'

ability to direct the change. This lack of control leads to negative effects such as anxiety, psychological tension, and underperformance. Different types of uncertainty have different effects on individuals. It can be argued that job uncertainty creates the highest level of stress in the abovementioned types of uncertainty as it directly concerns employees (Bordia et al. 2004b; Schweiger and DeNisi 1991).

At this point, the uncertainty management theory suggests that judgments regarding justice are more influential when individuals face uncertainty (Lind and Van den Bos 2002). For example, laboratory experiments conducted by Van den Bos (2001) revealed that procedural justice alleviates the adverse effects of uncertainty on individuals. Accordingly, people who are treated fairly in case of uncertainty have positive reactions, while people who encounter injustice following uncertainty have rather negative reactions (Van den Bos 2001). This is due to the fact that fair treatment gives people a choice to cope with uncertainty (Bozak et al. 2011). In case of uncertainty, employees expect their organizational leaders to perform a fair attitude when addressing their situation, and they use this to alleviate the stress caused by uncertainty (Wang et al. 2015; Erçetin et al. 2012).

An increase in perceived uncertainty may cause increased work stress, on one hand, and may lead to a decrease in job satisfaction, loyalty, intent to stay, and trust in reliability and integrity of the organization, on the other hand. Briefly, it can be stated that the perception of organizational change and job insecurity may have effects related to the future of organization-employee relationships. The purpose of this research is to perform the adaptation, validity, and reliability study of the Perceived Uncertainty Scale which was developed by Schweiger and DeNisi (1991) on the sample group consisting of teachers.

42.2 Methodology

In this study, validity and reliability analyses were conducted in two stages. Exploratory and confirmatory factor analyses were performed at each stage. The procedures followed at each stage can be explained as follows:

42.2.1 Perceived Uncertainty Scale

The Perceived Uncertainty Scale developed by Schweiger and DeNisi (1991) and including a single dimension consists of 21 items which exhibit a meaningful structure in terms of perceived uncertainty. The scale was designed as a seven-point Likert-type scale, where (1) is never the source of uncertainty and (7) is always the source of uncertainty. In applications carried out at different times, the Cronbach alpha reliability coefficient of the scale was seen to range between .88 and .97.

42.2.2 Adaptation Procedures

For adaptation of the scale into Turkish, translation work was carried out by five bilingual language experts. The translated scale was later checked by seven bilingual language experts. After the proofreading conducted as required in line with the opinions of experts, the scale was evaluated in terms of conformity with Turkish language by a Turkish language experts and in terms of content by academicians specialized in field of chaos and complexity. The scale was given its final form after the proofreading was performed as required in line with the opinions received. The scale was arranged as a five-point Likert-type scale in conformity with suggestions of experts.

42.2.3 Sample Group

For Stage 1 analyses of the study, data were collected from teachers who work at high schools in Ankara province. The teachers were selected through random sampling method. One hundred fifty-four teachers were contacted for the exploratory factor analysis. Two hundred fifty-one high school teachers who did not attend the exploratory factor analysis were contacted for confirmatory factor analysis by using the scale obtained as a result of the first exploratory factor analysis. For Stage 2 analyses of the study, data were again collected from teachers who work at high schools in Ankara province. The teachers were selected through random sampling method. One hundred sixty teachers were contacted for the exploratory factor analysis. Three hundred forty-two high school teachers who did not attend the exploratory factor analysis were contacted for confirmatory factor analysis by using the scale obtained as a result of the second exploratory factor analysis.

42.3 Findings

This part includes the results of exploratory and confirmatory factor analyses at the first and second stages and the results of the reliability analyses.

42.3.1 Stage 1

Exploratory factor analysis Prior to application of the exploratory factor analysis on Perceived Uncertainty Scale, Kaiser-Meyer-Olkin (KMO) Test was applied for the purpose of identifying suitability of sample size for factorization. Upon the analysis, KMO value was found as .883. Accordingly, it was concluded that sample

size is highly suitable for factor analysis (Tavşancıl 2006). When the result of Bartlett's test of sphericity was examined, it was seen that the chi-square value obtained is significant ($X^2_{(105)} = 729.818$; $p < .01$). In this direction, it was acknowledged that the data come from a multivariate normal distribution. It was concluded that the data collected on basis of the mentioned results are suitable for factor analysis. During factor analysis, maximum variability (varimax vertical rotation) method was used in order to identify sub-factors in the scale which are independent from each other.

Upon the analysis, it was observed that there are four components with their eigenvalue over 1 for the 21 items referred to as basis for the analysis. The table of explained total variance and scree plot of the mentioned four components were examined, and it was agreed that they must be repeated for two factors. The items 1, 2, 3, 4, and 14 in factors 3 and 4 were not included in the analysis which was conducted for two factors, whereas item 15 was omitted as it loaded on both two factors at the same time. Below is given the scree plot graphics obtained in the exploratory factor analysis (Fig. 42.1).

Upon the exploratory factor analysis carried out to reveal the factor pattern of the scale, levels of acceptance for factor load values were determined as .32 (Çokluk et al. 2014, 194). Upon omission of six items, the scale exhibited a two-factor structure, in which the explained total variance was found as 45.615%. The higher the variance rates obtained at the end of the analysis are, the stronger the factor structure of the scale will be. For analyses carried out in social sciences, variance

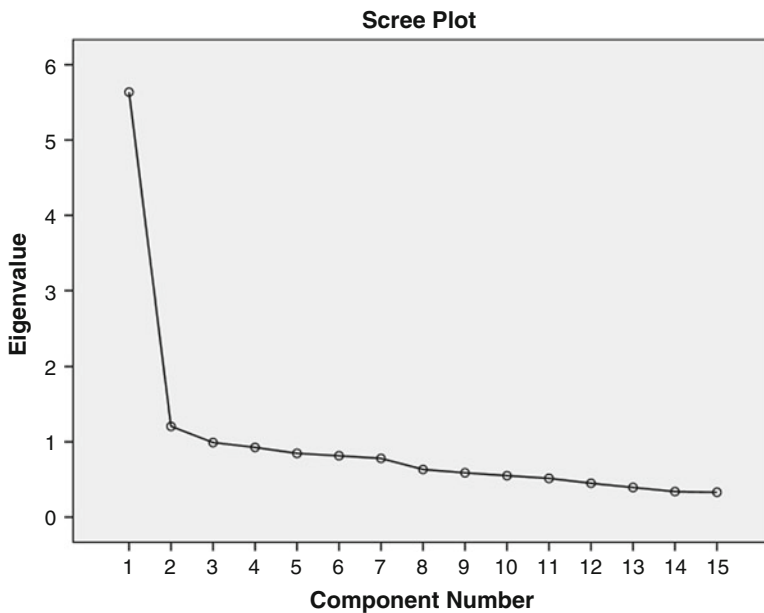


Fig. 42.1 Scree plot graphics for Stage 1

Table 42.1 Factor load values and item-total correlations of the items in the first and second factor for Stage 1

Factor 1			Factor 2		
Item no.	Factor loadings	Item-total correlations	Item no	Factor loadings	Item-total correlations
20	.748	.642	5	.747	.528
18	.702	.627	9	.746	.562
8	.676	.559	7	.661	.555
16	.643	.518	17	.623	.550
10	.588	.451	12	.480	.501
6	.553	.498	13	.476	.507
21	.507	.485	19	.444	.482
11	.482	.492			
Variance explained = % 25.109 Cronbach alpha = .82			Variance explained = % 20.506 Cronbach alpha = .80		

rates ranging between 40% and 60% are considered adequate (Tavşancıl 2006). The overall Cronbach alpha reliability coefficient of the scale was found as .88. The two factors of Perceived Uncertainty Scale and the factor loadings of the items loaded on these factors, their item-total correlations, Cronbach alpha reliability coefficients, and the variances explained can be shown as follows.

As seen in Table 42.1, the factor loadings of the items in factor 1 range between .482 and .748. Similarly the factor loadings of the items in Factor 2 range between .444 and .747. Item-total correlations of the items loaded on both factors are above .45.

Confirmatory factor analysis Confirmatory factor analysis was conducted by using the data obtained from 251 high school teachers who did not attend the exploratory factor analysis application. The model obtained by using AMOS software is presented in Fig. 42.2.

Also, standardized regression coefficients are presented in Fig. 42.2. Following confirmatory factor analysis, fit indices were found as [$\chi^2_{(89)} = 134.100, p < 0.01$], $\chi^2/df = 1.51$, RMSEA = .045, GFI = .94, and CFI = .92. In conclusion, it was found that the two-factor structure of the scale was verified by confirmatory factor analysis, or in other words, it has an acceptable fit level (Hu and Bentler 1999).

42.3.2 Stage 2

For Stage 2 analyses of the study, data were collected from teachers who work at high schools in Ankara province and who did not attend Stage 1. The teachers were selected through random sampling method. One hundred sixty teachers were contacted for the exploratory factor analysis. Three hundred forty-two high school

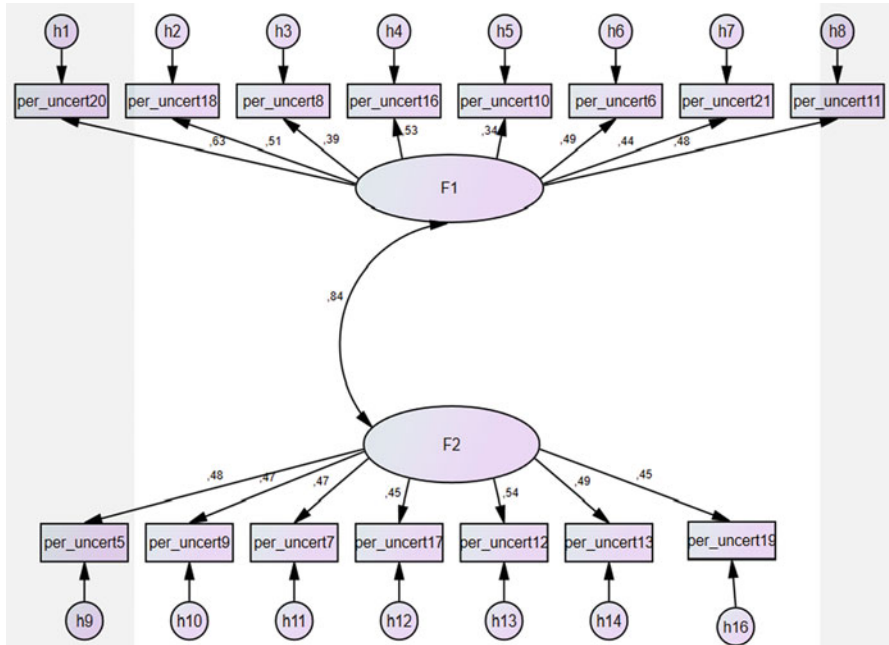


Fig. 42.2 Confirmatory factor analysis results for Stage 1

teachers who did not attend the exploratory factor analysis were contacted for confirmatory factor analysis by using the scale obtained as a result of the exploratory analysis of Stage 2.

Exploratory factor analysis Prior to application of the exploratory factor analysis on Perceived Uncertainty Scale, Kaiser-Meyer-Olkin (KMO) Test was applied for the purpose of identifying suitability of sample size for factorization. Upon the analysis, KMO value was found as .828. Accordingly, it was concluded that sample size is highly suitable for factor analysis (Tavşancıl 2006). When the result of Bartlett’s test of sphericity was examined, it was seen that the chi-square value obtained is significant ($X^2_{(105)} = 499.771; p < .01$). In this direction, it was acknowledged that the data come from a multivariate normal distribution. It was concluded that the data collected on the basis of the mentioned results are suitable for factor analysis. During factor analysis, maximum variability (varimax vertical rotation) method was used in order to identify sub-factors in the scale which are independent from each other.

Upon the analysis, it was observed that there are five components with their eigenvalue over 1 for the 21 items referred to as basis for the analysis. The table of explained total variance and scree plot of the mentioned five components were examined, and it was agreed that they must be repeated for two factors. The items 1, 2, 3, 4, and 14 in factors 3, 4, and 5 were not included in the analysis which was

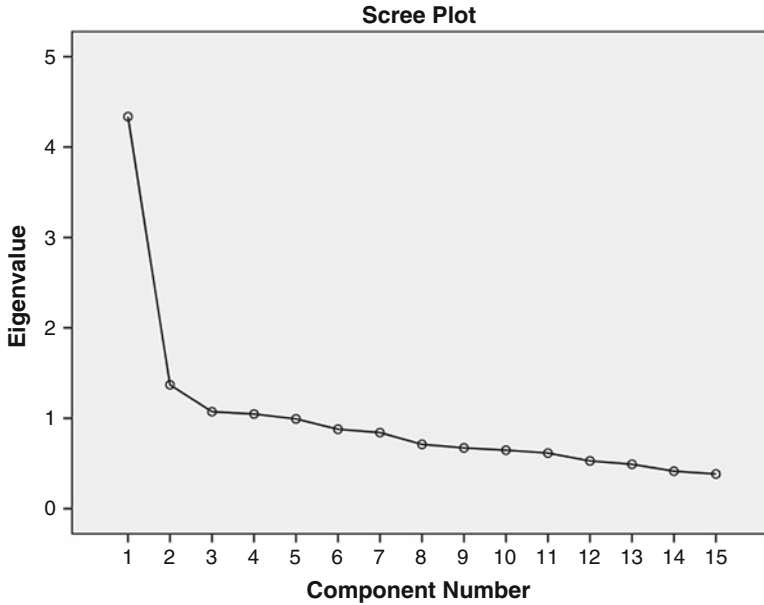


Fig. 42.3 Scree plot graphics for Stage 2

conducted for two factors, whereas item 15 was omitted as it loaded on both two factors at the same time. Below is given the scree plot graphics obtained in the exploratory factor analysis (Fig. 42.3).

Upon the exploratory factor analysis carried out to reveal the factor pattern of the scale, levels of acceptance for factor load values were determined as .32 (Çokluk et al. 2014, 194). Upon omission of six items, the scale exhibited a two-factor structure, in which the explained total variance was found as 40.046%. As remarked before, for analyses carried out in social sciences, variance rates ranging between 40% and 60% are considered adequate (Tavşancıl, 2006). The overall Cronbach alpha reliability coefficient of the scale was found as .82. The two factors of Perceived Uncertainty Scale and the factor loadings of the items loaded on these factors, their item-total correlations, Cronbach alpha reliability coefficients, and the variances explained can be shown as follows.

As seen in Table 42.2, the factor loadings of the items in factor 1 range between .376 and .724. Similarly the factor loadings of the items in factor 2 range between .440 and .737. Item-total correlations of the items loaded on both factors are above .30.

Confirmatory factor analysis Confirmatory factor analysis was conducted by using the data obtained from 342 high school teachers who did not attend the exploratory factor analysis application. The model obtained by using AMOS software is presented in Fig. 42.4.

Table 42.2 Factor loadings and item-total correlations of the items in the first and second factor for Stage 2

Factor 1			Factor 2		
Item no.	Factor loadings	Item-total correlations	Item no.	Factor loadings	Item-total correlations
20	.724	.523	9	.737	.488
18	.656	.560	5	.686	.445
8	.650	.480	7	.621	.501
16	.611	.451	19	.555	.404
6	.561	.400	17	.485	.402
11	.457	.385	13	.473	.409
10	.451	.330	12	.440	.422
21	.376	.361			
Variance explained = % 21.297 Cronbach alpha = .74			Variance explained = % 18.749 Cronbach alpha = .73		

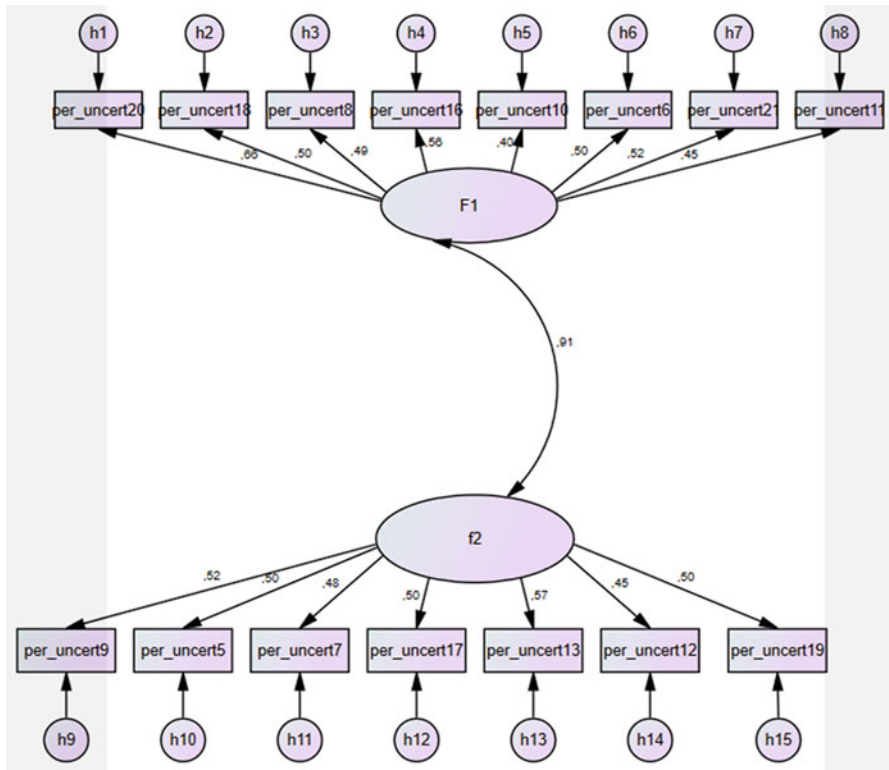


Fig. 42.4 Confirmatory factor analysis results for Stage 2

Table 42.3 Mean and standard deviation values for the items

Stage 1						Stage 2					
Factor 1			Factor 2			Factor 1			Factor 2		
No	\bar{X}	Sd	No	\bar{X}	Sd	No	\bar{X}	Sd	No	\bar{X}	Sd
20	2.74	1.26	5	2.77	1.32	20	2.60	1.26	9	2.73	1.19
18	3.00	1.26	9	2.76	1.22	18	3.03	1.28	5	2.67	1.32
8	3.10	1.19	7	2.75	1.29	8	3.03	1.24	7	2.72	1.28
16	2.89	1.26	17	2.97	1.37	16	2.76	1.29	19	2.86	1.23
10	2.94	1.26	12	2.80	1.25	6	2.62	1.29	17	2.84	1.32
6	2.75	1.31	13	2.79	1.33	11	2.80	1.37	13	2.66	1.27
21	2.90	1.36	19	2.83	1.23	10	2.82	1.28	12	2.75	1.23
11	2.94	1.38				21	2.78	1.33			

Also, standardized regression coefficients are presented in Fig. 42.4. Following confirmatory factor analysis, fit indices were found as $[X^{2(189)} = 169.999, p < 0.01]$, $X^2/sd = 1.91$, $RMSEA = .052$, $GFI = .93$, and $CFI = .91$. In conclusion, it was observed that the two-factor structure of the scale was verified by confirmatory factor analysis, or in other words, it has an acceptable fit level (Hu and Bentler 1999). Means and standard deviations of the items in the first and second stages are presented in Table 42.3.

As seen in Table 42.3, the mean scores of the items range between 2.60 and 3.10 which implies that teachers may relatively have lower uncertainty perception levels. This may due to the highly structuralized and regulated nature of the educational organizations.

42.4 Discussion and Conclusion

In this study, the Perceived Uncertainty Scale developed by Schweiger and DeNisi (1991) consisting of 21 items and a single dimension was translated into Turkish, and proofs of validity and reliability of the Turkish Form were sought. The results of the exploratory and confirmatory factor analyses conducted on two different study groups manifest that the Turkish Form of the scale consists of 15 items and two subdimensions. According to the results of the exploratory factor analyses, the scale has a robust factor structure (45.615%; 40.046%). For analyses carried out in social sciences, variance rates ranging between 40% and 60% are considered adequate (Tavşancıl 2006). All scale scores obtained from data of the first and the second study group have high Cronbach alpha internal consistency coefficients (0.88; 0.82) which implies that the Perceived Uncertainty Scale is a highly reliable scale (≥ 0.80 ; Kalaycı 2010, 405). The obtained values are in parallel to values of the scale in the studies previously conducted (Schweiger and DeNisi 1991; Rodell and Colquitt 2009). The two- subdimensional structure of the scale was verified through

confirmatory factor analysis. In other words, the model built in the process of adaptation of the scale to Turkish culture has an acceptable fit level (Hu and Bentler 1999).

Upon literature reviews, it was found out that the perceived uncertainty studies are mainly in fields of medicine, psychology, and organizational behavior. Examples of studies on uncertainty in the field of medicine include uncertainty in health risk assessment (Johnson and Slovic 1995), the effect of uncertainty on psychosocial adaptation in individuals with multiple sclerosis (McNulty et al. 2004), and the effect of increased social support on the level of uncertainty for cancer patients (Lien et al. 2009). Studies in social sciences can be classified as the studies in psychology such as perceived uncertainty and stress (Michel 1984) and in organizational behavior such as organizational learning mechanisms (Ellis and Shpielberg 2003) and job satisfaction (Ferris 1977). It can be suggested that most of the studies on perceived uncertainty in field of organizational behavior have been performed to identify employees' perceptions of uncertainty during organizational change. For instance, the Perceived Uncertainty Scale developed by Schweiger and DeNisi (1991) was not only used on the personnel of a hospital in restructuring process (Bordia et al. 2004a, b), but also for purpose of testing mediation effect of perceived uncertainty on the relationship between organizational change and organizational identification (Kim et al. 2013). Similarly, Rodell and Colquitt (2009) examined the effect of fair conduct of managers during an organizational change on the employees' methods of coping with uncertainty.

No study using the Perceived Uncertainty Scale developed by Schweiger and DeNisi (1991) was found in field of education. Revealing opinions of educators and principals working at public and private schools in Turkey on perceived uncertainty will ensure identification of changes in their job satisfaction, organizational loyalty and intent to stay, and levels of work stress as members of the Ministry of National Education in the face of constant restructuring processes, organizational changes, or government policies promoting job insecurity. Moreover, this study has been conducted in the field of education where strict statutory arrangements restrict decisionmaking processes at school level and participation of teachers in changes regarding their environments (Giles and Hargreaves 2006). Therefore, it is believed that different results might be achieved in terms of perception levels of participants on uncertainty in studies to be carried out at noneducational organizations.

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Chapter 43

Is There a Holistic Relationship Between Simulacra and Zuhur in the Media?



Yağız Alp Tangün

In memory of my father, M. Kemal Tangün (1958–2016)

Abstract In the twenty-first century, mass consumption of media has occurred through the Internet (social media). Recently, this situation has intensified changes in individuals' social and political lives and their relationships with the media. Two theories can be used to compare the terms of two different realities regarding the mass consumption of media: simulacra in Jean Baudrillard's simulation theory and *zuhur* in Gediz Akdeniz's chaotic awareness simulation theory. This chapter discusses the complexity of science in the experience of mass consumption of media, specifically the relationship between simulacra and *zuhur*.

43.1 Introduction

In some parts of the world, social movements can be viewed as political examples of Internet use. An examination of these cases shows some changes in the habits of media consumers. At the same time, these changes also are political. The root of this transformation may be the information produced by mainstream media, which can contradict public needs. However, this is also not sufficient, because the public has already consumed the media. Thus, media consumption may be a guide for understanding the images used in the media and their contexts.

Today, we are not as pessimistic as Baudrillard was. Some changes in media consumption manifested only in Baudrillard's simulacra (Baudrillard 1981, 1994, 1998, 2002, 2005). In a simulation world, media consumers are also media producers (such as with new media practice and citizen journalism) because of social movements. Changes in media consumption have revealed that the costs of social and political structures.

Y. A. Tangün (✉)
Pamukkale University, Denizli, Turkey

43.2 An Attitude: Tunneling

The relationship between media and power has been shaped by media consumption habits because of the images involved in a simulation world. It is possible to understand how media and power interact when the representation emerges in media. The concept of tunneling in media may be interpreted through the metaphorical use of the content of this relationship and how the new case affects this relationship (Tangün 2017).

A concept that is often used in the subatomic physics literature must be explored here: tunneling, or the state in which a particle or particle group passes through a wall barrier that cannot be overcome in classical physics. The concept of tunneling may be considered as the changes in media consumption. Thus, images that cannot be transferred from the existing media and power relationship channels as tunnels to the simulation universe can be transferred through a tunnel opening.

In this chapter, a comparison will be made between Jean Baudrillard's simulation theory (Baudrillard 1994) and Gediz Akdeniz's simulation theory (Akdeniz 2010), while also exploring tunneling in the media. The chapter focuses on the relationship between the two simulation theories from a new perspective.

43.3 The Holistic Relationship in Simulation Theories

To be able to simulate something through simulation theories in a simulation world, there must be a reality principle. There are two different realities in the theories of Baudrillard and Akdeniz. In Baudrillard's theory, the reality principle is modernity; the resulting simulacrum cannot be independent from it. The reality principle of the Akdeniz theory is the chaotic awareness and *zuhur*¹ as an unpredicted emergence based on it. The fundamental difference between the two theories points to two opposite poles of media consumption. However, it will be emphasized that legibility of the images in the simulation world can be created if the two concepts are held together.

43.3.1 Baudrillard and Mass Media Consumption

Baudrillard has stated that everything is aesthetic and that politics is a spectacle. He has discussed how these concepts are built and which symbols occur in the context of consumption.

As seen in Baudrillard's orders of simulacra, the transformations of existing images are constantly updated on the basis of consumption. When mass media and

¹*Zuhur* means "unpredictable emergences" in Turkish (originally, *zahara* in Arabic).

the capitalist consumption of cultures come together, the distinguishable difference between images and reality has come to an end. Thus, the images are no longer real. As Baudrillard (1994) said, “It does not hide the truth that we call simulacra, but it hides the absence of truth.”

Thus, reality can be built through the images presented by the media. Thanks to the use of mass media, reality can be presented as if it were an event, or it can be created from black holes that cover many events. Therefore, those who manipulate the media can also control the reality. The most obvious example of this is the interpretation of the Gulf War, which was used by Baudrillard as an example of a “non-event” (Baudrillard 1995). Along with the Iraq War, Baudrillard has suggested that the image presented is transformed into a kind of pornography—making everything visible, transparent, and now functioning completely differently.

Simulacra, therefore, is a power effect that simulates the orderly insensitivity of modernity in the simulation world. That is, simulacra is a periodic, predictable sequence.

43.3.2 Baudrillard vs. Akdeniz

Baudrillard also identified a “strange attractor,” which can interrupt the orders of simulacra from time to time. Akdeniz’s theory is related to the interruption of a strange attractor.

Baudrillard’s analyses are based on modernity, whereas Akdeniz’s analysis is based on the chaotic awareness reality in the complexity of non-modernity in his chaotic awareness simulation (CAS) theory (Akdeniz 2012, 2013a, b). The disorders of non-modern societies are related to these the realities marginalized by modernity. The function of the simulacrum seems to work as a means of social control. In the CAS theory, *zuhur* has a totally different function than simulacra. *Zuhur* simulates the complexity of the disorder-sensitive system and causes instability in the balance of the system.

Simulacra masks and covers up the absence of reality; thus, it is replaced by hyperreality. *Zuhur* works as an exposition functioning of a disorder-sensitive system, which is suppressed. Thus, *zuhur* does not work in this regard, such as in hyperreality; it is more transformative than simulacra. Consequently, another very important characteristic that distinguishes *zuhur* from the simulacrum is an evolutionary, non-reversible, non-symbolic exchange that will reproduce the existing order.

Despite the predictability of simulacra, *zuhur* emerges suddenly and is unpredictable; thus, it causes a crisis on the side of power. For this reason, Baudrillard’s strange attractor effect is important. However, it does not involve *zuhur*’s evolutionary nonreversible effect (Akdeniz 2013a, b; Akdeniz and Anastasopoulos 2014). Because simulacra is only based on modernity, it is order-insensitive.

This comparison clarifies the points at which the two simulation theories separate from each other. These points of separation show that a holistic relationship can be established in certain contexts. If this holistic relationship can be viewed in terms of media consumption in the area where there is complexity in society, it may be possible to grasp the experiences of tunneled media in the simulation world.

43.4 Conclusion

This chapter examined changes in media consumption habits within the holistic relationship between simulacra and *zuhur*. When the simulation world is analyzed, the two simulation theories can be understood in a holistic manner when they are combined.

Furthermore, by this study, it appears that tunneled media are related to the experiences of other media consumption habits. Today, people can consume this media through social media channels. These channels and similar spaces have played essential roles in the formation of network societies as public realms of the age. However, the role of media consumers and their media consumption habits are also important in the shaping of future social structures.

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Key Further Reading

- Akdeniz, K. G. (2010). *Disorder in complex human system*, Proceedings of the Conference in Honor of Murray Gell-Mann's 80th Birthday Quantum Mechanics, Elementary Particles, Quantum Cosmology and Complexity, edited by H Fritzsche and K K Phua, World Scientific Publishing, pp. 630–637.
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Chapter 44

An Epistemic Structuring in the Context of Complexity Science and Chaotic Awareness Theory



A. Hıdır Eligüzel

Abstract Epistemology reflects the unique characteristics of the system of notion about the social cycle. The epistemological community transformation can also make a difference in systematic qualities. For this purpose, the focus is on the systematic position, function, and behavior of the modern information philosophy to reproduce the system. The only response that information contained within the hierarchical social, economic, and moral world can bring to the solution of existing problems is the change of power ownership. If modern science can grasp the complex universe as a regular system, it can build up working systems. Modern science sees the complexity as the exception of the basic characteristic of the universe. Complexity Science understands this exception as the general behavior of the universe in its simplest form. The chaotic awareness theory is the most obvious and most effective set of this claim. The chaotic awareness theory questioned the restructuring of the epistemic field in pursuit of an assertion in this respect. This study attempts to exemplify the possibilities of chaotic awareness theory in the paradigm of complexity science.

44.1 Introduction

Epistemology explains the unique characteristics of the system of information about the social cycle. Of course, this relation is not unidirectional. The transformation system in the epistemic community can also make a difference to society system (Eligüzel 2017). The status of awareness is one of the dominant criteria of complex science. If we consider the modern world as one of the starting points of contemporary world, it is necessary to consider it as a period in which some social, political, economic, and epistemological values are shared. Evaluating of social, economic, moral, and epistemological transformations in this period when the founding of the modern state is on focus can give clear inferences in order to capture the whole, because modern state politics reveal the structural form of the social, economic,

A. Hıdır Eligüzel (✉)

Political Scientist and Independent Researcher, Dokuz Eylül University, İzmir, Turkey

moral, and epistemological system and show how these policies affect other social structures. The focus of this article is on the systematic position, function, and regeneration behavior of the modern philosophy of knowledge. The perception of knowledge in society as an independent activity from its ideological qualities is a reflection of a conscious politics. The answer that the information contained within the hierarchical social, economic, and moral world can bring to the solution of the existing problems will be no more than a change of power ownership.

In this context, Descartes as well as the quantum theory which rearranges the universe tries to generalize the whole universe and contemporary cosmology for the purpose of standardizing and centralizing the universe. With the unexplored celestial system, the subatomic world has become open to human intervention and research. The problems of the modern age cannot be solved with modern logic and information codes. The most important difference between Descartes, quantum theory, and complexity science is seen in the approach toward the research object. When modern science embraced the complex universe as a regular system, it could establish operational systems. The complexity, which is the basic characteristic of the universe, is seen as an exception in the logic of modern science. The complex science sees this exception as the general behavior of the universe in its simplest form. The chaotic awareness theory constitutes the most obvious and most effective set of this assertion. In this context, the trail created has created different aspects of the view. The chaotic awareness theory, in this regard, is after a claim to question the restructuring of the epistemic field. The complexity paradigm which focuses on the systemic connective tissues of all the actors of the system has the potential to offer solutions to today's social, political, and epistemological crises. This study attempts to exemplify the possibilities of chaotic awareness theory in the paradigm of complexity science.

44.2 On the Meaning of an Epistemic Structuring

Among the aims of this study is the reconstruction of epistemic knowledge in the existing scientific disciplines, and there is no effort to open space for the complexity science. For two reasons this expectation is driven out of the conception of the complex science. First, complexity consciousness followers know that the knowledge of complexity science stands out against linear logic. Linear logic puts into action the simulations we can perceive the universe (Baudrillard 1994; Akdeniz 2010). For example, Newton's second law, $f = ma$, predicts that the force (F) applied to a (m) mass point is directly proportional to the acceleration that the force imparts to that point (Prigogine- Stengers 1985). However, the reality of the matter out of the foreseen is more complex. The force systems that act on any object change at any moment as the result of their movement, which occurs between the objects. Foresight involves the interpretation of the material reality, which itself consists of the separation of reality from the context of certain criteria. The concept of the paradigm, as it determines the nature of this context, also gives an idea of the knowledge that is broken from reality.

Newtonian knowledge is one-way. The bond between A and B is revealed by the reason sequences. However, the material or vital system reestablishes things with their acceptance, rejection, and the inclusion of themselves and the system. This dynamic system is beyond the bounds of the mind world, trying to conceptualize the universe of prospects and the realm of living things through linear approaches.

In this context, it is necessary to focus toward the concept of paradigm Thomas Kuhn (1970) put forth in his book *The Structure of Scientific Revolutions*. Kuhn's skill bases on the fact that the assumptions that science has attributed and universalized revolutionary qualities are indeed alternatives. The concept of paradigm is defined as an epistemic structure in the processing of information. It is a structure that includes people, scientists, users of information, students, and even their opponents. Thus, the information possession and information in the paradigm are empowered to know what information is, how it is produced, and how to navigate. This empowerment is realized through institutional structures from the modern era. For this reason, Edward Lorenz made sense of the difference of the result to the computer's error by taking only three digits (0.506), not the number six digits (0.506127), to shorten the routine scientific work (Gleick 2008). Because modern science takes the list of things that are too small to be perceived to be negligible. But when reality is simulated, it does not emerge as a new reality (Baudrillard 1981, 2002). It's just one of the comments.

The concept of paradigm is about what kind of frame is knowledge. The finding of Lorenz's butterfly effect is a proof that the current paradigm is dysfunctional. But the neglect of the little is one of the principal working principles of the Newtonian gigantic world of science. Lorenz and Mandelbrot and others have discovered the numerities of complexity science in the logic of old science, because the universe is not as regular as Newtonian science predicts. Newtonian science is revolutionized because it can simplify this complexity with predictions and give it the potential to mechanize. However, Newtonian tradition will become a scientific obstacle if we are interested in the holistic system of interacting objects, beyond the point of falling of any research object falling toward the time, or beyond.

The visibility and elimination of these obstacles are primarily within the scope of the complexity science of promising a holistic scientific understanding. In this respect, the information itself needs to be structured in a holistic, complex, and horizontal context. The existence of a categorical hierarchy between the knowledge of both the research and the production is null and void. Of course, the only problem is not academic education itself but absolutely its methodology (Feyerabend 1975).

44.2.1 The Universe of Complexity Science and Chaotic Awareness Theory

The Complexity science focuses on the story of reality, contrary to modern science's notion of simulating and interpreting reality. This conceptual difference answers those dark claims of science. There is a different world that exists beyond the

perception of individual humans and which can be discovered in the future. What goes beyond the fantasy island of this different world is the evaluation processes that subject science to empirical studies and experiences. Of course, it is unacceptable that the empirical findings of a constantly changing world of reality remain constant. However, the story of the actors of the system, the uneven movements of events (Akdeniz 2013a), and feelings and thoughts in large, complicated networks require a broader perspective in world system.

The place of complexity science in the science community is the result of revolutionary transformations in the fields of physics and mathematics (Kaneko-Suzuki 1993). On the other hand, it is a systematic necessity to comprehend the sensual, behavioral, and ethical man as the source, operator, and destructor of all complexity. Of course, there is no scientific activity that does not involve human subjects. However, contrary to what is believed, it is a political discourse in which scientists engage in activities isolated from highly objective, sensory, and ethical discussions on scientific research. Scientists are composite of historical, social, economic and moral developments as well as existing knowledge structures. It is foolish to imagine that people with the object of science, such as Newton's mere act of motion and ignoring the mutual interactions of open actors, can be judged on only academic categories and totality. This attitude, which disintegrates the totality of the individual identified with different identities in different planes, is inspired by the principle of "ignoring the little ones" in modern science.

Chaotic awareness theory does not interpret systematic actors quantitatively as "small or large" in the paradigm of complexity (Akdeniz 2013b). Any actor evaluates the size of the effect of the connections within the systematic network that he or she has. Only the butterfly wings in China are not the miraculous wings. These wings, China and Africa are the reason for the possibility of a storm in Africa, nor the wings alone, nor China or Africa itself. The most important attribute is that the system is susceptible to such a change. Since the sensitivity of the system is at the same time an association of the actors with the system, each actor takes the presence of the system and itself. Qualitative and quantitative associations of actors do not build a structure that will differentiate them on a social level. On the contrary, the fact that the system is visible in the context of the interactions caused by the network connections positions the actors horizontally on the vital plane. The presence of the potential to change the flow of the system of each actor requires that every actor participate in the account in the systematic interpretation. Whichever actor comes forward is one of the focal points of chaotic awareness work as a temporal problem. An up-and-down science understanding based on linear reasoning produces synthetic distinctions, while information is also reduced to a synthetic categorization. The scientific attitude of the complexity science to produce is the rejection of hierarchical distinctions and a nonlinear imagination.

44.2.2 The Necessity of Nonlinear Epistemic Structuring

The “occurrences” described by the chaotic awareness theory contribute to the complexity science in the light of a science that has been reduced to an absoluteness against the preconceived understanding of modern science and the monopoly of knowledge/science (Akdeniz and Anastasopoulos 2014). We thus discover epistemology for the human being, the new politics of where we can find the symptoms of chaotic behaviors and lives that have been neglected/identified. Moving the philosophy of politics from an abstract realm to a life perspective in which people integrate with the universe will be useful for telling the whole complexity of life.

The form of politics described by nonlinear politics involves horizontal organizational behavior that would prevent the existing sociopolitical ideologies from imposing lien on the will of the people and masses (Bull 1996). The concept itself, rather than ideological discourses, focuses on the methodicity of processes such as creation, circulation, decay, and termination of discourse, because now political thoughts and behaviors can be passed on from the bottom-up. It is better to look for proof that politics is for life. The ideologies that the modern political thinker defines from the top-down are highly unmanned and mechanistic. It’s a simulated interpretation that Newton has come up with to understand the world. An ideological doctrine in which the little ones are ignored is just as functional as the contemporary position of Newtonian science, but the truth is condemned to stay away from itself. Before a human being defines himself with theories, we want to turn to the theories that he has shaped and shaped himself.

44.3 Conclusion

When we consider the modern world as one of the starting points of today’s world, it is necessary to consider it as a period in which some social, political, economic, and epistemological values are shared. Evaluating of social, economic, moral, and epistemological transformations in this period when the founding of the modern state is at the center can give clear inferences in order to capture the whole. Because modern state policy reveals the social, economic, moral, and epistemological system’s structural form and shows how these policies affect other social structures. For this purpose, the content of the philosophy of knowledge includes the systematic position, the function, and the behaviors of reproducing the system. The perception of knowledge as an independent activity in the ideological qualities of the state in society is a reflection of a conscious politics.

In this context, to standardize and centralize the universe, generalizing the entire universe and contemporary cosmology with foreseeable judgments is the loss of the cosmos. Problems created by the modern age are insoluble with modern logic and information codes. Complexity science confuses complexity not as an exception but as the actual nature of the system. It has been seen. The chaotic awareness theory is

the most obvious and most effective set of this claim. The chaotic awareness theory, following this claim, questions the restructuring of the epistemic field. The paradigm of sophistication of complexity, which fosters all the actors of the system and focuses on their systemic connective tissues, has the potential to offer solutions to today's social, political, and epistemological crises.

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Chapter 45

An Analysis of Variables Predicting Attitudes of High School Students Toward Teaching Profession: A Case Study



Sait Akbaşlı, Anıl Kadir Eranıl, and Barış Eriçok

Abstract Determining the attitude levels of the high school students toward teaching profession and the factors affecting these attitudes constitute the aim of the research. In line with this purpose, the attitude levels of the high school students toward teaching profession were determined and whether this level is predicted significantly by independent variables was examined. This is a quantitative study and has been designed as a survey model. Study group of these research consists of 396 students studying at the high schools in Nevşehir province in 2017–2018 academic year. The attitude scale regarding teaching profession was used in these study. Ordinal logistic regression analysis was used in the analysis of the data. According to the results of the study, the attitude of the students toward teaching profession is moderate. It was found that the attitude levels toward teaching profession were found to be higher in the group feeling anxious about choosing a profession compared to the other group that is not feeling concerned. The attitudes of the students planning to choose teaching profession are higher than those of not planning to prefer teaching profession. The students in the low-income group have higher attitudes toward teaching profession than the students in the high-income group. Lastly, the group with the teacher who has influenced them in choosing teaching profession has higher attitude toward teaching profession than the group that does not have such teacher.

S. Akbaşlı (✉)
Hacettepe University, Ankara, Turkey

A. K. Eranıl
Nevşehir Provincial Directorate of National Education, Nevşehir, Turkey

B. Eriçok
Nevşehir Hacı Bektaş Veli University, Nevşehir, Turkey
e-mail: barisericok@nevsehir.edu.tr

45.1 Introduction

When the definition of attitude is examined, expressions that include positive or negative evaluations about concepts, people, and events are named as attitudes. Attitudes convey what you feel about something to the other side. In addition, the words related to situations that are liked or disliked reveal the attitude about that situation (Haddock and Maio 2007; Robbins and Judge 2012). For instance, a student may not like literature, while the other may like psychology. A consumer may prefer liquid detergent, while another one may prefer powder detergent. All these liking or disliking behaviors, which have an important place in the world in which they are found, are at the base of human nature. In this context, attitudes are expressed as permanent evaluations that people have against many concepts in social life. Human beings have attitudes toward other people, such as friends or celebrities, toward objects, social issues, and even abstract concepts such as democracy and conservatism (Bizer 2004). In this way, it can be said that people may have attitudes toward various professions. Anderson (1928) defined attitudes as a social force that can shape people's behaviors not only in present time but also in the future. Likewise, Özdemir and Güngör (2017) also state that attitudes have the power to influence the direction, quality, and quantity of people's behaviors related to a certain event. Besides, attitude is such a versatile phenomenon that while positive and negative attitudes toward a subject have an effect upon achievement and affective variables such as learned helplessness, attitudes are also shaped by these variables interrelatedly (Özgan-Sucu 2018). As can be seen, attitudes can be defined as a concept involving people's final evaluations of a particular topic or situation and at the same time affecting the future.

It can be considered that the professions which are preferred by the influence of the attitudes possessed are the important elements that shape the experiences of the individual. It is obvious that success or failure in choosing a suitable profession will deeply affect one's social life and business life. Studies reveal that the education system has problems in high schools regarding the topics such as career choice and guidance (Kaya and Büyükkasap 2005; Özder 2014). As a consequence of these problems, many students prefer professions that are not suitable for them. In this regard, it can be considered that various problems are experienced at the point of choosing teaching profession. Bursalıoğlu (2013) sees teachers as one of the most strategic pieces of the school which is considered as a social system. Tekişik (1987) expresses teaching profession as an art of raising the growing generation as a good human being and citizen who is constructive, creative, and useful to his/her family, environment, nation, state, and homeland. Individuals who can perform this art should be chosen successfully at the secondary education level. For this reason, this study focuses on the high school students whose basic attitudes about career choice have come to the fore. When the literature is examined, it is seen that the studies about the attitudes toward teaching profession are generally handled in the context of the Faculty of Education and the pedagogical formation certificate programs (Bedel 2008; Oral 2004; Özdemir and Güngör 2017; Polat and Kesen 2014;

Terzi and Tezci 2007; Uğurlu and Polat 2011). Therefore, in this study, it is aimed to examine the factors that predict the attitudes of the high school students toward teaching profession.

45.2 The Purpose of the Study

The purpose of the study is to determine the attitude levels of high school students toward teaching profession and to determine the factors predicting these attitudes. In accordance with this purpose, answers were questioned for the following questions.

1. What are the attitude levels of high school students toward teaching profession? Are the attitude levels of high school students toward teaching profession significantly predicted by the following independent variables?
 - Gender
 - Feeling anxious about choosing a career
 - Preference of teaching profession
 - Having knowledge about the profession to be chosen
 - Having a teacher who may have an effect on not choosing teaching profession
 - Attitude toward the prestige of teaching profession
 - The monthly income of his/her family

45.3 Method

In this section, model of the study, study group of the research, collection of data and data collection tool, processes steps, and analysis of data were given.

45.3.1 Model of the Study

This is a quantitative study and it has been designed as survey model. Survey model is a research approach aiming at describing a past or present situation as it exists. An event, individual or an object which is the subject of the study is tried to be defined as is and within its own circumstances. No attempt is made to change or affect them in any way (Karasar 2003).

45.3.2 Study Group

The study group of the study research consists of 396 students attending the first, second, third, and fourth grades in Nevşehir province in the 2017–2018 academic year. The information gathered from the study group of the research was presented in Table 45.1.

According to Table 45.1, it is seen that the attitudes of the high school students toward teaching profession are mostly good ($f = 140$, 35.4%). It is seen that majority of the participants are females ($f = 259$, 65.4%), most of the students feel anxious about choosing a career ($f = 271$, 68.4%), most of them will not prefer teaching profession ($f = 279$, 70.5%), whereas most of them have the knowledge about the profession that they are thinking of choosing ($f = 312$, 78.8%), and they were influenced by the teacher as the reason for not choosing the teaching profession ($f = 199$, 50.3%). Additionally, it is stated that most of the students think teaching profession has a moderate prestige ($f = 199$, 50.3%), and monthly income of their family is between 1301 and 2000 ($f = 140$, 35.4%).

Table 45.1 Frequencies and percentages of dependent and independent variables

Dependent variable	Categories	f	%
Attitude toward teaching profession	Low	128	32.3
	Moderate	128	32.3
	Good	140	35.4
Independent variables	Categories	f	%
Gender	Female	259	65.4
	Male	137	34.6
Do you feel anxious about choosing a profession?	Yes	271	68.4
	No	125	31.6
Will you prefer teaching profession?	Yes	117	29.5
	No	279	70.5
Do you have any knowledge about the profession that you are thinking of choosing?	Yes	312	78.8
	No	84	21.2
Have you ever had a teacher who may have an effect on you about not choosing teaching profession?	Yes	199	50.3
	No	197	49.7
What do you think about the prestige of teaching profession?	Low	46	11.6
	Moderate	305	77.0
	Good	45	11.4
What is the monthly income level of your family?	0–1300	71	17.9
	1301–2000	140	35.4
	2001–3000	98	24.7
	3001–4000	47	11.9
	4000 and above	40	10.1
Total	396	100	

45.4 Collection of Data and Data Collection Tools

The data of the study were collected by using scale forms. Independent variables in the scale form are as the following:

1. Gender
2. Feeling anxious about choosing a profession
3. Preference of teaching profession
4. Having knowledge about the profession to be chosen
5. Having a teacher who may have an effect on not choosing teaching profession
6. Attitude regarding the prestige of teaching profession
7. The monthly income of his/her family
8. Self-knowledge
9. Priority in choosing a profession
10. Success in courses

Among these independent variables, the eighth, ninth, and tenth were excluded from the analysis because the type of analysis that would serve the purpose of the research was ordinal logistic regression analysis. One of the assumptions of ordinal logistic regression is to exclude variables that will not serve the purpose. When these variables are included in the model, including the causally unfavorable variables into the model, it can complicate the model. That can make the interpretation of the model difficult. These variables may be misinterpreted as having influence on the dependent variable (Baydemir 2014, s. 32). In addition, the number of individuals in the independent variables is taken into account, as well. According to Çokluk (2010), it is emphasized that there should be a minimum of 20 individuals for each independent variable and there should be a minimum of 60 individuals in total. For this reason, it was seen that inclusion of the last three independent variables in the analysis lowered the predictive value of the other independent variables and did not serve the purpose of the study, and therefore, they were not included in the analysis.

In the analysis, tolerance and variance increment values were also analyzed to determine whether there is a multicollinearity problem between the predictor variables. That VIF value is less than 10 and tolerance value is more than .2 indicates that there is no multicollinearity problem (Field 2009). Tolerance and VIF values of the predictor variables are given in Table 45.2.

When the tolerance and VIF values are examined according to the values in Table 45.2, it is seen that the tolerance values are more than .2 and VIF values are less than 10. It was concluded that related assumptions were ensured in this direction.

The attitude scale related to teaching profession used in this study was developed by Erkuş, Sanlı, Bağlı and Güven (2000). There are 23 items in total in this scale. Both four-point and five-point scales are available, and the five-point Likert scale was used in this study. As a result of examining the scale forms, the ones filled out without any due diligence were excluded from the analysis. After the calculation of z score, 18 data which were out of -2.5 and $+2.5$ points were excluded from the

Table 45.2 Results of multicollinearity assumptions between independent variables

Variables	Tolerance	VIF
Gender	.905	1.105
Do you feel anxious about choosing a profession?	.932	1.073
Will you prefer teaching profession?	.904	1.106
Do you have any knowledge about the profession that you are thinking of choosing?	.934	1.071
Have you ever had a teacher who may have an effect on you about not choosing teaching profession?	.964	1.038
What do you think about the prestige of teaching profession?	.960	1.041
What is the monthly income level of your family?	.934	1.071

analysis. There were 448 scale forms left; however, since the type of analysis to be used in the study is ordinal logistic regression, if there is missing data in any of the seven independent variables serving the purpose of the study, then that scale form is not included in the analysis. In 448 scale forms, 52 missing data were found due to independent variables and, automatically, these data were not included in the analysis. As a result, 396 scale forms were used for the analysis.

When the results regarding the validity and reliability of the scale were examined, the value related to construct validity (KMO) was found as .94 and Bartlett's results as 5107.389 ($p < .000$). These results show that the factor analysis assumptions explain the 55.61% of the total variance of the three-factor scale. Cronbach's alpha coefficient was found as $\alpha = .93$. According to these results, it can be interpreted that the scale is valid and reliable.

45.5 Data Analysis

The data of the study were analyzed by using the package software. The significance level of .05 was taken as the basis of the study. Descriptive statistics, frequency analysis, and ordinal logistic regression analysis regarding the students in the study were used. With this analysis, the dependent variable (*attitude score of the high school students toward teaching profession*) was divided into three categories by two-stage clustering analysis (*low, moderate, good*). These categories are progressive inter se from low to high. Thus, the relations between the dependent variable and the independent variables were examined. Ordinal logistic regression assumptions were ensured before the relations were examined. These assumptions are as in the following:

1. The dependent variable ensures the parallel line assumption. The dependent variable must be separated from the correct cutoff point. The separated lines must also be parallel to each other. In other words, the parameters must be equal

to one another in each category. The chi-square test was used to examine the parallel line assumption.

2. The Wald test was used to examine the distribution of the independent variables for each category. With this test, parameter significance was examined.
3. Selection of the appropriate function from the link functions. There are five different link functions. These are logit, complementary log-log, negatively log-log, probit, and cauchit. The most commonly used are logit, probit, and complementary log-log functions (Long 1997). It was seen that cumulative probability values of the categories did not show any sudden change. In such cases, use of the logit function is recommended (Koutsoyannis 1989). Besides, chi-square goodness of fit test was also performed. The function considered to be appropriate for this study is logit.
4. Goodness of fit was tested by examining different pseudo R^2 values. These tests are Cox and Snell and Nagelkerke and McFadden R^2 tests. These tests indicate how much the independent variables predict the dependent variable.

The enter method was used in the analysis process. Because of the importance of even very small correlation differences in ordinal logistic regression analysis, some of the independent variables considered to mislead the analysis were excluded from the analysis (Tabachnick and Fidell 2007).

45.6 Findings

In this section, analyses ensuring the assumptions of ordinal logistic regression and results related to research questions were stated.

The parallel line assumption for the ordinal logistic regression model with the logit link function conducted to analyze high school students' attitudes toward teaching profession is shown in Table 45.3.

H_0 = Parameter predictions pass through the same breakpoints.

H_1 = Parameter predictions pass through different breakpoints.

The total score of 448 people in the study was sorted descending. It was seen that the total scores ranged from 33 to 115, and the mean score was 71.5. While dividing the dependent variable into three categories (*low, moderate, good*), it was aimed to create parallel lines by considering the mean of the total points and the general distribution of the points. Within this context, the categories were formed by giving codes for groups: the highest scores of 152 people (115–77 points) in the study were coded as 3, the scores of the people between the 153 and 305 in the middle group

Table 45.3 Parallel lines

Model	-2 LL	X^2	df	p
Null hypothesis	427.423	12.408	11	.334
General	415.015			

Link function: logit

Table 45.4 The model adaptation table

Model	-2 LL	χ^2	df	<i>p</i>
Intercept only	700.258	190.948	13	.00
Final	509.311			

Table 45.5 Chi-square goodness of fit test

	χ^2	s.d	<i>p</i>
Pearson	296.333	313	.743
Deviance	296.497	313	.740

Table 45.6 Examination of goodness of fit through pseudo-values

Cox and Snell	.377
Nagelkerke	.424
McFadden	.216

(76,49–63,52 points) were coded as 2, and the scores of the people from 306 to 448 (63,49–33 points) were coded as 1. Accordingly, the attitudes of the people toward teaching profession were classified as in the following: people with code 1 were classified as low, with code 2 as moderate, and with code 3 as good. In addition to the calculation, it was also used two-stage clustering analysis and both technical come close. Table 45.2 shows that the regression coefficients according to these results are the same in the three categories of the dependent variable (*low, moderate, and good*) and ensure the parallel lines assumption, and the probability of *p* is .334. The hypothesis H_0 is acceptable for $P > .05$.

The $-2 \log$ likelihood values ($-2LL$) of the model, which is established without the independent variables and with the independent variables, are presented in Table 45.4 below.

In Table 45.4, it is seen that there is a meaningful difference between the model established with the independent variables and the model established without the independent variables ($\chi^2 = 700.258 - 509.311 = 190.948$, $p = .000$). The result shows that there is a relationship between dependent variable and independent variables. In order to test the suitability of the constructed model (logit), chi-square model fit test is presented in Table 45.5.

H_0 = Model is in compliance with data.

H_1 = Model is not in compliance with data.

According to Table 45.5, it is seen that the ordinal logistic regression model with the logit link function is suitable ($p = .743 > .05$). H_0 hypothesis indicating that the model is in compliance with the data can be accepted. Additionally, the pseudo R^2 values to predict the relation between the independent variables and the dependent variable are presented in Table 45.6.

In regard to Table 45.6, the independent variables explain 37% of the dependent variable according to Cox and Snell, 42% of it according to Nagelkerke, and 21% of it according to McFadden. In other words, the independent variables predict the dependent variable on high rates.

Table 45.7 The attitude levels of high school students toward teaching profession

N	Minimum score	Maximum score	\bar{X}	S.E
448	33	115	71.55	18.41

52 lost data scale forms that were excluded during ordinal logistic regression analysis were taken into account here, and the analysis was conducted on 448 students, not 396.

The attitude levels of the high school students toward teaching profession, which is the problem statement of the study, and ordinal logistic regression analysis showing whether these levels are predicted by the independent variables, are presented in Tables 45.7 and 45.8. Additionally, in order to make a comment on the model based on the Wald statistical results, the odds ratio is obtained by calculating e^{β} . When calculating e^{β} , e is stable, and its value is equal to 2.718 (Çokluk 2010).

According to Table 45.7, the mean score of 448 students regarding teaching profession is 71.55. Since the scale has 23 items, it corresponds to $71.55/23 = 3.11$. Accordingly, the attitudes of the students toward teaching profession are 3.11 out of 5. This result can be interpreted as students' having a moderate attitude toward teaching profession.

As seen in Table 45.8, there are seven independent variables. These are as follows:

1. Feeling anxious about choosing a profession ($I = \text{yes}$, $2 = \text{no}$)
2. Preference of teaching profession ($I = \text{yes}$, $2 = \text{no}$)
3. The monthly income of his/her family ($1 = 0-1300$, $2 = 1301-2000$, $3 = 2001-3000$, $4 = 3001-4000$, $5 = \text{above } 4000$)
4. Having knowledge about the profession to be chosen ($I = \text{yes}$, $2 = \text{no}$)
5. Having a teacher who may have an effect on not choosing teaching profession ($I = \text{yes}$, $2 = \text{no}$)
6. Gender ($1 = \text{female}$, $2 = \text{male}$)
7. Lastly, their opinions about the prestige of teaching profession ($1 = \text{low}$, $2 = \text{moderate}$, $3 = \text{good}$)

In the interpretation of the table, firstly the significance value and then the reference category must be taken into consideration. Four values which have asteriks symbol at table seem to be significant. These values were written in bold. The reference categories are written in italics in the independent variables section of the table. According to Field (2009), in interpretation of the odds ratio, if the odds value is more than 1, it is related to the rate of increase, and if the odds value is less than 1, it is related to the rate of decrease.

When the meaningful values are interpreted according to odds ratio, firstly, the part taken as a reference from the independent variables that are anxious about choosing a profession is the group which does not feel anxious about choosing a profession. In other words, while the attitudes related to teaching profession are interpreted, the group that does not feel anxiety in choosing a profession is taken as reference and interpreted accordingly. Each group has its own reference category.

Table 45.8 Examination of model parameter significance

	Variables	Estimate	Std. error	Wald	s.d	p	e^{β}
	Dependent variable						
Threshold	<i>Attitude toward teaching profession (1)</i>	.132	.524	.064	1	.800	–
	<i>Attitude toward teaching profession (2)</i>	2.098	.539	15.174	1	.000	–
Location	Independent variables						
Feeling anxious about choosing a profession (1)	.608	.231	6.918	1	.009*	1.836	
<i>Feeling anxious about choosing a profession (2)</i>	0 ^a	.	.	0	.		
Preference of teaching profession (1)	2.986	.290	106.010	1	.000*	19.681	
<i>Preference of teaching profession (2)</i>	0 ^a	.	.	0	.		
Monthly income (1)	1.113	.415	7.182	1	.007*	3.034	
Monthly income (2)	–.183	.366	.252	1	.616	.833	
Monthly income (3)	.358	.376	.906	1	.341	1.430	
Monthly income (4)	.265	.441	.361	1	.548	1.303	
<i>Monthly income (5)</i>	0 ^a	.	.	0	.		
Knowledge about the profession to be chosen (1)	.183	.257	0.508	1	.476	1.200	
<i>Knowledge about the profession to be chosen (2)</i>	0 ^a	.	.	0	.		
A teacher effecting not choosing teaching profession (1)	.422	.212	3.984	1	.046*	1.524	
<i>A teacher effecting not choosing teaching profession (2)</i>	0 ^a	.	.	0	.		
Gender (1)	–.112	.224	.250	1	.617	.894	
<i>Gender (2)</i>	0 ^a	.	.	0	.		
Prestige of teaching profession (1)	–.832	.439	3.593	1	.058	.435	
Prestige of teaching profession (2)	–.516	.342	2.282	1	.131	.597	
<i>Prestige of teaching profession (3)</i>	0 ^a	.	.	0	.		

Namely, the attitude of the group that is anxious about choosing a profession is 1.83 times higher than that of not feeling anxious. Similarly, the attitude of the group that is thinking of choosing teaching profession is 19.68 times higher when compared to the group that is not thinking of choosing teaching profession. The attitude of group with a family income of 0–1300 TL is 3.03 times higher than the attitude of the group with a family income of above 4000 TL. Finally, the group with the teacher who has influenced them in choosing the teaching profession has a 1.52 times higher attitude toward the teaching profession than the group that does not have such teacher.

45.7 Discussion and Conclusion

In this study, the attitude levels of the high school students toward teaching profession were determined, and this level was scrutinized in terms of various variables. It can be said that the attitude toward teaching profession is quite important because of the strategic position of teaching profession. As a result of this, it is seen that various studies have been conducted on the subject in literature. These studies include the attitudes of the students of a particular program to the teaching profession. In addition, there are studies including perceptions of teacher candidates and pedagogical formation program for students toward teaching profession. Finally, there are also studies in which various variables are examined as a predictor of attitudes toward teaching profession (Arastaman and Demirkasımoğlu 2017; Bektaş and Nalçacı 2012; Eraslan and Çakıcı 2011; Kaşkaya et al. 2011; Korthagen 2004; Kyriacou and Coulthard 2000; Özbek 2007; Unwin 1990; Üredi 2017). According to this situation, it is thought that determining the attitudes of university students who have chosen their profession and receiving the education of that profession toward teaching profession is more appropriate than the attitudes of high school students who have not chosen their profession yet. This study, unlike the studies mentioned before, examines the attitudes of the students in high school toward teaching profession.

According to the results of this study, the attitudes of the high school students toward teaching profession are moderate. The problem of unemployed teachers which occupies the agenda and has become an important problem in recent years may be the reason of moderate attitude revealed in this study. Gökyer and Çiçek (2011) have also made a study on contracted teachers which can be seen as a part of the problem of unemployed teachers. According to the results of the study, contracted teachers have considerations such as inadequacy in their personal rights, low job satisfaction, and feeling themselves worthless. There are quite a number of studies on the attitudes toward teaching profession in literature. Demircioğlu and Özdemir (2014) found that the attitudes of the students attending the Faculty of Science and Literature toward teaching profession were moderate and positive. Engin and Koç (2014) studied teacher candidates' attitudes toward teaching profession and found that their attitudes were high and positive. Similarly, Çiçek Sağlam (2008) and Terzi and Tezci (2007) found quite high attitude toward teaching

profession. On the other hand, Aksoy (2010) observed moderate and high attitudes in his research on teacher candidates, depending on the programs the candidates were studying. In other words, it can be said that the results of these studies differ according to the samples they have studied, but in general it can be seen that students have moderate or high level of attitudes toward teaching profession. There may be many underlying reasons for this result: to be employed officially by the Ministry of Education is difficult in Turkey, the news that emerge in the media harms teaching profession, and the salaries of the teachers are quite low.

In this study, variable of feeling anxious when choosing a profession was also examined. The studies conducted show that professional anxiety, finding a job, or future anxiety are among the most important problems of the student in all grades (Erdener et al. 2017; Güneri et al. 2003; Kitzrow 2003; Özgiiven 1992; Pektaş and Bilge 2007; Schweitzer 1996; Topkaya and Meydan 2013). According to the result of this study, the attitude levels toward teaching profession were found to be higher for students feeling anxious about choosing a profession compared to the other students that do not feel anxious. Dogan and Çoban (2009) also found that the attitudes of the students toward teaching profession were positive and their levels of anxiety were low. Feeling anxiety in choosing a profession can be interpreted as having a certain level of consciousness. In this regard, this level of consciousness may be the reason why those who are anxious about choosing a profession have higher attitudes toward teaching profession.

According to this study, the attitude level of the high school students who plan to choose teaching profession is higher than the students who do not prefer teaching profession. It was observed that there were very few studies examining the attitudes of the high school students toward teaching profession in literature. Yanık (2017) examined the attitudes of high school students toward physical education teaching profession. As a result of the research, it was concluded that the attitudes of the high school students toward the physical education teaching profession were moderate. The reason for these results can be interpreted as high school students have already planned their career and have an idea about the profession they have planned.

In this study, significant results according to the independent variable of income status were also obtained. Accordingly, the students in the low-income group have higher attitudes toward teaching profession than the students in the high-income group. In other studies in literature, it is seen that the students who are in the low-income group have high attitudes toward the teaching profession. Özbek, Kahyaoğlu, and Özgen (2007) also found higher attitudes toward teaching profession among those with low-income levels. Özbek (2007) found that the tendency to prefer teaching profession in higher-income families also increased. Engin and Koç (2014) state in their study that there is no differentiation in the attitudes of the candidate teachers toward teaching profession according to their income status. The desire to have a profession that guarantee the future of the students can be interpreted as the reason for this result.

Finally, it was found that the group with a teacher who influenced them in choosing teaching profession had higher attitude toward teaching profession than the group that did not have such teacher. This situation shows how crucial the effects

of teachers on students can be. It can be said that classroom experiences play an important role in the background of the professional choices of the students, especially during high school education.

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Chapter 46

The Determination of the Turkish Perception of Graduate Students Through the Method of Metaphor



Ercan Baysülen

Abstract In this study, the perception of the graduate students towards Turkish was tried to be determined through metaphor. This study was conducted using the phenomenology pattern within the framework of qualitative research approach. The study group consisted of 49 graduate students studying in different departments of various universities during the 2017–2018 academic year. Metaphors related to Turkish were analysed by content analysis technique within the qualitative research approach. The metaphors created by the participants were analysed in terms of their common features, and they were collected in seven categories as “being indispensable, valuable, rooted, enlightening, unifying, reliable and unique” in the positive perception category for Turkish. When the findings of the study were examined, it was seen that participants had a positive perception (97.9%) on the Turkish side, and very few (21%) perceived it as difficult.

46.1 Introduction

It is language that takes human beings who live here and now like other beings to the past, the future or elsewhere separating them from here and now (Karaağaç 1999). The system that mankind has formed by word. Meaning relation in long years in the history scene by separating himself from other beings is called language. Language is a regular system made up of words. Language that has an important function in the relation of human with human and human with being has thus formed its tradition and history. Hence culture has promoted societies in all fields from culture to science and from philosophy to art not allowing any returns, repetitions and disappearances. Language is the strongest band that makes a society a nation because language is the most significant means that ensures the continuity of the national culture. Language ties the individuals tightly to their nation, country and history and makes them a part of the chain between the past and the future (Aksan 1998).

E. Baysülen (✉)
Ministry of National Education, Ankara, Turkey

A human being realizes his first relations with the outside world in his mother tongue. Many languages can be learned or acquired later, but only one of them can be learned the time directly by living and experiencing during the time and way from infancy to becoming a member of a language community (Vossler 2014). The concept of a mother tongue that is the national language of societies is experienced only once in each individual's life. The physical existence of a human can live anywhere in the world, but the spiritual being lives on in the mother tongue. Losing or corrupting the mother tongue means losing the soul at the same time, and history shows us the nations that are lost along with their language. This point undoubtedly demonstrates how important Turkish is for the Turkish nation.

In the formation of Turkish, the social, cultural and religious values of the Turkish society and its interactions with other communities have played a significant role.

It is seen that the roots of this language go back to the old times far away from this century when the sentence structures, vocabulary and richness of expression in the Göktürk inscriptions that are written in the eighth century AD and that are the first written document in Turkish are examined. This deeply rooted language, which dates back to centuries ago, owes its existence to the Turkish nation, and the Turkish nation owes its being to the Turkish language.

The continuous communication and interaction of humans with humans and other beings affects the attitude that people will exhibit in the process. In this attitude, the perception of the individual has a great influence. Therefore, the perception of an individual about Turkish gives an idea about the social structure and culture. Perception is the conscious awareness of something through senses by directing one's attention to it (Akarsu 1975). Using the metaphors to reveal the images of individual's thoughts about Turkish can help us understand their perception of Turkish. Because metaphors are the main linguistic means that humans have discovered to understand, explain, establish and organize the world, for this reason, metaphors help humans to see how they build their own reality and how they perceive the world (Lakoff and Johnson 2005) and metaphors expand imagination to provide strong insights (Morgan 1998). Metaphor is a tool of perception (Arnett 1999). There are many studies showing that metaphors are strong study tools in the determination of perceptions (Inbar 1996; Guerrero and Villamil 2002). Metaphors can be used as a powerful tool to reflect the individual's perception of Turkish. For this reason, these metaphors of the participants can give significant ideas about how Turkish is perceived and the current situation of Turkish. Although there are metaphor studies in the field of language, literature and foreign languages at the higher level education (Sevim et al. 2012; Göçer 2013; Mete and Ayrancı 2016), there are no studies about this subject on the perception of Turkish on the graduate level. In this regard this study can also be considered as an effort to cover this area in the literature. In this context, this study aims to determine the perception of Turkish by metaphors among the graduate students. To achieve these, answers of the following questions are sought:

1. What are the metaphors of the graduate students about Turkish?
2. Under which conceptual categories can these metaphors of graduate students be collected in accordance with their common features?

46.2 Method

46.2.1 Research Pattern

The study was carried out using the phenomenology pattern within the framework of qualitative research approach; phenomenology pattern focuses on the phenomena that we are aware of but we do not have an in-depth and detailed understanding. Phenomena can emerge in various forms such as events, experiences, perceptions, inclination, concepts and situations in the world we live (Yıldırım and Şimşek 2005:72).

46.2.2 Study Group

The study group of this study includes 49 graduate students studying at different universities in the 2017–2018 academic year. Participation was based on volunteering, and no personal information was requested in the data collection form.

46.2.3 Collection of Data

In order to determine the perceptions of Turkish by metaphors, a form which requires gap filling with a single question was prepared by the researcher. Participants were asked to express the notions that “Turkish” evoked in them and the reason for this connotation. The question in the form is as follows:

“Turkish is as because

46.2.4 Analysis of Data

The participants’ metaphors for Turkish were analysed using the content analysis technique within the qualitative research approach. By using the content analysis approach to analyse the study data, it has been attempted to make the data more understandable by bringing similar data, concepts and themes together. The analysis of the qualitative research data through content analysis was made by the following stages: coding the data, finding the themes, organizing the codes and themes, and identifying and interpreting of findings. Both the researcher and the field expert coded the data separately, and the consistency of the analysis of the themes was analysed, and the result were compared by the determination of the numbers of agreement and disagreement. The reliability calculation of the study was made using

Miles and Huberman's (1994) reliability percentage formula "reliability= consensus / (consensus + dissidence)."

In the literature, when the reliability percentage is 70%, then the study is accepted as reliable (Yıldırım and Şimşek 2005). This study's reliability percentage is 91%, and it is accepted as reliable.

46.3 Findings and Interpretation

In this part of the study, the findings obtained in the direction of the aims were interpreted by analysing. The findings were obtained by analysing the data derived from the data gathering form. At the analysis stage of the study, the expressions the students wrote to the question were coded by a group of words. Data that have the same features formed the same theme. Phenomena that are combined under the similar themes formed a category.

Two main categories were formed during this research as positive and negative.

As seen in Table 46.1, the participants developed 49 metaphors for Turkish. Metaphors (being in dispensable, valuable, rooted, enlightening, unifying, reliable, unique) whose theme have positive connotations are classified under the category of "positive perceptions." Besides metaphors with negative connotations are collected under the theme of "hard to learn" under the category of negative perception. It is seen that 97.9% of metaphors are positive, and 2.1% of them are negative. This result is significant since it shows how participants perceive Turkish.

Metaphors such as "life, breath, water, etc." generated by most of the participants ($n = 12$) are important since they express the significance and indispensability of Turkish for the participants. The metaphor of "breath" with the description "Just as we cannot live without breathing, we cannot live without language." is remarkable since it shows the significance language has. The metaphor of "salt in the food" with the description "Just as food without salt has no taste, life without Turkish would be

Table 46.1 Distribution of metaphors by categories and themes

Category	Theme	Code	<i>f</i>	%
Positive	Being indispensable	Life, breath, oxygen, soil, water, heart, blood, salt in the meal, car	12	24.5
	Being valuable	Treasure, bird, freedom, heritage, the foundation of the building, melodic	8	16.3
	Being rooted	Tree, plane tree, universe, sky, ocean, sea	8	16.3
	Being enlightening	Sun, light, tart, candle	6	12.2
	Being unifying	Homeland, home	5	10.2
	Being reliable	Mother, mother's womb, my daughter	5	10.2
	Being unique	Identity, mirror	4	8.2
Negative	Hard to learn	Brain cube	1	2.1
Total			49	100

unpleasant and meaningless.” is also remarkable since it shows the significance language has.

The metaphors such as “treasure, freedom, etc.” with the description “Turkish is a unique treasure handed down to us from our ancestors and a treasure that will be handed to the next generation.” are significant since they show that Turkish is valuable ($n = 8$). The metaphors such as “tree, plane tree, universe, etc.” with the description “rooted like a plane tree and magnificent as to take everyone under its shade” show that the participants are aware of the fact that Turkish has a rooted history ($n = 8$).

The metaphors “sun, light, star, and candle” with the description “It enlightens the darkness.” are significant since they show that Turkish is “enlightening” ($n = 6$). The metaphor “homeland” with the description “It keeps us together, we should protect its borders.” is significant since it shows that Turkish is “unifying” ($n = 5$). The metaphor “nine months in the mother’s womb” with the description “The moments I felt most confident are the ones when I express my thoughts in Turkish (my mother tongue) and when I think I will be understood. The dialogue I make with people whose mother tongue is Turkish makes me more comfortable and relaxed.” is significant since it shows that Turkish is “reliable” ($n = 5$).

The metaphors “identity and mirror” with the description “my mother tongue reminds me who I am” are significant since they show that Turkish is “unique.” These statements can be regarded as a sign of strong attachment the participants have towards Turkish.

As it can be seen in Table 46.1, just one of the metaphors out of 49 metaphors that the participants generated is classified under the category of negative metaphors.

The metaphor “brain cube” with the description “Turkish is like a brain cube because just as it is difficult to bring together the same colours in the brain cube, Turkish is also a difficult language to learn” is evaluated as negative.

46.4 Conclusion and Recommendations

In this study, participants were asked to produce metaphors related to Turkish in order to determine the perception of graduate students when the metaphors generated by the participants were analysed in terms of their common features; they were collected in seven categories as “being indispensable, valuable, rooted, enlightening, unifying, reliable and unique” in the positive perception category for Turkish. When the findings of the study were examined, it was seen that most of the participants (97.9%) had a positive perception towards Turkish; a very few of them (2.1%) perceived it as difficult to learn.

It is expressed in written and visual media or in the social perception that the new generation use Turkish wrongly (Karahisar 2013). Although these statements are true in a sense, we should be aware of the fact that we live in a digital world without any borders and that such influence is not limited to our language and that the whole world is facing similar problems.

As the findings of this study point out, most of the Turkish perceptions of students constitute attachment to Turkish.

Although Turkish is under corruption (Yalçın 1997), it is seen in this analyses that the next generation feels attachment to Turkish and that national consciousness is high. This study provided the opportunity to understand how participants perceive Turkish. Other researches that reveal the perceptions of Turkish through metaphors at different levels of educations can also be done.

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Chapter 47

Investigation of the Critical Leadership Scores of Candidate Teachers by Parental Education Levels



Mehmet Özcan, Recep Gür, Anıl Kadir Eranıl, and Barış Eriçok

Abstract The quality of the family environment in which candidate teachers have been raised plays an important role in shaping their future. Therefore, it is extremely important to investigate the teachers who have an essential role in shaping the society and what kind of family structure they have come from. In this context, the importance of the concepts family and teacher in terms of their influence on the students makes the parental education status of the candidate teachers a topic worth studying. In this regard, the aim of this study is to investigate the effect of parental education level of candidate teachers on the levels of critical leadership. The present study has been designed as a survey model. The study group includes 497 students studied at Nevşehir Hacı Bektaş Veli University in 2015–2016 academic year. Critical leadership scale was used as data collection tool. In this study, while the critical leadership scores of the candidate teachers did not differ significantly according to the mother’s education level, there was a significant difference in the paternal education level. When examining that the difference in the paternal education level results from which pairwise group, there was a significant difference between the critical leadership scores of candidate teachers whose fathers graduated from “primary school university” and “secondary school university.” This difference has been found in favor of candidate teachers who graduated from primary school and secondary school, respectively. We can infer from these results that while the paternal education level reduces, the critical thinking levels of candidate teachers increase.

M. Özcan (✉) · B. Eriçok
Nevşehir Hacı Bektaş Veli University, Nevşehir, Turkey

R. Gür
Erzincan University, Erzincan, Turkey

A. K. Eranıl
Nevşehir Provincial Directorate of National Education, Nevşehir, Turkey

47.1 Introduction

Criticism plays a central role in the processes during which individuals develop and mature. Individuals can be subjected to criticism from the outer world, and also individuals can criticize themselves. This situation might have been assessed by individuals differently. Individuals can develop defense mechanisms against these criticisms or they can turn the situation into positive achievement by analyzing the process of criticism deeply. The importance of criticism is considered and highlighted by both individuals and national and international institutions. In this context, the American Philosophical Society has arrived at a consensus about the definition of critical thinking in 1990 and defined critical thinking as “the process of determined, self-regulatory judgment” (Facione 1990). This judgment process reflects different attitudes in the individual. Dias et al. (2016) state that an individual should develop a set of features of attitude and critical thinking such as self-discipline, responsibility, forethoughtfulness, curiosity, perspective, intuition, creativity, practicality, empathy, flexibility, insistence, courage, patience, and reflection of thought and vision for the critical thinking. The abovementioned attitudes and behaviors of the individual help her/him to become prominent in the society and develop leadership skills. Erani (2014) said that if a leader has the skills to influence her/his own environment, she/he can win her/his followers’ confidence and lead them in difficult decisions she/he makes through this skill. The leader with critical skills has the opportunity to refresh herself/himself and her/his followers through this skill. This opportunity is an important skill to keep up with the globalizing world.

There have been different definitions in the literature on the concept of critical leadership, which is a subject for many researches. Critical leadership describes thinking skills as being utilized leadership actions in different situations (Jenkins and Cutchens 2011). Blackmore (1999) indicates that critical leadership is the ability to act together with followers. In his/her critical leadership studies, Collinson (2014) firstly emphasizes the importance of followers’ actions, knowledge, and potentials. Secondly, leadership dynamics can go beyond their purpose and become complicated in the event that the leader does not understand or realize. Thirdly, critical leadership studies examine how leadership-follower dynamics can enhance through secure personality discovery strategies that produce complex results. In sum, critical leadership provides multifaceted development for the individual. The individual constitutes group dynamism by using leadership dynamics on his/her followers during this development process. The leader becomes aware of the potential of his/her followers within this period. The ability to manage the potentials is an important characteristic of critical leaders.

Individuals obtain majority of their achievements from their family. As in most achievements, leader achievement also begins firstly in the family. In this regard, the family has a great influence on the individual’s leadership skill. Yıldız (2015) defines the family as the first and most important social institution to be appealed to the establishment of social peace, as well as the first educational environment in which

the individual prepares for the life. Thus, the family forms the core unit of a society. The education level of the family members can also have an influence on what kind of culture this family has. The quality of family culture can show the quality of the social structure, too. Parental education level cannot reveal the cultural structure of a family alone, but it might be a crucial factor. Balkıs et al. (2016) report that students whose parents have low-education level and low-income level had higher absentee rates of high school than the others. Hoff-Ginsberg (1991) stated that university graduate mothers establish a more verbal communication, use a richer vocabulary, and read more books to their children than mothers whose education is limited to high school. This situation also directly affects the child development. A child with a rich vocabulary may also have a higher awareness level and communication skills than her/his peers. Hence, she/he may show leadership trait within the group since she/he will be one or a few steps ahead of her/his peers. In brief, parental education level may significantly affect child's leadership abilities.

It can be said that in addition to the family, the teacher has an influence on the child. It is critically important to investigate the teachers who have a vital role in shaping the society and what kind of family structure they have come from. The family of the teacher is important in shaping her/his life world. This importance can also affect that teacher's students. Thus, the importance of the concepts family and teacher in terms of their influence on the students makes the parental education status of the candidate teachers possible to investigate.

A teacher with critical thinking can also train students with critical thinking in the same way. The critical thinking origins of a teacher may lie in family structure. In this regard, the family can be thought of as the first institution, which has been sowed the seeds that the child becomes critical leader. Individuals with critical thinking and critical leadership characteristics can look at events objectively. This may cause to create a society in which its individuals can make decisions with their logics. In this regard, it is important to note that the family environment in which the candidate teachers have been raised has also given them critical thinking skills and critical leadership characteristics. As a result, the investigation of the effect of parental education level on the critical leadership scores of the candidate teachers constitutes the problem question of the research.

The overall aim of the present study is to examine the effect of parental education level of candidate teachers on critical leadership scores. In this direction, it was examined whether the critical leadership scores of the candidate teachers differ significantly according to their parental education level. In accordance with this purpose, some answers have been searched to the following questions:

1. Do the critical leadership scores of candidate teachers differ significantly according to the mother's education level?
2. Do the critical leadership scores of candidate teachers differ significantly according to the paternal education level?

47.2 Method

This part includes the aim of the research, research model, study group, data collection, and analysis of data.

47.2.1 Research Model

The present study has been designed as a survey model. Survey models are “research approaches aimed to describe a past or present situation as it is” (Karasar 2012, p.77).

47.2.2 Study Group

The study group includes 497 students who studied pedagogical formation education in the 2015–2016 academic year at Nevşehir Hacı Bektaş Veli University. Women ($f = 339$, 68.20%) greatly outnumber men ($f = 158$, 31.80%) in gender distributions of pedagogical formation students. Although marital status distributions of candidate teachers are close to each other, single candidate teachers (52.30%) are a bit more than married ones. When the mother’s education level is examined, 61.60% of them graduated from a primary school. The number of candidate teachers whose father graduated from high school and university according to the paternal education level shows an equal distribution (19.30%). Furthermore, it has been concluded that the average age of the candidate teachers is 24.

47.2.3 Data Collection Tool

The study data were collected using online form, which includes critical leadership scale, parental education level, age, gender, and marital status demographic variables. 532 scales were answered at the end of this course. 35 of the answered scales were excluded from the study which were filled imprecisely. As a consequence, a scale of 497 students was included in analyses.

Critical leadership scale developed by Saylık (2015) was employed as data collection tool in the research. The study by Saylık suggests that the first factor includes 13 items, the second factor includes 21 items, and factor loadings of 34 items in total ranged from .59 to .82 and Explanatory factor analysis of the scale is (KMO = .98). These two factors explain 63.50% of the total variance. These results provide evidence for the construct validity. When internal coefficient of consistence is examined, a finding of the first factor ($\alpha = .95$), second factor ($\alpha = .97$) and total factor ($\alpha = .97$) indicates that the items forming the scale are

consistent with each other. These results demonstrate that critical leadership scale is valid and reliable.

47.2.4 Analysis of Data

The data obtained from the study were analyzed by package program. The significance level was accepted as .05 in the research. Descriptive statistics and frequency analyses were used for the critical leadership description of candidate teachers in the study group. They were excluded from the analysis for five data out of $-3z$ and $+3z$ scores constitute outliers by calculating z -scores in relation to critical leadership scores of candidate teachers. After excluding the outliers, histogram graph, skewness and kurtosis values, mean, median, and mode values were examined for normality hypothesis. -1 and $+1$ ranges for the skewness and kurtosis values were considered as the acceptable range (Büyükoztürk et al. 2011; Leech et al. 2005). One-way analysis of variance (ANOVA) was performed in this study.

In this study, null and H_0 hypothesis are suggested. If the null hypothesis (H_0), that is, no difference between their universe averages to which the groups belong is rejected, that is to say, there has been found significant difference between at least two groups for their universe averages, finding out that this difference or these differences arise(s) from which groups add power to interpretation of the analysis results. For this purpose, an appropriate multiple comparison test (Scheffe) should be used for the mean scores of the groups.

47.3 Results

This part includes findings and interpretations related to the research questions searching for the answer within the aim of the research. Descriptive statistics for critical leadership scores of candidate teachers are presented in Table 47.1.

Table 47.1 shows that range of variable investigating within the research was narrow, and candidate teachers formed a homogeneous group in terms of the variable that has been investigated (Büyükoztürk et al. 2011). The fact that the coefficients of skewness and kurtosis are in the range of ± 1 and mode, median, and arithmetic mean values are close to each other provides an insight into the univariate normality assumption relating to critical leadership scores of 497 candidate teachers (Leech et al. 2005). Findings and interpretations related to the research questions searching for the answer within the aim of the research are presented.

Table 47.1 Descriptive statistics for critical leadership scores of candidate teachers

	<i>N</i>	Range	<i>M</i>	Med	Mod	K_y	B_S	SD	$V_{\%}$
Critical leadership	497	69.00	145.40	148.00	156.00	-.58	-.21	15.00	5.96

Table 47.2 Results of one-way analysis of variance

Source of variance	Sum of squares	Sd	Mean squares	<i>F</i>	<i>p</i>
General	111609.70	496			
Between groups	1887.73	6	314.62	1.41	.21
Within groups	109722.00	490	223.92		

47.3.1 Findings of the Effect of Mother Education Level of Candidate Teacher on Critical Leadership Scores

This part includes the findings as to whether critical leadership scores of the candidate teachers differ significantly according to mother education level. When the Levene test, also known as the homogeneity test, used in order to test the equality of group variances related to the mother's education level is examined, it is seen that [$F_{(6,490)} = .07, p > .05$] F test was not statistically significant, suggesting that the group variances are equal. The average of the critical leadership scores of the candidate teachers ranged between 138.50 and 164.50 according to the mother's education levels. Table 47.2 presents the results of one-way ANOVA as to whether critical leadership scores of candidate teachers differ significantly according to mother education level.

The hypothesis H_0 is accepted according to the results of a single-factor analysis of variance for independent samplings. In other words, the critical leadership scores of the candidate teachers do not differ significantly at the .05 level according to the mother's education level ($F = 1.41, p > .05$). Therefore, the mother's education level has no significant effect on the training of a candidate teacher with the critical leadership characteristics.

47.3.2 Findings of the Effect of Paternal Education Level of Candidate Teachers on Critical Leadership Scores

This part includes the findings as to whether critical leadership scores of the candidate teachers differ significantly according to the paternal education level. When the Levene test, also known as the homogeneity test, used so as to test the equality of group variances relating to the paternal education level is examined, it is seen that [$F_{(4,492)} = 1.21, p > .05$] F test was not statistically significant, suggesting that the group variances are equal. The average of the critical leadership scores of the candidate teachers ranged between 139.78 and 147.73 according to the paternal education levels. Table 47.3 presents the results of one-way ANOVA whether critical leadership scores of candidate teachers differ significantly according to the paternal education level.

The results of "one-way analysis of variance table" suggest that critical leadership scores of candidate teachers differ significantly at .05 level according to the paternal

Table 47.3 Results of one-way analysis of variance

Source of variance	Sum of squares	Sd	Mean squares	<i>F</i>	<i>p</i>
General	111609.70	496	1153.39		
Between groups	4613.55	4	217.47	5.30	.00
Within groups	106996.20	492			

Table 47.4 Results of multiple comparison test

Method	Primary school	Secondary school	High school	Faculty	Master
Primary school	–	–	–	*	–
Secondary school	–	–	–	*	–
High school	–	–	–	–	–
Faculty	*	*	–	–	–
Master	–	–	–	–	–

* $p < .05$.

education level ($F = 5.30$, $p < .05$). In order to detect that differences result from which pairwise group, Scheffe test is frequently used for multiple comparisons of mean scores when the group variances are equal [$F_{(4,492)} = 1.21$, $p > .05$] and the sample is unequally distributed. Table 47.4 presents the results of multiple comparison test (Büyükoztürk 2010).

When analyzing Table 47.4 for the results of the multiple comparison test (Scheffe test) showing that differences arise from which pairwise group, it is seen that there was a significant difference between critical leadership scores of candidate teachers whose fathers graduated from “primary school” ($M = 147.73$), “secondary school” ($M = 147.16$), and university” ($M = 139.78$). It has been found that candidate teachers whose fathers graduated from primary school had the highest critical leadership scores. It has been established that candidate teachers whose fathers graduated from the secondary school had higher critical leadership scores ($M = 147.16$) than ones ($M = 139.78$) whose fathers graduated from the university.

47.4 Discussion and Conclusion

Critical thinking has a complex structure because all the stakeholders of the education system have a substantial effect on critical thinking. These stakeholders consist of school administrators, teachers, auxiliary staff, local administrators, assigned or elected officials, and most importantly, families. For this reason, there exist a lot of studies on parenting education and critical thinking in the literature (Akbaýır 2003; Bakır & Adak 2015; Can & Kaymakçı 2015; Emir 2012; Jenkins 2012; Saracalođlu et al. 2004; Őenol et al. 2015; Yıldız 2015).

When examining the literature on the parental education level, Yıldız (2015, p.179) emphasizes that parental education should be regarded as an important part of child education, to put it another way, stresses the importance of parental education level. Kocayörük (2016) also attaches the importance to father participation practices and considers these practices as a part of parental education. Kocayörük's research concentrates on efforts aimed to increase the social, academic, and personal development of parents and students, with the involvement of a mother, a father, or family members. Saranlı and Metin (2014, p. 8) underline the positive results of parenting education. Similarly, Biber and Ural (2016, p.1197) indicate that the support being provided for families may contribute substantially to the child's various developmental levels. Hoff (2003) notes that parental education level has the most important environmental impact on a child's cognitive enhancement and that there is a direct link between parents who graduated from a higher education and creating a more intellectual environment for children. Hoff et al. (2002) concluded that language used by parents who graduated from a higher education has a positive influence on their own children.

When the studies on the level of family education and critical leadership are examined together, Connell-Carrick (2006, p. 832) suggests that families must also possess critical thinking skills. Koçak et al. (2015) investigated the candidate teachers' critical thinking levels and their attitudes toward reading in terms of various variables and found low-level, positive, and significant relationship between them. Ay (2006) also investigated the relationship between the power of critical thinking and parental education level and came to the conclusion that there is a positively significant relationship between the mother's education level and the power of students' critical thinking. Moreover, Özdemir (2005, p. 13) who investigated critical thinking skills of university students in terms of various variables suggests that the mother's education level had no effect on children's critical leadership and critical thinking levels. Similarly, Sen (2009, p. 86) also found that there was no significant difference between the mother's education level and the critical thinking attitudes of the candidate teachers. Çekiç (2007) revealed that when examined the levels of power of critical thinking in terms of various variables, the mother's education level did not cause to differ in the students' critical reasoning power scores. Çetin (2008) also found that the mother's education levels of primary school teacher candidates did not have an influence on the critical thinking power levels. In addition to these, Gülveren (2007), Kaya (1997), and Can and Kaymakçı (2015) demonstrated that the mother's education level did not have significant difference in the critical thinking skills of the students. It can be said from these studies that as the mother's education level increases or decreases, there is no significant improvement or decline in the critical thinking skills of the students.

Considering the studies inconsistent with the finding indicating that critical leadership scores of candidate teachers did not differ significantly according to the mother's education level, a study by Ay (2006, p. 176) who examined a relationship between critical thinking power of secondary school students and their parental education status indicates that there was a quite positively significant relationship between the mother's education level and the power of students' critical thinking. In

other words, the results of Ay's study suggest that as the mother's education level increased, the level of students' critical thinking also improved. The studies by Tmkaya and Aybek (2008) and Krm (2002) found that there is a significant difference between tendencies toward critical thinking and the "mother's education level."

en (2009, p. 86) found that there is no significant difference between the paternal education level and critical thinking attitudes of the candidate students. Tmkaya and Aybek (2008) revealed that there is no significant difference between the paternal education level and critical thinking tendencies. In a similar manner, Can and Kaymakı (2015), Glveren (2007), and Kaya (1997) also stated that the paternal education level does not influence the critical thinking skills of the students. Findings of the studies carried out by Sen (2009), Tmkaya and Aybek (2008), Can and Kaymakı (2015), Glveren (2007), and Kaya (1997) contradict with the finding that reports a significant difference in the critical leadership scores of candidate teachers according to the paternal education level in this study.

In this study, when paternal education level examined, it has been determined that there was a significant difference between the critical leadership scores of candidate teachers whose fathers graduated from "primary school-university" and "secondary school-university." In this research, the critical leadership score of the candidate teachers whose fathers' education level is primary school is higher than whose fathers' education level is university. Similarly, the level of critical leadership of the group whose fathers' education level is secondary school is higher than the group whose fathers' education level is university. In other words, as the fathers' education level decreases, the level of critical leadership score of candidate teachers increase. Contrary to this study, as the paternal education level increases, the critical thinking power has also increased significantly (Ay 2006). Likewise, Krm (2002) highlights that critical thinking power of the candidate teachers whose fathers were illiterate is significantly lower than one of the candidate teachers whose fathers graduated from the university.

From these findings, it can be said that the mother is the family's helper and guardian and the father is the family's leader in Turkish family structure. In this regard, the fact that mothers are more affectionate toward and more intervening against the children than fathers may lead to the loss of their ability to make their own decisions and cause the children's critical questioning skills to weaken. It can be inferred, however, that as the paternal education level decreases in the direction of a limitation caused by the cultural structure of the research group, the candidate teachers' fathers may contribute to their children's development of critical leadership skills.

On the one hand, it may be recommended the researchers to plan a study in which to investigate the combining effect of whether the parents of candidate teachers are divorced and parental education levels on critical leadership scores. Besides, this can be examined thoroughly by means of a qualitative research being carried out on critical leadership by interviewing the candidate teachers about why their critical leadership scores have been reduced while increasing the paternal education level. On the other hand, it may be recommended that the relevant institutions and

organizations give seminars and trainings for the families on the critical leadership in cooperation with the Ministry of National Education (MEB), Council of Higher Education (YÖK), and Ministry of Family and Social Policies.

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Chapter 48

The Leadership Types Which the Ombudsmen Can Utilize at the Ombudsman Institution



Ümit Binbir

Abstract The aim of this study is to put forward the leadership types which the ombudsmen working at the Ombudsman Institution can use, while they are performing their tasks. First, the reasons for which the Ombudsman Institutions were established in the world are mentioned. Then, the mentioned tasks which the Ombudsman Institution and the ombudsman perform are explained. Afterward, the features of the ombudsman and the mentioned leadership types are tried to be related with each other by mentioning the personal and professional features of the ombudsman and leadership types. The data was gathered through the document analysis in this study in which the descriptive model was used, and this descriptive method was used so as to analyze the data. According to the results, the ombudsman may get benefit from some leadership types when their personal and professional features are taken into account. These leadership types are charismatic leadership, transformational leadership, moral leadership, democratic leadership, and quantum leadership.

48.1 Introduction

The emergence of governments made difference between governors and governed people in the societies. It is because gradual population growth caused chaos and disorder. Hence, people needed a power above that of a human being so as to guarantee themselves and to protect their rights (Çeçen 2000, p. 93). Protecting rights and freedom has kept the societies highly busy since the notion of “the freedom” arose. In order to protect their freedom, the societies struggled to organize direct, rapid, and free organizations. However, as there are some inadequacies in created organizations, either some organizations were founded to compensate current shortage of those organizations or some new organizations were established as substitutions for the former ones (Temizel 1997 p. 34). Those developments are entailed to inspect available or formerly established organizations. In this regard, the

Ü. Binbir (✉)
Hacettepe University, Ankara, Turkey

Ombudsman Institution along with several organizations was given an inspector role in the historical period.

The Ombudsman Institution which are now running with various types in almost 100 countries arose first in Sweden. The king of Sweden, Charles XII, assigned the first ombudsman in 1713 so as to inspect the judges, the people who gathered the taxes on behalf of the king, and the ones who acted on behalf of the king when the king was abroad. Then, Ombudsman Institution spread over the world because of some reasons (Özden 2010, p. 26–27). The reasons why the Ombudsman Institution emerged are the developments of individual rights and freedom, the inadequacies in the available inspection ways, and the complex government structure.

48.1.1 The Developments in Individual Rights and Freedom

Rights, justice, and equality are the subjects the societies stress on most in the historical periods. The mentioned notions above were the ones which the administrators, philosophers, lawyers, and politicians have thought over in every age as the basic notions of the human being. While the people were looking for a prosperous and worth-living life, they didn't neglect asking for more rights for themselves (Küçüközyiğit 2006, p. 90)

In the past, the administration ideas were subjected to hierarchy, bureaucracy, class difference, and centralism; today, these qualifications are related to chaos, dynamism, difference, decentralization, accountability, and auditability. Especially after the World War II, with the development of liberal government concept, emerging individual freedom made the notion “the ombudsman” become widespread (Fendoğlu 2011, p. 32).

The Ombudsman Institution is firstly interested in protecting individuals basic right and freedom and the rights and justice in government works. So, contrary to the close usual bureaucracy between the governors and governed people in the organizations, it is a public institution which reaches every kind of information and documents on behalf of individuals upholding them and which helps the administration run within the modern administration idea framework through some unique means (Küçüközyiğit 2006, p. 91) .

48.1.2 Inadequacies in Current Inspection Ways

There is significant inadequacy in political inspections, which are the following ones: there is a disparity between parliament members and complaints, the parliament members may be charged with upholding, the parliament members do not have the opportunity to inspect the issues subject to complaints, and the improper and partisan complaints to parliament members cause injustice (Temizel 1997, p. 31–32).

Although judicial control is one of the most efficient and binding inspection type, there are some insufficient points and some applying difficulties in that inspection type. These difficulties can be summarized as the complexity, expensiveness, and slowness of procedures as usual in Turkey. Since judicial control is complex, technical justicial information is needed. Though the varieties of judiciary were emerged in order to create specialization, from time to time it drives the lawyers to the wall (Kahraman 2011, p. 357).

In administrational inspection, insufficiencies may appear because of hierarchy and authority ambiguity. It is because the more staff members an organization have, the less they have knowledge of subordinate actions and works. As this situation prevents healthy communication in an organization, from time to time managers give the staff contradictory advices or give instructions (Özden 2010, p. 122).

Due to the mentioned reasons above, the fact that the available inspection ways are sufficient was detected, and instead of them, new direct and efficient costless inspection ways which may determine whether administrative works are proper are one of the important factors for arising and spreading the Ombudsman Institute system. (Küçüközyiğit 2006, p. 94).

48.1.3 Complex Governmental Structure

The government is taking charge in several fields in the historical timeline and making people understand that it causes chaos. Facing this chaos, individuals have insufficient healthy information in their rights and responsibilities. So, the individuals become defenseless and need a protection (Küçüközyiğit 2006, p. 94; Işııkay 2017).

Though in each country there are several ways for complaints about the administration operation, these operations aren't used by the most part of the society. It is because of the fact that the government structure is getting more and more complex that causes a fear culture in most part of the society. As a result of this, individuals become inadequate in starting and maintaining a procedure on their own which will defend themselves to the administration (Temizel 1997, p. 70).

48.1.4 The Tasks of the Ombudsman Institution

In modern societies, public bureaucracy has become a big power. As it is known, public bureaucracy is inspected by several organs and people with different methods on the basis of constitutional state. However, in order to give a quality service to the governed people in contemporary and democratic systems, in addition to judicial, political, and administrative inspection methods, some administrative developments are seen to have been carried out (Ökten and Turhan 2015, p. 149). Especially in recent years, in some countries, a new inspection method has been developed so as to

inspect the administration. Through this inspection, inspection organ gets its power from parliament support, it has an administration position by running its tasks, and its inspection results resemble judicial control (Tortop et al. 2012, p. 133)

Usually, in the countries in which the union of the judiciary is applied, there is a place for an organization called “ombudsman,” and it is translated as “kamu denetçisi” in Turkish along with administration’s usage of available inspection ways (Akıllıoğlu 1995, p. 297). The ombudsman generally reveals useless, inoperative, and defective sides of the administration by inspecting the complaints of the society against public administration. After inspecting them, it announces their results to the public and the parliament (Eryılmaz 1993, p. 91).

In Turkey, with the law in September 21, 2010, the Ombudsman Institution was approved to be established. The establishment and working procedures of the Institution were organized with the law “The Ombudsman Institution Law” (Law no: 6328) in June 14, 2013. The Institution has begun to gather applications since March 29, 2013.

In Turkey, “The Ombudsman Institution is responsible for searching, inspecting administration’s every operations, working procedures and attitudes with the complaints about administration operations in terms of their convenience to the law and justice on the basis of the justice idea based on human rights” (Law no: 6328, item:5)

48.1.5 The Tasks of the Ombudsman

In Turkey, the ombudsman is elected by parliament through secret voting. As to the applications in the world, the ombudsman is usually elected by the legislature so as to remove the administrators’ effect. The ombudsman’s electing by the legislature and his reporting about the staff to the parliament mean it’s being far from the intervention of executive organ (Özkal Sayan 2014, p. 334).

In the seventh item of the Ombudsman Institution Law, the tasks of the chief ombudsman and of the ombudsman are mentioned. On the basis of this law, the chief ombudsman inspects and searches the complaints that reached the organization and, if needed, advises the organization subjected to the complaints. Moreover, he prepares the regulations related to the application of the Ombudsman Institution Law and writes the annual reports. Without waiting for the annual reports, he prepares specific reports if he needs to present them to the public. Besides, he assigns one deputy. He makes a division of labor among the ombudsmen particularly one of whom is assigned to the women’s and children’s rights branch. He appoints a secretary-general and other staff members; he performs the other tasks which are determined with the laws. The ombudsmen help the chief ombudsman to perform the tasks stated in the Ombudsman Institution Law and do the works given to them by the chief ombudsman.

In Turkey, in addition to the president’s own operations, his ex officio signatures about the decisions, the parliament’s operations related to legislature, the court’s

decisions related to judicial power, Turkish armed forces' subjects, and their operations as military feature are beyond the practice of the Ombudsman Institution (Law no: 6238, it. 5: 2).

The ombudsman needs to have some features. These are the ombudsman's personal features: freedom and neutrality, being easily reachable, professionalism, extensive research, investigating and inspecting authority, and his decisions not being binding.

48.1.5.1 Ombudsman's Professional Features

The symbol and representative of the Ombudsman Institution is the ombudsman's personality. Complainers want to feel that their complaints are taken into consideration and inspected, and they want to go through the ombudsman and talk to him (Pickl 1986, p. 43). In this respect, he should both manage to complete the heavy work load and have judicial knowledge in case he is exposed to the political and similar pressure. Besides, he should be matured, be neutral even under heavy pressure, be honest, and be loyal to his work (Küçüközyiğit 2006, p. 99).

Usually, "prestige" is the most required feature for the ombudsman. It is so important for the ombudsman to be prestigious not only in the administrative level but also in the judgment community and in the public. It is because the ombudsman has no authority for law sanction. Hence, just his speech, proposals, and critics can awaken the public, and they can be effective on administrative organs (Kestane 2006, p. 133).

When taking the features the ombudsman should have into consideration, we realize that according to the tenth item of the Ombudsman Institution Law (OIL), an ombudsman needs to be a Turkish citizen; to graduate from the 4-year faculties including faculty of management, the school of economics, and favorably law faculty and political science faculty or from the domestic universities or from the ones abroad which have accreditation; and to be above 40 (for the ombudsman) and above 50 (for the chief ombudsman). In addition, he needs to have already worked at public agencies and organizations, international organizations, nongovernmental organizations, or professional organizations such as public agencies or private sector for 10 years. He must not be prohibited from public rights, and he must not be a member of any political party during the application time. Moreover, on the date of election voting, the ombudsman's not having any conviction is another issue (Law no: 6328).

In most of the countries where the Ombudsman Institution is available, there is no need for someone to have specific features so as to be elected. It does not matter if one is male or female, as anyone can be elected as ombudsman. The ombudsman doesn't work as an inspector or a judge or perform judicial tasks. In fact, he does not have to be a lawyer, but he has to know the procedures in public administration (Küçüközyiğit 2006, p. 100).

48.1.5.2 The Ombudsman's Professional Features

There are professional features in addition to personal features. These are being neutral, independent, easily reachable, and professional; having inspecting, examining, and controlling authority; and his decisions not being binding.

48.1.6 Freedom and Neutrality

When organizations fulfill the duties and use their sources, they need to have some principles such as being productive, efficient, accountable, and customer-centered and working at their best performance. Organizations should be inspected by a neutral and free inspection mechanism so as to keep their healthy procedures by being administrated according to the mentioned principles and so as to reach their goals shortly and rationally (Altınışık 2015, p. 85).

According to the twelfth item of OIL, it is stated: "None of organs, offices, competent authorities or people are allowed to give order, give instruction, send notice, give advice to the Ombudsman and the chief Ombudsman related to their tasks. The Ombudsman and the chief Ombudsman have to behave according to the neutrality principle while fulfilling their tasks."

The independence of the ombudsman is specified by the laws. In addition to this, one of the most important factors providing the independence of the ombudsman is the form of his appointment. An ombudsman reflects the prestige of the Institution appointing him. In this regard, appointing and dismissal of an ombudsman determine his status. Appointing an ombudsman via parliament not only makes him independent but also constitutes the source of his authority. The action of the ombudsman isn't put to supervision at all. It doesn't mean keeping the actions that he has or hasn't done in accordance with his duty out of supervision. Besides, the ombudsman can be discharged by the parliament because of different reasons, such as his failure, his inadequacy, or his neglect of duty.

48.1.7 Being Easily Reachable

It is stated in the seventeenth item of the first subsection of OIL titled Application and Method that "Both real people and legal people can apply. The application is kept private upon the demands." Sometimes it is crucial to keep private the identity of the person who complained. So it is important to give an ombudsman the authority of hiding the source of complaints. It is said in the seventeenth item of the second subsection that "Application is done with petition that involves applicant's name, surname, signature, residence, job address and ID number for the citizens of Turkish Republic, passport number for foreigners, if the applicant is a legal person, the legal

person's title, residence and the signature of authorized person, if available, central legal personality number and authorization certificate." This application is done in electronic media or other means of communication as long as the specified conditions of the regulation are obeyed. When the content of the subsection at issue is examined, it is seen that the petition's involving any element about the subject of application is not obligatory (Tutal 2014, p. 219). It is thought that this situation cases the process of application done to the institution. It is stated that the complaints can be done verbally or without using a form if there are obligatory information and documents specified in the content of the regulation about the method and principle of applying OIL published in official journal dated March 28, 2013, and numbered 28,601 (Efe and Demirci 2013, p. 62).

Moreover, in the seventeenth item of the fifth subsection, different application points are presented by saying, "Applications to the institution can be done by means of governorship in cities, district governorship in countries. Thus, providing necessary easiness about the application and Access to the institute can be said."

48.1.8 Professionalism

It is a must for the ombudsman to own enough technical practicum about principles and details of the work as well as at least bureaucracy to be able to do clear research and examination on operations which are done by experienced bureaucrats. Otherwise, it will be far from benefiting the solution of the problems since the ombudsman is open to directing in the subject which is not fully known (Sağlam 2012, p. 47).

Generally, bureaucracy forms the assigned position of the ombudsman. Bureaucracy has its own language, traditions, and non-written rules. The information and experience that an ombudsman owns to research the necessary information and documents to help him to perform and direct the decisions on the field that can be called as "a World in itself" have a vital importance.

48.1.9 Having Authority in Extensive Research, Examining, and Inspection

When reviewing the applications all around the world, it is supposed that generally the Ombudsman Institution is "law-maker institute or is an institute founded by parliament or the Constitution and it is administrated by senior public officers and that it examines the aggrieved people's complaints towards the individuals, employees and public institution and that it examines with its own initiative and that it has authority in examining, writing report and in performing the tasks" (Ribo 2012, p. 101).

It has a big importance to not only the quality of the limit to the ombudsman's authority and of his decisions' conformability but also the speed of his decisions. Before the ombudsman decrees about the complaints, he should be able to get every document and information easily, and he should be able to refer to any person he regards as important (Sezen 2001, p. 81).

The ombudsman was given a right to gather all of the documents and inspect them by the laws. This right also includes the information and documents which are not allowed to share with the other people and organizations due to the administrative secrecy. Therefore, the ombudsman has the right to gather, learn, examine, and inspect the secret documents (Fendoğlu 2011, p. 84) .

48.1.10 Ombudsman's Decisions Not Being Binding

According to OIL, the Ombudsman Institution hasn't any sanction power. The Institution has no power to take any decisions about the public Institutions and its staff, to put off the administrative procedures, and to give any orders to the public Institutions. In this regard, the decisions taken by the Institution have no effects on the public institutions in terms of imposing criminal or administrative sanction. The tasks of the Institution were stated as examining, searching, and giving advice to the administration. Therefore, there are no binding points of its decisions (Özkal Sayan 2014, p. 340).

According to Fendoğlu (2011, p. 84), the organization may ask for the decisions to be reviewed again, may take decisions as advices, may sue, and may get involved into the lawsuit as a result of the ombudsman's inquiry and examining. Also, he may force the administration to apologize, may take attention of public with special reports when needed, and may present the attention of the parliament.

Consequently, in order to be successful, the ombudsman needs to have professional and personal features. The more features the ombudsman has, the more he can perform the tasks as expected. These features are summarized in the table below, for they can be perceived entirely.

When Table 48.1 is perused, it can be realized at once that especially the features "being easily reachable" and "his decisions' not being binding" are not available in the other inspection mechanisms. These criteria reveal the ombudsman's main deterrent power by strengthening his hands when these criteria are taken into consideration with the other criteria. However, it must be remembered that these features can be effective just if they are together. For instance, it can't be expected for an ombudsman who is dependent to be neutral or who is not professional and reliable to be effective in finding solution. Hence, absence of one or a few features of the ombudsman will decrease the ombudsman's success by affecting him negatively. In addition, it is seen that even if the ombudsman uses all the features in Table 48.1 effectively; it is hard for him to have an effect over the administration. In this regard, it is thought that the notion "leadership" is important so as to make the ombudsman outshine.

Table 48.1 The ombudsman's professional and personal features

The criteria	Explanation
<i>I. The ombudsman's personal features</i>	
	Regarded as an esteemed person by the public Is well-educated in law Having an effective communication ability Withstanding political pressure and heavy workload Being neutral, honest, and reliable Having the features stated in the tenth item of OIL (being a Turkish citizen, being 40 or over 40, not being banned from public rights, not being a member of any political party) Knowing the public procedures well
<i>II. The Ombudsman's professional features</i>	
Freedom and neutrality	Being appointed by the parliament Being independent from administration and executive organ Not getting any commands and instructions by any organs, competent authorities, or people His actions not being bound to be inspected
Being easily reachable	Applying to the institution directly Not requiring any types and features during the application process Not requiring any other person during the application process No difference between legal and real person during the application process Complaints and application forms being secret upon the applicants' request The applications can be presented via letters or online There is no obligation that anything related to the applications have to be written in the letters of application There is an opportunity to apply orally without any letter of application The applications can be given via governorship or district governorate in the cities
Professionalism	Having full knowledge of administrative process and of diplomacy Being well-equipped in his profession Having full knowledge of public administration procedure Knowing the details of the bureaucrats' tasks as much as the bureaucrats
Having authority on widely searching and inspecting	Reaching every kind of documents and information easily Referring to information of people whom he regards as important His actions being excluded from administrative secrecy
His decisions not being binding	His decisions not having law sanction directly Not having an authority over making a binding decision about public institutions and their staff Having no power to command to public institutions or cancel administrative actions Asking for reviewing the administrations' decisions, making decisions as advice, suing against the administrations, and being included in the filed lawsuit

(continued)

Table 48.1 (continued)

The criteria	Explanation
	Forcing the administration into apologizing If needed getting attention of the public and the parliament by giving special reports Creating public and political pressure over administration

Source: Binbir (2016), p. 97

48.1.11 Leadership Types

Leader is a person who leads the people to act for a goal and affects them in this period or whom one group follows so as to fulfill both their own tasks and the group's tasks (Koçel 2001, p. 465). Leadership means what the leader does related to the process (Efil 1998, p. 5). So leadership means bringing out desired interaction among the people as a process using the power (Erdoğan 1994, p. 330).

Since a process which owns some features such as being decisive, being self-confident, taking risks, having a vision, and appreciating moral values is thought when leadership is mentioned (Erçetin 2000, p.12–21), it is not absurd to think that the ombudsman acts as a leader. It is because the ombudsman interacts with the individuals and institutions directly or indirectly. Hence, the leadership type the ombudsman uses will be effective not only inside but also outside the institution. Within this context, it is not wrong to state the ombudsman's leader roles concern with the whole public.

48.1.11.1 Charismatic Leadership

Charisma means a legendary power of the leaders according to his followers. Charismatic leadership means that the owner of this power, that is, the leader, created with personal skills, creates some unusual effects on the followers (Can 1999, p. 208). Within this context, the ideas which Weber asserts related to the leadership can be collected under five titles. They can be listed as follows: the leaders are blessed with extraordinary gifts, social crises are effective in appearing the charismatic leaders, charismatic leaders may find some radical solutions to the crises, the followers believe that leaders have some extraordinary powers, and the leaders' successes which are owned by using the leaders' extraordinary powers make the leaders more valuable in their eyes and thus strengthening the leaders' positions (Exc.; Hunt et al. 1999, p. 424).

48.1.11.2 Transformational Leadership

After the conceptual basis of transformational leadership had been founded by Burns in 1978, it was improved by Bass. Transformational leader wants to make changes

on his followers. These changes can be about values, beliefs, and needs (Özdemir 2014, p. 170). When Bass first came up with the theory of transformational leadership, he emphasized on three important behavioral elements including charisma, intellectual stimulation, and respect to individual. Then Bass and Avolio looked through the theory and made the number of behavioral elements into four by adding inspiration (Erçetin 2000, p. 58).

48.1.11.3 Moral Leadership

In moral leadership, there is an extensive relationship which responds warmly to common needs, demands, and values as well as the strength and the relationship between the leader and his followers and gives importance to sharing. The followers can withdraw their support when needed since they react freely to the leaders' initiative. So moral leadership can be defined as the highest level of transformational leadership (Aydın 2010, p. 310). Moral leadership provides a moral point of view to the works and followers. In the content, the leader makes effort for his followers obeying the moral rules as he obeys them himself.

48.1.11.4 Democratic Leadership

Democratic leader, except crisis periods, bases on the group decisions to carry out the decisions of organization. Within this context, he encourages the superiors to join the decision making and organizing activities. The decisions are more clear since the superiors decide with their own initiatives. In democratic leadership, workers are treated kindly. In this type of leadership, prize is more important than punishment (Şahin et al. 2004). The democratic leader provides carrying out the organization activities without controlling over the superiors. So they get strength both from the authority and their followers (Güney 1997, p. 213).

48.1.11.5 Quantum Leadership

Quantum leadership is a paradigm which tries to explain the leadership with quantum physics. Blank tries to explain the quantum leadership paradigm by benefiting the hypothesis and differences between quantum physics and classical physics. According to this paradigm in classical physics since gaining momentum as well as piece-wave discrimination, cause and effect relationship, accuracy, continuity of energy, and applied force are discussed, leadership is the total of its pieces, it is explained with cause and effect relationship, it is a continual feature attributing one person, and its influence is based on power. But in quantum physics since piece-wave dilemma, uncertainty and possibilities, discontinuity of energy, and applying the force to some extent are discussed, leadership is a field of interaction between the leader and the followers, it can't be structured or estimated, and it is discrete and

based on interaction. Quantum leadership regards system as chaotic and emphasizes the dynamic aspect of leadership. According to this perspective, the transformation of change is not estimated as it is too complex (Baker 2001).

48.2 Method

In this section, the research model, data collection methods, and the data analyses are mentioned, respectively.

48.2.1 The Research Model

This study is a qualitative approach based on descriptive research design. In this study, document review is used. Descriptive research model consists of the whole universe or part of the universe in order to conclude generally about the universe. In this model, current situation or the issues came from the past are studied. Document analysis can be expressed as a method which comprises analysis of written materials about the facts that the researcher aims to study (Yıldırım and Şimşek 2013, p 217; Karasar 2012, p. 79). The universe of document analysis in this study constitutes the information belonging to the Ombudsman Institute, accessible documents in the literature, and legal documents.

48.2.2 Data Collection Methods

In this study, document analysis method was used as a data collection method. Within this study, first the tasks of the Ombudsman Institute, the task of the ombudsman, and his features were searched, and then the gathered information about them were associated with the leadership types.

48.2.3 Data Analysis

In this study, for the data analysis, qualitative approach based on descriptive research design was used. Qualitative analysis is used to data processing which doesn't require in-depth analysis. In this approach, the available data were summarized and interpreted in the light of the theme which was determined in advance. By means of the qualitative analysis, not only the direct explanation or defining of the subject but also a photo of the subject is provided (Yıldırım and Şimşek 2013, p. 256; Ekiz 2007, p. 195).

48.3 Findings

Since the leadership types the ombudsman uses when he performs his tasks are related to his personal and professional features, the ombudsman's professional and personal features in Table 48.1 and leadership were tried to be associated when this section was written.

48.3.1 The Ombudsman and the Charismatic Leadership

Whether the ombudsman will be a charismatic leader or not depends on both his professional and his personal features. As mentioned in Table 48.1, some of his features can lead to becoming a charismatic leader. These are listed as follows: regarded as an esteemed person by the public, having an effective communication ability, his actions not being bound to be inspected, having full knowledge of administrative process and of diplomacy, having full knowledge of public administration procedure, being well-equipped in his profession, knowing the details of the bureaucrats' tasks as much as the bureaucrats, reaching every kind of documents and information easily, referring to information of people whom he regards as important, his actions being excluded from administrative secrecy, asking for reviewing the administrations' decisions, forcing the administration into apologizing, if needed getting attention of the public and the parliament by giving special reports, and creating public and political pressure over administration. So the ombudsman can use charisma during his inspection and get benefit from charismatic leadership to a degree.

48.3.2 The Ombudsman and Transformational Leadership

In transformational leadership, it is necessary to comprehend whether the ombudsman who uses charisma, intellectual stimulation, respect for the individuals, and inspire as behavioral elements will get benefit from the transformational leadership. In Table 48.1, some of the ombudsman's professional and personal features help the ombudsman to be a transformational leader. These features are listed as follows: being neutral, honest, and reliable, complaints and application forms being secret on the applicants' request, asking for reviewing the administrations' decisions, making decisions as advice, suing against the administrations and being included in the filed lawsuit, forcing the administration into apologizing, if needed getting attention of the public and the parliament by giving special reports, and creating public and political pressure over administration.

48.3.3 The Ombudsman and Moral Leadership

It is supposed that moral leadership is significant, while the ombudsman is acting as a charismatic, transformational, and democratic leader. It is because, without moral leadership, some problems are thought to arise in acceptance of the other leadership types by the followers. In Table 48.1, some of the ombudsman's professional and personal features help the ombudsman to be a moral leader. These features are listed as follows: regarded as an esteemed person by the public; having an effective communication ability; being neutral, honest, and reliable; being independent from administration and executive organ; not getting any commands and instructions by any organs, competent authorities, or people; complaints and application forms being secret upon the applicants' request; and forcing the administration into apologizing.

48.3.4 The Ombudsman and Democratic Leadership

Democratic leadership is an important leadership type which the ombudsman can use. Although the democratic leadership is stated to be effective except from the crisis periods, the Ombudsman Institute is to benefit from democratic leadership if the subject is related to the ombudsman, the Ombudsman Institute, or the individuals who complain about the administrations. In Table 48.1, some of the ombudsman's professional and personal features help the ombudsman to be a democratic leader. These features are listed as follows: regarded as an esteemed person by the public; withstanding political pressure and heavy workload; being neutral, honest, and reliable; not being a member of any party; being independent from administration and executive organ; not getting any commands and instructions by any organs, competent authorities, or people; and having full knowledge of administrative process and of diplomacy.

48.3.5 The Ombudsman and Quantum Leadership

As the ombudsman's decisions are not binding and as the process in which the ombudsman decides is vague, the ombudsman can be claimed to benefit from quantum leadership. In Table 48.1, some of the ombudsman's professional and personal features' conclusions cannot be predicted in advance. These features are listed as follows: his decisions not having law sanction directly, not having an authority over making a binding decision about public institutions and their staff, having no power to command to public institutions or cancel administrative actions, asking for reviewing the administrations' decisions, making decisions as advice, suing against the administrations and being included in the filed lawsuit, if needed

getting attention of the public and the parliament by giving special reports, forcing the administration into apologizing, and creating public and political pressure over administration. Because of the ambiguity, the ombudsman can benefit from quantum leadership.

48.4 Discussion and Results

The reasons why the Ombudsman Institute has emerged are the developments in personal rights and freedom, the inadequate inspection ways, and structure of the government which is gradually getting complex. In addition to these, it can be said the fact that the ombudsman's decisions are not binding brings out the ombudsman's leadership features. It is because, when the administration implements the ombudsman's nonbinding decisions, it is supposed that leadership role is more deterministic than regulations.

The ombudsman can benefit from the leadership types such as charismatic, transformational, moral, and democratic leadership along with his own professional and personal features. When he benefits from them, he can use more than one leadership roles together. For example, in order to change something, a charismatic ombudsman should be strong morally, act in a democratic way, and bear in mind the unforeseeable cases. It is not right to state that one leadership type mentioned above is more important than the others. It is because the mentioned leadership types are substantially tied with each other. In the contrary, they complement each other.

Nowadays, population growth and the government structure which are getting complex result in chaos. This chaos impairs the individuals against the government. If the ombudsman gets benefit from the mentioned leadership types which are suitable for himself, if he takes the individuals' complaints into account and evaluates them, and if he gives advices to the administration about the individuals' rightfulness, then this chaos is supposed to decrease to some extent.

It should be noted that the leadership types that the ombudsman can get benefit from are not limited to the ones above. The ombudsman can get benefit from different leadership types by taking changing social and administrative structure into consideration.

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Chapter 49

Investigating University Preparatory Students' Level of Learned Helplessness in Learning English in Terms of Different Variables



Hatice Özgan Sucu and Merve Bulut

Abstract The purpose of the study is to determine the level of learned helplessness of university preparatory students in learning English. In accordance with this purpose, it is examined whether there is a significant difference among the gender of the university preparatory students, their objectives of learning English, their residence, and students' perceived English achievement levels with regard to students' levels of learned helplessness in learning English. The presented study is a qualitative research using the survey model. The population of the study consists of 170 students who are studying at the English preparatory class in the School of Foreign Languages at Nevşehir Hacı Bektaş Veli University in 2017. The questionnaires were applied to all of the students, and it was seen that the number of questionnaires that could be taken into evaluation was 138. The research sample consists of 138 students. The data on the learned helplessness used in the study were collected by the "learned helplessness in learning English" scale. Frequency and percentage distributions of descriptive statistical techniques were used to determine the demographic characteristics of the study group. Kruskal-Wallis H and Mann-Whitney *U* tests were used in the analyses after it is recognized that the data were not parametric. According to the research findings, it has been reached that the level of learned helplessness of the students in learning English did not show a statistically significant difference according to gender and residence variables. However, research findings showed that there is a statistically significant difference among the students' level of learned helplessness in learning English regarding objectives of learning English and perceived English achievement levels. It was also found that learned helplessness levels of the students having the objective of good career expectations in learning English are higher than the students learning English because they enjoy learning it.

H. Ö. Sucu (✉) · M. Bulut
Nevşehir Hacı Bektaş Veli University, Nevşehir, Turkey
e-mail: haticeozgan@nevsehir.edu.tr; mervebulut@nevsehir.edu.tr

49.1 Introduction

Increasing awareness of the importance of foreign language learning in our country and our increasing need to travel abroad and for workforce competent with foreign language skills in many sectors have made foreign language teaching a priority recently. Although it is believed that learning one or several foreign languages has a very important role on many areas of life and there is great effort to learn foreign languages today, we have not achieved the desired level of success in teaching English as a foreign language in our country (Ekmekçi 1983; Demirel 1999; Işık 2008; Üstünoğlu 2008). It is thought to be a situation in which a solution is sought today but unsuccessful in practice though the importance of teaching and learning English is realized by most people. The obtained results cannot be appreciated as sufficient despite the effort and time spent (Demirel 2004; Üstünoğlu 2008; Tosun 2012). On the other hand, most of the developed countries have a secondary school graduate who knows more than one foreign language. This shows how inadequate or inconvenient foreign language education in our country is (Demirel 2004).

The vast majority of the students who have started university have foreign language skills and competency at the beginning level (Paker 2012). The reason for this is traditional language teaching habits; in other words, dependence on traditional teaching techniques and methods (Cem 1978), deficiencies in planning foreign language education and methods, activities, materials, and inadequacies or mistakes in measuring and evaluating them can be shown. It is possible to address the reasons of failure in foreign language education from many perspectives. Some of the problems regarding English lessons at preparatory departments of universities in Turkey have been figured out as lessons do not include enough practice, lessons are teacher-centered, students do not spend enough time and effort to learn this language, and there are improper class environment and conditions (Gökdemir 2005: 254–255).

When we examine the problem from the students' point of view, we are confronted with the finding that the effect of the personal, social, and attitudinal characteristics of the students to the success is inevitable (Aydın 2006). In the beginning, enthusiastic, participating students have begun to experience English learning process as a formulated math problem based on grammar-oriented and a lot of mechanical practice over the years, and their interest in English lessons is diminishing, and this leads to learned helplessness (Paker 2012: 90). Students also fail because they cannot control learning processes, use logical thinking and cognitive skills, and see that their efforts do not work. For this reason, learned helplessness causes a multidimensional failure (Hsu 2011). The fact that students are influenced by many variables in the foreign language learning process and they may have different learning experiences in different conditions should not be ignored. The fact that the learners face many new information in the foreign language classes also makes the situation more complicated. From this point of view, the psychological structure of the learning concept is shaped by different factors; it is seen that the cognitive, emotional, and personality characteristics of the individual have caused

the thoughts and movements in the learning environment in different ways (Akpur 2005:78). The learned helplessness variable, which enables learners to be willing to learn and handle under the heading of “affective characteristics,” also significantly affects the learning process. This concept seems to have an important role in the success or failure of the students, especially in the classroom environment.

Academic achievement is a broad concept, and there are various studies with different samplings in literature (Eriçok and Gür 2017). When the problem of this study is evaluated within the scope of general academic achievement, it is stated that the academic performance of the students with high level of learned helplessness is lower than the other students and the academic achievement is directly or indirectly related to the learned helplessness (Saintonge and Dunn 1998; Valas 2001; Johnson 1981; Manning 2007; Woolfolk 1993; Raufelder et al. 2013; Dweck et al. 1988; Carson et al. 2002; Elliott and Dweck 1988; Slavin 2003; Fincham et al. 1989; Firmin et al. 2004; McKean 1994; Cananoğlu 2011; Ayköse 2006; Baş 1998; Oluklu 1997; Hovardaoğlu 1986; Avcı 2008).

Covington (1985) also suggests that the learned helplessness is the result of negative cognitive loadings on failure. At the same time, the learned helplessness model predicts that exposure to uncontrollable conditions will lead to the development of cognitive and motivational inability and emotional disturbance, which in turn will adversely affect subsequent learning performance. It can be thought that cognitive and motivational insufficiency emerging as a result of learned helplessness can affect the learning and memory as well as affecting the metacognitive (Tabakci 2010).

49.2 Conceptual Framework

49.2.1 *The Formation of Learned Helplessness*

Learned helplessness was first developed in the early 1960s through learning surveys of dogs exposed to inevitable electrical shocks (Overmier and Seligman 1967). The situation in which dogs are exposed to disgust, regardless of behavior, will be interpreted as a way of learning that their behaviors are inadequate to change the behavior and that their future behavior will be inadequate (Kümbül-Güler 2005). Learned helplessness consists of four steps as objective disconnection, perception of current and past disconnection, expectation that there will be no connection in the future, and desperation signs.

In individuals' learned helplessness experience, in the first stage the organism notices the disconnection between behavior and outcome; nevertheless, the individual expects that this situation will continue in the future, and ultimately, the individual exhibits learned helplessness behaviors involving three basic disorders (Kümbül-Güler 2006: 27). According to the theory, in the first step, the organism must have an awareness of not having a relationship between behavior and event; in the second step, this awareness should be cognitively symbolized the embryonic and

the unrelated; in the third step, the organism has a certain behavior (Maier et al. 1976; Kümbül 2002). They also argued that the organization was able to obtain results that were independent of their behavior and that they learned these results were uncontrollable. This situation causes the expectation of not rating to occur in the future. As a result of learned helplessness, the final step consists of motivational, cognitive, and emotional disorders (Weiner 1979; Alloy et al. 1984; Kümbül 2002).

The concept of learned helplessness was first used by Seligman et al. in 1975 (Ersever 1993: 621). Seligman defined learned helplessness as the belief in the result independent from the behaviour causes an increase in desire to control the result of the behaviour, obstacle to learn because of not controlling the result of the behaviour. Besides, if the result is negative with regard to the individual, learned helplessness causes fear as a result of continuing anxiety and depression at a later stage. It can also be described as the inability of the individual to behave alike in similar situations when one learns that there is no connection between behavior and the result of the behavior (Maier et al. 1976: 3–46).

Learned helplessness is seeking answers to questions about what happens when the result is negative for the organism (Ersever 1993: 621). Learned helplessness is described as an indifferent attitude arising from the belief that an individual's behavior and movements do not have the power to change their own situation. Learned helplessness in psychology dictionaries is defined as the condition that occurs when the subject is exposed to unresistable and repulsive phenomena and with this negative effect of this situation, preventing or delaying learning in subsequent conditions where abnegation (or avoiding) is possible (Kümbül 2002: 26).

Woolfolk (1993: 138) described learned helplessness as a way of thinking from the previous experience that all the effort shown later will cause failure, as always, or as before. According to Gündoğdu (2001), learned helplessness is being unable to make the necessary effort to control the situation, depending on the anticipation of uncontrollability which has been developed as a result of inability to control after the organism learns that he cannot control a negative result with the behavior, even in situations where the individual removes negative results. Hovardaoğlu (1986) also described the concept of learned helplessness as failing to perform necessary behaviors in situations where an organism can control negative events after they have passed through a situation where they cannot control negative events with their behavior.

In another definition, Sekman (2006) defined learned helplessness as the loss of courage to try again, thinking that he will never succeed again, he will not change anything, and those events are not in his or her own control if one does something by failing many times. In a different way, Aşkın (1994) defined learned helplessness as a state of despair which is taking people's life and teaching-learning effort and performance experiments from their hands and affects not only just people but also their environment, so that the person who thinks things they do will not work and the individual will not try to do something.

49.2.2 Learned Helplessness and Academic Achievement

The model of learned helplessness emerges as an important factor in education. Many researchers emphasize that all the models of despair that emerge in the development process will lead to cognitive and motivational problems of helplessness (Seligman 1975; Abramson et al. 1978; Boyd 1982; Alloy 1982; Ersever 1993; Atkinson and Feather 1966; Linden et al. 1997). Therefore, learned helplessness in the context of psychology and education develops a negative patterns in the students' behaviors; loss in "self-esteem" and the feeling of "worthlessness" (Fawzy et al. 1995: 100), significantly reduced the level of motivation, and it is clear that this is a natural consequence of the fact that the learning experiences lead to the failure of thought (Akpur 2005: 63). Beck and Weishaar (1989: 21) argue that helpless individuals who encounter a different knowledge expect failure rather than success, they put forward their failures while evaluating their own qualifications or access, and they underestimate their success.

When learned helplessness is assessed within the scope of success, there is often confrontation as escape from difficulties, instability in confrontation with failure, excessive worries about competence, misplaced failures, misleading strategies, and negative emotions that hinder the learning process (Elliott and Dweck 1988). Slavin (2003: 343) considers learned helplessness as one of the worst outcomes of motivation disorder to avoid making mistakes, and he explains this as a belief that whatever the quantity of the effort the individual will demonstrate, he will eventually suffer failure. In this case, students who are constantly failing can develop "protective pessimism" in order to protect themselves from negative feedback. Moreover, learned helplessness, which can be caused by inconsistent punishments or rewarding practices of teachers, can make the sense of failure chronic for individuals. While Carson et al. (2002) associate learned helplessness with teacher behaviors, they found that students who did not receive teacher support in their researches were substantially helpless. Similarly, Dweck and others (1978) also point out that helplessness at school can emerge from teacher behaviors.

Raufelder et al. (2013) found that students who have self-perception at school had a better relationship with their teachers, and therefore they experience less learned helplessness. In this context, Wang and Eccles (2012) draw attention to the fact that the students who are supported by their teachers are exposed to less learned helplessness and that teachers should have healthy relationships with the students. Likewise, Woolfolk (1993) emphasizes that teachers should identify helpless students and take care of them individually, take precautions to prevent comparisons and competition environments with other students, and that some methods should be used to encourage helpless students to compete with themselves. In this regard, Manning and Bucher (2007) argue that teachers and educators can avoid the desperation that they have learned by improving the strengths of students in a supportive learning environment to increase self-esteem and self-confidence.

Studies show that there is a significant relationship between the success of a student and the learned helplessness behavior. Johnson (1981) found that academic

performance of students with high levels of helplessness were lower than other students at school. Similarly, Valas (2001) concludes that academic achievement is directly or indirectly related to learned helplessness. In another study conducted by Saintonge and Dunn (1998), it was found that the students who failed in successive examinations had a higher level of despair, and the performance of these students in independent studies was found to be quite low. Similarly, Firmin et al. (2004) studied the effects of learned helplessness on exams and found that students who had pessimism and despair were suspicious of their intellectual skills. From here, learned helplessness is a theoretically natural cause of this.

However, according to the learned helplessness hypothesis, students who face difficult questions before easy questions tend to fail to do easy questions because of the despair they have experienced (Firmin et al. 2004). Therefore, teachers and survey specialists have adjusted the questions to be asked in exams with an increasing degree of difficulty. According to Firmin et al. (2004), people easily avoid and accept the obstacles they encounter as a result of learned helplessness; but also they tend to relatively easy tasks and this often arises in situations where failure cannot be controlled. Also teachers can use authentic assessment forms to encourage students because it corresponds to, and mirrors, good classroom practices; its results can be utilized to improve instruction based on the knowledge gained regarding how learners make progress (Aksu Ataç 2012).

McKean (1994) concluded that students who have high levels of helplessness at the end of their research with university students do not fulfill their academic duties properly; they have failed in their work and have been more influenced by adverse events. Fincham et al. (1989) revealed that there are important personal differences with regard to learned helplessness and test anxiety on motivation for success and there is a significant relationship between academic achievement and the sense of belonging to the college that learned helplessness plays a decisive role and helpless students are more prone to failure.

Hovardaoğlu (1986) found that objective behavior-result independence alone is not sufficient for the emergence of helpless behavior in the light of findings and cognitive variables such as performance evaluation, causal predispositions, and anticipations also play a role in the emergence of learned helplessness. Similarly, Oluklu (1997) found that the level of learned helplessness of students with poor academic achievement was significantly higher than the level of learned helplessness of students with very good, good, and moderate academic achievement. Baş (1998) stated that students with a very good academic achievement score had a lower score of learned helplessness and students with a successful grade had a higher score of learned helplessness than those with a middle and poor achievement. Ayköse (2006) stated that students who perceived their academic success as inadequate had higher levels of learned helplessness than other students.

On the other hand, Yee et al. (2003) found that the relationship between desperation loading style and test success was not linear and significant. Yüksel (2003) suggests that there is no sufficient effect in explaining the variability of the academic achievements of the learners' levels of learned helplessness. Moreover, some studies show that learners who have learned helplessness have improved their behavior in

some cases and have performed better. These studies show that students who are in despair cause an improvement in their performances in a similar task after the initial failure.

It is reported that children with learned helplessness think that the reason of failure is lack of talent (Lerner 2000; Hsu 2011). Since children do not develop this kind of talent concept until the middle of school years, it is emphasized that young children are not prone to helplessness (Duman 2004). It is also reported that pre-school and primary school children are making high-level predictions of their talents, expecting success, and much more optimistic than older children (Burhans and Dweck 1995).

Individuals give different reactions in case of failure, some are helpless; others show a tendency toward sovereignty (Dweck and Leget 1988). Helpless individuals have tended to give up the task easily. Ones who tend to sovereignty insist on resolving the problem in the face of unsuccessful results, and they level at internal factors that may change such as lack of effort or external factors such as poor test conditions. So they try to reach a better result by increasing their effort or avoiding bad situations (Lerner 2000; Duman 2004). These children think that their parents and teachers will appreciate their efforts and progress. Children who have “learned helplessness” commit their failures to internal and immutable causes, especially to ability. They think that their parents and teachers will be very punitive and critical and that they will focus on the very general deficiencies/malevolence rather than failure in a particular situation (Kılıç and Oral 2006: 80).

In conclusion, it is revealed that the lack of motivation was correlated with the learned helplessness (McIntosh and Noels 2004), and there was a significant relationship between foreign language achievement and the motivational factor which is a dynamic phenomenon (Ryan and Deci 2000; Gardner et al. 2004; Dörnyei and Csizér 2005; Şad and Gürbüztürk 2009), and learned helplessness is an important factor that prevents learning in individuals and requires careful monitoring because it affects motivation to a large extent. For this reason, it is necessary to know the learned helplessness in all dimensions and to take necessary measures without delay. Düzgün and Hayalioğlu (2006: 406) point out that among the negative consequences of depression that can arise from learned helplessness is that the students are not interested in the lesson so they fail. Valas (2001) and Duman (2004) indicate that learned helplessness results in lower academic expectations, lower self-esteem, and depressive tendencies in the educational process. For this reason, measures must be taken to prevent learned helplessness, and it is necessary to reduce and eliminate the helpless behaviors students have.

49.2.3 Learned Helplessness and Success in Foreign Language Acquisition

Despite the fact that learners who know the importance of English language at a good level, there is a huge lack of motivation in some of them, which significantly impedes the education and training process. The reluctance of students to participate

in activities is one of the most obvious examples of this (Hsu 2011: 162). Because motivation is one of the strongest factors in the English learning process (Gardner et al. 2004), foreign language teachers need to be very aware of individual motivational differences and other related phenomena (Dörnyei and Csizér 2005) because motivation is a dynamic and constantly changing phenomenon (Ryan and Deci 2000).

Lack of motivation is correlated with learned helplessness (McIntosh and Noels 2004). Also students fail because they cannot control learning processes, use logical thinking and cognitive skills, and see that their efforts do not work. For this reason, learned helplessness causes a multidimensional failure (Hsu 2011). Price (1991: 105) notes that even successful learners who experience disconnection between behavior and result of the behavior feel less controlled at foreign language lessons than in other classes. There are studies (Diener and Dweck 1980; Gernigon et al. 2000) showing that learned helplessness in foreign language classes leads to loss of self-esteem and motivation in the students. From another point, Er and Aksu Atac (2014) stated that most students stated the benefits of cooperative work, its gains, and its joy. For them they had the opportunity of social interaction, improving their knowledge, putting better works forward. They thought it improves motivation, creativity, and productivity as different points of views were blended. So, if students work cooperatively, the level of learned helplessness can get lower as they feel motivated.

Stipek and DeCotis (1988) found that students who had learned helplessness in English classes initially developed intrinsic motivation to learn English because of their helplessness and then were tired of pursuing motivation due to many failure experiences. However, Stipek and DeCotis (1988) argue that for foreign language learners with learned helplessness, internal motivation is not effective in achieving and increasing efforts to learn, whereas external motivation is more successful. On the other hand, Hsu (2011) suggests that students who cannot increase external motivation based on their research results are exposed to learned helplessness. In addition, it has drawn attention to the fact that neglecting or ignoring learned helplessness in foreign language classes leads to much worse results as it has shown that these students are also influencing others and affecting similar behaviors.

Yaman et al. (2011) have found that as learners become more helpless, their achievements in English acquisition have fallen as a result of their research. Gan et al. (2004), who achieved similar results in another study, found learned helplessness experiences in students who failed to learn English as a foreign language. Nakata (2006: 93), which lists the negative emotions of students learning English as a foreign language, is the breakdown of the enthusiasm of the students, then the experience of motivation disorder, and the last stage is learned helplessness because at this stage students are completely losing all their motivation and students have completely lost control of their learning. For this reason, they passivate and develop depressive behaviors. When individuals with a malattribution have also generalized this situation for subsequent learning and failure, helplessness emerges as a learned fact (Graham and Weiner 1996: 75). In parallel, Seligman (1975: 37) also notes that an individual who has had a bad experience in an uncontrollable situation cannot

perceive his success even in the subsequent situations. Brown (2000) describes these students as “lost,” often indicating that they do not have a second chance.

Gan et al. (2004) state that students who are exposed to learned helplessness while learning a foreign language do not even know what to do to solve the problem after a certain point. They have also found that they were uneasy and even absent from the class. They also reported that desperate students who thought that they had completely lost control when they learned a foreign language did not attend classes for a very long time.

Tobias (1978) suggests that adults show more learned helplessness behaviors than children; therefore, they have higher anxiety levels. The reason for this is that, while learning a foreign language, individuals are faced with a great deal of new situations and information, and children are more successful in overcoming them. This situation, in particular, often emerges in the development of speaking skills. Similarly, while Spark et al. (1993) describe those who are desperate in foreign language classes as being at high risk for academic success, in this case, negative attitude toward foreign language learning and perception develops, which results in failure.

On the other hand, there are different findings at the research of Akpur (2005) who found that there was no significant relationship between learned helplessness levels and students' English academic achievement, and he reached the conclusion that the level of learned helplessness of learners does not affect their English academic achievement. From this point of view, students are not inclined to load their failures into their own inadequacies; they do not relate the causes of failure to internal causes.

49.3 Methodology

The purpose of this study is to investigate the university prep class students' level of learned helplessness in learning English. In this context, it is aimed at finding out whether learned helplessness levels of students differ regarding gender, English language learning objectives, residence, and perceived English achievement level of the students. Based on the objectives, the present study seeks answers to the following research questions:

1. Is there a statistically significant difference among the scores of learned helplessness in learning English with regard to gender?
2. Is there a statistically significant difference among the scores of learned helplessness in learning English with regard to English language learning objectives of the students?
3. Is there a statistically significant difference among the scores of learned helplessness in learning English regarding students' residence?

Table 49.1 Characteristics of the study group

Variables	Levels of variables	Frequency	Percentage
Gender	Male	65	47
	Female	73	53
Residence	Metropolis	63	46
	City	56	40
	Town/village	19	14
English language learning objectives	Enjoy learning English	28	20
	Career expectations	88	64
	Communication	22	16
Perceived English achievement level	Very successful	9	6
	Quite successful	36	26
	Successful enough to pass the course	77	56
	Unsuccessful	16	12
Total	NA	138	100.0

4. Is there a statistically significant difference among the scores of learned helplessness in learning English regarding perceived English achievement level of the students?

The presented study is a qualitative research using the survey model. The population of the study consists of the English prep class students at the University of Nevşehir Hacı Bektaş Veli in 2017. The scales were applied to all of the students, and it was seen that the number of scales that could be taken into evaluation was 138. The research sample consists of 138 students. In Table 49.1 below, some characteristics of the study group were shown:

Table 49.1 indicates that the study group is composed of 47% male and 53% female students. Most of the students are used to live in metropolises (46%) or cities (40%), and only 14% of the participants live in a village or a town. According to the English language learning objectives, students are grouped into three, and it is found out that most of the students (64%) learn English because of better career expectations, 20% of them prefer to learn English because they enjoy learning English language, and 16% of the students learn English with the aim of communication. It is also shown in Table 49.1 that only 6% of the students perceive their level of English achievement very successful. 26% of them perceive as quite successful, and 56% of them perceive their achievement successful enough to pass the course. Finally, 12% of the students perceive their level of English achievement unsuccessful.

In this study, data is collected by a questionnaire composed of two parts. The first part is composed of demographic questions. In the second part, Scale of Learned Helplessness in Learning English developed by Ozgan Sucu (2018) is used in order to measure students' level of learned helplessness. The scale is specific to learned helplessness in English consisting of 24 items which are prepared to measure "general, stable, and internal" attribution styles in learning English with reliability level of 0.93 (KR-20) and validity proven by item total correlation analysis. Each

item of the scale consists of a hypothetical good or bad learning event and two possible causes of the event. Participants pick the cause from the pair that better describe the cause. One of these two options shows the presence of learned helplessness in learning English. In the scoring of the scale, the option expressing learned helplessness was coded as 1–0 points, and scores that can be taken from the scale range from 0 to 24.

Data were collected during the 2017–2018 academic year by the completion of the questionnaires. All the students at the school of foreign languages completed the questionnaires at the end of the first semester. For data analyses the statistical program SPSS version 16.0 was used. Nonparametric tests were used for analyzing the data because the data did not provide the assumptions of parametric tests (Büyüköztürk 2005). The principal statistical procedures were descriptive analysis, the Mann-Whitney test to compare between the groups and the Kruskal-Wallis test to examine the difference between groups.

49.4 Findings

Data analysis of Mann-Whitney and Kruskal-Wallis tests revealed the findings that students' level of learned helplessness in learning English did not show a statistically significant difference regarding the gender and residence variables. However, according to the research findings, the level of learned helplessness students have in learning English showed a statistically significant difference in terms of English language learning objectives and perceived English achievement levels of the students. It was also found that the total score of the group of English learners with the objective of good career expectations is higher than that of the learners who learn English because they enjoy learning English language. The findings will be revealed according to the research questions below.

In order to find an answer to the first research question of the study *Is there a statistically significant difference among the scores of learned helplessness in learning English with regard to gender?*, Mann-Whitney *U* test is used, and the test results are shown in Table 49.2.

As seen in Table 49.2, Mann-Whitney *U* test scores showed that there was not a significant difference between male and female students in terms of the scores of learned helplessness of the students ($p > 0.05$). Thus, it is possible to conclude for this sample group of students that gender does not play an important role in their learned helplessness in learning English.

Table 49.2 Mann-Whitney *U* test results of difference among the scores of learned helplessness in learning English regarding gender

	Groups	<i>N</i>	Mean rank	Sum of ranks	<i>Z</i>	<i>U</i>	<i>p</i>
Gender	Male	65	70.62	4590.50	−0.312	2299.500	0.755
	Female	73	68.50	5000.50			

Table 49.3 Kruskal-Wallis test results for difference among learned helplessness scores regarding English language learning objectives

	Variable	Levels of variables	<i>N</i>	Mean rank	Df	χ^2	<i>p</i>	Significant difference
Learned helplessness in learning English	English language learning objectives	Enjoy learning English	28	47.59	2	10.842	0.004*	1–2
		Career expectations	88	75.97				
		Communication	22	71.50				

* $p = 0.05$

Table 49.4 Kruskal-Wallis test results for difference among learned helplessness scores regarding the residences of the students

	Variable	Levels of variables	<i>N</i>	Mean rank	Df	χ^2	<i>p</i>
Learned helplessness in learning English	Residence	Metropolis	63	65.67	2	5.599	0.061
		City	56	67.02			
		Town/village	19	89.53			

To answer the second research question *Is there a statistically significant difference among the scores of learned helplessness in learning English with regard to English language learning objectives of the students?*, nonparametric analyses were conducted, and the test results are shown in the table below.

The above table indicates that there is a statistically significant difference in the median scores of two objectives, namely, in enjoy learning English and career expectations at $p < 0.005$. However, the test does not show where the exact differences lie; therefore, the Mann-Whitney *U* test is conducted as a post hoc test to locate the differences. As seen in Table 49.3, mean rank of the group learning English with the purpose of good career expectations (75.97) was higher than that of the group learning English because they enjoy learning it (47.59). Therefore, the findings show that learned helplessness levels of the students having the objective of good career expectations in learning English is higher than the students learning English because they enjoy learning it.

In order to find an answer to the third research question of the study *Is there a statistically significant difference among the scores of learned helplessness in learning English regarding students' residence?*, nonparametric tests were used. Kruskal-Wallis test results are shown in the table below.

It is revealed in Table 49.4 that although mean ranks of the variables are not so close to each other, there is no statistically significant difference in learned helplessness scores of the students in terms of their residences ($p = 0.061 > 0.05$).

To answer the fourth research question *Is there a statistically significant difference among the scores of learned helplessness in learning English regarding perceived English achievement level of the students?*, nonparametric analyses were conducted. Kruskal-Wallis and Mann-Whitney *U* test results are shown in the table below.

Table 49.5 Kruskal-Wallis test results for difference among learned helplessness scores regarding perceived English achievement level of the students

	Variable	Levels of variables	N	Mean rank	Df	χ^2	p	
Learned helplessness in learning English	Perceived English achievement level	Very successful	9	26.28	3	63.022	0.000*	1-3
		Quite successful	36	38.17				1-4
		Successful enough to pass	77	78.62				2-3
		Unsuccessful	16	120.44				2-4
								3-4

*p = 0.05

The above table indicates that there is a statistically significant difference in the median scores of four levels of the variable, namely, very successful, quite successful, successful enough to pass the course, and unsuccessful at $p < 0.005$. Since the test does not show where the exact differences are, the Mann-Whitney *U* test is used to locate the differences. It is shown in Table 49.5 that mean rank of the group perceiving their level of English achievement as *very successful* (26.28) is quite lower than that of the group perceiving their level of English achievement as *successful enough to pass the course* (78.62) and *unsuccessful* (120.44). Hence, according to the research findings, it is possible to state that learned helplessness levels of the students perceiving their level of English achievement as very successful are lower than the students with perceiving their level of English achievement as successful enough to pass the course and unsuccessful.

Besides, in Table 49.5, it is revealed that mean rank of the group perceiving their level of English achievement as *quite successful* (38.17) is considerably lower than that of the group perceiving their level of English achievement as *successful enough to pass the course* (78.62) and *unsuccessful* (120.44). Therefore, it is possible to state that learned helplessness levels of the students perceiving their level of English achievement as quite successful are lower than the students perceiving their level of English achievement as successful enough to pass the course and unsuccessful.

Finally, as the Mann-Whitney *U* test results show there is a significant difference between groups perceiving their level of English achievement as successful enough to pass the course and unsuccessful. Table 49.5 shows that mean rank of the group perceiving their level of English achievement as *successful enough to pass the course* (78.62) is lower than that of the group perceiving their level of English achievement as *unsuccessful* (120.44). Therefore, it is possible to state that learned helplessness levels of the students perceiving their level of English achievement as successful enough to pass the course are lower than the students with perceiving their level of English achievement as unsuccessful.

49.5 Discussion and Conclusion

This study whose aim is to investigate the university preparation class students' level of learned helplessness in learning English is carried on to find out whether learned helplessness levels of students differ with regard to gender, English language learning objectives, residence, and perceived English achievement level of the students. The findings revealed significant differences among some variable groups in terms of students' level of learned helplessness in learning English while there exists no significant difference among others.

According to the findings obtained in the research, it is possible to conclude in his sample group of students that gender does not play an important role in students' level of learned helplessness in learning English. These findings are consistent with the research findings of Frieze et al. (1982) who found little evidence that female participants had more learned helplessness characteristic than male participants did and that of Cemalcılar et al. (2003) who found out that there were no significant gender differences in the effects of either the helplessness-induction procedure or the results of therapy. Similarly, Dilci and Mermer (2013) found no significant difference between the students' views on learned helplessness in mathematics achievement regarding gender. Also, Eliöz et al. (2013) revealed that gender of eighth class students did not significantly affect the level of learned helplessness.

In addition, according to the findings that there is a statistically significant difference in learned helplessness levels in terms of English language learning objectives, it can be concluded that the students learning English with the objective of good career expectations have higher level of learned helplessness than the students learning English because they enjoy learning it. Therefore, it is possible to state that English language learning objectives of the students have an effect on students' level of learned helplessness in learning English. Another conclusion of this study revealed that where students live did not have an important role on learned helplessness based on the research findings that there is no statistically significant difference in learned helplessness scores of the students in terms of their residences.

Finally, according to the research findings, it is possible to state that learned helplessness levels of the students perceiving their level of English achievement as very successful is lower than the students with perceiving their level of English achievement as successful enough to pass the course and unsuccessful. Also, learned helplessness levels of the students perceiving their level of English achievement as quite successful are lower than the students perceiving their level of English achievement as successful enough to pass the course and unsuccessful. Besides, learned helplessness levels of the students perceiving their level of English achievement as successful enough to pass the course are lower than the students with perceiving their level of English achievement as unsuccessful.

In other words, it can be claimed that how students perceive their English achievement plays an important role in their level of learned helplessness in learning English. Other research findings similarly reveal that learned helplessness is an important factor affecting success in learning a foreign language (Gan et al. 2004;

Hsu 2011). The findings of Yaman et al. (2011), demonstrating that as learners become more helpless, their achievement levels in English acquisition decrease, are also consistent with the research findings. Findings of Gan et al. (2004) and Nakata (2006) support the research. Similarly, Yazdanpanah et al. (2010) and Hashemi and Zabihi (2011) bring forward learned helplessness as the most important predictor of success in learning a foreign language since it carries with internal control over learning providing learners with control of the effort and outcome relationship.

In conclusion, it is possible to claim that while learned helplessness, one of the prominent affective variables in teaching-learning process, has a bearing on their objectives of learning English and how students perceive their level of English achievement, learned helplessness is proved to have no crucial relation with their gender and where they live. Therefore, in order to decrease the level of learned helplessness in learning English, students need to be assisted to lead proper objectives to learn English by the true guidance of the instructors. Also, the instructors are supposed to help students to attribute their success and failure to unstable reasons such as effort and hard work instead of stable reasons such as ability, self-efficacy, and personal competence. After all, as learned helplessness is one of the most significant issues, it should be studied from different aspects, and strategies should be developed to lessen the learned helplessness in learning English in further researches.

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Chapter 50

Metaphorical Perceptions of the School Directors and Teachers Related to School Principals



Deniz Görgülü

Abstract Metaphors are written, verbal, and symbolic expressions used by people during their concretization of a concept. On the other hand, chaos theory depends on the hypothesis that there are unknown things although everything is known. In this sense, metaphors are important means that can be used to determine obscurities in the chaos theory. In this research, it is aimed to define the metaphoric perceptions of school directors and teachers about the management of school principals. In the research, 153 views of school directors and teachers working in Konya in 2017–2018 educational year take place. To determine the metaphoric perception of school directors and teachers related to the school management a form that says “School principal is like.....because.....” has been submitted to the participants. Participants have used 89 metaphors for school principals. Among these metaphors “father” is the most frequently used one. Metaphors that the participants created were separated into 14 categories. Among these leadership, being a component of negativity, being uniting, and doing a hard and tiring job are the categories that have the most of the views.

50.1 Introduction

Schools’ being effective, that is, their achieving a goal, highly depends on the effectiveness of the directors who are responsible for carrying on the activities in the school and planning these activities very carefully (Kiraz 2013). In order to carry on and plan the indicated activities successfully, school principals have many responsibilities. According to Çelikten (2004), there is a direct connection between the academical proficiency of the school principals and the efficiency of the school. Therefore school principals have to take new roles against the changes that concern schools and occur around the schools (Hoşgörür and Yoncalık 2004).

School principals are in close relationship with the components they manage. School principals put forward their characteristics of leadership by affecting the

D. Görgülü (✉)
Hacettepe University, Ankara, Turkey

thoughts, feelings, values, and behaviors of their employees (Tahaoğlu and Gedikoğlu 2009). According to Akçay (2003) school principals must have some leadership abilities while putting forward these characteristics.

The management styles that principals use while managing the schools may affect the working styles of the teachers and the assistant principals. The management styles of the principals can be set forth by how they are perceived by the assistant principals and the teachers. Metaphors are the one of the methods that can be used to put forward these perceptions.

As the Turkish equivalent of metaphor *mecaz* is given by the Turkish Language Association (TDK). *Mecaz* is defined in two ways by TDK (2017): “1. An expression used with different meaning from its real one as a result of a relation or resemblance. 2. Using a word or a concept with other meanings apart from its accepted meaning.” When it is looked for where the metaphor word came from, it is seen that the word originates from “metaphora” which is an etymologically compound word expressed as meta + phora. “Meta” that means “beyond” and “phora” that reminds “convey” are originally Greek words. Latin writers have used metaphor concept as “translation” (convey, transport) or “smilitudo” (likening) (Tepebaşılı 2013). What the descriptions related to metaphor made in two languages have in common is that metaphor is seen as a means of making resemblances between concepts.

In our daily lives, we desire to concretize the abstract words while expressing our feelings and thoughts. As a result of the written, verbal, or symbolic expressions that those individuals use during this concretization, metaphors emerge. Tepebaşılı (2013) indicates that metaphors are used to beautify the language, to get rid of criticisms by using indirect speech, to indirectly explain some topics regarded as law or exalted because of religious and cultural reasons, and to eliminate a lexical gap.

Lakoff and Johnson (1980) express that the principal use of metaphor is to understand and experience something according to something else. Metaphor, a linguistic means combining two objects or concepts to each other, is accepted as symbolic means relating two different ideas or concepts to compare or to pass from one experience to another (Aydoğdu 2008). Aydın (2004) defines metaphor as words or group of words used for the purpose of making the wanted description of a thing that has similar qualities with another thing or an idea generally without using the words “like” and “similar.” Arslan and Bayrakçı (2006) on the other hand explain metaphor as a strong mental mapping and modeling mechanism aimed at individuals’ constructing and understanding their own worlds.

In a metaphor relation, there have to be three basic components at least (Forceville 2002; Akt. Saban 2004). These are the subject, the source of metaphor, and the features attributed to the subject. From this aspect in a metaphor relation, duty of source is to qualify the subject in a different way.

When the domain articles are analyzed, it is observed that metaphors are frequently used in educational area. Metaphors are used in comprehension, education, and increasing the permanency of knowledge, gathering information and making investigation, putting forward the problems, and summarizing and determining the important subjects (Çelikten 2006; Semerci 2007; Zheng and Song 2010). Another

area that the metaphors are used in education is educational researches. In these researches, metaphors are used to put forward various mental perceptions (Saban et al. 2006; Çelikten 2006; Cerit 2006; Semerci 2007; Aydođdu 2008; Saban 2009; Döş 2010). In the research, it is thought that putting forward the mental perceptions about the school principals will contribute to the educational researches.

Chaos theory defined as unforeseen movement in the systems by Kaneko and Tsuda (2001) provides opportunity to put forward and evaluate many factors that are unnoticed and not evaluated. Chaos theory offers a new management paradigm to the managers. This paradigm depends on the assumption that though everything is known, there is something unknown (Ertürk 2012). In this respect, specifying the metaphoric perceptions of the assistant principals and the teachers, who cannot directly express their opinions about school principals, is very important to reveal the unknown related to school principalship.

50.2 Aim of the Research

The aim of the research is to determine the metaphoric perceptions of school directors and the teachers related to school management. With this purpose, answers are sought to these beneath problems:

1. What are the metaphors that the school directors and the teachers determined to put forward their perceptions related to school management?
2. Under which categories can these metaphors be gathered with regard to their common features?
3. Are these conceptual categories showing differences in terms of the jobs of the participants?

50.3 Method

In this part, information about the method of the research takes place.

50.3.1 Model of the Research

This research, which is done with the aim of defining metaphoric perceptions of school directors and teachers related to the school management, made use of qualitative and quantitative research methods. Within the scope of qualitative research method, half-constructed interview technique is used. According to Yılmaz (2011) half-constructed interview technique is preferred because of its advantages like flexibility of adaptation to the changing circumstances during the interviews with the teachers, functioning of feedback mechanism right away, being able to get

Table 50.1 Information related to the participants of the research

		<i>n</i>	%
Occupation	Teacher	98	64
	Assistant principal	21	14
	School principal	34	22
Working place	Preschool	10	7
	Primary school	66	43
	Secondary school	51	33
	High school	26	17
Gender	Male	93	61
	Female	60	39
Professional seniority	1–5 years	18	12
	6–10 years	48	31
	11–15 years	44	29
	16–20 years	24	16
	21 years and over	19	12
Total		153	100

information deeply, and preserving individuality in the answers. In the context of quantitative research methods, it is given place to frequency and percentage rates with the aim of analyzing the differences of the metaphors the participants created according to the features of being a school director and teacher.

50.3.2 *Participants*

55 school directors and 98 teachers chosen randomly, working in Konya, constitute the participants of the research to determine the perceptions of the school directors and the teachers related to school management. Information about the participants of the research is given in Table 50.1.

According to the table, 198 of the participants work as a teacher, 21 of them work as an assistant principal, and 34 of them work as a school principal. 10 participants work in a preschool, 66 of them in a primary school, 51 of them in a secondary school, and 26 of them work in a high school. 18 participants have 1–5 years professional seniority, 48 of them have 6–10 years, 44 of them have 11–15 years, 24 of them have 16–20 years, and 19 of them have 21 years and over professional seniority.

50.3.3 *Collecting Data*

In order to determine perceptions of school directors and the teachers related to school management, the participants are asked to complete the sentence “School

principal is like.....because.....” In the studies where metaphors are used as a means of research, the concept “like” is generally used to remind the connection between the subject of the metaphor and the source of the metaphor. By giving a place to the concept “because” it is desired that the participants give a reason or logical ground to their own metaphors (Saban 2008). The form that has been prepared for participants to express their views online is used as a basic data source in this research.

50.3.4 Analyzing Data

The metaphors that participants developed are analyzed in five stages: (1) coding and eliminating stage, (2) compiling sample metaphor images stage, (3) creating category stage, (4) ensuring validity and reliability stage, and (5) transferring the data to SPSS packet program stage for analysis of quantitative data.

1. Coding and eliminating stage

At this stage, first list of metaphors from A to Z is prepared temporarily. It is analyzed whether the participants has given a valid example related to the school principalship or not. The views that don't give an example of metaphor, give more than one example of metaphor, and don't fit with the reasons of their metaphors are eliminated. Due to all these reasons, the views of 25 participants are excluded from the research.

2. Compiling sample metaphor images stage

After the process of elimination, metaphors are ordered from A to Z again and “example metaphor list,” in which the reasons why the participants used that metaphors take place, is prepared. As the expressions indicated by the participants generally consist of short sentences, abbreviation procedure is not required. Coding is done to give information about to whom a metaphor belongs. In order to indicate the owner of the metaphor, teacher, assistant principal, and school principal words are used. To indicate the type of institution they work, 0–3 numbers are chosen from preschool to high school. To indicate the gender of the participants, M letter for males and F letter for females are used. To express the professional seniority of them, the ranges of the professional seniority of the participants are written.

3. Creating category stage

Every metaphor image produced by the participants is analyzed in terms of (1) the subject of the metaphor, (2) the source of the metaphor, and (3) the relation between the subject and the source of the metaphor. Then 14 different conceptual categories are created by relating every metaphor image to a defined theme in terms of its perspective related to school.

4. *Ensuring validity and reliability stage*

Validity and reliability are the two most important criteria used to ensure the credibility of research results. According to Yıldırım and Şimşek (2005), reporting the collected data in detail and explaining how the researcher reached to the results are among the important criteria in a qualitative research. Unique to this research with the aim of providing validity of the research results, data analysis process is explained in detail, and for 89 metaphors obtained in the research, example metaphor images, which are supposed to represent each of them best, are compiled, and all of them take part in the findings part.

In order to provide the reliability of the research to confirm whether the metaphor images given under 14 categories created in the research represent that category or not, it is consulted to an expert view. For this purpose, the list, in which metaphors are ordered from A to Z to create metaphor categories, is given to the expert. Matches that the expert done are compared to the matches that the researcher done. The reliability of the research is estimated with the formula ($\text{Reliability} = \frac{\text{Consensus}}{\text{Consensus} + \text{Dissidence}}$) defined by Miles and Huberman (1994). Within the concept of reliability study, the expert consulted for his/her views has correlated only two metaphors, *bee* and *masseur*, with different categories. In this case the reliability is estimated as 98%.

5. *Transferring the data to SPSS packet program stage for analysis of quantitative data*

All data is transferred to the SPSS statistics program after identifying 89 metaphors in total and developing 14 conceptual categories consisted of these metaphors. Following this process, first of all the number of participants (f) representing the 14 categories and 89 metaphors is estimated. Then the number of participants (f) is estimated so as to determine which participant groups form the conceptual categories where most of the participants indicated their views.

50.4 Findings

The findings of the research are presented by being analyzed among beneath problems.

50.4.1 *Findings Related to the 1. Beneath Problem*

In the first beneath problem, an answer to the question “What are the metaphors that the school directors and the teachers determined to put forward their perception about school management?” is looked for. In this respect, the metaphors that the school directors and the teachers determined about school management are given in Table 50.2.

Table 50.2 Metaphors that the school directors and the teachers determined related to school management

Rank	Metaphor	f	Rank	Metaphor	f	Rank	Metaphor	f
1	Elder brother	1	31	Guardian	1	61	Poet, minstrel	1
2	Trunk of tree	1	32	Ship captain	2	62	Leader	1
3	The one from family	1	33	Sun	2	63	Boss	1
4	Whirlpool	1	34	Party leader	1	64	Cop	1
5	Mother	1	35	Weeble	1	65	Advertiser	1
6	Friend	5	36	Porter	1	66	Politician	2
7	Sunflower	1	37	Goal setter	1	67	Question	1
8	Mirror	2	38	Godsend	1	68	Supermen	1
9	Father	24	39	Servant	1	69	Sugar	1
10	Gardener	1	40	Hulusi Kentmen	1	70	Sheriff	1
11	Brain	7	41	Director	1	71	CEO of the company	1
12	Root of a tree	1	42	Screw wrench	1	72	Driver	1
13	Chameleon	2	43	Skeleton	1	73	Captain of the team	1
14	Big ass	1	44	Captain	2	74	Coach	2
15	Roof	3	45	Guide	1	75	Drumstick	1
16	Core?	1	46	Bridge	1	76	Drum without stick	1
17	Apprentice	1	47	King	1	77	Favored	1
18	Shepherd	1	48	Queen bee	1	78	Favored teacher	1
19	Mountain	2	49	Locomotive of the institution	1	79	Traffic light	1
20	Equilibrant	1	50	Leader	14	80	Shimmering ball	1
21	Ocean	1	51	Maestro	1	81	Assistant	1
22	Government	2	52	Machinist	1	82	Lazy porter	1
23	Representative of government	1	53	Masseur	1	83	Software	1
24	Dumb	1	54	Stick of MEM	1	84	Star	1
25	Wall	1	55	Officer	1	85	Advisor	1
26	Torch	1	56	Touchstone	1	86	Manager	3
27	Factory head	1	57	School	1	87	Redirector	1
28	Self-sacrificing	1	58	Organizer	1	88	Armor	1
29	Paralyzed	1	59	Maestro, chief of orchestra	6	89	Chain	1
30	Film director	1	60	Authority	1			

According to Table 50.2, school directors and teachers determined 89 metaphors to put forward their perceptions related to school principalship. Among these friend (5), father (24), brain (7), leader (14), and maestro (6) are the most used metaphors.

When the metaphors in the list are analyzed, it can be expressed that the perceptions of school directors and the teachers related to school principalship are positive.

50.4.2 Findings Related to the 2. Beneath Problem

Within the second beneath problem, the question “Under which conceptual categories can these metaphors be gathered up with regard to their common features?” is answered. Thus the categories created for school principalship metaphor are given in Table 50.3.

Table 50.3 Categories created for school principalship metaphor

Metaphor Categories	<i>f</i> (person)	Metaphors
1. Guardianship/ reassuring	8	Father (7), armor
2. Leadership	30	Advisor, CEO of a company, guide, torch, leader (12), sun (2), redirector, captain (2), brain (4), shepherd, leader, machinist, Manager, driver
3. Being a component of negativity	24	Chameleon (2), mountain, officer, apprentice, big ass, guardian, advertiser, king, boss, party leader, sunflower, stick of MEM, dumb, wall, whirlpool, lazy porter, paralyzed, favored teacher, Shimmering ball, favored, drumstick, drum without stick, politician
4. Being a problem solver	6	Supermen, father (2), sheriff, assistant, director
5. Doing a hard and tiring job	15	Mother, father (7), servant, factory head, screw wrench, cop, ocean, porter, self-sacrificing person
6. Being a component of power	4	Mountain, authority, representative of government, manager
7. Being uniting	20	Roof (2), maestro (6), trunk of tree, organizer, bridge, maestro, father, touchstone, film director, captain of the team, brain (2), leader, chain
8. Being an example	3	Leader, mirror (2)
9. Providing justice and balance	11	Government (2), politician, equilibrant, Hulusi Kentmen, father (2), weeble, poet, queen bee, manager
10. Being seen as a source of success/failure	9	Gardener, star, goal setter, coach, ship captain (3), locomotive of the institution, root of a tree
11. Being a precious and loved creature	11	Friend (5), one from the family, father (3), elder brother, sugar
12. Being indispensable	7	Brain, coach, roof, godsend, skeleton, core, father
13. Being motivating	1	Masseur
14. Others	4	Traffic light, school, question, software

When the Table 50.3 is analyzed, it is seen that most of the participants' views are gathered up under the categories *leadership* (24), *being uniting* (20), and *doing a hard and tiring job* (15). In addition, it draws attention that the metaphor "father" takes place in seven categories.

50.4.3 Categories of Dominant Metaphors

In this part of the research, it is given place to metaphor categories where most of the participants take part.

50.4.3.1 Category 1: Leadership

30 participants created 14 metaphors in this category. It is seen that the most frequent metaphors are *leader* (12) and *brain* (4). Some views of the participants from the leadership category are these:

School principal is like a CEO of a company because principal is the person who coordinates everything and generally leads the activities to be done and to the new actions. (Teacher-1-E-6/10).

School principal is like a captain because a good captain aims to transport his/her passengers to the land safe and successfully by taking into account all risks. School principal should take into account all components that provide students and teachers to reach success as well. (Assistant principal-1-K-6/10).

School principal is like a leader because principal is the person who cares for teachers' problems guides them leads the way for them. (School principal-2-E-16/20).

50.4.3.2 Category 2: Being a Component of Negativity

23 metaphors are created by 24 participants. Some views related to school principalship are like these:

School principal is like a chameleon because it is not obvious whose color will the principals wrap up and they shift color frequently. Moreover they are not fair to people around them they wrap up whosever color they wish. (Teacher-1-K-1/5).

School principal is like a guardian because principals always restrict the teachers that want freedom. They prefer the teachers who do whatever they want by force, not independent and creative teachers. (Teacher -3-K-1/5).

School principal is like a favored teacher because principalship is not given according to competence. (Teacher -1-E-1/5).

50.4.3.3 Category 3: Being Uniting

13 metaphors in this category are created by 20 participants. *Maestro* draws attention as the most frequently used metaphor. Some views of the participants are indicated below:

School principal is like a maestro because principals know how to handle the situation in every good or bad moment and bring out beautiful works. (Teacher -3-K- 1/5).

School principal is like a roof because principals are the people who protect the school and keep the students, teachers and parents together. (Teacher -0-K-11/15).

School principal is like a bridge because principals make connection between the teachers and ministry, regulations, students and their parents. They become a bridge to the new to the future. (School principal -1-E-21 years and over).

50.4.3.4 Category 4. Doing a Hard and Tiring Job

9 metaphors in this category are created by 15 participants. It is detected that “father” is the most frequently used metaphor. Some views of the participants are:

School principal is like a mother because principals think everything about their children and the school. (Assistant principal -1-K-1/5).

School principal is like a screw wrench because everything is expected from him/her (School principal -3-E-21 years and over).

School principal is like a father because s/he deals with all the work (Öğretmen-1-E-11/15).

50.4.4 Findings Related to the 3. Beneath Problem

In the third beneath problem of the research, an answer to the question “Are these determined conceptual categories showing differences in terms of the features of the participants?” is looked for. Hence the differences in the four categories, in which most of the participants stated their opinions, in the previous beneath problem are tried to be detected.

The variance of the metaphors that the school directors and the teachers created related to the school principalship is given in Table 50.4.

Table 50.4 The variance of the metaphors that the school directors and the teachers created related to the school principalship

Categories	Source of the metaphor			
	Teacher	Assistant principal	School principal	Total
Leadership	18	3	9	30
Being a component of negativity	22	1	1	24
Being uniting	11	1	8	20
Doing a hard and tiring job	5	4	6	15

When the Table 50.4 is analyzed, it is seen that 18 teachers, 3 assistant principals, and 9 school principals produce metaphors that take part in the leadership category when it is asked about school principalship. It draws attention that 22 teachers, 1 assistant principal, and 1 school principal set forth negative metaphors related to school principalship. Within the category of being uniting, it is determined that 11 teachers, 1 assistant principal, and 8 school principals created metaphors. It is put forward that 5 teachers, 1 assistant principal, and 6 school principals described school principalship in the category of doing a hard and tiring job.

50.5 Discussion

Metaphors are the descriptive means used in explaining the desired concept or situation written, verbal, or by means of symbols. With this feature, metaphors are important means that can be used to reveal the unknown. Metaphors serve to the aim of revealing the unknown of the chaos theory because of this function.

In the research that aims to determine the metaphoric perceptions of school directors and the teachers related to school principalship, 89 metaphors are determined. Friend (5), father (24), brain (7), leader (14), and maestro (6) are the most frequently used metaphors. This finding shows resemblance to the findings obtained in the researches of Çobanoğlu and Gökcalp (2015), Yalçın and Erginer (2012), and Dönmez (2008). In the researches of Çobanoğlu and Gökcalp (2015), father (25), lion (23), mother (13), shepherd (11), brain, coach (9), and captain of the team are the most created metaphors. In the researches of Yalçın and Erginer (2012), these are the most created metaphors for the school principalship by the teachers and the students' parents: father, lion, angel, head of the family, ant, locomotive, hot-headed, mother-father, maestro, and flower. In Yalçın (2011)'s research, the most frequently used metaphors are mother-father, head of the family, and maestro. When it is looked over the created metaphor list in this sense, it can be said that the participants generally have a positive perception about school principalship.

At the end of the research, metaphors are separated into 14 categories. Among these the categories in which the participants stated their opinions most are, respectively, leadership, being a component of negativity, being uniting, and doing a hard and tiring job. In leadership category 30, in the category of being a component of negativity 24, in the category of being uniting 20, and in the category of doing a hard and tiring job 15 views of the participants take place.

In leadership category *CEO of the company, guide, torch, leader, sun, redirector, captain, brain, shepherd, chief leader, machinist, director, and driver* metaphors are used. Among these "leader" is the most frequently used metaphor. This finding shows resemblance with the findings Yalçın and Erginer (2012) and Koçak (2011) obtained in their researches. In the researches of Yalçın and Erginer (2012), it is seen that locomotive, maestro, leader, ship captain, coach, driver, captain of a team, and pilot are the metaphors created in average and over by the teachers and the students' parents. When Koçak (2011)'s metaphors that take part in "directing and leadership"

theme created from the metaphors that school principals produced related to their perceptions of school principalship during their teaching years are analyzed, it is seen that they used metaphors like organizer, leader, and maestro. When the views of the participants are analyzed, it is understood that the school principals show the behaviors like being a model, solving problems, and guiding and heading the way within the sense of leadership role in carrying out the educational activities.

In the category of being a component of negativity, the *chameleon, mountain, officer, apprentice, guardian, advertiser, king, boss, party leader, sunflower, stick of MEM, big ass, dumb, wall, shimmering ball, favored one, drum without stick, politician, whirlpool, lazy porter, paralyzed, and favored teacher* metaphors are used. As justification to their metaphors, participants put forward that school principals have features like limiting freedom, acting incoherently in each situation, being assigned to his/her job with an interview exam, being inexperienced, and not being fair. The findings obtained show similarities with the findings of Çobanoğlu and Gökalp (2015), Koçak (2011), Aydoğdu (2008), Balcı (1999), and Lum (1997). In the researches of Çobanoğlu and Gökalp (2015), the most created metaphors in the theme of negativity are “Dictator,” “King,” and “Sultan.” In Koçak (2011)’s research when the metaphors that are created for reflecting the perception of the school principals during their pupilage are separated into themes by analyzing the reasons why they are preferred in terms of their reflecting similar meanings, metaphors mostly take place in “toughness and oppressiveness” and “inaccessible position” themes. It is detected that most of the students participated in the research of Aydoğdu (2008) perceive the school directors as rude, destructive, and too authoritarian. According to Balcı (1999)’s research, it is detected that the students see the school principals as stuck in the past, too authoritarian, and damaging. In Lum (1997)’s research, it is detected that the metaphors students used for school principals are policeman, Darth Vader (bad guy in the film Star Wars), God, and SS (Nazi) soldier. As a result of variance of school directors and teachers’ metaphors related to school principalship, the most remarkable result is the ones who stated their opinions in the category of being a component of negativity are formed by teachers mostly. This situation may arise from the unpleasant experiences occurred between the school principals and the teachers in the past. Moreover regarding this finding, it can be deducted that the ones working in the management position do not have negative opinions related to school principalship in general. In other words, it can be expressed that the perception of the school directors about the job they do is positive.

In the category of being uniting, *roof, maestro, trunk of tree, organizer, bridge, father, touchstone, film director, captain of the team, brain, leader, and chain* metaphors are used. The metaphor that the participants mentioned most is *maestro*. *Maestro* is also one of the metaphors mostly created in the researches of Yalçın and Erginer (2012) and Yalçın (2008). When the views of the participants are analyzed regarding this category, the result that school principals are successful in bringing different characteristics together shows up.

In the category of doing a hard and tiring job, *mother, father, servant, factory head, screw wrench, policeman, ocean, porter, and self-sacrificing person* metaphors are used. This finding shows resemblance to the findings in the researches of

Yalçın and Erginer (2012) and Karademir (2008). In the researches of Yalçın and Erginer (2012), the metaphors produced in average and over for school management by the teachers and the students' parents are *ant*, *bee*, *motor*, and *machine*. In the theme of "hard and tiring job" that is formed of the metaphors school principals produced regarding their perception of school management during their principalship period, metaphors like *porter*, *mukhtar*, and *pilot octopus* are created. In the findings of Karademir (2008)'s research, 86% of school principals indicated that school principalship is a hard and tiring job with a lot of responsibilities.

When the source of metaphors produced for school principalship is analyzed, it is seen that the highest frequency among the participants who stated their opinions in the categories of leadership, being a component of negativity, and being uniting belongs to the teachers. Teachers' stating their opinions in the categories of leadership and being uniting more is an indicator that their perception of school principalship is positive. The fact that most of the participants that indicated their opinions in the category of being a component of negativity formed by teachers is a subject that should be taken into consideration. By analyzing the opinions of teachers in this subject, it is required to make some improvements to fix these negative perceptions. School principals' having quite few negative perceptions related to the school principalship is another remarkable point in this subject. Regarding this finding, it can

be said that school directors see the position of school principalship valuable. When the category of doing a hard and tiring job is analyzed, it stands out that school principals have the most frequency. According to this result, it can be said that school principals see their jobs as hard and tiring.

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Chapter 51

Randomness and Chaos



Cemal Atakan, Rukiye Dağalp, Nihan Potas, and Fikri Öztürk

Abstract The primary goal of this study is to remind, emphasize and revive the ideas of C. Radhakrishna Rao, inscribed in his words “*Chance deals with order in disorder while chaos deals with disorder in order*”. We will focus upon some concepts such as randomness, probability measure, chaos, fractals, random sequences and complexity. Deterministic phenomena need and use mathematics, stochastic phenomena need and use statistics, at least probability theory, as a modeling device. Analysis of measurements always need statistics. Modeling of some natural phenomena need fractional calculus. Fractional calculus nor stochastic calculus will be used.

51.1 Introduction

After inventing the notion “derivative” Newton threw up the basics of Newtonian mechanics. Newtonian mechanics is based on three principles (inertia, action-reaction, momentum). It is deterministic in its methodology of inference and use mathematics as a modeling device. Quantum mechanics is based on Heisenberg’s uncertainty principle. It is stochastic in its essentials and use probability theory and statistics as a modeling language, as well as mathematics.

Let us notice that the concept of measuring and evaluation of measurements is a statistical topic. Every measuring instrument gives us an erroneous measurement. Errors can be considered as random variables, and the observations can be thought as values equal to what we want to measure plus errors. The theory of measurement

C. Atakan (✉) · R. Dağalp
Ankara University, Department of Statistics, Ankara, Turkey
e-mail: catakan@ankara.edu.tr; Rukiye.Dagalp@ankara.edu.tr

N. Potas
International Science Association-Ankara, Turkey, Gazi University, Ankara, Turkey

F. Öztürk
Ankara University, Modelling and Simulation Lab, Ankara, Turkey
e-mail: ozturkf@ankara.edu.tr

errors is the first stage in understanding and modeling the randomness. The next stage is the modeling stage of the randomness inherent in the nature of phenomenon. How can we understand the uncertainties behind measurements or randomness in physical systems? The answer may be: Use Probability and Statistics.

Pure mathematics, as an abstract science, is constructed axiomatically using the logic as a meta science. Probability theory is based on Kolmogorov's axioms. Statistics has its own principles like sufficiency, likelihood, measurement invariance. We can say that statistics use the decision theory as a meta science. In statistical theory, there are principles and laws like in natural sciences, and axioms and theorems like in pure mathematics. Briefly, we can say that statistics is applied mathematics of randomness. In other words, statistics is the language of modeling the randomness. The statisticians don't ask "What is randomness?". They, only want to measure it. The probability measure does this job.

"Time" and "randomness", these two concepts are the two most important concepts of philosophers. Physicists look at the "time" as a basic concept. Although, not giving an exact definition, they are trying to explore it. They don't insist on the question "What is time?" very much, they are measuring it. The time is what a clock reads. Also, for the notions of "mass" and "distance", they are only measuring them (mks system of units). The concept of measure and measuring in natural, social and other fields of the science has its own methodology in the application stage, which is different from the concept of measure in mathematics. Measuring is a rational operation using unit, scale and measuring device, sensible to what we want to measure. Sometimes measuring is only a nomination or classification. There are four scales of measurement: nominal, ordinal, interval and ratio. The notion "measure" in mathematics is an abstract idealisation of the measuring in applications. We never will read "pi" on any scale of any measurement device, because it is an irrational number.

What about chaos? In the British Dictionary the first explanation for "chaos" is "complete disorder". Chaos is a frequently observed behavior in many social and physical environments, with spontaneous occurrence. Chaos theory is closely related to stability theory and dynamical system modeling (Alligood et al. 2000). Chaos that scientists are talking about is mathematical in nature. Its study is made possible and attractive by the use of computers. In common usage, "chaos" means "a state of disorder".

In the next section the concept of randomness is considered. Two examples from stochastic processes are given; Random Walk and Brownian Motion. The third section dwell on chaos. After the conclusion section, some references are listed.

51.2 Randomness

In the British Dictionary one of the explanations for "random" is "lacking any definite plan or prearranged order; haphazard", with synonyms expand "haphazard, chance, fortuitous".

51.2.1 What Is Randomness and How to Model It?

Natural and social sciences have their own topics. For example, the motion phenomenon is a physical topic. The DNA is a notion in biology, but as an aside it is a chemical notion. What about randomness? An intuitive feeling of randomness and its use is as old as mankind itself.

From the time of Aristotle to the middle of the 19th century, chance was considered by scientists as well as philosophers to be an indication of our ignorance which makes prediction impossible. It is now recognized that chance is inherent in all natural phenomena, and the only way of understanding nature and making optimum predictions (with minimum loss) is to study the laws (or the inner structure) of chance and formulate appropriate rules of action (Rao 1997).

Before going on, let's make a small treaty: chance and randomness is inherent in nature and we will not differ the idioms "by chance", "at random" and "randomly". Experiments, having outcomes occurring randomly are called Random Experiments. The set of outcomes of a Random Experiment is called a Sample Space, sometimes denoted by Ω . Events are the subsets of the Sample Space. Sample Space may have infinitely many subsets. We may be interested in all of the events corresponding to these subsets. Also, we may consider the event of occurrence of both of two events $A_1, A_2 \subset \Omega$ written mathematically as $A_1 \cap A_2$ or the event $\bigcap_{n=1}^{\infty} \bigcup_{i=n}^{\infty} A_i$ consisting of those outcomes occurring in infinitely many of the events $A_i \subset \Omega$ ($i = 1, 2, \dots$). Random Experiment, briefly saying experiment is related to some natural phenomenon, while Sample Space as a set is a mathematical notion. As is well known the family of subsets of the Sample Space corresponding to events on which we are interested form a sigma-algebra U ($\Omega \in U$ and U is closed under countable set operations of complement, union, and intersection). Events are occurring randomly. What is the probability of occurrence? In Kolmogorov's Probability Theory, initiated at early 1930's, the probability of occurrence for an event $A \in U$ is the value $P(A)$ according to a measure P which satisfy the following properties called Kolmogorov's Axioms (Kolmogorov 1956).

$$\begin{aligned} P : U &\rightarrow R \\ A &\rightarrow P(A) \end{aligned}$$

1. $P(A) \geq 0$
2. $P(\Omega) = 1$
3. When A_1, A_2, \dots are disjoint events then $P\left(\bigcup_{n=1}^{\infty} A_n\right) = \sum_{n=1}^{\infty} P(A_n)$

The ordered triple (Ω, U, P) called Probability Space is some kind of a mathematical model. Infinitely many Probability Measures satisfying the Kolmogorov's axioms can be defined on a sigma-algebra. One of them is modeling the randomness inherent in the natural phenomenon we are interested in. But, which one? Sometimes it is possible to parametrize the family of candidate Probability Measures. Then the

problem becomes a statistical inference (estimation) problem. Before going on to statistical inference an appropriate random variable (random vector, random element) is defined. Random variables as Borel measurable functions correspond to measurements made on the outcomes of the experiment. Sometimes the outcomes are itself measurements, where the Sample Space is equipped with an appropriate Probability Measure. Probability distribution functions and probability density functions, when they exist, are some kind of mathematical tools in the modeling stage.

Some initial notions of Probability and Statistical Theory are as follows (in its logical chronology): sample space, sigma-algebra, probability measure, probability space, random variable, random element (a measurable function from a probability space to an appropriate measure space, the trajectories in a stochastic process are some kind of random elements), expected value (Lebesgue integral), distribution functions (expected values becomes Riemann-Stieltjes integrals) probability density functions (expected values are Riemann integrals) and so on. The Law of Large Numbers and the Central Limit Theorem are the best examples for the “order in disorder” mentioned by C. R. Rao.

Once again recall that randomness phenomenon is inherent in the nature. The randomness in the occurrence of an event is prescribed by its Probability Measure. The connection between randomness phenomenon to Probability Measure is based on Kolmogorov’s axioms. Probability distributions are models for randomness. Our understanding of the randomness inherent in a natural phenomenon is only that, what an accepted appropriate model is saying to us. Our difficulty in dealing with randomness is at the perception stage. In the stage of modeling we have to get rid of false perceptions. We can get close to the truth only by improving our sensors, measurements and observations. Correct inference is also very important, of course.

51.2.2 *Random Numbers*

Let’s put 10 balls, with 0,1, 2, ..., 9 numbers on them, in a bag and draw one by one with replacement and thoroughly shuffling the bag. As result we have a sequence of random digits. How can we generate such a sequence, which is long enough and easily obtained in a short time. There are two methods for generating random numbers. The first method uses some physical phenomenon as measuring atmospheric noise (RANDOM.ORG), thermal noise, radioactive decay etc. Such generators are called “true” random number generators (TRNG’s). The second method uses computational algorithms. The generated sequence of seemingly random numbers is determined by an initial value (seed value). Such random number generators are called a pseudorandom number generators (PRNGs).

Defects exhibited by PRNG’s range from unnoticeable and unknown to very obvious. Particularly illustrative example of this is RANDU, which was widely used in the early 1970’s on mainframe computers. It was seriously flawed, but its inadequacy went undetected for a very long time. RANDU is a linear congruential generator, given by the recurrence,

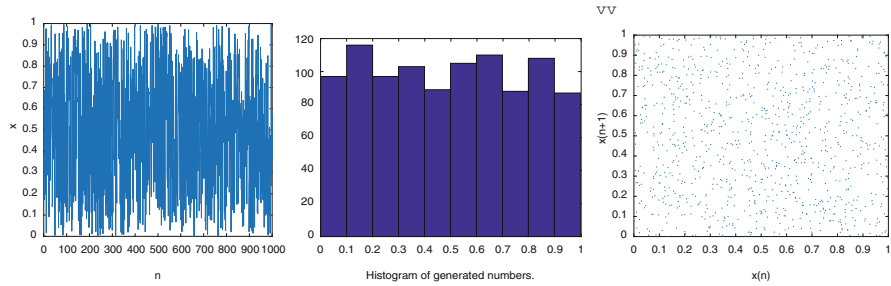


Fig. 51.1 The generated $n = 1000$ numbers are visualised on the left, the histogram at the middle, and points with coordinates $(x(j), x(j + 1)), j = 1, 2, \dots, n - 1$ on the right

$$V_{j+1} = 65539 V_j \text{ mod } 2^{31}, \quad j = 0, 1, 2, \dots$$

with the initial seed number V_0 as an odd number. The numbers so generated are in the interval $[1, 2^{31}]$. These numbers are divided by 2^{31} and transformed to numbers $X_j = \frac{V_j}{2^{31}}$ in the interval $(0, 1)$ (Fig. 51.1).

```
m=2^31; seed=12345; n=1000;
v(1)=seed; for j=2:(n+1); v(j)=mod(65539*v(j-1), m); end
x=v(2:(n+1)); x=x/m; hist(x); figure; plot(x(1:(n-1)), x(2:n), '.'); %Matlab
```

Pseudorandom number generators using linear congruential algorithms are inadequate. Better pseudorandom number generators are constructed on linear feedback shift registers, which produces a stream of pseudo-random bits, each of which is truly pseudo-random, and can be implemented with essentially the same amount of memory as a linear congruential generator, albeit with a bit more computation (Wikipedia).

One way to examine a random number generator is to create some visual picture of the numbers it produces. It is a quick way to get a rough impression of a given generator’s performance, as is seen in Fig. 51.2.

There are some standards for random number generators. Many tests for randomness are proposed, such as runs test, serial test, etc. The tests required by National Institute of Standards and Technology (NIST) of USA, with a nice explanation can be found in Kenny (2005). Let us mention that the tests of randomness are only something like “traps for nonrandomness”. We can’t say that those who survive all the traps are random. It is impossible to put the “randomness” notion into the null hypothesis.

Pseudorandom number generators based on linear congruential algorithms suffer from serial correlation. For any pseudorandom number generator, the algorithm itself follows some rule that contradicts the notion of randomness. We feel that randomness is a concept related to nature. Everything in nature seems to us to be random. Can we be random mentally? This is a psychological question. To the best of our knowledge it is impossible. For example, it is impossible to create a random number sequence by pressing the computer keys many times. But, we have a lot of

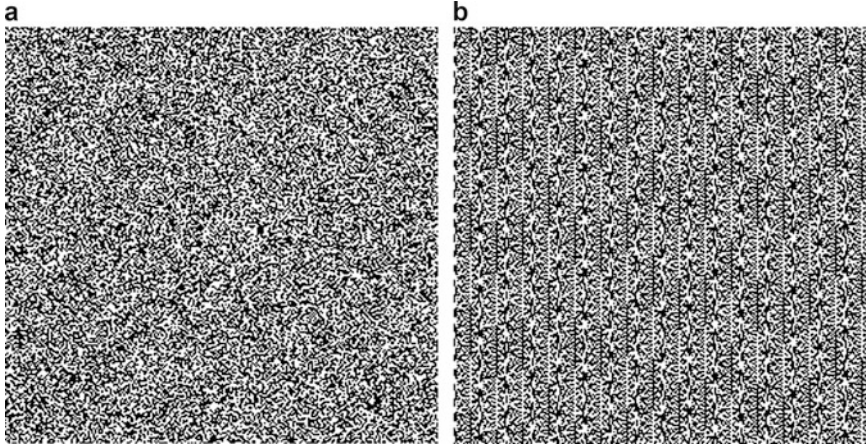


Fig. 51.2 (<https://www.random.org/>) TRNG in RANDOM.ORG extracts randomness from atmospheric noise. (a) RANDOM.ORG(TRNG). (b) PHP rand() on Microsoft Windows(PRNG)

behavior done randomly. By observing them and taking relevant measurements we can obtain random numbers, but it is not economical at all. Beyond this, the numbers produced in this way will have the properties of randomness inherited in the behavior. Although not explicitly mentioned, it is desirable that the generated numbers are uniformly distributed on the interval $[0,1]$. In statistical terminology, it is desirable, that the generated numbers are like a “sample” from uniform distribution on $[0,1]$, where “sample” means, observed values of independently and identically distributed random variables.

Producing random numbers has become an industry. Monte Carlo calculations and system simulations need huge volumes of randomly generated numbers. Random number generation problem is more related to computer and electronic technology. You should not overlook the role of mathematics and statistics also.

51.2.3 *Random Walk*

The notion “Random Walk” at first glance seems to be related to reality, but it is also a mathematical notion. Random Walk is a sequence of random steps over some graph, integers, lattice, real line or a higher dimensional space. Natural examples include molecular movement in liquids or gases. The path of a walking animal, the price of a wave stock, and the financial condition of a gambler can be modeled as a Random Walk. Random Walk models are widely used in many scientific fields such as physics, chemistry, biology, psychology, electronics, and computer science. Many real-world time series data are modeled as Random Walks, such in finance and economics. Gaussian Random Walks, where the step size is normally distributed are the most used, as in the famous Black-Scholes formula for modeling option

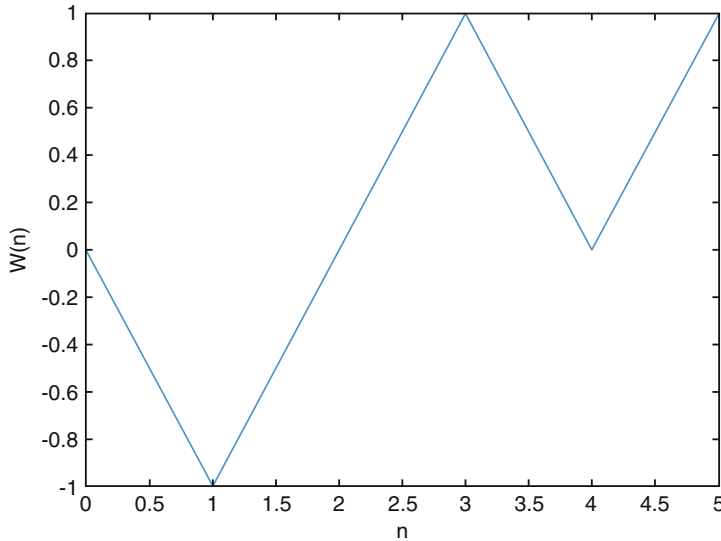


Fig. 51.3 A Simple Random Walk’s trajectory ($n = 5$ steps)

prices. Random walk is one of the basic models for real random processes and activities.

As a mathematical notion, let us take the simplest Random Walk and define it. The simplest Random Walk is a one-dimensional Random Walk on the points corresponding to integers on the real line. Let Z_1, Z_2, \dots are independent random variables, taking the values 1 or -1 , with equal probability $1/2$. Set $S_0 = 0$ and

$$S_n = \sum_{j=1}^n Z_j.$$

For $n \geq 1$ the random variable S_n represents the position of the walker

at the n 'th step and $E(S_n) = 0, \text{Var}(S_n) = n$. For example, the random variable S_n can take the values $-3, -1, 1, 3$ with probabilities $P(S_3 = -3) = P(S_3 = 3) = 1/8, P(S_3 = -1) = P(S_3 = 1) = 3/8$. The sequence $\{S_n\}_{n=0}^\infty$ is a stochastic process, tracing the random positions of the walker. The stochastic process $\{S_n\}_{n=0}^\infty$ is called Simple Random Walk. Simple Random Walk is a walk on the set of integer numbers. The series $\{|S_n|\}_{n=0}^\infty$ gives the translation distances to the initial point. The expected translation distance after n steps is of the order of \sqrt{n} and $\lim_{n \rightarrow \infty} \frac{E(|S_n|)}{\sqrt{n}} = \sqrt{\frac{2}{\pi}}$, showing that diffusion is ineffective for mixing (Wikipedia/Random walk).

As a stochastic process, the trajectories of the Simple Random Walk are like below ($W(n) = S_n$). (Figs. 51.3 and 51.4).

Below are 100 trajectories of a simulated 5 steps Simple Random Walk and the frequencies for the values in the final step. The frequencies mimics the probabilities in the binomial distribution $b(n = 5, p = 1/2)$ (Fig. 51.5).

As can be seen in Fig. 51.4 a trajectory of the Simple Random Walk crosses the horizontal axis many times, indeed infinitely many times. A Simple Random

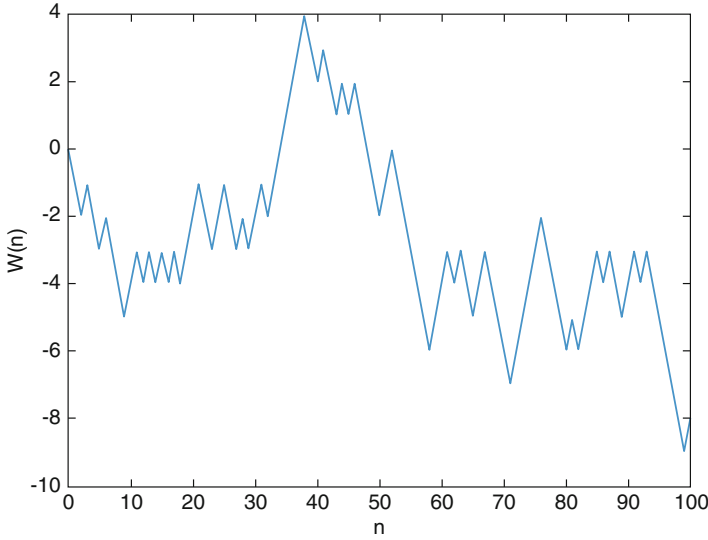


Fig. 51.4 A Simple Random Walk’s trajectory ($n = 100$ steps)

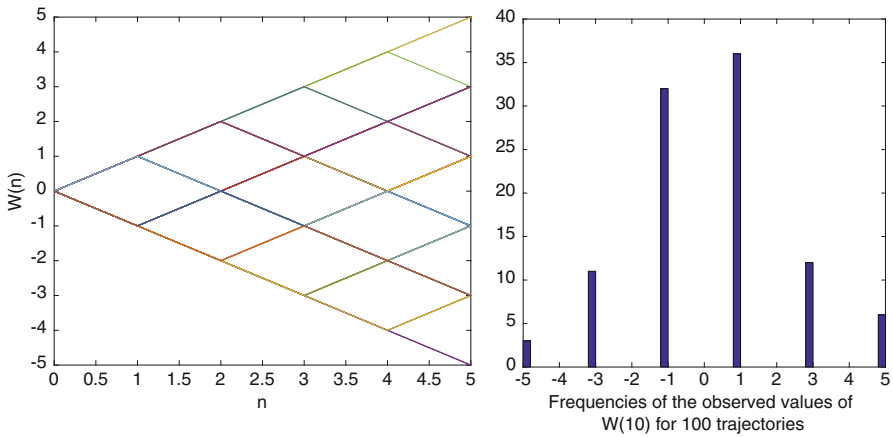


Fig. 51.5 100 trajectories of 5 steps Simple Random Walk and the frequencies of the final step values

Walk visits every point of the real line corresponding to an integer number infinitely many times. This is known as the level-crossing phenomenon, recurrence or the gambler’s ruin (Chung 2002). In Fig. 51.6 at the left, there is a trajectory of simulated 100 steps of a simple random walk. The crossed (visited) points and numbers of crossings are at the right.

As a stochastic process the simple random walk is a walk on the integers of the real line, starting from 0, with equal direction probabilities for steps of length 1. In

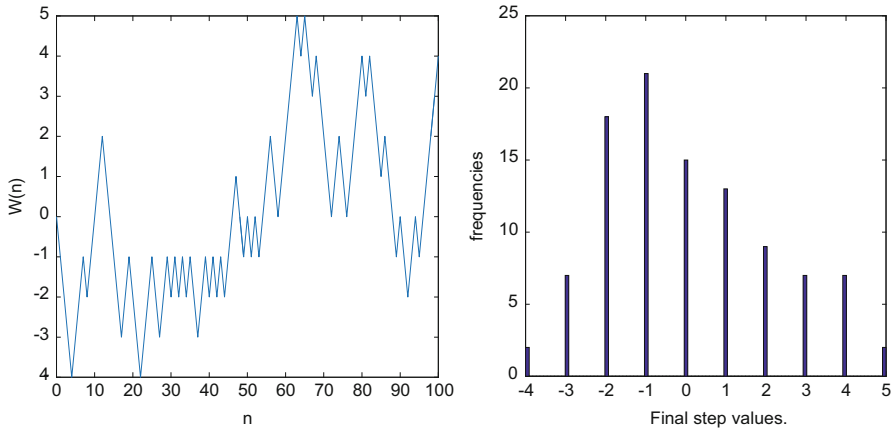


Fig. 51.6 A trajectory of simulated simple Random Walk. The crossing points and numbers of crossings are at the right, for $n = 100$ steps

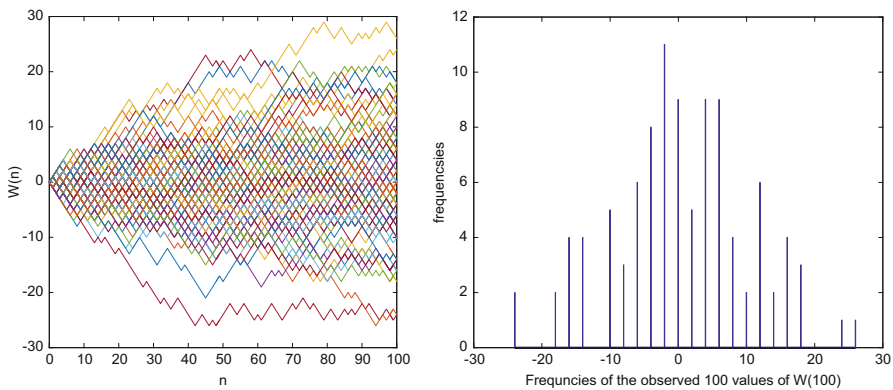


Fig. 51.7 Simulated 100 trajectories of the Simple Random Walk and frequencies of the final step values

Fig. 51.7 at the left, there are trajectories of simulated 100 simple random walks, with $n = 100$ steps each. The frequencies for the final step values (at the right) are like the probabilities in the Binomial distribution $b(n = 100, p = 1/2)$.

For the Simple Random Walk steps are of length 1 and direction probabilities are equal. Both of them can be generalized. For example, in Gaussian Random Walk the step length values are $N(0, 1)$ distributed independent random variables. Let us consider such a walk on the real line, starting from zero and having equal direction probabilities. In Fig. 51.8, at the left side there are trajectories of simulated 100 Gaussian Random Walks, for $n = 100$ steps with steps at the moments 0, 0.01, 0.02, ..., 0.99. The histogram of the final values is at the right.

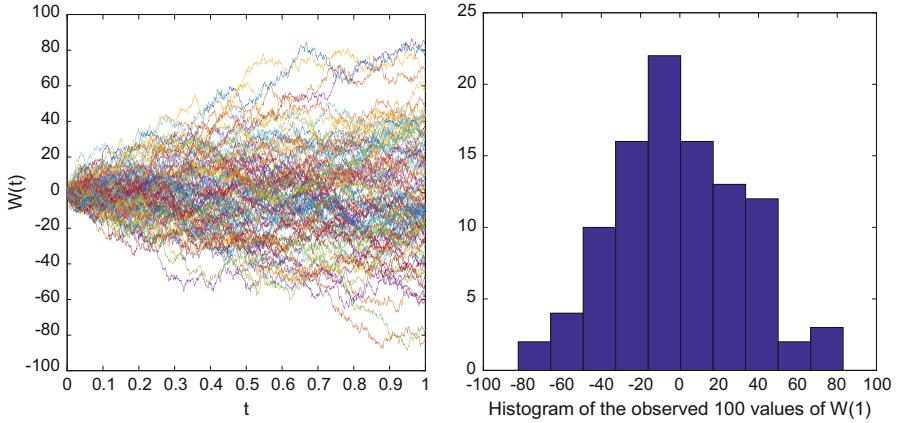


Fig. 51.8 Simulated 100 trajectories from Gaussian random walk and histogram of the final step values

It is important to keep in mind that all motions considered in this study take place on the vertical axis. They are one-dimensional movements. The visualized trajectories are only mathematical graphics.

51.2.4 Brownian Motion

Brownian Motion as a real-world phenomenon is the random motion of particles suspended in a fluid, named after Robert Brown, who observed it in 1827 by microscope, looking at the motion of pollen grains in water. In probability theory, statistics and mathematics the real-world phenomenon Brownian Motion is modeled by the Wiener Process. A Markov Process whose finite-dimensional distributions are normal distributions is called Wiener Process (Chung 1982). The Wiener Process (W_t) is characterized by the following four facts:

1. $P(W_0 = 0) = 1$.
2. W_t is almost surely continuous.
3. W_t has independent increments (if $0 \leq s_1 < t_1 \leq s_2 < t_2$ then $W_{t_1} - W_{s_1}$ and $W_{t_2} - W_{s_2}$ are independent).
4. $W_t - W_s$ is distributed as $N(0, t - s)$ (for $0 \leq s \leq t$).

Some properties of the Wiener Process are as follows:

- $W_t \sim N(0, t), t > 0$.
- $Cov(W_s, W_t) = \min(s, t), s, t > 0$.
- The joint distribution of $W_{t_1}, W_{t_2}, \dots, W_{t_n}$ is $N(0_{n \times 1}, (\min(t_i, t_j))_{n \times n})$.
- The scaled process $\sqrt{c}W(\frac{t}{c})$ is also a Wiener Process on the interval $[0, c]$.

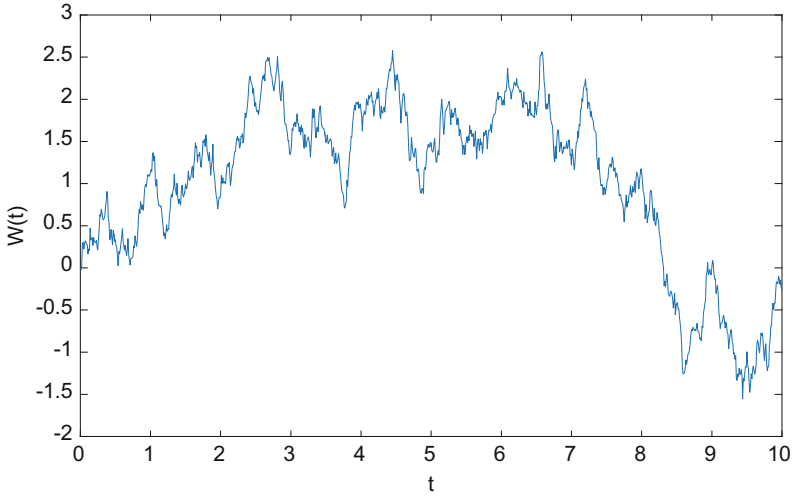


Fig. 51.9 A simulated Wiener Process trajectory at discrete 0, 0.01, 0.02, . . . , 9.99 times in [0,10]

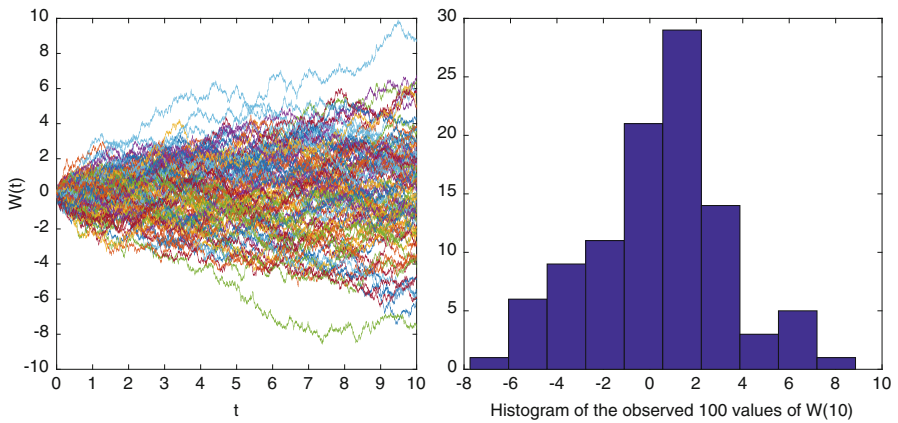


Fig. 51.10 Simulated 100 trajectories on [0,10] and histogram of the final $W(10)$ values

- Let ξ_1, ξ_2, \dots be independently and identically distributed random variables with mean 0 and variance 1. For each n , define a continuous time stochastic process

$$W_n(t) = \frac{1}{\sqrt{n}} \sum_{1 \leq k \leq [nt]} \xi_k.$$

The so constructed process is a Wiener Process. Figure 51.9 shows a simulated trajectory on [0,10]. The limiting distribution of $W_n(t) - W_n(s)$ is the normal distribution $N(0, t - s)$ and as $n \rightarrow \infty$ W_n approaches a Wiener Process by the Donsker's theorem (Wikipedia) (Fig. 51.10).

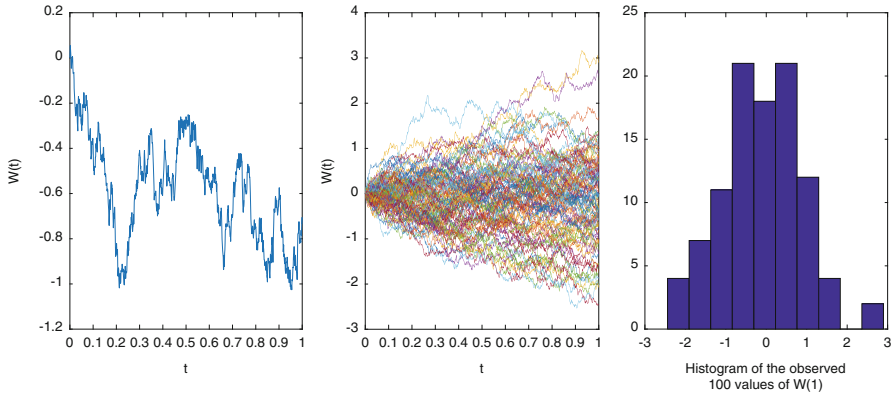


Fig. 51.11 A simulated Wiener Process trajectory at discrete 0, 0.001, 0.002, ..., 0.999 times in [0,1] (at the left). Simulated 100 trajectories on [0,1] (at the middle) and histogram of the final W(1) values (on the right)

- Wiener represented the trajectories by Fourier series with random coefficients.

$$W_t = \xi_0 t + \sqrt{2} \sum_{n=1}^{\infty} \xi_n \frac{\sin(\pi n t)}{\pi n}$$

represent a Brownian Motion on [0, 1], where ξ_n 's are $N(0,1)$ distributed, independent random variables (Wikipedia) (Fig. 51.11).

Wiener Process is recurrent. The most prominent property of sample paths of the Wiener Process is that, they are continuous almost everywhere but differentiable nowhere, like in Weierstrass function (published in 1827),

$$f_a(x) = \sum_{k=1}^{\infty} \frac{\sin(\pi k^a x)}{\pi k^a}, \quad x \in [0, 1]$$

which is the first example of continuous function with mentioned property. The graphics of the Weierstrass function has a fractal structure. The Hausdorff dimension of the graphics of Weierstrass function $f(x) = \sum_{n=1}^{\infty} \frac{\sin(2^n x)}{2^{n/2}}$ is 1.5 (Wikipedia).

```

a=2;k=1:1000;xx(1)=0;f(1)=0;deltax=0.0001;j=1;
for x=deltax:deltax:1
j=j+1;xx(j)=x;f(j)=sum(sin(pi*(k.^a)*x)./(pi*(k.^a)));
end
plot(xx,f,'x');xlabel('x');ylabel('f(x)');%Matlab
    
```

The Hausdurff dimension of the Weierstrass function

$$f(x) = \sum_{n=1}^{\infty} \frac{\sin(b^n x)}{a^n}, \quad x \in [0, 1] \quad (1 < a < 2, b > 1)$$

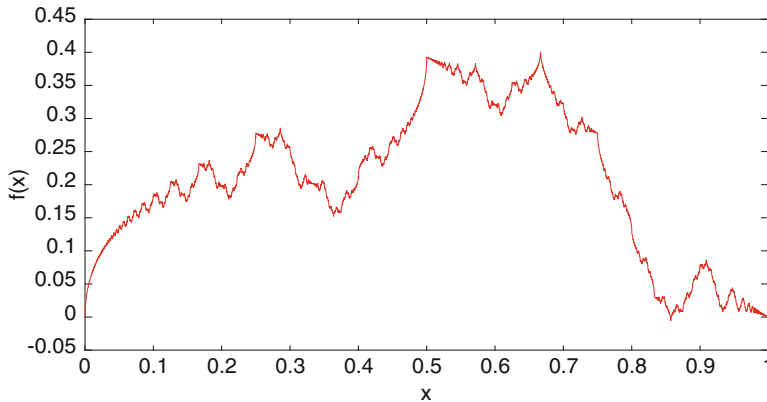


Fig. 51.12 The graphics of the Weierstrass function for $a = 2$

has upper bound $2 - \log_b a$ (Falconer 2003). The graphics in Fig. 51.12 looks like a Brownian Bridge Trajectory.

Wiener Process Trajectory is also a fractal. The Hausdorff dimension of the Wiener Process trajectory (regular Brownian function) is 1.5 (Falconer 1985, 2003). The trajectories of Wiener Process are continuous. They are nowhere differentiable. The Wiener Process is used to represent the integral of a white noise Gaussian process, and so is useful as a model of noise in electronics engineering (Brownian noise). In physics Wiener Process is used in modeling the Brownian motion, that is the diffusion of particles suspended in fluid, and other types of diffusion via the Fokker-Planck equation (Grigoriu 2002). It is also using in the mathematical theory of finance, in particular the Black-Scholes option pricing model (Oksendal 2003; Kuo 2000).

51.3 Chaos

Differential and difference equations are widely used in modeling of motion in physics or population growth in biology. Consider the Verhulst's population growth model (Giordano and Weir 1985; Murray 1993) known as logistic map or logistic equation

$$x_{n+1} = rx_n - rx_n^2 = rx_n(1 - x_n) \quad , \quad n = 0, 1, 2, \dots$$

With $x_0 \in [0, 1]$. Here, $x_n \in [0, 1]$ represents the ratio of existing population size to the possible maximum population size. This recurrence relation or nonlinear difference equation captures two effects: (a) reproduction (the population size increase at a rate proportional to the current population), (b) starvation (density-dependent mortality, the growth rate is decreasing when the population size is increasing).

Let us see the three possible situations, which can occur: situation of steady state, periodic oscillation and chaos, which appears for some values of r . The sequence $\{x(n)\}_{n=0}^N$ presents the development of population growth, where $x(n) = x_n$ (Figs. 51.13, 51.14 and 51.15).

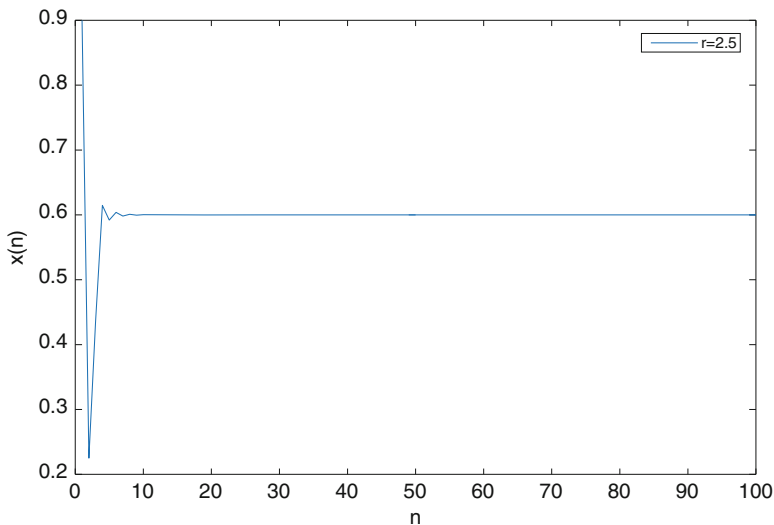


Fig. 51.13 Time course of logistic growth with parameter $r = 2.5$ and initial value $x(0) = 0.9$

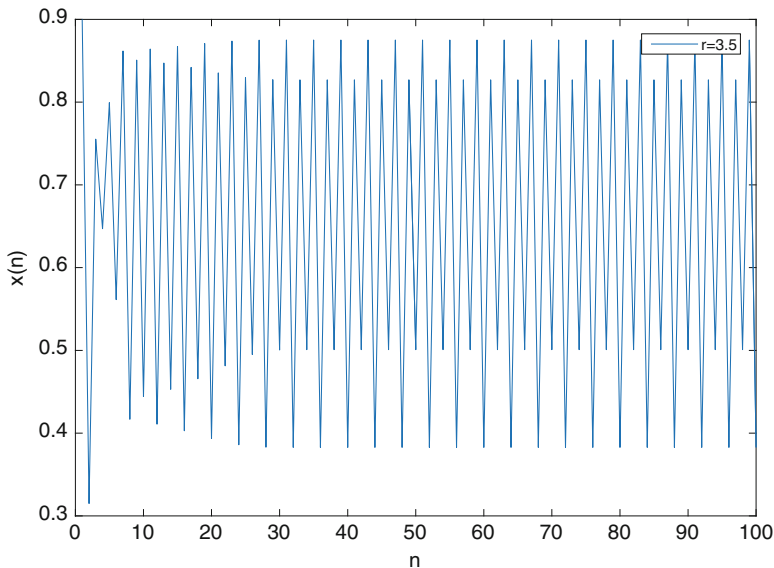


Fig. 51.14 Time course of logistic growth with parameter $r = 3.5$ and initial value $x(0) = 0.9$

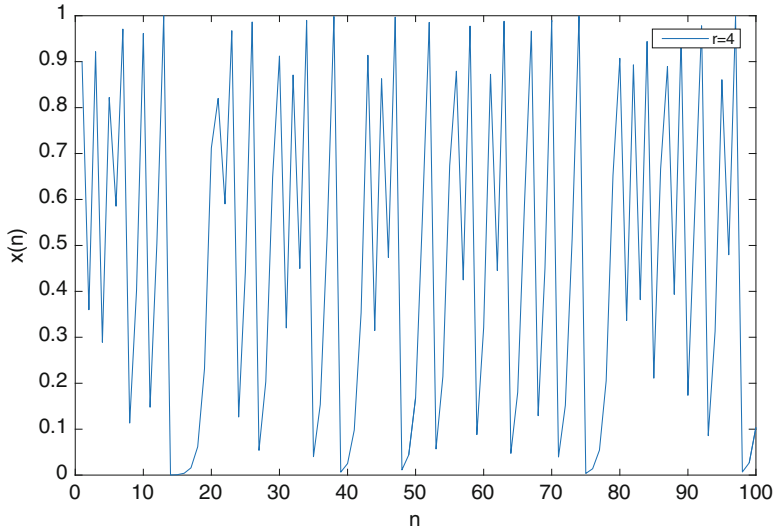


Fig. 51.15 Time course of logistic growth with parameter $r = 4$ and initial value $x(0) = 0.9$

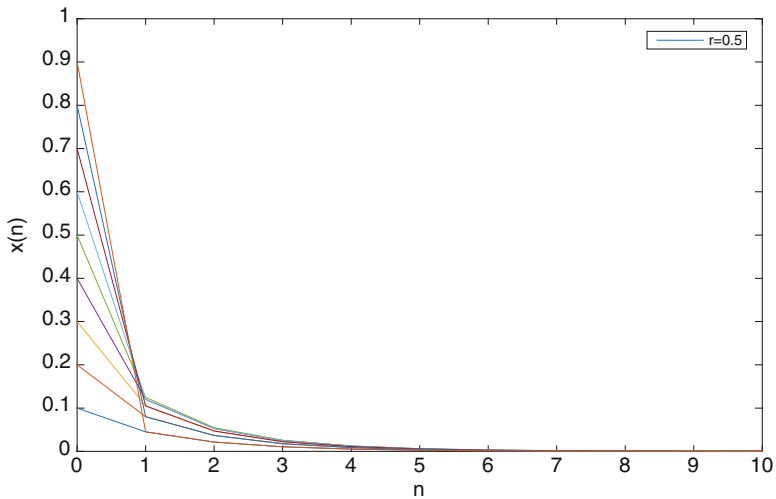


Fig. 51.16 Time courses of logistic growth with initial values $x(0) = 0.1, 0.2, \dots, 0.9$ and $r = 0.5$

Depending on the parameter r , the following behaviors can be observed:

- For the values of r in $[0,1]$ the population will disappear, independent of $x_0 \in [0, 1]$ (Fig. 51.16).

- For the values of r in $(1,2]$ the population size approaches to the fixed-point value $(r - 1)/r$, for every initial value $x_0 \in [0, 1]$. Indeed a fixed point of the logistic map $x_{n + 1} = rx_n(1 - x_n)$ satisfies the equation $x_{n + 1} = x_n = x_*$, which yields $x_* = rx_*(1 - x_*)$. Eliminating the degenerate value $x_* = 0$ provides $x_* = (r - 1)/r$ for the remaining fixed point (Fig. 51.17).
- For the values of r in $(2,3]$ the population size at first fluctuates around $(r - 1)/r$ and after some time approaches to the same fixed-point $(r - 1)/r$ (Fig. 51.18).

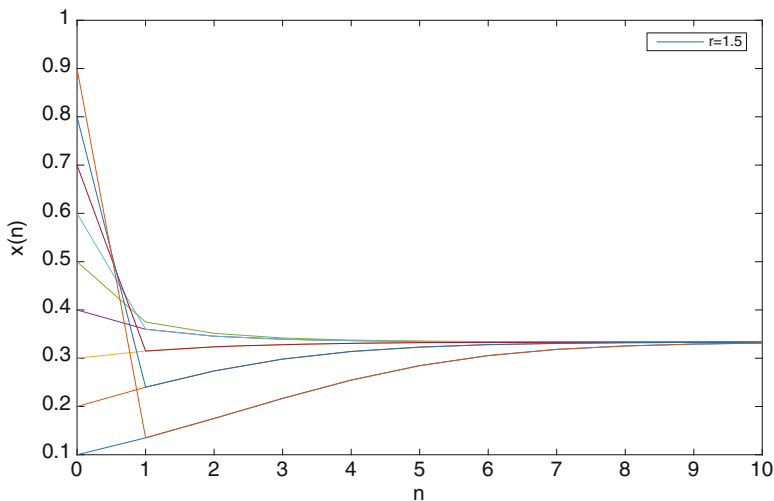


Fig. 51.17 Time courses of logistic growth with initial values $x(0) = 0.1,0.2,\dots,0.9$ and $r = 1.5$

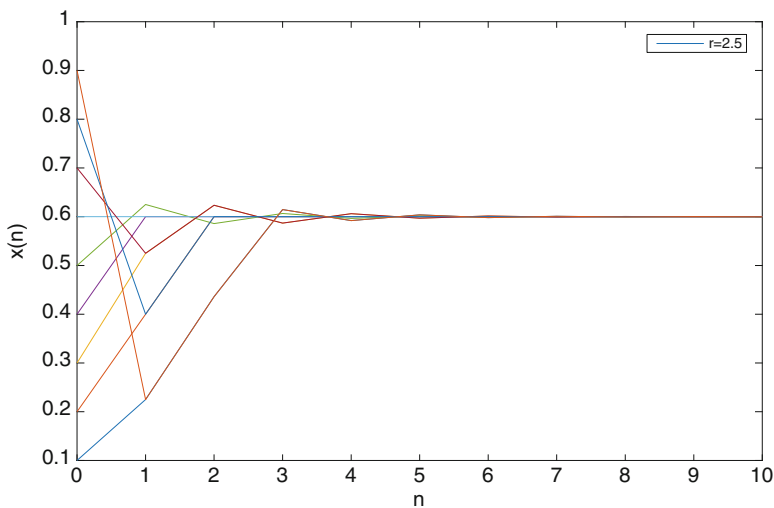


Fig. 51.18 Time courses of logistic growth with initial values $x(0) = 0.1,0.2,\dots,0.9$ and $r = 2.5$

- With r between 3 and $1 + \sqrt{6} \cong 3.44949$ the population size approaches permanent oscillations between two values, for every initial value $x_0 \in [0, 1]$. The oscillation values are dependent on r (Fig. 51.19).
- For the values of r between 3.44949 and approximately 3.54409 the size of the population approaches permanent oscillations among 4 values, for every initial value $x_0 \in [0, 1]$ (Fig. 51.20).

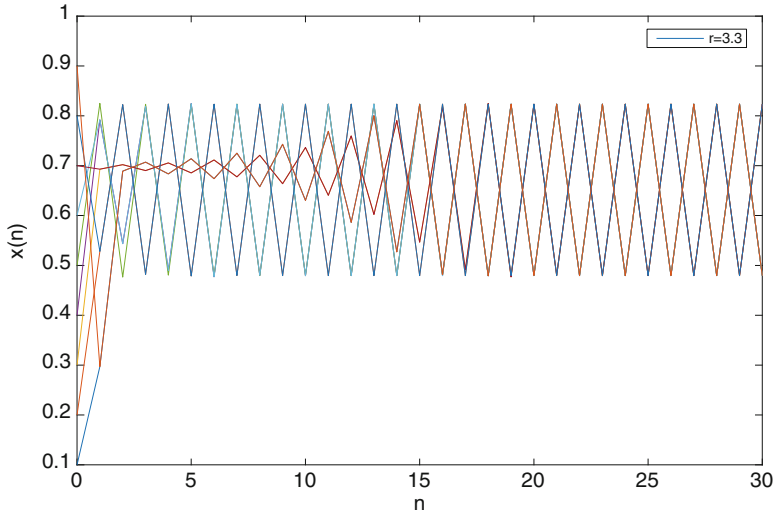


Fig. 51.19 Time courses of logistic growth with initial values $x(0) = 0.1, 0.2, \dots, 0.9$ and $r = 3.3$

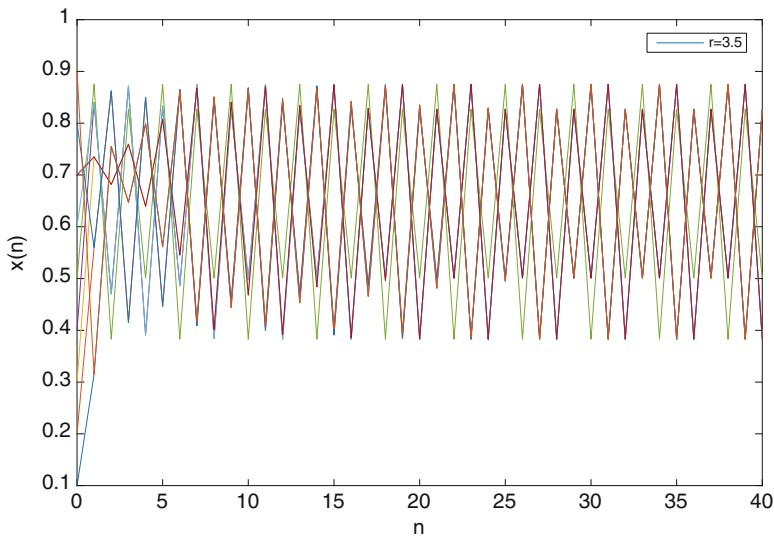


Fig. 51.20 Time courses of logistic growth with initial values $x(0) = 0.1, 0.2, \dots, 0.9$ and $r = 3.5$

- For the values of $r > 3.54409$ the population size approaches to permanent oscillations among 8 values, then 16, 32, etc, for every initial value $x_0 \in [0, 1]$ (Fig. 51.21).

In order to identify the values on which the population oscillates we can consider a single trajectory of $x(n) = x_n$, $n = 1, 2, \dots, N$ values (Fig. 51.22) and look at the frequency distribution of these values (Fig. 51.23). As is seen the population oscillates on 8 values (Figs. 51.24 and 51.25).

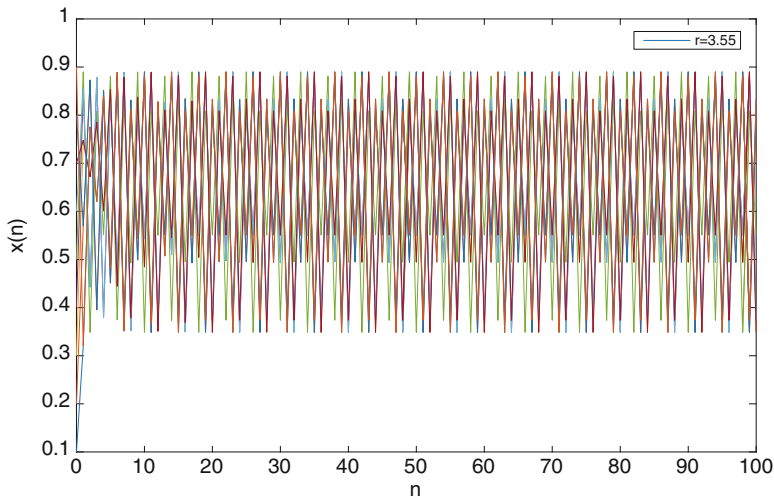


Fig. 51.21 Time courses of logistic growth with initial values $x(0) = 0.1, 0.2, \dots, 0.9$ and $r = 3.55$

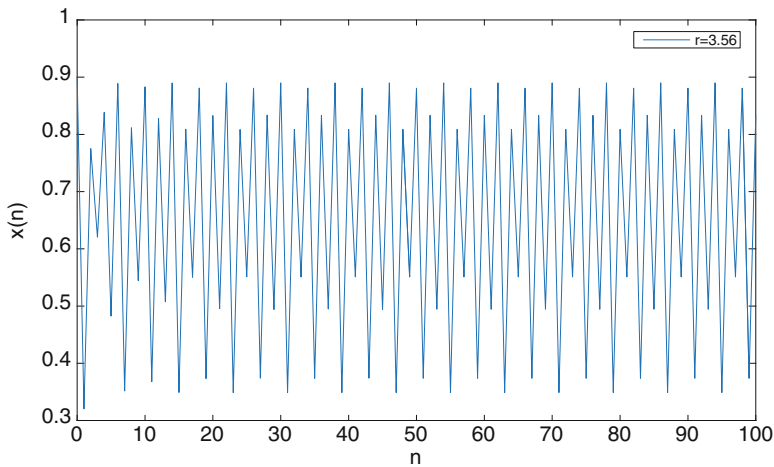


Fig. 51.22 Logistic growth with parameter $r = 3.56$

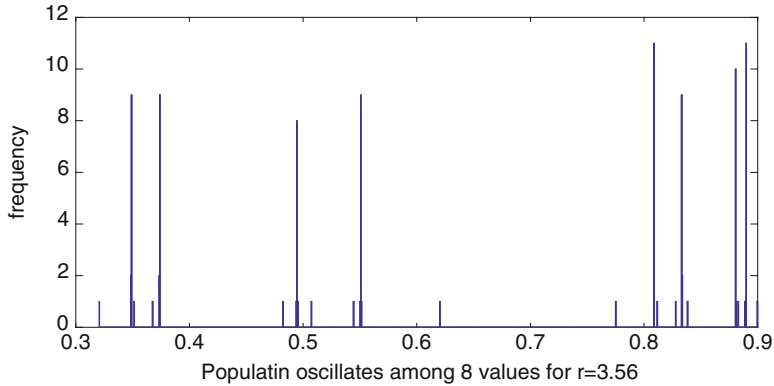


Fig. 51.23 Population oscillates on 8 values for $r = 3.56$

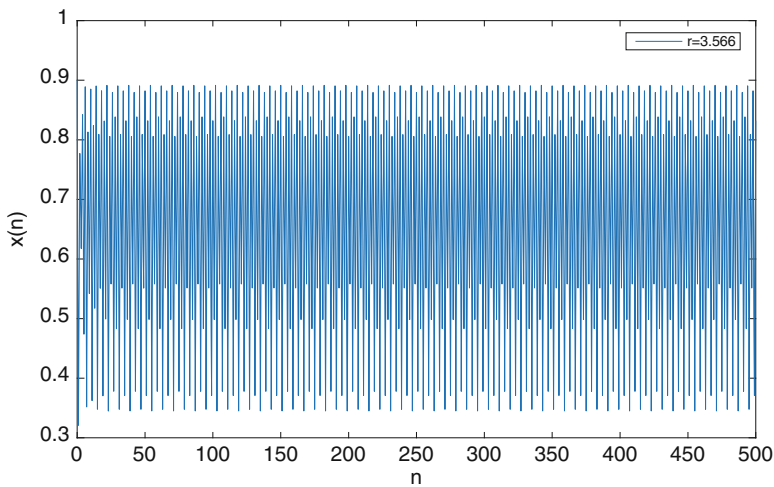


Fig. 51.24 Logistic growth with parameter $r = 3.566$

For a what value of r the oscillation points doubled from 8 to 16, that is $r_{16} = ?$. The bifurcation occurs at (r_{16}, u^*) (Fig. 51.26).

The lengths of the parameter intervals that yield oscillations of a given length decrease rapidly; the ratio between the lengths of two successive bifurcation intervals approaches the Feigenbaum constant $4.6692\dots$. This behavior is an example of a periodic-doubling cascade.

- For most values of $r > 3.56995$ there is chaotic behavior. There are certain isolated ranges of r , called islands of stability, where the population have non-chaotic behavior. For example, beginning from $1 + \sqrt{8} \simeq 3.82843$ there is a range of r , where the population oscillates among 3 values, and for slightly

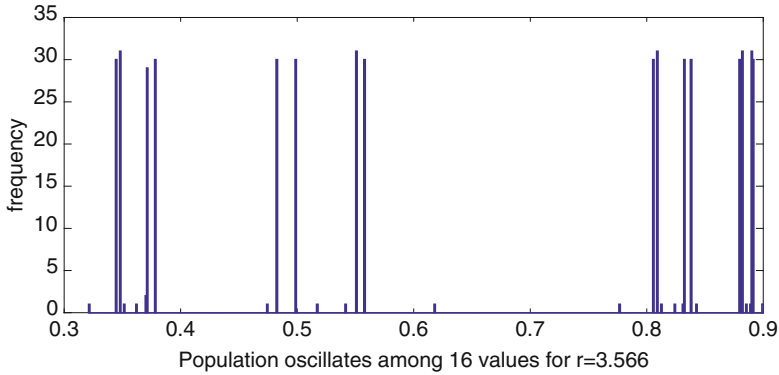
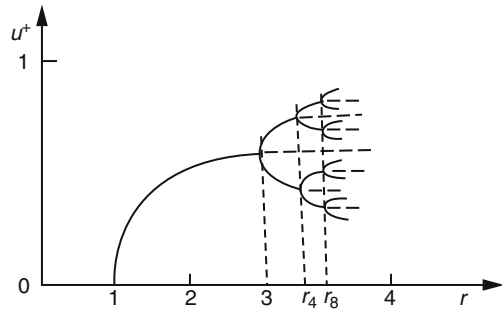


Fig. 51.25 Population oscillates on 16 values for $r = 3.566$

Fig. 51.26 Bifurcation of values on which the population oscillates



higher values of r oscillates among 6 values, then 12 etc. ([Wikipedia](#)) (Figs. 51.27 and 51.28).

- For the values of the parameter r from approximately 3.56995 to approximately 3.82843 the development of the chaotic behavior of the logistic map is characterized by a periodic phase interrupted by bursts of aperiodic behavior (Figs. 51.29, 51.30, 51.31, 51.32, 51.33 and 51.34).
- $r = 4$, chaos or randomness?
- Beyond $r = 4$, for almost all $x_0 \in [0, 1]$ values, the population size diverges.

Let us return to Fig. 51.26. The y-axis represents the set of values $\lim_{k \rightarrow \infty} x(n_k)$ visited asymptotically, where $(x(n_k))_{k=1}^{\infty}$ is a subset of $(x(n))_{n=1}^{\infty}$. The logistic map has at most one stable cycle. The stable cycle attracts almost all points, if it exists. For some values of r with a stable cycle, there is infinitely many unstable cycles as is shown in Fig. 51.35.

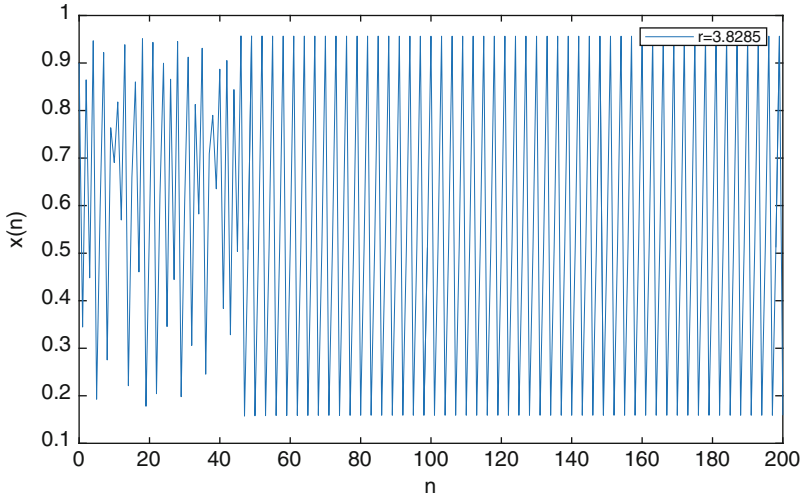


Fig. 51.27 Logistic growth with parameter $r = 3.8285$

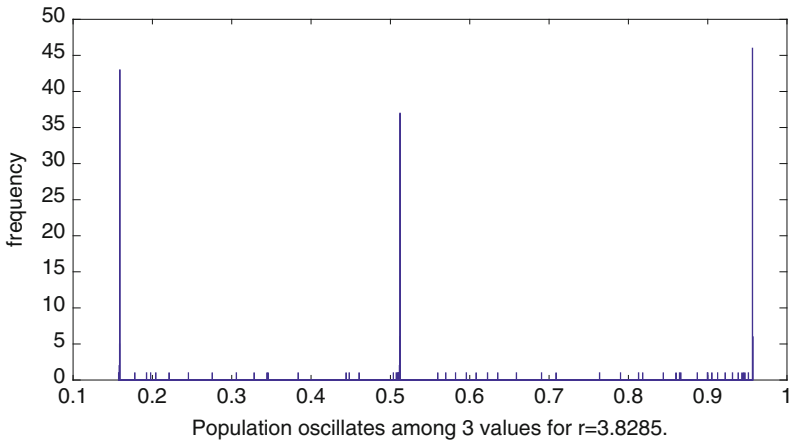


Fig. 51.28 Population oscillates on 3 values for $r = 3.8285$

Let us remind that, a dynamical system is said to be chaotic, if it satisfies the following properties: sensitivity to initial conditions, topologically mixing, obeying dense periodic orbits. The concept of fractal (more precisely fractal set), involve three main characteristics: possessing a self-scaling form under shifting and stretching (Mandelbrot 1982), scaling statistics according to measurement size (Lowen and Teich 2005), noninteger Hausdorff dimension (Falconer 1985). At least one of these characteristics is enough to serve a definition. Also, let us notice that some fractals have integer valued Hausdorff dimension.

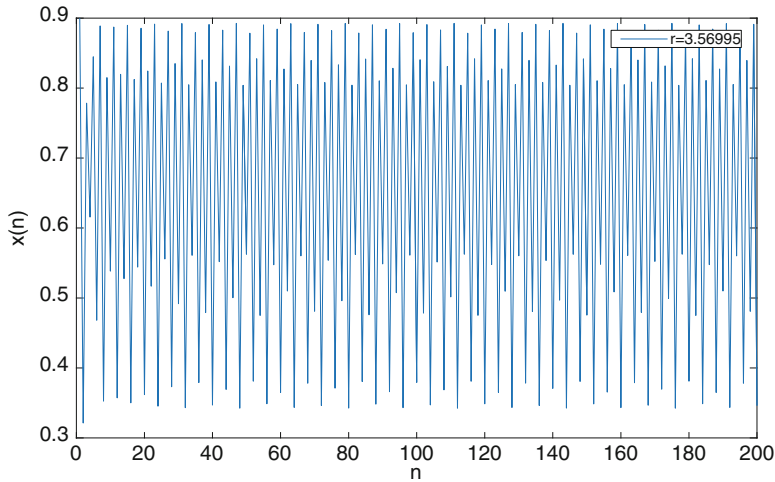


Fig. 51.29 Logistic growth with parameter $r = 3.56995$

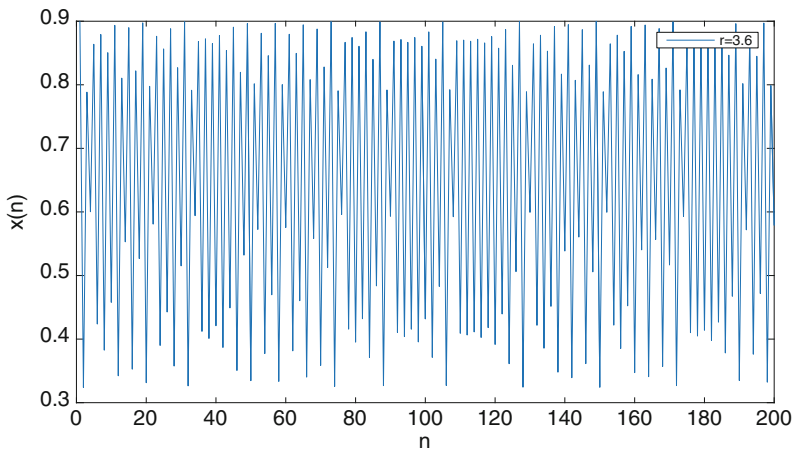


Fig. 51.30 Logistic growth with parameter $r = 3.6$

The Hausdorff dimension of the Feigenbaum attractor (bifurcation diagram) is 0.538. It is self-similar. A population growth modeled by the logistic map is chaotic for $r = 4$. The population size is no longer predictable. Also, it is very sensitive to the initial conditions.

The sensitivity to the $1 + \sqrt{8} \simeq 3.82843$ initial conditions can be easily seen in Fig. 51.36. Beginning from very near points 0.9 and 0.91 the population sizes grow in different ways. The trajectories are indistinguishable at first, but the difference grows quickly.

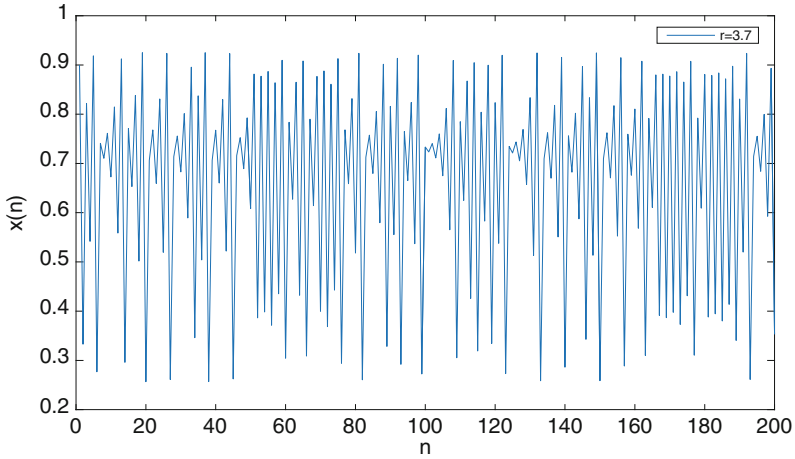


Fig. 51.31 Logistic growth with parameter $r = 3.7$

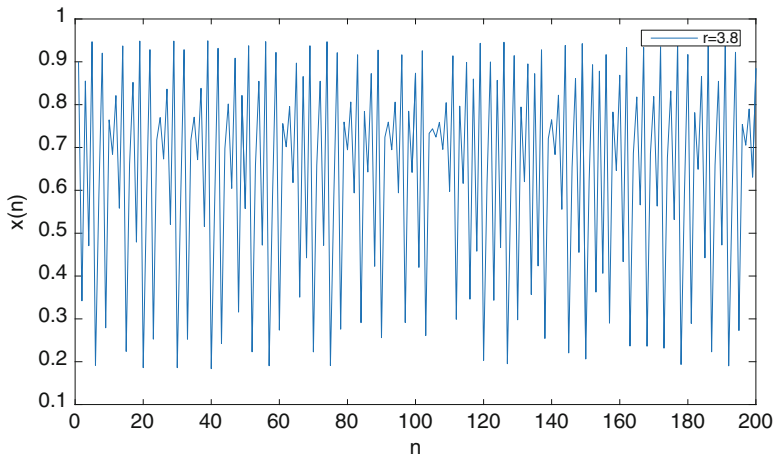


Fig. 51.32 Logistic growth with parameter $r = 3.8$

The fractals in the nature are static, such as coastline (static, but not for a long time) or dynamic, such as Brownian Motion. Most of them are randomly occurred (or still occurring) fractals. The Hausdorff dimension of the coastline of Norway is measured as 1.52 (Feder 1988).

The purely mathematical fractals are static, such as Cantor set, having Hausdorff dimension of $\log_3 \approx 0.6309$ or dynamic, depending on some parameters, varying in a time. Some of them are random fractals, such as the trajectories of the Wiener Process. Being dynamic, the Feigenbaum attractor is deterministic (not random).

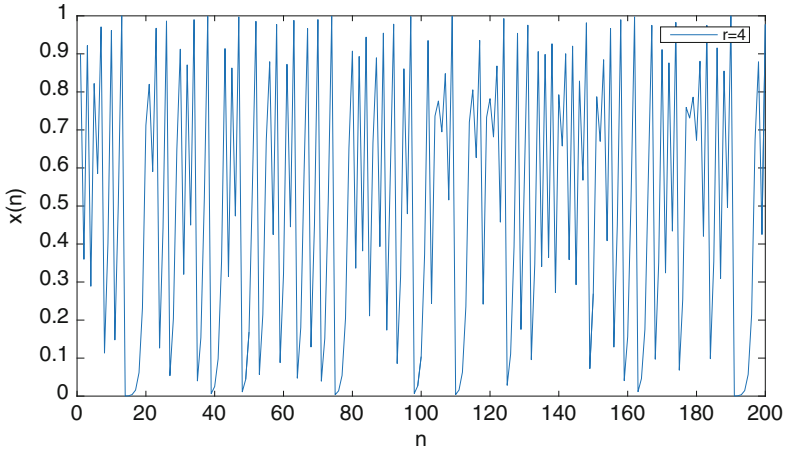


Fig. 51.33 Logistic growth with parameter $r = 4$

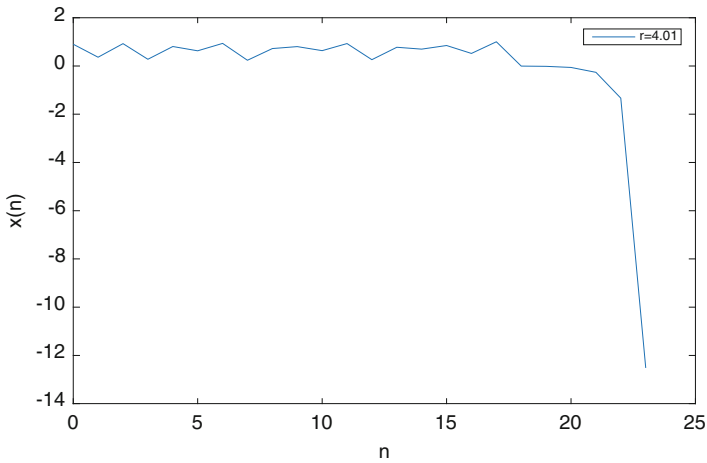


Fig. 51.34 Logistic growth with parameter $r = 4.01$

What is the relation between chaos and fractals? Chaos and fractals are not synonymous. Lowen and Teich (2005) demonstrates examples of all four possibilities: chaotic and nonchaotic systems with both fractal and nonfractal attractors. The behaviour in logistic model demonstrates C.R. Rao's idea "Chaos is disorder in order".

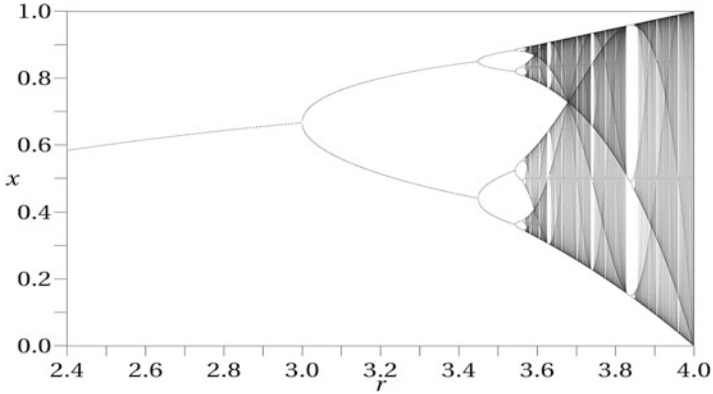


Fig. 51.35 Bifurcation diagram for r in $[2.4, 4.0]$. (Wikipedia)

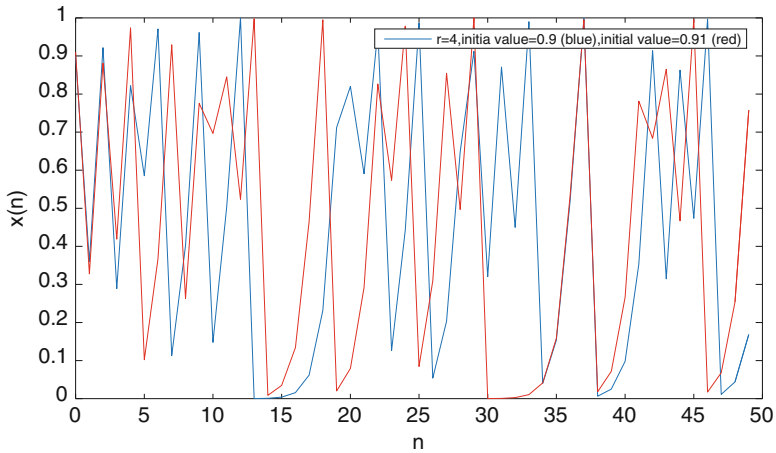


Fig. 51.36 Logistic growth for $x(0) = 0.9, x(0) = 0.91$

51.4 Conclusion

What is randomness and how to model it? When we use concepts like randomness and chaos, we need to know very well, where we are looking at, and from where we look. We need to know whether the concept we use is in the abstract field of mathematics or in the real world. Are we in the model or in reality? Although inherited in the nature, the Figenbaum’s constant and pi seem as mathematical notions. What about the gravitational acceleration constant $g(m/s^2)$? It is different. The values of Figenbaum’s constant and pi are calculating mathematically, but the gravitational acceleration is estimating from measurements. We need better

mathematics and computers to get closer to π and Figenbaum's constant. To better estimate the acceleration of gravity we need better statistical knowledge and more precise measurements. Measuring instruments becoming electronically from day to day. Almost all sensors are electronically based. A very large amount of data is flowing from these sensors and other databases in a quantitative form. What information is there in these numbers and how we can extract it. An attempt is made to emphasize the need for public understanding of statistics. As emphasized by H.G. Wells: "Statistical thinking will one day be as necessary for efficient citizenship as the ability to read and write".

How do we combine the effects of known causes with the possible effects of unknown causes in explaining observed phenomena or predicting future events? What are meant by "explaining a phenomenon" and "prediction of an event" when there is uncertainty? The way of understanding the micro complexity of natural phenomena by macro simplified system modeling is based on to C.R. Rao's idea: "If we were to speak of any rational principle in nature, then that principle can only be chance: for, it is chance, acting in collaboration with selection, that constitutes nature's reason. Evolution and improvement are impossible without chance".

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Chapter 52

Analysis of Professional Interests of High School Students



Anıl Kadir Eranıl, Mehmet Özcan, and Fatih Mutlu Özbilen

Abstract The purpose of this study is to determine the level of professional interests of high school students and to analyze them in terms of various variables. Study group of the study consists of 448 high school students receiving education in the province of Nevşehir. “Professional interest scale” was used as data collection tool in the study. In the analysis of the data, t test, one-way analysis of variance (ANOVA), and Tukey’s multiple comparison test were used. At the end of the study, the level of professional interests of the high school students was found to be higher than mean, and it was found that there were significant differences between the groups according to the variables such as gender, the level of knowing themselves, how they describe themselves, and their knowledge about the profession to be chosen.

52.1 Introduction

Education is an important process for raising the qualified human power that societies aim. Regulations are made, and the success chart is upgraded so that the education system can be successful. The success of the instructional program carried out by states’ ministries in charge of education, policymakers, program development specialists, educational institutions, and educators involved in the implementation process is, undoubtedly, about how the inputs of the system have become the output. The demonstration of whether an educational system has succeeded can be seen more realistically with the prolonged expansion of the plans. In Turkey, rather than in other countries, that this kind of long-term plans are not arranged much and frequent changes occur in certain parts of the education system or in the vast majority of the education system are seen as a significant problem. Beyond a doubt, those who

A. K. Eranıl (✉)

Nevşehir Provincial Directorate of National Education, Nevşehir, Turkey

M. Özcan

Nevşehir Hacı Bektaş Veli University, Nevşehir, Turkey

F. M. Özbilen

Belma Barut Primary School, İstanbul, Turkey

are most affected by these changes are students and their families who are involved in the education process as well as the educators who have difficulties in adapting to the innovations encountered. Examination systems where change is intensive and students have difficulty in adapting to and accepting requirements of universities and equipment expected from students depending on necessities of the time lead to considerable uncertainties in the way that students decide professional choices and cause them to experience professional instability. In addition, that students cannot continue their education in high education institutions which are an important step for choosing a profession because of both wrong choices and individual or family factors may lead them to be unhappy individuals in the future. In this regard, students who are the human capital of high schools which are the institutions raising people for the labor market should be guided efficiently during the process of choosing a profession, be supported to discover the qualities they have or do not have, and be assisted to fulfill their future profession willingly. In this context, the first part of this study will focus on choice of profession, followed by professional interest and content of the study.

52.2 Career Choice

Choice of a profession is one of the most important issues in the life of individuals. Before individuals choose the profession that they will pursue throughout their lives, they have to accurately determine whether they have qualifications related to the profession they will choose. In this sense, it will be appropriate to mention earlier studies conducted on career development, since the decisions to be made in choosing a profession are important enough to affect the lives of individuals throughout their careers.

The roots of career development theory are based on a three-step form developed by Frank Parsons (Brown 2002). Three key factors are described by Parsons in career choice as (1) to be able to understand oneself clearly, (2) professional knowledge, (3) and the ability to establish relation between those two. If individuals have these characteristics, they will not only make the right choices for themselves but will also be able to achieve greater productivity when people are matched with their profession (Parsons, 1909; as cited in: Peterson, Sampson, Lenz & Reardon, 2002). Brown and Brooks (1996: 5) also state that the process of decision-making involves reasoning on (1) skills, interests, details, ambitions, resources, limitations, and causes of these; (2) requirements, success conditions, advantages and disadvantages, wage opportunities, and the opinions of different business areas; and (3) relations between the elements in these two groups. Many career development theories have shaped research and practice (Osipow & Fitzgerald 1996). Holland (1997) mentions many factors effecting career choices of individuals such as family, peers, teachers and other adult role models, school, work, leisure time experience, socio-economic status, and ethnicity in his theory, which is seen as one of the most

important of these theories. Holland's theory is an interactive model based on the typology of people and environments. Individuals can be defined by different types of personality, and the environments in which these people live and work can be classified with the same types (Mumme 1997). In Holland's (1997) theory, identity of a person is defined as (a) realistic, (b) investigative, (c) artistic, (d) social, (e) enterprising, and (f) conventional, and it is stated that individuals belong to one of these six types. However, besides these personality types as mentioned by Holland, there are unique identities of individuals that reflects their interests, values, and talents (Miller 1994). According to Holland's (1997) theory, people look for environments that are compatible with their personality types and engage in actions in which they can use their abilities. As Holland (1997), notes that harmony between the individual and the environment plays an important role in the career process, under this conceptual framework, many studies have emerged examining the relation between the individual and the environment (Dawis 2002; Gordon & Meyer 2002; Wasylow, Mellott & Martin 2006).

Holland (1997) stated that career choices could be seen as a reflection of the personalities of individuals. In this regard, if the choice of career includes the personality trait of the individual, then it is successful, because according to Holland (1997), the personalities of individuals can be fully expressed through careers. Those whose professional identity is low, in other words, who cannot find a job that is compatible with them, experience career changes more often as well as have more contradictory career choices than those whose professional identity is high, in other words, who find a job that is compatible with them (Donohue 2006; Kimongo-Kemboi 2016). One of the concepts faced in the literature about career choice is career indecision. In Holland's (1997) theory, career indecision is attributed to the fact that one has a high score in completely different areas. Studies conducted suggest that individuals with uncertain career orientation are indecisive because they do not have a clear professional identity and cannot fully perceive the business world (Zagora & Cramer 1994). However, students who have established a strong professional identity are more likely to make good decisions about career preferences (Super, Savickas & Super 1996).

52.3 Professional Interest

Today, having a proper profession for themselves is seen as one of the sources of individuals leading a happy life. Professions chosen in accordance with their talents, interests, and skills enable individuals to improve both their personal and organizational performance, while the reluctance of those who work in professions in which they are not interested increases, and their professional satisfaction also decreases gradually. Additionally, there is a visible decrease in the productivity of individuals

who work in different professional groups rather than in their own professions and an increase in quitting jobs because of dissatisfaction. This is seen as an important problem caused by employing individuals in wrong professional groups.

Holland (1973: 7) defines professional interest as “the expression of individual’s personality at work, hobbies, activities and the preferences.” He noted that environmental interactions are important variables for understanding professional interest and that consistency between professional interest and characteristics of the working environment is important for satisfaction in career choice (Holland 1975; as cited in: Noronha & Ambiel 2015). Likewise, interest reflects the goals, values, and desires that directly define the identity of the individual (Hogan & Blake 1999). Furthermore, interests can direct individuals’ progress and activities in a specific major or profession by influencing their preferences and specific activities (Su 2012). Professional interest is seen as the most stable individual differences within the whole psychology field (Hansen 2005). Professional interest is a process including professional preferences as well as a concept which has vital outputs for many researchers. For instance, they express intentions (Low, Yoon, Roberts & Rounds 2005), job satisfaction (Morris 2003), and determination (Costa, McCrae & Holland 1984) as attitudes do.

Along with the increased age and the education received, it is possible to encounter the results related that professional interest become more visible in individuals (Noronha & Ambiel 2015). For example, while professional interest varies throughout adolescence, in this period, personality change, social and emotional development, and hormonal, psychological, and some somatic changes, as well as role changes in the family, school, and peers, are seen (Low & Rounds 2007). From the end of adolescence to adulthood, especially when you are enrolled in the university, entering the work life, the stability of professional interest increases, and this profile becomes even clearer (Hirschi 2010; Louis 2010). However, middle-school students who are still in adolescence often need guidance in identifying their interests and therefore the types of professions that are appropriate for them (Bennett 2012). Since young people in adolescence have not reached their determination in professional sense, yet, the choices they make will sometimes be related to their interests, though sometimes they are influenced significantly by various factors. For instance, in a conducted study (Mustapha 1984), in South Trinidad, the professional needs of young people were influenced by the educational status of both male and female parents, the occupational status of their fathers, the socioeconomic status, and the mass media.

From this point of view, it is of vital importance that the professional interests of the students, factors affecting the emergence of these professional interests, and necessary interventions required for professional guidance of the students at high level, which is the most important step of the choices to be made in the professional sense, are clearly defined. For this purpose, in this research, the professional interest of the high school students was tried to be analyzed in terms of various variables.

52.4 The Purpose and Importance of the Study

In this regard, the purpose of the research is to determine the score of professional interest of high school students. In accordance with this purpose, answers were sought for the following questions.

1. What is the mean score of high school students' professional interests?
2. Does the mean score of professional interests indicate a significant difference in the choice of profession according to:
 - Gender
 - Monthly income of the family
 - The place where he/she lives mostly
 - The situation affecting the choice of a profession most
 - The success status in the classes
 - The level of knowing themselves
 - How he/she describes himself/herself
 - Having knowledge about the profession to be chosen
 - The state of anxiety in choosing a profession
 - The priority in the choice of a profession

52.5 Method

52.5.1 Model of the Study

This is a quantitative study, and it was conducted by using descriptive survey model. Descriptive survey model is a research approach aiming at describing a past or present situation as it exists. An event, an individual, or an object which is the subject of the study is tried to be defined as it is and within its own circumstances. No attempt is made to change or affect them in any way (Karasar, 2003).

52.5.2 Study Group

Study group of the study consists of 448 high school students having education in the province of Nevşehir in 2017–2018 academic year. In Table 52.1 below, descriptive statistics of the study group and the distributions of the independent variables regarding the purpose of the study are presented in frequency and percentage.

Table 52.1 Descriptive statistics on the demographic characteristics of the study group

Variables		<i>f</i>	%
Gender	Female	281	63.4
	Male	162	36.6
What is the monthly income level of your family?	0–1300	78	18.1
	1301–2000	152	35.2
	2001–3000	105	24.3
	3001–4000	50	11.6
	4001 and above	47	10.9
Where do you live?	Province	310	70.5
	District	75	17.0
	Village	55	12.5
Who influenced you the most in your career choice?	Myself	350	83.7
	My family	49	11.7
	Society	19	4.5
Do you find yourself successful in your classes?	Yes	360	82.4
	No	77	17.6
Do you know yourself well?	Yes	365	83.7
	No	71	16.3
How do you describe yourself?	Realistic	164	46.6
	Investigative	48	13.6
	Artistic	15	4.3
	Social	69	19.6
	Enterprising	44	12.5
	Conventional	12	3.4
Do you have any knowledge about the profession that you are thinking of choosing?	Yes	344	78.9
	No	92	21.1
Do you feel anxious about choosing a profession?	Yes	296	67.9
	No	140	32.1
What is your priority in choosing a career?	Money	56	17.1
	Career	66	20.1
	Comfort	41	12.5
	Serenity	93	28.4
	Prestige	34	10.4
	None	38	11.6

According to gender distribution in Table 52.1, the number of female students ($f = 281$, 63.4%) is 26.8% higher than the number of male students ($f = 162$, 36.6%) by 119 students. In regard to family income status of the students, it is seen that the income range is between 1301 and 2000 ($f = 152$, 35.2%), and the place where the students live most is province ($f = 310$, 70.5%). It is seen that the students choose their profession by themselves ($f = 350$, 83.7%), and also, they found themselves successful in their classes ($f = 360$, 82.4%). As a response to the question asking how they describe themselves, most of the students described themselves as realist ($f = 164$, 46.6%). As for their profession in the future, it is

seen that most of them decided their professions. Additionally, it can be stated that the majority of the students feel anxious about choosing a profession ($f = 296\%$, 67.9). Finally, it is seen that serenity ranks first as their priority when choosing a profession.

52.5.3 Collection of Data and Data Collection Tools

The scale forms included in the survey were collected approximately in a week. As a result of examining the scale forms, the ones filled out without any due diligence were excluded from the analysis, and 443 scale forms were used in the analysis of the data. The professional interest scale used in the research was developed by Gencür (2011). There are 55 items in the scale, and it is a 5-point Likert scale. The scale consists of six sub-dimensions. These are as follows: Realistic, investigative, artistic, social, enterprising, and conventional professional interest. The demographic variables in this study are gender, economic status of the family, the place where they live most, the situations affecting their choice of a profession, finding themselves successful in classes, the level of knowing themselves, how they describe themselves, their knowledge about the profession to be chosen, state of anxiety in choosing a profession, and priority in the choice of a profession. Demographic variables consist of 2- and 5-point Likert levels.

When the results regarding the validity and reliability of the scale were examined, the value related to construct validity (KMO) was found as .83 and Bartlett's results as 8392.267 ($p < 0.000$). These results show that factor analysis assumptions reveal 61.15% of the total variance of the 6-factor scale. Cronbach's alpha coefficient was found as ($\alpha = .87$). According to these results, it can be interpreted that the scale is valid and reliable.

52.5.4 Data Analysis

The data of the study were analyzed by using the package software. In the process of data analysis, the Kolmogorov-Smirnov test; normality hypothesis test, which is the premise criterion of parametric statistical techniques; and Levene statistic, which is a homogeneity test of variances, were applied to all sub-groups. As a result of these analyses, t test, one-way analysis of variance (ANOVA), and Tukey's multiple comparison tests were used. In addition, descriptive statistics were used, and the significance level of the research was determined as .05.

52.6 Results

In this section, the results related to the research questions to be answered within the scope of the research purpose are stated below. In Table 52.2 below, the mean score of professional interest of high school students is presented.

When Table 52.2 is examined, the professional interest level of 448 high school students was found as 3.25 out of 5. The skewness and kurtosis coefficients appear to be in the range of ± 1 . This situation suggests that univariate normality assumption can be ensured (Leech, Barrett & Morgan 2005).

In Table 52.3 below, the type of analysis by which the dependent variable and the independent variables of the study were tested and the levels of significance obtained from the analysis is presented.

According to Table 52.3, variables related to high school students' gender, the level of knowing themselves, how they describe themselves, and having knowledge about the profession to be chosen indicate significant differences ($p < .05$). Detailed tables of the analysis and the sources of which binary groups these differences arise are presented in the following tables.

Table 52.2 Professional interest level of high school students

Dependent variable	<i>N</i>	\bar{X}	<i>K_y</i>	<i>B_s</i>	<i>S_s</i>
Professional interest level	448	3.25	-.159	-.151	.21

Table 52.3 Analyses conducted in the study and levels of significance

Dependent variable	Independent variables	Number of category	Conducted analyses	<i>p</i>
Professional interest level	Gender (e.g., 1, female; 2, male)	2	t test	.004*
	The place where he/she lives mostly	3	One-way ANOVA	.845
	The success status in the classes	2	t test	.958
	The level of knowing himself/herself	2	t test	.006*
	How he/she describes himself/herself	6	One-way ANOVA	.000*
	The knowledge about the profession to be chosen	2	t test	.023*
	Anxiety about choosing a profession	2	t test	.371
	The priority in the choice of a profession	6	One-way ANOVA	.085
	The situation affecting the choice of a profession most	3	One-way ANOVA	.371
Monthly income	5	One-way ANOVA	.262	

* $p < .05$

Table 52.4 Comparison of professional interests of high school students according to the variables of gender, the level of knowing himself/herself, and the knowledge about the profession to be chosen

Independent variables		<i>N</i>	\bar{X}	<i>Ss</i>	<i>Sd</i>	<i>t</i>	<i>p</i>
Gender	Female	281	3.20	.42	441	-2.930	.005*
	Male	162	3.33	.49			
Do you know yourself well?	Yes	365	3.28	.46	434	2.761	.006*
	No	71	3.12	.39			
Do you have any knowledge about the profession that you are thinking of choosing?	Yes	344	3.27	.46	434	2.286	.023*
	No	92	3.15	.44			

* $p < .05$

Table 52.5 The results of one-way ANOVA test indicating whether there is a statistically significant difference in the professional interests of high school students according to the variable of describing themselves, ANOVA results

Mean score	How do you describe yourself?	<i>N</i>	<i>SS</i>	<i>Var. K.</i>	<i>KT</i>	<i>Sd</i>	<i>KO</i>	<i>F</i>	<i>p</i>
3.10	Realistic	164	0.43	Between group	1.241	5	6.204	6.549	.000*
3.37	Investigative	48	0.46						
3.37	Artistic	15	0.47	Within group	0.189	346	65.556		
3.19	Social	69	0.40	Total		351	71.760		
3.45	Enterprising	44	0.43						
3.25	Conventional	12	0.45						

* $p < .05$

The results of the t test conducted to compare the professional interests of the high school students according to the gender variable are presented in Table 52.4 below.

According to Table 52.4, professional interests of the high school students indicate a statistically significant difference according to gender variable ($p < .05$). According to this difference, male students have higher professional interests than female students.

Their professional interests does not show a statistically significant difference in respect to independent variable of knowing themselves well ($p < .05$). According to this difference, it is seen that the level of professional interest of the group expressing that they know themselves well (yes) is higher than the other group.

In regard to the variable of having knowledge about the profession to be chosen, their professional interests indicate a statistically significant difference ($p < .05$). According to this difference, the group having a knowledge about the profession to be chosen has higher professional interest level than the other group with no knowledge about the profession.

In Table 52.5 below, whether high school students' professional interests show a statistically significant difference according to the variable of describing themselves is presented.

According to Table 52.5, professional interests of high school students indicate a statistically significant difference in regard to the condition of describing themselves ($p < .05$). From which binary groups this difference arises was found out by conducting Tukey's multiple comparison test. Accordingly, there is a significant difference between the investigative/realistic, investigative/enterprising, social/enterprising, and enterprising/realistic binary groups. The differences are in favor of the group with a high mean score.

52.7 Discussion and Conclusion (Yaman, Gerçek, & Soran 2008)

In this section, results obtained in the study are discussed and interpreted within the scope of literature. The first conclusion reached, depending on the results of the research, is that the level of professional interest of high school students is above mean. Yaman et al. (2008) also found that the professional interests of university students were high. Another result of the research is that female students' professional interest scores are higher than male students' professional interest scores. Thus, it can be said that gender can be a decisive factor in professional interests and professional tendency, and female students' professional interest scores were higher than male ones. In the study conducted on high school, Uzer (1987), found that female students reached more professional maturity in terms of professional attitude and self-knowledge. In the study of Iyem and Erol (2013), it was determined that the desire to establish his own business after graduating from university in men was significantly higher than that of women. As it is seen, it has been observed in previous studies that gender has an effect on professional interest (Deng, Armstrong & Rounds 2007; Sayın 2000). Conversely, in the study of Atli and Kaya (2017), it was seen that there was no significant difference in the order of professional personalities in terms of gender.

According to the conclusion reached by another result of the study, the level of professional interest of students who express knowing themselves well (*yes*) is higher than those who express not knowing themselves well (*no*). In relation to this, Dursun, Kaya and İstar (2015), state that individuals should be happy in the job or profession they are engaged in, and at the same time, they should choose appropriate professions for their personality in order not to encounter various emotional problems. At the same time, in the process of choosing a job or profession, they state that individuals should be aware of the personality traits they have, that is, they should know themselves and tend toward a job or profession appropriate to their personality. Enache and Matei (2017), emphasize the importance of the ability to know and control himself in contemporary social and professional environment. They also indicate that young people are trying to cope with everyday problems and that the difficulties coped with in adolescence enable students to discover themselves and acquire personal development strategies. From this point of view, it can be said

that students who know themselves are close to finding the most suitable profession for themselves. In this regard, it can be said that it is an important factor for individuals to know themselves and their own skills and abilities about career choice and professional interest.

It was found in this study that the level of professional interest of students having knowledge about the profession to be chosen is higher than those of who do not have any knowledge. According to research findings in literature, individuals are indecisive about occupations due to lack of information about the professions (Çakır 2004; Sampson, Reardon, Peterson & Lenz 2004). Therefore, in order for individuals to be able to decide on a career process that match up with them, they should have information about the professions appropriate for them and the specific activities and responsibilities that these professions require (Pesch 2014). In addition, career guidance plays an important role in helping job markets start working and educational systems reach their goals (OECD 2003). Expectations of policy makers for career guidance services in OECD countries are expressed as increasing the productivity of education systems and the job market and contributing to the labor market and social equality (OECD 2004). Given that career guidance can obviously be regarded as a global principle, informing the individuals in the professional sense can be considered as an important step in the formation of qualified societies.

According to the conclusion reached by another finding of the study, the level of professional interests of the students does not vary according to the place where they live most. In the study carried out by Özmen, Erbay-Dündar, Çetinkaya, Taşkın & Özmen (2008), it was found that the adolescent students living in urban areas are hopeful for the future, but the proportion of those who are desperate is not so low.

According to the result of this study, the level of professional interest of the students does not vary in regard to the success status in their lessons. According to this result, it can be considered that the students do not take into account the grades that they get in the choice of the profession; instead they choose the professions suitable for their personalities. However, the majority of the students who participated in the study expressed themselves as successful in their lessons. In the study of Vurucu (2010), although the majority of the students indicated that the grades they received were effective in choosing a profession, very few thought that grades were effective.

In reference to the research results, the levels of professional interest vary in terms of how students describe themselves. Accordingly, the following were found to have higher professional interests:

- The students who perceive themselves as investigative in contrast with those who perceive themselves as realistic,
- The students who perceive themselves as enterprising in contrast with those who perceive themselves as investigative,
- The students who perceive themselves as enterprising in contrast with those who perceive themselves as social,
- The students who perceive themselves as enterprising in contrast with those who perceive themselves as realistic.

As Miller (2015) noted, while enterprising pioneered lifesaving, productivity-enhancing innovations, they also contributed significantly to our lifestyle, health, and happiness. In Ören and Biçkes' (2011) study, a relation between personality traits and enterprising potentials arose. It was found that individuals with enterprising skills could adapt more easily to changes because they grew up in a rapidly changing environment where there was an inter-personal rivalry. At the same time, it was seen that such individuals had the ability to find a way out in the face of straits. In another study, it was found that the enterprising of the students who believed that they were supported by their families in the process of establishing their own business was higher than the others, and the entrepreneurship of those who receive support in the direction of their thoughts and decisions would increase (Çiftçi & Öztürk-Serter 2017). From this point of view, it is possible to mention the importance of showing respect for the individual in the direction of their desires and considerations and the importance of giving support in line with the decisions they make. Given the fact that there are differences between individuals, it should not be ignored that each individual can also tend toward different professions.

Another finding of the study is that the level of professional interest of the students does not vary according to the level of professional anxiety. As Kurt (2007) points out, young people who are aware of the fact that their business, education, social, cultural, and economic opportunities are limited have an anxiety for maintaining their education, finding a job, and planning their future. Both high school and university students experience a process integrated with personal challenges, responsibilities to their families, and problems in the country, and in this process, they have to make serious decisions that will affect their whole lives. In addition, many people and institutions try to create prestige for themselves through adolescents. This leads students to experience an exaggerated and unrealistic anxiety. This anxiety can persist for a long time on the students as well as causing serious risks (Aydın & Çiftel 2013). Based on these results, indecision in choosing a profession, lack of knowledge, and personal, family, and social distress can cause professional anxiety in individuals.

In the study, professional interest of the students does not show a significant difference in terms of career, comfort, serenity, money, and prestige. The research results of Atli (2012), do not match up with this study; it was seen that the professional values of high school students varied significantly according to the dimensions of financial gain, freedom and creativity, help, use of physical features, friendship, and teamwork. In the study of Çelik and Üzmez (2014), it was stated that the students choose their professions by considering the advantages such as high income of the profession, providing an opportunity to build a career, enabling knowledge and skills that will help them to get another job, and being prestigious in the eyes of the society. From this point of view, taking the professional interest and value of the students into consideration together and making the necessary plans will undoubtedly make the students reach more satisfactory results (Otrar & Canel 2015).

Although the level of professional interest of the students did not show any significant difference according to the situation which affects them the most in

choosing a profession, the students stated the factors from high to low as themselves, their family, and the society. Similarly, in the study of Vurucu (2010), when the vast majority of high school students indicate the factors that are effective in their process of choosing a profession, they state themselves first, followed by their family, and they state their teachers, friends, environment, relatives, and previous graduates respectively. When studies in literature were examined, though family is an important factor in choosing a profession in general (Hamamcı 1996; Ulaş & Yıldırım 2015; Vurucu 2010), the effect of the family was found to be very low level in the study of Çelik and Üzmez (2014).

As to last result of the study, the level of professional interest of the students does not vary significantly according to the monthly income of the families. Özmen, Erbay-Dünder, Çetinkaya, Taşkın and Özmen (2008), found in their study that children of families with low socioeconomic level were more desperate. Aydın and Çiftel (2013), state in line with the results of their study that as the income level decreases, students' academic and professional anxiety increases. Again in accordance with this study, the researchers stated that an inverse relation between anxiety and income level of the family can be considered as an expected result. A decent income and the opportunities offered by this income enable people to feel safe. For this reason, the income status of the family can also be a basis in their preparation for the exam and confidence for the future. Low anxiety levels of students who feel safe or high level of anxiety of those who do not feel safe enough may result from this. University students whose families had high monthly income focused on career opportunities, whereas the students whose families had low income focused on job security and other factors in choosing a profession (Pekkaya & Çolak 2013). In another study, significant differences between the average income of the families of the individuals and the preference of the field they wanted to work after graduation is found; it arose that those whose families had high incomes wanted to establish their own business and those whose families had low incomes wanted to work in the public sector (İyem and Erol 2013).

The following suggestions can be made in the framework of the study results. Young people in adolescence should receive adequate guidance from psychological counselors at school because they experience difficulty making professional decisions, and specific tests should be applied to help young people discover their professional interests. Additionally, high school seniors should be introduced to the important universities that can help them improve themselves before they make a selection on universities, and young people who graduated from high schools and were accepted to important universities should be brought together with high school students, and they should set an example on what path they followed on planning their careers. Lastly, individuals who experience professional indecision, cannot discover their abilities, and experience disagreement with their family about the choice of profession should be encouraged in choosing a career by cooperating with their families.

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Chapter 53

Examining the Relationship Between School Culture and Leadership Behaviors of Teachers



Gökhan Savaş

Abstract The purpose of this study is to determine the relationships between school culture and leadership behaviors of teachers in state secondary schools. A total of 230 teachers employed in secondary schools in Kastamonu participated in this study. The research was designed using a correlational model. Data was collected via “Teacher Leadership Scale,” developed by Beycioğlu and Aslan (2010), and the “School Culture Scale,” developed by Terzi (2005). Arithmetic mean, standard deviation, ANOVA, Pearson product-moment correlation coefficients, and multiple linear regression were conducted to analyze the data. Results revealed that teachers’ perceptions of teacher leadership behaviors are at a high level, and teachers exhibit such behaviors usually in terms of professional improvement subscale. Task-oriented culture is more dominant than support-oriented, success-oriented, and bureaucratic culture in secondary schools. Teacher’s leadership behaviors of institutional improvement, professional development, and cooperation with colleagues are significantly associated with support-oriented, success-oriented, bureaucratic, and task-oriented culture subscales of school culture. Results of regression analysis showed that support-oriented and task-oriented culture dimensions are significant predictors of all subscales of teacher leadership. Furthermore, success-oriented culture significantly and positively predicts institutional improvement and professional development subscales, while bureaucratic culture significantly and negatively predicts professional development and cooperation with colleagues subscales. Success-oriented culture is not a significant predictor of cooperation with colleagues, and bureaucratic culture is also not a significant predictor of institutional improvement subscales of teacher leadership. Results are discussed with respect to improving leadership behaviors of teachers and school culture.

G. Savaş (✉)

Faculty of Education, Hacettepe University, Ankara, Turkey

53.1 Introduction

At the present time with developments in every field, organizations have evolved to more complex and chaotic structures (Erçetin 2001; Neyişci and Potas 2012). Traditional approaches have become ineffective in solving problems of the modern world (Balci 2012). In this regard, hierarchy-based understanding of leadership became obsolete. Ideas arguing that organizations have complex patterns gave a new insight to leadership concept. According to this new perspective, leadership is not only limited to administrative roles but a dynamic and interactive process emerging in different times and contexts (Lichtenstein et al. 2006). Seeing the chaotic structure of organizations, educational organizations have to put more emphasis on flexibility, team work, and individual creativity rather than a mechanical administration system (Ertürk 2012).

Recent years have witnessed the transformation of school administrator-based leadership. It is seen that the perception of leadership is changing and is being collectively rather than independently discussed (Katzenmeyer and Moller 2009). Chaotic and complex patterns of educational organizations have also brought considerable changes in the roles of teachers. The understanding arguing that teachers only transfer knowledge has become invalid (Ertürk 2012). In this regard, the idea that teachers also show leadership behaviors and this may occur in school cultures with team work and collaboration has become dominant. With a review of the related literature, it is possible to see studies highlighting the fact that school administrator-based leadership perception is not applicable within the complex environment of schools. These studies also suggest a holistic understanding of leadership in which each member of the school society makes significant contributions and takes responsibility for achieving goals of the schools and enabling effective learning (Day and Leithwood 2007; Fullan 2011; Harris 2003; Harris and Lambert 2003; Harris and Muijs 2005; Muijs and Harris 2006; Sergiovanni 2001).

According to Hargreaves (1994), schools have to change their bureaucratic and hierarchical structures because this one-sided, authoritarian, and power-based system hinders schools from operating effectively. Formal positions are not the only means of influence, but teachers working collaboratively could be as influential as formal leaders (Can 2006a; Lambert 2003). In the related literature, it is also possible to see discussions about the acceptance of leadership behaviors of teachers in schools. For example, Little (2003) reports that teachers' leadership behaviors are just perceived formally, and these are limited to tasks determined by regulations. In a study conducted by Muijs and Harris (2006), it is claimed that the perception that teachers as well as school administrators may show leadership behaviors is not common in schools; therefore teachers do not associate themselves with leadership. Similarly, Katzenmeyer and Moller (2009) assert that teachers are unsure about defining themselves as leaders though they display such leadership behaviors. The authors use the term *sleeping giant* for pointing that teachers are not aware of their potential in displaying leadership behaviors. However, teacher leaders have important roles in improving school effectiveness and contributing to academic success of

the students (Anderson 2004; Frost and Durant 2003; Frost and Harris 2003; Harris and Muijs 2005). They participate in decision-making processes and collaborate with their colleagues. Moreover, in effective schools teacher leaders express their opinions freely, care about their professional development, communicate effectively, and take a collective approach (Lambert 2003; Muijs and Harris 2003). In line with these statements, leadership behaviors displayed by teachers may be seen important for an effective teaching and learning environment in schools, sustaining their professional development and contributing to school improvement.

In the related literature, there is a range of concepts such as school climate (Fullan 2011), organizational commitment (York-Barr and Duke 2004; Little 2003), and school effectiveness (Harris and Muijs 2005) associated with teachers' leadership behaviors. It is thought that one of the concepts associated with teachers' leadership behaviors is school culture. It is stressed in the literature that school culture is an important factor upon teachers' leadership behaviors (Anderson 2004; Frost and Harris 2003; York-Barr and Duke 2004; Harris 2003; Öztürk 2015), teacher leaders can easily emerge in collaborative and participative school cultures (Beycioğlu and Aslan 2012), collaborative school cultures facilitate teachers' leadership behaviors (Muijs and Harris 2006), and hierarchy-based school cultures hinder teachers' leadership behaviors (Lambert 2003). Katzenmeyer and Moller (2009) state that teachers do not want to take roles in school cultures which their leadership behaviors are not approved. This argument is supported by the view suggesting that teacher leaders will emerge in collaborative school cultures where they are supported emotionally and professionally (Fullan 2011). In addition Lambert (2003) claims that teachers will be more courageous for displaying leadership behaviors in school cultures they find opportunities to communicate, research, and participate in decision-making process. In line with these views, it can be suggested that teachers need a school culture that is supportive and far from hierarchy for displaying leadership behaviors.

53.2 Teachers' Leadership Behaviors

Although teacher leadership is a complex term that is difficult to be defined (Childs-Bowen et al. 2000), it is dealt within the scope of contribution of teachers to creating a learning atmosphere in schools, collaborating with and supporting each other, displaying leadership behaviors outside the classroom as well as inside, and developing and applying effective teaching methods for students. At the same time, teachers' leadership behaviors are closely related with continuous learning, contribution to professional development of peers, and leading activities for achieving school objectives (Katzenmeyer and Moller 2009).

Harris and Muijs (2003) state that teachers' leadership behaviors are coaching, mentoring, and leading study groups, developing effective teaching methods, and making them a model. York-Barr and Duke (2004) defined teacher leadership as a term in the center of effective teaching and learning. Similarly Muijs and Harris

(2006) argue that teachers display leadership behaviors not only formally but informally based on a collaborative and collective understanding. Supporting these views, Danielson (2006) claims that these leadership behaviors have an informal pattern and they are not only gained through formal authority, but also they contribute to school culture, climate, and development as an important factor. Stating that teacher leaders have a range of roles, Harris (2002) ranged these roles as fostering academic success of the students, contributing to school development, influencing and helping colleagues, and communicating effectively with peers.

53.3 Organizational Culture

Although the literature related to organizational culture includes various definitions about the concept of organizational culture, it is difficult to claim that there is a consensus on a single definition (Özdemir 2012). Schein (2004) defines organizational culture as a pattern of shared basic assumptions emerged by interaction with others and shaped by leadership behaviors. Robbins (2003) defined it as a social term, differentiating an organization from others, providing the employees with an identity, increasing commitment of the staff, and shaping behaviors of individuals in an organization. Peterson and Deal (2009) suggested that organizational culture is a concept that involves common goal, vision, norms, values, a set of beliefs, rituals, traditions, ceremonies, and history of an organization. Şişman (2002) regards organizational culture as a means of integration, motivation, effectiveness, efficacy, performance, communication, socialization, controlling, and problem solving. Another definition of organizational culture was made by Eren (2008) as a concept gathering staff for a common goal and influencing policy- and decision-making process of an organization. Reviewing the related literature, it is possible to see various classifications of organizational culture. Harrison (1972) classified the organizational culture in a four-dimensional structure as power, role, person, and task culture. Another classification was made by Hofstede (1997) as power distance, uncertainty avoidance, individualism vs. criticism, and masculinity vs. femininity. Şişman (2002) classified organizational culture as entrepreneurial, collaborative, structured, and market-centered cultures. The present study is based on Terzi's (2005) classification of culture. This classification has a four-dimensional structure: support culture, success culture, bureaucratic culture, and task culture. In support culture relations between people are in the foreground, and these relations are based on trust. Effective communication and collaboration between individuals are featured. In bureaucratic culture the formal structure of the organization and the definitions of the roles played by individuals are stressed highly. A control mechanism based on legislations and rules has primary importance. Success culture points to achievement of organizational goals. Individual responsibility and success are at the center. In task culture organizational goals are more important than individual goals. This type of organizations is work-oriented, and goals are in the foreground (Terzi 2005).

The related literature reveals the relationships between teachers' leadership behaviors and school culture. A wide range of studies stresses the importance of school culture for facilitating teachers' leadership behaviors (Anderson 2004; Frost and Harris 2003; York-Barr and Duke 2004; Harris 2003). In this regard, a supportive school culture is required for emergence and development of teachers' leadership behaviors (Muijs and Harris 2006). The purpose of this study is to determine the relationships between school culture and teachers' leadership behaviors according to perceptions of secondary school teachers. In this regard, the present study aims at addressing the following questions:

1. What are the secondary school teachers' perceptions on school culture and teacher leadership behaviors?
2. Are there significant correlations between teachers' leadership behaviors and school culture?
3. Are the dimensions of school culture significant predictors of teachers' leadership behaviors?

53.4 Method

53.4.1 Research Design

This study was designed using a correlational research model to empirically examine the relationships between dimensions of teacher leadership and school culture. Correlational research models aim to explain the present conditions as they are (Karasar 1999). The subscales of teachers' leadership behaviors (institutional improvement, professional development, and collaboration among colleagues) were dependent, whereas the subscales of school culture (support-oriented, success-oriented, bureaucratic, and task-oriented) were the independent variables of the study.

53.4.2 Population and Sample

The population of this study consisted of 568 teachers employed in secondary schools located in the center of Kastamonu Province in the 2017–2018 educational year. The sample of the study was determined via sample calculation formula. In this sense, a total of 230 teachers were chosen through simple random sampling method. In simple random sampling method, every participant has an equal chance to be chosen (Büyükoztürk et al. 2013). Out of the 230 teachers, 123 (54%) were female, and 107 (46%) were male. There were 28 (12%) foreign language, 32 (14%) math, 29 (13%) Turkish, 31 (13%) social science, 39 (17%) science, and 71 (31%) teachers from other branches participating in the study.

53.4.3 Instrumentation

Teacher Leadership Scale This Likert-type scale was developed by Beycioğlu and Aslan (2010), and it has a range from *always* (5) to *never* (1). The scale measures both the perceptions and the expectations of teachers' leadership behaviors. The scale comprised of 25 items and 3 dimensions as institutional improvement (9 items), professional development (11 items), and collaboration among colleagues (5 items). In this study only the perception dimension of the Teacher Leadership Scale was used. For evaluation, the ranges of 1.00–1.79 (never), 1.80–2.59 (rarely), 2.60–3.39 (sometimes), 3.40–4.19 (often), and 4.20–5.00 (always) were used. The total variance explained by the dimensions of the scale was 57.23%. The item-total correlations of the scale items varied between .47 and .92 (Beycioğlu and Aslan 2010). In this study, Cronbach's alpha coefficients were found to be .96 for perception. According to subscales, Cronbach's alpha coefficient was found to be .91 for the institutional improvement dimension, .95 for the professional development dimension, and .92 for the collaboration among colleagues dimension.

Organizational Culture Scale This scale developed by Terzi (2005) with the aim of determining teachers' perceptions on school culture is rated as never = 1 to always = 5. This scale has a four-dimensional structure consisting of 29 items. Support-oriented culture dimension of the scale included eight items, success-oriented included six items, bureaucratic culture included nine items, and task-oriented culture included six items. Higher scores from each factor means that features of school culture in that factor are higher. The validity and reliability analysis of the scale revealed that the four-dimensional structure of the scale explained 51% of the total variance. Internal consistency coefficients calculated for the dimensions ranged between .76 (bureaucratic culture) and .88 (support-oriented culture). Cronbach's alpha coefficient of the scale was totally found to be .84 (Terzi 2005). At the present study, Cronbach's alpha coefficient to test the reliability was calculated as .84. Furthermore, according to subscales, Cronbach's alpha coefficient was found to be .90 for the support-oriented culture, .83 for the success-oriented culture, .85 for the bureaucratic culture, and .83 for task-oriented culture dimensions.

53.4.4 Data Analysis

SPSS 15.0 was used to analyze the data. Firstly, research data was processed into the computer and examined in terms of missing or wrong data. Subsequently, research problems were analyzed in a systematic order. Arithmetic mean and standard deviation scores were computed to determine secondary school teachers' perceptions of the subscales of teacher leadership and school culture. Pearson correlation coefficients were calculated to examine the relationships between the subscales of teacher leadership and school culture. Multiple regression analysis was conducted to

determine whether subscales of school culture are significant predictors of subscales of teacher leadership. When interpreting the results of regression analysis, beta (β) coefficient and results of a t-test were used (Büyüköztürk et al. 2013).

53.5 Findings

53.5.1 Correlations Between Variables

The means, standard deviations, and correlation coefficients for the dependent and independent variables of the study are given in Table 53.1.

As can be seen from Table 53.1, teachers display teacher leadership behaviors mostly related to professional development ($\bar{X} = 4.15$). In addition, teachers' perceptions of task-oriented school culture ($\bar{X} = 4.11$) was the highest rated, while bureaucratic school culture was the least rated ($\bar{X} = 3.02$). When examining the correlation coefficients among teacher's perceptions of teacher leadership and school culture, it is seen that support-oriented culture ($r = .64, p < .01$), success-oriented culture ($r = .45, p < .05$), and task-oriented culture ($r = .52, p < .05$) were positively and significantly associated with institutional improvement subscale of teacher leadership. Results also show that professional development was positively correlated with support-oriented culture ($r = .71, p < .01$), success-oriented culture ($r = .65, p < .01$), and task-oriented culture ($r = .55, p < .01$). Furthermore, positive and significant correlations were found between collaboration among colleagues and support-oriented culture ($r = .72, p < .01$), success-oriented culture ($r = .55, p < .01$), and task-oriented culture ($r = .50, p < .01$). However, there were negative significant correlations between bureaucratic culture and institutional improvement ($r = -.25, p < .01$), professional development ($r = -.41, p < .01$), and collaboration among colleagues ($r = -.37, p < .01$) subscales of teacher leadership.

Table 53.1 The means and standard deviations of subscales and the correlations between variables

Variables	\bar{X}	SD	1	2	3	4	5	6	7
1. Institutional improvement	3.64	.74	1.00	.71**	.76**	.64**	.45**	-.25**	.52**
2. Professional development	4.15	.71		1.00	.78**	.71**	.65**	-.41**	.55**
3. Collaboration among colleagues	3.95	.83			1.00	.72**	.55**	-.37**	.50**
4. Support-oriented	3.85	.72				1.00	.77**	-.34**	.57**
5. Success-oriented	3.84	.67					1.00	-.31**	.55**
6. Bureaucratic	3.02	.71						1.00	.01
7. Task-oriented	4.11	.65							1.00

** $p < .05$

53.5.2 Institutional Improvement

Table 53.2 shows the results of multiple linear regression analysis for the variables predicting the institutional improvement subscale of teachers' leadership behaviors.

As is seen in Table 53.2, there was a positive and significant relationship between the perceptions of the teachers on subscales of school culture and institutional improvement dimension of teacher leadership ($r = .68, p < .05$). These predictive variables explained 46% of the total variance in institutional improvement scores. Findings related to t-tests for significance of regression coefficients showed that support-oriented culture ($\beta = .60, p < .05$), success-oriented culture ($\beta = .19, p < .05$), and task-oriented culture ($\beta = .28, p < .05$) were significant predictors of teacher leadership behaviors in terms of institutional improvement subscale. However, bureaucratic culture ($\beta = -.08, p > .05$) did not significantly predict it. In other words, support-oriented, success-oriented, and task-oriented cultures were important variables for explaining institutional improvement subscale of teacher leadership.

53.5.3 Professional Development

Table 53.3 shows the results of multiple linear regression analysis for the variables predicting the professional development subscale of teachers' leadership behaviors.

In Table 53.3, it is seen that there was a positive and significant relationship between the perceptions of the teachers on subscales of school culture and

Table 53.2 Results of regression analysis for variables predicting institutional improvement

Variables	B	SE	β	t	p
Constant	1.04	.34		3.09	.00
Support-oriented	.61	.08	.60	7.39	.00
Success-oriented	.21	.09	.19	2.41	.01
Bureaucratic	-.08	.05	-.08	-1.52	.13
Task-oriented	.31	.07	.28	4.58	.00

$F = 47.97, p < .05, R = .68, R^2 = .46$

Table 53.3 Results of regression analysis for variables predicting professional development

Değişkenler	B	SE	β	t	p
Constant	1.63	.28		5.79	.00
Support-oriented	.37	.07	.37	5.31	.00
Success-oriented	.19	.07	.18	2.56	.01
Bureaucratic	-.21	.05	-.21	-4.53	.00
Task-oriented	.24	.06	.22	4.58	.00

$F = 80.81, p < .05$

$R = .77, R^2 = .59$

professional development dimension of teacher leadership ($r = .77, p < .05$). These predictive variables explained 59% of the total variance in institutional improvement scores. Findings regarding t-tests for significance of regression coefficients indicated that support-oriented culture ($\beta = .37, p < .05$), success-oriented culture ($\beta = .18, p < .05$), and task-oriented culture ($\beta = .22, p < .05$) were significant predictors of teacher leadership behaviors related to professional development subscale, whereas bureaucratic culture ($\beta = -.21, p < .05$) negatively and significantly predicted it. In other words, support-oriented, success-oriented, bureaucratic, and task-oriented cultures were important variables for explaining professional development subscale of teacher leadership.

53.5.4 Collaboration Among Colleagues

Table 53.4 shows the results of multiple linear regression analysis for the variables predicting the collaboration among colleagues subscale of teachers' leadership behaviors.

In Table 53.2 it is seen that there was a positive and significant relationship between the perceptions of the teachers on subscales of school culture and collaboration among colleagues dimension of teacher leadership ($r = .75, p < .05$). These predictive variables explained 56% of the total variance in collaboration among colleagues scores. Findings for t-tests for significance of regression coefficients showed that while support-oriented culture ($\beta = .64, p < .05$) and task-oriented culture ($\beta = .17, p < .05$) were significant predictors of teacher leadership behaviors in terms of collaboration among colleagues subscale, bureaucratic culture ($\beta = -.16, p < .05$) negatively predicted it. However, success-oriented culture ($\beta = -.08, p > .05$) was not a significant predictor of teacher leadership based on collaboration among colleagues. In other words, support-oriented, task-oriented, and bureaucratic cultures were important variables in explaining collaboration among colleagues of teacher leadership.

Table 53.4 Results of regression analysis for variables predicting collaboration among colleagues

Değişkenler	B	SE	β	t	p
Constant	1.21	.34		3.55	.00
Support-oriented	.74	.08	.64	8.85	.00
Success-oriented	.11	.09	.09	1.28	.20
Bureaucratic	-.18	.06	-.16	-3.31	.00
Task-oriented	.21	.07	.17	3.08	.00

$F = 71.60, p < .01$

$R = .75, R^2 = .56$

53.6 Results and Discussion

At the present study, relationships between secondary school teachers' perceptions of teacher leadership and school culture were examined. Findings of the study confirmed that school culture was a significant predictor of teachers' leadership behaviors. The first finding of the study is that teachers highly exhibit leadership behaviors relating all subscales. Teachers displaying leadership behaviors highly may be commented as they have positive attitudes toward leadership roles. Findings of the present study revealed that secondary school teachers display teacher leadership behaviors higher in professional development than institutional improvement and collaboration among colleagues subscales. This finding of the present study is consistent with the findings obtained from several studies (Beycioğlu and Aslan 2012; Kılınç and Receptoğlu 2013). This shows that teachers perceive leadership behaviors mostly in terms of professional development. The reason of this finding is likely to be resulted from the fact that secondary school teachers may focus on achievement due to high school placement exams.

Furthermore, recent changes in curriculum programs in Turkey could have arisen the need for updating the skills and knowledge of the teachers thus increasing their perceptions toward professional development. Teachers displaying leadership behaviors highly regarding professional development such as making efforts for student achievement, developing themselves and colleagues professionally, trusting students, and giving them confidence is seen positive in terms of school improvement and academic success of students. In the related literature, studies arguing that teacher leaders contribute to student learning and struggle for their professional improvement support these statements (Katzenmeyer and Moller 2009; Lambert 2003). On the other hand, there are also some studies on teachers' leadership behaviors presenting different findings in regard to the subject. For example, Öztürk (2015) found out that teachers exhibit leadership behaviors mostly related to collaboration among colleagues. This shows the need for conducting further research on this subject by using different research methods.

Findings of the present study revealed that teachers' perceptions of school culture are mostly task-oriented. In other saying, secondary school teachers think that a task-oriented culture is dominating in the schools they are employed. It is claimed by Harrison (1972) that in the organizations with task culture, organizational structure and functioning to accomplish its goals are in the foreground. In this context, it can be argued that this finding may have resulted from teachers perceiving teaching as a task to be accomplished. For instance, obligatory tasks of teachers such as watching students, guidance, and daily-yearly planning may be increasing teachers' perception of task-oriented culture. In addition, this finding indicates that teachers prioritize organizational goals and they struggle to meet the requirements of their profession. On the other hand, the research results showed that bureaucratic culture had the lowest level perception among secondary school teachers. Findings of a range of studies in the related literature are congruent with this finding (Kılınç 2014; Koşar

and Çalık 2011; Özdemir 2012; Sezgin 2010; Terzi 2005). Hargreaves (1994) states that bureaucratic and hierarchical structures hinder schools from operating effectively. Ertürk (2012) claims that schools do not present a linear pattern due to its complex and chaotic environment; therefore standardized rules are not valid. Moreover, Balcı (2012) argues that traditional hierarchical patterns have lost its effect in organizations. In this sense, finding of this study demonstrating bureaucratic culture is less dominant in schools than support-oriented, success-oriented, and task-oriented cultures may be seen as a favorable result.

This research demonstrated that support-oriented, success-oriented, and task-oriented culture are positively and significantly associated with teachers' leadership behaviors in institutional improvement, professional development, and collaboration among colleagues dimensions. It was revealed that all dimensions of teacher leadership had the highest level of positive significant relationship with support culture. This finding shows that in supporting school cultures, the level of teachers displaying leadership behaviors increases. Can (2006b) regards support as an important factor for teachers' taking on leadership roles. Similarly, Muijs and Harris (2006) claim that a supporting atmosphere is required for teachers to show leadership behaviors. Kabler (2013) also stresses the importance of a supporting and encouraging school culture for teachers to work in collaboration. On the other hand, bureaucratic culture was found to be negatively and significantly associated with institutional improvement, professional development, and collaboration among colleagues dimensions of teacher leadership. In other words, teachers display less leadership behaviors in bureaucratic school cultures.

The present study finally investigated the predictability of teacher's leadership behaviors by the subscales of school culture. The findings of the study demonstrated that bureaucratic school culture was a negative and significant predictor of professional development and collaboration among colleagues subdimensions. This may be resulted from teachers not finding the opportunity for exhibiting leadership behaviors in bureaucratic cultures in which rules and procedures are not stressed. Reeves (2008) and Can (2013) regarded bureaucracy as an important obstacle for teacher leadership behaviors. In a similar manner, Ash and Persall (2000) claimed that bureaucratic cultures in which role definitions of school members were separated sharply caused that teachers do not go far beyond legally determined roles and demonstrate leadership behaviors.

Although there are positive and significant relationship between success-oriented culture and collaboration among colleagues subdimensions, the former does not significantly predict the latter. This finding may be regarded as interesting. Terzi (2005) stated that individualism is on the foreground in success-oriented cultures. Sezgin (2010) claimed that rewarding and appreciating are the basis of success-oriented cultures. In this sense, it may be argued that secondary school teachers were likely to perceive success-oriented culture individually. Similarly, teachers participating in this study may have regarded success as rewarding individual accomplishments rather than a collective term (Özdemir 2012). Another interesting finding of the study is that bureaucratic culture does not significantly predict institutional

improvement subdimension of teacher leadership although there is a significant relation between them. Institutional improvement is the subdimension in which teachers' leadership behaviors are clearly separated from their traditional roles. In institutional improvement, teachers share the leadership roles of school administrators and take administrative actions (Beycioğlu and Aslan 2010). Considering that, it is expected that bureaucratic culture will reduce teachers' leadership behaviors regarding institutional improvement. In terms of this contradictory finding, it can be thought that teachers may have perceived a range of leadership behaviors such as enabling participation of parents, reporting, taking on the role of department chief, and taking part in strategical planning as obligatory tasks to be conducted in the frame of bureaucracy.

Remarkable results of the research can be concluded as:

1. Teachers' perceptions of leadership behaviors regarding professional development are higher than those of institutional improvement and collaboration among colleagues.
2. A task culture is dominant in secondary schools in Turkey.
3. Support-oriented and task-oriented cultures cause decrease in teachers' leadership behaviors, while bureaucratic culture increases them.
4. Support-oriented and task-oriented cultures are important factors explaining all subdimensions of teacher leadership, success-oriented culture is an important factor explaining institutional improvement and professional development, and bureaucratic culture is an important factor explaining professional development and collaboration among colleagues.

It is possible to offer several suggestions within the scope of research results. It is necessary to foster support-oriented culture in schools. An effective rewarding system should be operated both for students and teachers. Considering that success-oriented culture is not an important factor explaining collaboration among colleagues, rewarding should be based on collaborative work rather than individual achievements. School administrators should build a supportive and collaborative school culture enabling teachers to display leadership behaviors. With regard to negative relations between bureaucratic culture and teachers' leadership behaviors, it can be suggested that school administrators should stress support and collaboration rather than rules and procedures in schools. Studies regarding teacher leadership can be carried out in different educational levels. Furthermore, these studies may be associated with different variables primarily psychological factors. Further research may be supported with qualitative data. Studies regarding teacher leadership can be conducted according to views of school principals. Results of the present study is thought to present an important data for school principals having a vital role for creating a school culture and for policy-makers in regard to providing information about the significance of school culture.

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Chapter 54

Educational Organizations in the Light of Change and Suggestions for Adaptation to Change



Gözde Sezen-Gültekin

Abstract Often seen as an inevitable action, change has some effects on educational organizations as well as on everything else. These effects prompt educational organizations to review their actions for adaptation to change. This situation necessitates understanding of change. In this context, this study aims to examine education organizations in the light of change and to develop suggestions for adaptation to change. In order to understand the concept of change firstly, autopoiesis, chaos and complexity theories, and mutual causality and dialectical change logic are defined in this subject. In this context, first of all the theories of autopoiesis, chaos and complexity, and the logic of mutual causality and dialectical change were defined in order to facilitate understanding of the concept of change. After being addressed these four basic ideas underlying the logic of change in terms of organizations, the concepts of autopoietic, chaotic, and complex organizations were identified, and the cases of mutual causality and dialectical change in organizations were intellectualized. In addition, the flow and transformation metaphors were exploited to probe the concept of change. After then, the concept of change of which conceptual basis was constituted with the theories of autopoiesis, chaos and complexity, the logic of mutual causality and dialectic change, the metaphors of flow and transformation, and adaptation to change was examined in terms of educational organizations, and the suggestions on what can be done within the scope of education management in terms of schools, administrators, teachers, and students about change adaptation were presented.

54.1 Introduction

The continuous changes that are taking place today are also affecting organizations as well as everything else. Often considered something inevitable, change is seen as an independent force which transforms the things around us and confronts us with all

G. Sezen-Gültekin (✉)
Sakarya University, Sakarya, Turkey
e-mail: gsezen@sakarya.edu.tr

kinds of new problems we have to deal with (Morgan 1998:332). Organizations, however, have to constantly change and innovate themselves in order to be able to survive, become more productive, reach their goals more effectively, and have competitive power (Calik 2003). In this study, the change in organizational life is dealt with through metaphorically in order to be conveyed in a more concrete way.

Metaphor as a concept is regarded as a powerful mental instrument from which an individual can benefit in order to understand and explain a high-level abstract, complex, or theoretical phenomenon (Saban et al. 2006). Morgan (1998) used eight different metaphors such as *machine*, *organism*, *brain*, *culture*, *political system*, *psychic prison*, *flux and transformation*, and *instrument of domination* in order to describe and explain the nature of organizations. In this study, organizations will be addressed through the *flux and transformation metaphor* in order to reveal the logic of change.

The image of flux and transformation presents a metaphorical framework for how the open reality of organizational life is created and transformed by the processes having its own scheme or logic (Morgan 1998:280). This framework is based on a specific theme that includes the logic of change. These bases and their effects on organizational can be handled under four main headings: *autopoiesis*, *chaos and complexity*, *mutual causality*, and *dialectical change*.

54.2 Autopoiesis Theory

According to Bursalioglu (2000), the survival or success of organizations depends on the ability to monitor and respond to changes in the environment through open systems (cited by Cobanoglu 2008). Maturana and Varela (1980), however, opposed the idea that the sources of the problems which modern organizations had to deal with were changes in the environment (cited by Cobanoglu 2008), and they suggested the term of *autopoiesis* (Morgan 1998:281). The concept of autopoiesis consists of the convergence of the Greek words *auto* (self) and *poiesis* (creation or production) and is used in the sense of self-renewing and self-producing (Balyer 2014). Photosynthesis is an example of this situation. In photosynthesis, the green plant combines carbon dioxide and water to produce a new nutrient; thus it renews itself.

According to the autopoiesis theory, phenomenological systems of living systems are determined entirely by its own autopoiesis (Kay and Goldspink 2000). In other words, systems identify their relationships with any environment internally. Numerous interaction chains can exist within and between systems; however, changes that occur in system A do not result in changes in B or C since this chain of relationships is the part of a self-determining pattern (Morgan 1998:284). For this reason, the change that takes place in a system does not have to affect other systems in the process of self-production and replication.

54.2.1 *Autopoietic Organizations*

According to autopoiesis theory, the structure of organizations determines both the source and the nature of change. Change is the reaction to the complexity resulting from the operation of an environment or other units, and all the changes emerge in a functionally closed form as they originate from internal dynamics of a particular unit (Kay and Goldspink 2000). In this context, some features attract notice when the organizations are examined by the autopoiesis glasses behind the change.

The structure of the autopoietic system reveals its own limits, determine the properties of the system components, and they have a structure determining the dynamics since it determines both the source and the nature of change (Kay and Goldspink 2000). Therefore, the autopoietic systems dealt with in the light of change have the features of autonomy, circularity, self-referencing (Morgan 1998:281), revealing their own limits, determining the characteristics of the system components, and having a mechanism to determine the dynamics (Kay and Goldspink 2000). According to Matura and Varela, living systems have three main characteristics: autonomy, circularity, and self-referencing (Morgan 1998: 281). When autonomous organizations exhibiting these three basic characteristics are considered, it can be said that such organizations are autonomous because they use their own items in the process of production and renewal, that they are circular because their interaction is again a reflection of their organization, and that they refer to themselves as use themselves as both a source and an evaluative mechanism.

Autopoietic organizations are the systems in which the priority product of the operation is “self” (Kay and Goldspink 2000). They try to shape themselves according to their own images and see themselves as a source of reference (Morgan 1998:286). For this reason, such organizations are functionally closed because they try to reproduce themselves through *their own material* (Seidl 2004). For example, a farmer family plants the cropland and uses what they have obtained from that cropland as food until the other planting period. Here, the family uses the crops planted in the land as a means of subsistence for themselves and maintains this system constantly. But when doing so, they do not completely disconnect from the outside because they still use the sun, rain, and air. Thusly, this situation can be illustrated as an example for an autopoietic system.

Autopoietic organizations show a closed system feature because they use their own elements at the stage of production and renewal and refer to themselves as a priority. For this reason, the interaction with an environment of an organization is actually a circular reflection of itself, and the organization must interact with its environment in order to be able to organize itself. Therefore, in fact, the perimeter of an organization is still a part of itself (from Maturana and Varela 1980 cited by Saygan 2014). In this context, instead of exhibiting closure in the classical sense, it can be argued that the autopoiesis has created a new sense of closure in which organizations do not disconnect from the external environment but their relations with the environment are again seen as their own reflection.

According to Matura and Varela, the aim of the autopoietic organizations exhibiting the above features is ultimately to produce themselves. For this reason, their own organizations and identities are the most important products (Morgan 1998:281). Organizational identity is gained by adopting and experiencing organizational culture (from Kreps 1986 cited by Guclu 2003). It is the process of self-referencing which allows the members of an organization to participate in creating and maintaining organizational identity (Morgan 1998:287). Some organizations can see themselves independently in this referral process. However, this may cause organizations to fail to realize the effects of their networks. The egocentric organizations, who do not understand that they are part of their surroundings, are held tightly to their own identities by separating themselves from others instead of keeping up with the changes in the system they are in (Morgan 1998:289–290). To sum up, when addressed by the metaphor of autopoiesis in the light of change, an organization can be seen as a closed system which can define its own structure, its elements, its boundaries, which reflects itself in its interaction with the environment, which makes the main reference source itself by giving priority to itself, and so which cares about its identity.

54.3 Chaos and Complexity Theory

The main feature of the general system theory is that it calls for unchanging laws by emphasizing order and regularity. The understanding of that there are regular patterns of law and behavior which do not change on the basis of cause-effect relationships allows scientists to predict and foresee. However, different scientists have discovered the unstable direction of nature by their work and thus they have revealed chaos theory (Tekel 2006). According to Tetenbaum (1998), although the concept of chaos indicates irregularity and disorder, it is a regular irregularity for scientists that cannot be predicted, but which has no formalities but similar forms (cited by Toremén 2000).

According to Allen (2001), complexity is a system that has the capacity to react not only in one direction to the environment but in very different directions, and this definition means that the complexity is not a one-way mechanical system. According to Luhmann (1985), complexity means a multitude of possibilities that is likely to occur in a system (cited by Saygan 2014). As an extension of system thinking, complexity theory is at the same time viewed as a new theory of evolution as it characterizes a more complex phase transition as “evolution” by examining self-organizing processes in chaos (Diker and Okten 2009).

Chaos theory and the theory of complexity in its parallel emphasize that relationships are not linear in the complex systems such as organizations and that there is a system which produces unexpected results and creates unpredictable options (from Tetenbaum 1998 cited by Bakioglu and Demiral 2013). There are some debates about the technical meanings of chaos and complexity terms. For most scientists, chaos theory is a general theory of nonlinear dynamics, while complexity theory is a

subset of chaos (Marion 1999: 5). However, they are not the same even though the concepts of chaos and complexity are related to each other. While there are rules and repetitions in chaos theory, complex systems have the ability to adapt (from Mitleton-Kelly 2003 cited by Saygan 2014).

54.3.1 Chaotic and Complex Organizations

Examining organizations in the light of change through chaos and complexity perspective is useful for observing the disorder rather than order in an organization by changing perspective. In this context, the metaphors of chaos and complexity will show us how complexity that may arise in an organizational process puts the organization into a state of uncertainty and to what extent organizations live chaos in this uncertainty.

Chaos theory puts forward a model of biological organization which is complex, self-adapting, living, and self-organizing. According to this theory, when we think about a group of people in motion, we observe that they can organize themselves mutually in complex and unexpected situations (from Ruelle 1996 cited by Toremén 2000). Considering this perspective, it can be said that a new dynamism can be revealed from these differences in a chaos that can be experienced in organizational operation even if organizations have a structure where many employees come together and their individual differences can create chaos.

Chaos is not a situation; it is a dynamic process. For this reason, chaos can be seen as a dynamic phenomenon arising from changes in organizations over time (from Liang 2004 cited by Tekel 2006). In other words, chaos is a phenomenon that occurs with changes within organizational process rather than being a simple situation. For example, an organization does not slide into a chaos instantly because of a present problem. However, it can be dragged into chaos when that problem cannot be avoided over the years and is no longer easy to resolve.

Chaotic management conception predicts that organizations live together in evolution and cooperation. Coevolution is a way to mobilize synergies. It is also emphasized that systems do not compete with each other, but rather how they connect with each other and in an insoluble way. Mutual assistance is needed because all work and decision-making authority is shared not only by the person doing the work but by many people (from Tuz 2001 cited by Bakioglu and Demiral 2013). In this context, looking at organizations from a chaotic point of view reveals a system in which employees are in cooperation during the period of change coexisting with chaos, they create integration rather than competition synergistically, and thus they set organizational solidarity to work.

In the case of chaotic situations in which such an organizational trust cannot be created, organizational casualties and entropies may occur. The more diversity within an organization increases, the more entropy level increases. That the increase in entropy causes errors in organizational functioning leads to negative feedback, and negative feedback allows the differentiation of order (Diker and Okten 2009).

For example, consider a meeting where an administrator asks for help from many employees having different methods about the construction of a work that needs to be done with limited resources and limited time. A confusion that may arise from differences in this meeting may ultimately lead to the work to be done in the wrong way. In this case it will cause entropy because it cannot be repeated at the same time and with the same resources.

Both chaos and complexity theorists put forward that systemic dynamics include much more than the relation of “If A exists than B occurs” in which the results are a simple function of input. According to these theorists, system behavior is more often the result of the complexity between components, the nonlinear interaction, and thus it is difficult or impossible to predict behavior (Marion 1999:5). Complex systems therefore have a number of features, such as nonlinearity and unpredictability, the influence of attractive items, interaction, self-organization, impossibility of planning, designing and predicting, coevolution, diversity of probability areas, chaos threshold, and new order formation (Saygan 2014).

When evaluated by the system approach, according to Flood and Carson (1993), complex systems are the open systems which have multiple subsystems and multiple inputs, outputs, and feedback relationships between these subsystems and which interact with their environment (Diker and Okten 2009). When considered in this context, complex organizations are functionally open systems that contain many subunits and have organizational inputs, outputs, and feedbacks. For example, when a university is considered as a complex system, it can be referred that there are many subunits serving to the organization and physical and human resources as input, output, and feedback.

Very small entries cause very large changes in complex systems. For this reason, a tiny intervention to the system can change the behavior of the whole system along with causing unexpected and unpredictable massive changes (Saygan 2014). Chaos theorists have pointed out that complex systems can be influenced by different kinds of “attractive elements.” While these attractive elements sometimes bring the system closer to equilibrium, sometimes it can completely drag into new forms (Morgan 1998:293). According to the chaos theory, when a system starts to go out of balance, it is pulled in a new direction by “strong attractor” (Toremén 2000).

The systems can be dragged to the threshold of chaos while experiencing a flow between strong and weak attractors. The complex systems at this threshold are faced with “forking points” that resemble road junctions that lead to different futures. At these points, the systems either build a structure similar to the one commanded by the old dominant attractiveness or get into a different shape thanks to a new strong attracts sequence by organizing themselves (Morgan 1998:295). In this case, it can be said that the systems which come to the threshold of the chaos bring about changes in the structures by the effect of attractive elements. At this point, it can be told that systems driven to this threshold show more creative and different behaviors (Saygan 2014) due to the fact that creative change often occurs on the verge of chaos (Comfort 1994).

If all the above information about chaos and complexity is addressed under an organization, imagine this scenario. The school administrators want to move their

school campus from the present district to another one in order to increase organizational productivity. To do this, they will have the power to ignore all other factors when they focus only on this true goal. However, they will have a dilemma at the very moment when listening to the sayings of the people of that district that they may suffer from this situation. At first, it may seem that there are two ways in which the managers who stay in this dilemma have to either stay there by listening to those people or leave from that district by thinking about organizational efficiency. However, this organization at the edge of a chaos can create a new solution by leaving only one of its busiest units, rather than the entire campus. Thus, this organization, experiencing chaos due to its driving and attracting powers, can reveal its creativity by finding ways to benefit from this chaotic situation and serve its purposes.

In summary, when an organization is dealt with the metaphors of chaos and chaos in the light of change, it comes across an open system which is driven by uncertainty and unpredictability due to changes in the process, which tries to keep pace with the complexity thanks to organizational solidarity in this process, and to transform living chaos into synergy, which is open to entropy because of the differences it has, which is under the influence of attractive characters, and which interacts with its environment.

54.4 The Logic of Mutual Causality

Autopoiesis and chaos complexity theories show how the changes occurred within circular interaction patterns affect systems and see change as being circular rather than linear. For this reason, when the change is evaluated in terms of these theories, the idea of mechanical causality leaves its place to mutual causality (Morgan 1998:305–307).

Today, the focal point shifts from linear concepts and one-way causality to dynamic dependence perceptions on which phenomena affect each other mutually or bilaterally. For this reason, the paradigm of mutual causality emerges as an interdisciplinary approach based on science. Causality, often defined as the reciprocal relationship between cause and effect, is about how things are, how change has occurred, and how events are related (Macy 1991:1).

54.4.1 *Mutual Causality in Organizations*

It is not enough for complex organizations to have in a multitude of parts. The parts of complex organizations need to be found in interaction (from Cilliers 1998 cited by Saygan 2014). The fact that the parts in a complex organization are tightly connected to each other shows that a change in one part of the system will affect and change other parts (from Mitleton-Kelly 2003 cited by Saygan 2014). For this reason, seeing

organizations only linearly may not be enough to analyze this effect among the pieces. At this point, the interaction between parts should be addressed in the context of mutual causality.

Causality is the reciprocal relationship between cause and effect. It is a framework that shows how mutual causality change emerges and how events are related to each other (Macy 1991:1). It can be stated that two best examples for explaining mutual causality are the butterfly effect and domino stones movement. In both cases, the first movement in a single butterfly or domino stone actually affects all other butterflies and dominoes in waves. For this reason, the first step taken is the cause of the latter. For example, a corporate company which embodies many brands suffers from the sales of its most important brand. The company announces to the customers via the media that this brand no longer works effectively and that it terminates its agreements with the brand. This situation causes the company's customers to make a negative impression not just for that brand but for the entire company and therefore to develop disbeliefs in the other brands of the company to be shaken. For this reason, sales fall and the impact from a single brand affects the whole company system.

Maruyama, one of the many researchers studying mutual causality, has taken the positive and negative feedback as a focal point in shaping system dynamics. Positive feedback deals with a change in which what is more leads more or vice versa, while negative feedback is a change which mobilizes opposing forces by leading to a change in the opposite direction. Together these two feedback mechanisms may be more effective in understanding the time-series transformations of the systems (Morgan 1998:306). For example, in an organization, the elements that motivate employees may enhance their work engagement, while the elements that disrupt their motivation can reduce this engagement. At this point, the directly proportional relationship between motivational factors and work engagement behavior reflects positive feedback. However, the fact that an employee perceives the financial prize presented among the motivational elements as bribe may undermine his/her belief in the organization, and for that reason, work engagement may even diminish despite the increase in prizes. In this case, negative feedback manifests itself. What is important for an organization is to evaluate the changes that may be experienced in the process by taking both positive and negative feedback together not only focusing on positive or negative feedback.

Maruyama argues that the situations need to be analyzed circularly rather than linearly in order to promote the key links and determine the feedback mechanisms showing the attractive elements. Analyzing the systems circularly in the process helps to understand the points that shape system dynamics, and thus it provides to approach to organizational and social problems from a viewpoint of mutual causality patterns (Morgan 1998:313–315). In this context, it may not always be effective to focus on changes in organizations in terms of a linear perspective, since it focuses on a hierarchical sequence. At this point, examining the changes circularly in the form of relations with each other can ensure that organizational changes are better analyzed and the real dynamics come to light.

According to Maruyama, the changes that are happening are not a simple matter, but a process (Morgan 1998:307). For this reason, dealing with organizations on the basis of processes can help to see that changes in both the organization and the external environment are not completely independent from each other. In other means, addressing organizational functioning as a process may be a guide for the comprehension of mutual interaction between causes.

In summary, when an organization is dealt with the metaphors of chaos and complexity in the light of change, it comes across an open system which is driven to uncertainty and unpredictability by the changes in organization, which tries to keep pace with complexity in organization thanks to organizational solidarity in this process, which tries to transform chaos into synergy, which is open to entropy because of the differences in organization, which is under the influence of attractive characters, and which interacts with its environment.

54.5 The Logic of Dialectical Change

Dialectics, a method of thinking and interpreting nature and society, is a way of looking at the whole world by acting on the understanding that everything is constantly changing and flowing (from Woods and Grant 2004 cited by Cobanoglu 2008). According to the dialectical idea, the phenomena in the world have been isolated and can be understood not as abstract items, but in holistic relations. The formations within this wholism have contradictory directions that give them the power of movement within themselves, which is called the principle of contradiction. Another principle is the unity of the opposites. The dialectical thought is based on the conflict against the nobility of tranquility in spiritualism, that is, the virtue of inaction, and it predicts the superiority of the conflict structures (Sezgul 2010).

Although different people interpret the dialectical idea in different ways, the views of Hegel and Marx are particularly noteworthy. Marx attempted to apply the dialectic directly to class relations since he considered the class conflict as the main source of social change (Sezgul 2010). The Marxist dialectic focuses the ideas that the interaction of the opponents impels social change, all societies have a tendency toward transformation, and social change destroys itself in many ways due to internal contradictions that cannot be overcome (Morgan 1998:319). Hegel's dialectic accepts that the original and universal are mutually dependent. Contrasts arise in this dynamic interdependence relationship, and this situation ultimately leads to a new coherence. It is thought that your dialectic contains three "moments" in this way: thesis, antithesis, and synthesis (from Alvesson and Willmot 1992 cited by Dikili 2014).

54.5.1 Dialectical Change in Organizations

When organizations are treated in a dialectical way in the light of change, it can be seen that organizational functioning considers not only the current situation and its opposite but also an alternative to these two situations. For this reason, evaluating organizations in the light of dialectical change enables them to be dealt with in a wider frame than autopoiesis, chaos, complexity, and mutual causality.

Dialectics is the logic of contradictions. According to dialectics, change and movement have contradictions and can only happen through contradiction. Rather than being a smooth and unbroken line of progress, dialectics in organizations emerge as a line that is interrupted by sudden and explosive epochs, in which slow and cumulative changes (quantitative change) gain a high acceleration, and quantity turns into quality (from Woods and Grant 2004 cited by Cobanoglu 2008).

Each solution leads to a new problem. Today's executives live in this situation every day while trying to cope with the flux. However, they are rarely aware of the social dynamism underlying their problems (Morgan 1998:323). At this point, looking at the dialectical framework of organizational life may be beneficial to see different aspects of events. From this point of view, the present situation can be questioned, and the alternatives can be created by confronting possible contradictions.

According to Benson (1977), there are four basic principles that guide dialectical analysis. These principles are social structure, integrity, contradiction, and practice. On one hand, the social structure focuses on the social process that allows for the regular production and reproduction of predictable relationships, while the integrity expresses the dependency of previously formed social patterns on one another. On the other hand, the contradiction means various tears and inconsistencies between and within established social arrangements, while the application is a free and creative restructuring of the social pattern based on the justification of both limits and potentials of existing social forms. These four dialectical principles can also be used directly in the analysis of institutional processes (cited by Seo and Creed 2002). For example, when an organization is analyzed with these four principles in terms of dialectics, it can be addressed that social structure is the organizational climate reflecting the interaction between occupations, that integrity is organizational memory, that contradiction is the duality to be encountered in organizational functioning, and that practice is the identity created by an organization.

The dialectical viewpoint basically depends on the concept of process. Some regulations in this process lead to other events and in this way they cause transformation (from Benson 1977 cited by Seo and Creed 2002). This situation usually indicates that "crossroads on the road" emerge around key paradoxes or contradictions that block a new future. Successful orientation of change requires the ability to overcome these contradictory tensions (Morgan 1998: 326). In this context, organizations can encounter many contradictions in the process and can initiate transformation with the changes they make. But the success of this transformation depends on making paradoxes useful for organizations.

54.6 Strengths and Weaknesses of the Flux and Transformation Metaphor in the Light of Change

Handling events with flux and transformation metaphors is going to help probe the idea of change. However, analyzing organizations through these metaphors can sometimes offer advantages in terms of focusing on different points while sometimes creating difficulties. The strengths and weaknesses of flux and transformation metaphor stated by Morgan (1998) are presented as follows.

Autopoiesis theory provides organizations a perspective of “living with their environment, not against them.” In addition, this theory allows organizations to see that they are open systems with varying degrees rather than being a 100% closed systems. *Chaos and complexity theory* helps to understand that organizations and their environments create an attractive element pattern, and for this reason, the basic patterns such as structure, culture, information, belief, and identity can gain new forms with possible changes. Handling the organization with *the theory of mutual causality* ensures that a holistic viewpoint is displayed and that the key of the administration is involved in this whole. Looking at formations from *the dialectical analysis lens* allows the adoption of the idea that managing organization, society, and personal life is to overcome contradictions (Morgan 1998:332–334).

The challenge of *autopoiesis theory* is to understand how organizations change and transform with their environment, and developing organizational approaches to support an open-ended evolution can be perceived as a daunting task (Morgan 1998:290). The difficulty faced by an organization coming to the threshold of *chaos* is to push systems in the desired direction by moving small changes that can create great effects. When considered from the perspective of *mutual causality theory*, the inability to see that the key of administration is involved in the holistic perspective puts organizations on the spot. In the context of *dialectical analysis*, organizations may experience difficulty overcoming the contradictions if they cannot find ways to fit key tensions into a new framework with the aim of creating a new ways of development (Morgan 1998:332–334).

54.7 Educational Organizations and Suggestions for Change in the Light of Change

54.7.1 School

Change can be perceived as both a condition and a process. Change as a condition affects people and occurs independently of them, while change as a process shows leadership and management actions made for the purpose of transforming organizations (from Sullivan and Harper 1997 cited by Çalık 2003). Therefore, changes in school life can sometimes occur as a condition, sometimes as a process. When it

comes to change as a condition, stakeholders of a school are affected by the events occurring at the school, while they can play a more active role in change as a process.

Educational organizations can remain closed within themselves and ignore changes in the environment (Balyer 2014). For example, a school that detaches itself from its environment can develop a closed organization culture. However, since the school cannot renew itself in such a close system and this detachment cannot be continued continuously, it either ends up or falls under the influence of another culture. This situation can lead to failure in the task of educating the contemporary people that society expects from school. In the name of change, educational organizations need to develop new identities such as following and adapting to educational changes, valuing and applying the findings of scientific research, and implementing them (Balyer 2014). For this reason, educational organizations should exhibit an open to change culture change, and by this means, they should follow the flux of change and the transformations that take place in this flow.

The schools, which are more complicated than other organizations, need to create the structures of interaction and their own expectation patterns among their stakeholders. These structures created at a school make the school meaningful and protect its identity, and this shows that they are autopoietic. According to the internal dynamics of autopoiesis management approach, the organizations in which change is experienced rapidly must adapt this change to their own structures by protecting their identities (Balyer 2014). In this context, it can be suggested that schools, one of these organizations, must follow the same rationale and maintain the process of change by protecting their identity.

Schools are such organizations that are dynamic, unpredictable, and nonlinear and have continuously changing external environments. As a matter of fact, they have many features of complex adaptive systems by organizing themselves, responding to their own society, and shaping them; and thus, they provide social change and adaptation at the macro and micro level (Morrison 2008). The success of a school depends on the fact that educational institutions have complex, rather than linear, feedback networks (from Gunter 1995 cited by Toremén 2000). For this reason, circle analysis rather than linear steps can be carried out to uncover the points connecting events with the aim of solving a problem in school. For example, organizational network analysis can be used to reveal complex feedback networks for the school.

The chaos, which is used in a different sense than the expressions of “irregularity” or “confusion” as it is generally used, gives freedom to organizational life (from Rosenhead 1998 cited by Balyer 2011). Individuals receive their own authority in their organizations, their duties are surrounded by boundaries, they have the need to maintain support, and there is a requirement to act ethically for them. In this context, an organization is a more elaborate structure which is self-organized or reorganized, and a large number of independent elements are interacting in it (from Vincent 2001 and Monroy 2003 cited by Balyer 2011). Considering this point of view, the school is an organization that has many different sources with its internal and external stakeholders. If the chaos that can occur because of these different sources can be evaluated in a way that will serve organizational purposes, it is not a disadvantage for

the organization; on the contrary, it is an opportunity for organizational development. Even if the rules are written in this type of organization, people can take individual responsibilities using initiatives.

Dialectics lead to look down on the flux and see dialectical contradictions that shape detailed organizational life (Morgan 1998:324). For this reason, taking a dialectical way of thinking in education management also requires education to be understood with a nonlinear “asymmetric” understanding (Erdogan 2014). In this context, that the private teaching courses were liquidated and delegated to the schools affiliated to the Ministry of National Education in Turkey is a good example of dialectic in the context of thesis-antithesis-synthesis.

54.7.2 Educational Administrator

Educational administrators’ goal should not be to continually maintain order. Such an understanding leads to self-recurrence and poses an obstacle to creativity and transformation. However, educational organizations should be able to organize themselves and seek new arrangements in complex and unexpected situations (Çobanoğlu 2008). School administrators should be alert about the events happening in and around the school, be sensitive to the events, and be careful to avoid possible problems. The administrators should be able to predict the change, but it must also be considered that they will not always be successful to do this (from Ozgenc 2008 cited by Balcer 2011).

The adaptation of schools to changing new technologies, the indispensability of internet network, and information at the tip of the index finger compel more autonomous behaviors of schools, administrators, and teachers. Although states and societies are willing to have a more predictable future and to stereotype their curricula, schools, administrators, and teachers in order to obtain a more disciplined student population acting on the axis of their value judgments, the specific aspects of educational administration do not fit in this situation. For this reason, schools should shift from a tighter structure to a more loose structure (Donmez et al. 2011).

Bureaucratic organizations are inadequate to comply with globalizing environment and complex situations involving rich information. Resistance to change, innovation, and adaptation problems are common situations. However, there is a need to learn how to achieve change in the information society (from Meyer 2002 cited by Dönmez et al. 2011). At this point, it is necessary that the people who manage the change should be the pioneer of change above all (from Uckun 2002 cited by Bakioğlu and Demiral 2013). For this reason, Sisman (2011) states that school administrators should be given more support and autonomy in the process of school development, and they should put especially their leadership skills into practice in school restructuring (Bakioğlu and Demiral 2013).

The existing organizational model based on the understanding of scientific management can only maintain its continuity with regularity, predictability, and effectiveness. If the future seems predictable, organizational leaders may struggle to

interpret a fixed and visible future and to plan this vision for a long term. However, rethinking the different models they have effectively used for the unpredictability of the future for decades has become a necessity for administrators and leaders (Toremén 2000). Because of this requirement, school administrators should be able to conceptualize the logic of change and manage this process accordingly by realizing the change.

Administrators who are interested in change for transformation need to be skilled at overcoming contradictory tensions and knowing how to choose the most important points. To do so, they should firstly conceptualize that the changes accompanying contradictions are valuable. Subsequently, they should minimize the negativities that may arise from conflicts while creating the contexts in which the desired attributes are actuated and can be preserved (Morgan 327–328).

The theory of chaos and complexity emphasizes the importance of dealing with human diversity in a way that enriches organizations and recognizes it as an important management skill in educational administration (Balyer 2011). The school administrators who are aware of this importance and able to use this skill can see the difference between their internal and external stakeholders as a source for the organization and use the richness of that source for their organization.

In the complexity approach, skillful leaders in using and interpreting data are defined as the administrators who support individuals and groups. Leaders in the organizations governed by this approach are described as facilitating, providing opportunities, coaching, and counseling (Balyer 2011).

According to Senge, delayed feedback and response can cause instability in organizations and restraint or exaggeration of individual behavior (Morgan 1998:313–314). When this situation is adapted to the school environment, it can be claimed that intervening at the right time and in the right way to the requests or changes that may come from the stakeholders can save school from possible troubles. For this reason, Balyer (2011) suggests that administrators should be proactive leaders who anticipate and take precautions instead of being reactive leaders that react after the event.

Experiencing the tensions as contradictory processes may lead the negation of change for transformation. For instance, it is possible for people to feel inertia if they feel that their demands, such as more innovation, cooperation, autonomy, and motivation, are not compatible with what seems possible (Morgan 1988:327). For this reason, it can be said that school administrators and teachers in classroom management should exhibit realistic behaviors and clear attitudes while interfering with the tensions arising from possible conflicts.

54.7.3 *Teacher*

The theory of chaos and complexity believes that individual differences enrich organizations (Balyer 2011). The teachers who support this belief can act by thinking that each student is an ore and can shape the class climate accordingly. In

this way, teachers can manage the complexity that can arise from individual differences and transform this complexity into useful for the organization.

According to this approach, teaching work is the most complex of all professions in cognitive sense. A teacher's pre-, post-, and during-teaching decisions and metacognitive processes may be his/her most important product (from Garmston and Wellman 1995 cited by Balyer 2011). For this reason, the studies should focus on matter of education in a comprehensive and accurate way. But sometimes it is difficult to notice the negativities created by the studies on the agenda for education, and even it is hardly imaginable that there may be a mistake in the right thing. This is why dialectical thinking is important in order to evaluate the studies on education (Erdogan 2014). For this reason, instead of regarding the sources of information they have unquestioningly, teachers should develop a dialectical viewpoint and approach the information more critically.

54.7.4 Student

Taking a glance at the Turkish education system, the first day of school is generally a complete chaos for students. This chaos is much greater for the first graders who have just started studying because of the orientation to school process, the innovations and responsibilities to be faced. However, that Turkish Ministry of National Education carries out an orientation training in which the students, preschool and primary school freshmen, start to school a week earlier than the rest of students for a while has been an effective step in preventing chaos.

According to the theory of complexity, it is assumed that the human mind is a complex adaptive system and that our mind is not stationary. For this reason, every new event is met and learned by a new mind, and also our minds are different from our previous mind (Morrison 2008). In this regard, it can be said that a student's mind is not stable, but in a flux and transformation taking new forms with experienced changes. For this reason, teaching process design can be shaped according to the complexity theory.

The theory of complexity, which is a theory of change, development, and evolution, is an interesting agenda for educational philosophy. Change equals learning, and learning is a central element both in the theory of complexity and in education. All complex events and systems have to learn, adapt, and change to survive (from Fullan 1989 cited by Morrison 2008). In other words, it can be said that every change is equal to learning at the same time according to the theory of complexity. From this point forth, the learning process for students in school environment can be shaped by providing changes. By ensuring that the information obtained from this learning is linked to real life, it can be possible to make students open and adapt to changes in life.

54.8 Conclusion

Flux and transformation metaphor emphasizes that changes in organizations are governed by the processes with a set of unique features. In this context, the explanation of the metaphor of flux and transformation from organizational point of view has been carried out with four basic perspectives underlying change logic. While the organizations as autopoiesis are such organizations that are not totally independent from the outer world but regard and see this relationship with the external environment as their own reflection, and take themselves as reference source, the organizations as chaos and complexity are such systems that produce unexpected results and offer unpredictable options. Whereas the logic of mutual causality in organizations implies that living changes are based on the process rather than any simple cause, and sees change as rings, the understanding of dialectical change in organizations expresses the idea that the phenomena are entreties containing conflicts and contradictions rather than being independent and abstract elements. Approaching organizations as flux and transformation is effective to see in depth the interaction between the pieces forming the structure of an organization.

Acknowledgment This Study Was Presented as an Oral Presentation in the 5th International Symposium on Chaos, Complexity and Leadership (ICCLS 2017) between December 11 and 12, 2017, in Ankara, Turkey.

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Chapter 55

The Commodification of Religion from Modern Society to Postmodern Consumption Culture



İhsan Çapcıoğlu and Mehmet Cem Şahin

Abstract The theory of modernization states that the distinctive feature of modern world view is its emphasis on progress. It argues that prior stage in the historical development continuum is more primitive than the next stage. Religious assumptions can provide necessary motivation and reasons to give up and/or limit desires for consumption goods and experiences. This function can also be true for recent period. However, religious authorities have many barriers to realize this function. The process of modernity influenced both religious beliefs and religious practices. However, religion sociologists argue that such changes have mostly occurred in social domains and that individual religious experiences have not been affected by these changes. The commodification of religion from modern society to postmodern consumption culture was discussed in this chapter.

55.1 Introduction

Modernization is a type of organization or life style that occurred beginning by the seventeenth century. It involves mechanisms of spreading to the world. One of them is economic dimension. Economic dimension of modernization refers to industrialized society that has a system of production based on inorganic energy within capitalist relations. In such a society, products are materialized, labour depends on wage and liberalist ownership is institutionalized. The second dimension is the approach to knowledge. It states that social facts can be truly represented, and therefore, an objective sociology is possible. Furthermore, language is viewed as a transparent means for transmitting this knowledge. In regard to values, it is believed that a valid field for universal ethics and law can be established. The third dimension of modernism is the fact that an individual who can manage himself independent of traditional social bonds exists. Typical citizens of modern society are such individuals and become equal members of the society within anonymous relationships of

İ. Çapcıoğlu (✉) · M. C. Şahin
Ankara University, Ankara, Turkey
e-mail: m.cem.sahin@ankara.edu.tr

larger society. They participate in public life through citizenship responsibility. The fourth dimension of modernism is its institutional pattern. Such a society has produced its own organization way. It may be briefly described as nation-state and democracy.¹

The theory of modernization states that the distinctive feature of modern world view is its emphasis on progress. It argues that prior stage in the historical development continuum is more primitive than the next stage. Meaning attached to progress dominated the Western thought of the eighteenth and nineteenth centuries. Auguste Comte's three-state law, Hegel's theory on the process of tin to become aware of its conscious and Marx's dialectical process about production types are all distinct formulations of the views of modernization. The aim of modernization in the historical process varies in accordance with thinkers' perspectives, but the common emphasis is on the concepts of happiness, freedom, equality, virtue, enlightenment and peace.²

55.2 Towards Modern Society

Both horizontal and vertical pattern and the system of relations in the Western societies modified with laicism and secularism that began by Renaissance, continued by the Reform throughout the period of Enlightenment, and with the establishment of modern-central states, their political and administrative structure changed. Briefly stated, the distinction between religious and non-religious became influential in many fields of social life such as policy, economy, law and ethics.³ The philosophy of enlightenment that was defining the character of the transition between premodernity to modernity is a turning point in the history of culture. Enlightenment is aware of the fact that it enabled the cognitive-instrumental reason to dominate successfully the nature represented free thinking independent of emotional biases and traditional knowledge and provided limited opportunities to instrumental reason that produced the technique of reaching the predetermined goals using the shortest way.⁴ On the other hand, as a result of the break of religious domain, knowledge, ideology, life styles and ethics produced by the mental transformation of the Enlightenment period were shaped based on humanism, secularism and democracy. New world view is a human-centred paradigma that provided the humans with domination and that looked for truth not in religion but in science.⁵ Modernization

¹İlhan Tekeli, "Bir Modernleşme Projesi Olarak Türkiye'de Kent Planlaması", *Türkiye'de Modernleşme ve Ulusal Kimlik*, (Editörler: Sibel Bozdoğan, Reşat Kasaba), (Çev. Nurettin Elhüseyni), (2. Baskı), Tarih Vakfı Yurt Yayınları, İstanbul, 1999, s. 137.

²Mehmet Akgül, *Türk Modernleşmesi ve Din*, Çizgi Yayınları, Konya, 1999, ss. 47–48.

³Akgül, *Türk Modernleşmesi ve Din*, s. 67.

⁴Erhan Atiker, *Modernizm ve Kitle Toplumu*, Vadi Yayınları, Ankara, 1998, s. 13.

⁵Akgül, *Türk Modernleşmesi ve Din*, ss. 67–68.

resulting from the Enlightenment period with this dimension is useful in reasoning about basic principles like science, laicism, nationalism and individualism and challenges artificial distinction of modern and traditional.⁶

Although the production of knowledge for predetermined goals and its efficient use is successfully achieved, the problem is that it is not possible to achieve a priority order of social goals using instrumental reason. Modernity eliminated all barriers in front of the functional reason to achieve predetermined goals of the system, but it cannot avoid private interests of the system having role in determining the goals. Thus, rationality cannot assume the role in this process, since in rational determination of common interests that form the reason for social aims, instrumental reason is not sufficient.⁷

Modernity has a historical understanding according to other perspective. Therefore, accordingly, it should be analysed based on a description of its position at the line proceeding from traditional to modernity. Whatever its shape, materialist or idealist, the dominant institution concept in the historical thought became universality at the stage of scientificity. That's why progression meant economic growth and national development as equal points.⁸

In terms of theoretical point of view, change parameters such as industrialization, urbanization, democratization, rational thinking, organization and individualization should be discussed in relation to modernization. Classical thinkers could not provide sufficient account for these parameters in regard to their occurrence, because they regarded each of them as an independent variable. Sociologists put modern against traditional formulating that modernization can be achieved universally. Such a perspective states that the most significant examples of modernism and progression are the Western cultures. The remaining countries, societies and cultures are all primitive and, therefore, dominated by traditional world view and life style. In other words they are underdeveloped or developing societies. *Underdeveloped societies* represent the former state of the Western societies. Recent state of the Western societies represents the future state of non-Western societies. The most developed form of human civilization is that of west. It is also argued that other societies can achieve the level of modernity if the reason for their underdeveloped state is not biological/ethnic.⁹

The distinction between traditional and modern has certain basic parameters that form the modern age. These are as follows:

- This transformation matured the thought of enlightenment and activated the references in all domains. For instance, the Newtonian physics discovered the natural laws and avoided a mystical approach to the nature.

⁶Deniz Kandiyoti, "Modernin Cinsiyeti: Türk Modernleşmesi Araştırmalarında Eksik Boyutlar", *Türkiye'de Modernleşme ve Ulusal Kimlik*, (Editörler: Sibel Bozdoğan, Reşat Kasaba),(Çev. Nurettin Elhüseyni), (2. Baskı), Tarih Vakfı Yurt Yayınları, İstanbul, 1999, s. 100.

⁷Atiker, *Modernizm ve Kütle Toplumunu*, s. 14.

⁸Akgül, *Türk Modernleşmesi ve Din*, s. 49.

⁹Akgül, *Türk Modernleşmesi ve Din*, ss. 48–49.

- The invention of steam machine as well as rapid advances in production technology and transportation all created the revolution of industry leading to job divisions. Thus, life styles were radically transformed.
- Major religions account for the world based on the God, but the world is reformulated based on human beings.
- People have become the object of the market relations.
- Cemaats that are traditional social units were resolved, and larger social units appear as a result of immigrations and increase in communication and transportation.
- Democracy is no longer just an administrative form and becomes only a rational and legal way of administration. Legality of political governments even in monarchy becomes based on public acceptance.
- Instead of cemaats, political units and nations appear.
- Inequalities due to belief differences are replaced by arrangements based on laicism, and religious establishment is excluded from political domain.¹⁰

55.3 Modern Industrial Society

Technological developments were initiated by Renaissance and Reform and included religious and social changes, major geographical inventions and scientific advances. These developments beginning by the nineteenth century produced machinized production, rational mass production and urbanization and great changes in economic, political, demographical, ethical, social and cultural patterns of traditional societies.

All these developments certainly affected the traditional religious life styles. Moreover, these effects were not experienced only by industrialized societies but also in other societies, though their level varies.¹¹ It is interesting that a new category named *modern industry societies* has appeared in which such effects are being extremely experienced.¹²

Modern industry societies have very complex and distinct patterns. In such a society which has very developed technology, humans live in a technological environment that is different from its natural environment of traditional society. Modern industry societies divide human beings and the nature through machines, sophisticated techniques, knowledge, fabricated equipment, etc. The revolution of industry is characterized by transition from handcrafting to machinery production and domination of people over the nature. In the technological environment produced by the revolution of industry, people tend to dominate the nature in regard to

¹⁰Akgül, *Türk Modernleşmesi ve Din*, ss. 69–70.

¹¹Ünver Günay, “Modern Sanayi Toplularında Din I”, *Erciyes Üniversitesi İlahiyat Fakültesi Dergisi*, Sayı: 3, 1986, s. 44.

¹²Günay, “Modern Sanayi Toplularında Din I”, s. 42.

their needs, wishes and desires. Modern industry societies have higher levels of production through the use of machines, electricity, electronics and nuclear energy. Therefore, they have a production-driven economy. The thread for traditional society is the danger of scarcity, but it is overproduction for modern industry societies.

On the other hand, in traditional societies families consume what they have produced. Therefore, they are both producers and consumers. However, in modern industry societies, families become just a consumption unit. In other words, workers produce for those they do not know. Workplace and home are quite different places. Social organization of modern industry society is much more complex in contrast to that of traditional society. Although elements of family, relatives and age groups are still current, they have new functions or lost some of their former functions. Furthermore, social organization of modern industry society included new occupations and related establishments, social classes, political parties, unions and other interest groups. In this sense, within the social organization, relatives are replaced by specialized economic, political, legal, etc., institutions.

In parallel to increase in societal job divisions, societal vertical and horizontal mobility in the society has increased in relation to advances in mass transportation and communications. Modern industry society is characterized also by massive increase in population, urbanization, bureaucracy, appearance of social classes and domination of economic structure. Cities are characterized by anonymous life styles formed by larger populations. Neighbours in modern cities are foreigners who do not know one another, and social relations in traditional societies become different in modern city life. Wide job divisions in industry societies produce heterogeneous populations, and therefore, groups with different cultures live side by side leading to cultural conflicts.

On the other hand, any industry society should be attached to another society. Therefore, this fact and continuous technological developments and modifications have produced change in human actions and the appearance of new norms. Finally, modern industry society is characterized by the distinction between holy and non-holy, laicism, scientific and rational accounts of events and higher value for education. It provides opportunities for free discussion of different views, being open to innovations and change. However, the other significant cultural characteristic of it is its tendency to distribute its own values, to affect the traditional cultures surrounding it and to occupy them.¹³

¹³Günay, "Modern Sanayi Toplumlarında Din I", ss. 53–55.

55.4 Commodified Religion in the Modern and Postmodern Consumption Culture

Bell states that the real problem of modernity is the problem of “belief”. He argues that after breaking the bond between the society and religion, the use of popular culture products as a solution to avoid any spiritual crisis is misleading. “Only a religious revitalizing can produce a social order that address our existential gaps satisfactorily”.¹⁴ Bell indicates that “I” stress characterized by the culture of modern industry society leads to distortions in belief in the God. Bell accounts for this transformation not only through capitalist mentality that excludes spiritual values and transcendence ethics but also through puritanism allowing ego-centred neo-liberal, hedonist cultural norms and distortions in Protestant ethics. For Bell, it is a sign of inherent sociocultural conflict of Western societies.¹⁵

Bell¹⁶ states that a belief gap that should be filled by ethical system and strong social bonds has occurred in society as a result of hedonist approach of modern consumption society and that such a gap cannot be filled by popular approach of consumption industry. Bell argues that meaning systems developed by religious figures, intellectuals and artists should be challenged in terms of their roles in unifying the daily life. At this point, Bocock¹⁷ states that the only strong cultural socio-psychological institution is religion that enables people to avoid their own interests over consumption goods and services and to direct them towards other activities and experiences. Religion forms a significant part of social life. Each religion includes a set of content and approach about significant life issues in addition to religious views. Religion provides people with certain mentality and spirit. Therefore, it provides a perspective that is used to interpret the world. Thus, it facilitates the interpretation of people on the world in which they live and the positioning of them within it.¹⁸

When religion is defined as a belief system providing the most consistent answers to basic questions on existence, weakness in religious belief distorts social consolidation and social bond. In fact, Bell’s approach to the culture of modernity and his concerns also state the same point.¹⁹ Religion is a guiding factor in making sense the existence of people and defining the universe. It fills the gaps in people’s consciousness about themselves, the universe and society and, therefore, provides them with

¹⁴Mike Featherstone, *Postmodernizm ve Tüketim Kültürü*, (Çev. Mehmet Küçük), Ayrıntı Yayınları, İstanbul, 2005, s. 190.

¹⁵Margaret M. Poloma, *Çağdaş Sosyoloji Kuramları*, (Çev. Hayriye Erbaş), Gündoğan Yayınları, Ankara, 1993, s. 336.

¹⁶Robert Bocock, *Tüketim*, (Çev. İrem Kutluk), Dost Kitabevi Yayınları, Ankara, 1997, s. 156.

¹⁷Bocock, *Tüketim*, s. 121.

¹⁸Niyazi Akyüz, *Gecekonduarda Dini Hayat ve Kentleşme*, Gündüz Eğitim ve Yayıncılık, Ankara, 2007, ss. 53–54.

¹⁹Featherstone, *Postmodernizm ve Tüketim Kültürü*, s. 193.

the answers to these questions. Thus, people gain an identity in social life and feel themselves secure to realize various aims and to direct their life.²⁰

Bell's²¹ analysis about the conflicts inherent in the culture of modernity can be related to German societal rationality that regards contemporary mass society as atomic, nonpersonal and far away from meaningful social bonds and integration tools²² and to the tradition of *Kulturpessimismus*.²³

From this perspective, processes in modernity such as rationalization, materialization, etc. cannot make religion disappear because all major religions, although they become weakened, maintain to exist in the centre of social processes as image classification and ritual practices. As stated by Durkheim, since anything can be categorized as holy, we may state that material products of capitalism have now holiness status. If we focus on real usage of materials, then it may be recognized that they lose their holiness status in some cases but gain a symbolic function for their users. Therefore, ordinary consumption goods may be transformed into holy consumption objects.²⁴

Hyperactive consumption increased in parallel to global mass culture, and provision of images as materials as well as very rapid and changing life styles leads to competition between religion and daily life. Therefore, the gap between daily life and ideals widens each day. Such a competition is true for Islam, Christianity, Hinduism, Buddhism, etc. In a world where global consumption surrounds all social domains, religions continue to be rapidly materialized and distorted. Religions now cannot direct lives of people and find any place in social forms. Thus, religions become internal matter for people and begin to have a symbolic value for them losing their true value.²⁵ Strict materialization of daily life and strict secularism in daily life influence the nature of religious beliefs through competition and conflicts. Such a case causes a serious barrier against religions to present themselves as a universal life style.

Life in a postmodern world is directed by consumption patterns. In such a world, religious life is melted by global life styles. As a result, religion fastly loses its traditional dimension as well as its efficiency and reality. It has a clear implication: daily life will position religion as a subculture, and religion would legitimate the relativity being postmodernized and have to change itself. However, there is a common assumption that Islam is sufficient for itself and Islam has suspicion

²⁰Niyazi Akyüz, "Dinin Nesnelleşmesi", *Ankara Üniversitesi İlahiyat Fakültesi Dergisi*, (1998), 37, ss. 275–276.

²¹Daniel Bell, *The Cultural Contradictions of Capitalism*, Heinemann, London, 1976.

²²Featherstone, *Postmodernizm ve Tüketim Kültürü*, s. 195.

²³It is a concept that expresses a cultural approach identified with the Frankfurt school criticizing popular culture and being pessimistic about cultural developments in the recent period.

²⁴Featherstone, *Postmodernizm ve Tüketim Kültürü*, s. 196.

²⁵İhsan Çapcıoğlu, Fatma Çapcıoğlu, "Popüler Kültürün Metalaştırdığı Değerlerimizi Nasıl Yeniden İnşa Edelim?", *Uluslararası İnsani Değerlerin Yeniden İnşası Sempozyumu, Tebliğler Kitabı*, (ed. Cengiz Gündoğdu), Atatürk Üniversitesi Yayınları, Erzurum, 2015, ss. 21–29.

about non-Islamic entities and is unwilling to open to foreign cultures. These features make difficult to position Islam as a subcultural entity.²⁶

Postmodernism refers to an era in which consumption becomes very intense and images and symbols are presented as values. Goods consumed have a symbolic value determining class status in addition to their practical usage value. Consumption in this sense is a means for communication. Postmodern period is a period in which images are attached to many meanings. People have to make continuous choices to form their identity, and behaviours forced by consumption make daily life very materialized.²⁷

Daily life materialized leads to inconsistencies and uncertainties as a result of very changing conditions. People frustrated due to these inconsistency and uncertainty begin to look for holy values that have been lost. As such search for holy principles and values increases, revitalizing of religion also rises. People seem to be pleased with such a revitalization of religion hoping that it will lead to society with ethical values and virtues. However, such revitalization may lead to radical religious approaches, and therefore, people may fear of it. Nostalgia for agricultural-type cemaat and strict interpretation of religion that is not consistent with the current life styles make religious people far away from society, and therefore, they position themselves as a subculture in the hyperactive culture.

For postmodern theologian, the past and future are not significant, but the current daily life and problems experienced by people in their daily are important. For independency, social legality and peace are needed. Religion also calls for a society in which peace, love, goodness and help are valued. Without social legality and peace, the existence of the God does not mean anything, and in this context, Nietzsche's remark "the God died" is the basis of postmodern religion understanding. Therefore, religion in postmodernism is not viewed as a theological problem but a fact with social concerns.

However, before modern and postmodern periods, religions all over the world satisfied unconscious desires of people although its implications were sometimes hazardous and sometimes positive. There are evidences that this position of religion seems to continue in highly industrialized societies. For instance, in the USA there have been signs on the fact that the influence of religion has been increasing since the 1940s, but it cannot provide a control over social and ethical issues and over consumption habits. Bocoock²⁸ states that the USA is more religious than both England and other Western countries. On the other hand, in non-Western societies in which Hinduism, Islam, Christianity, Buddhism and also Confucianism are still dominant, increase in consumption tendency is also observed. In majority of these societies, consumption includes material needs such as food, water, accommodation, medical equipment and transportation. However, it is not limited to these. Excluding these basic needs, desire for less needed materials of modern/postmodern life

²⁶ Featherstone, *Postmodernizm ve Tüketim Kültürü*, ss. 25–26.

²⁷ Featherstone, *Postmodernizm ve Tüketim Kültürü*, s. 58.

²⁸ Bocoock, *Tüketim*, s. 121.

styles²⁹ (music systems, blue jeans and even automobiles and televisions) is also very evident. Many young people living in non-Western capitalist societies have already begun to follow the invitation of increasing consumption culture.

Bocock³⁰ states that for educated people who can estimate the environmental problems caused by modern/postmodern consumption trends, supporting religions for their sensitivity for environmental matters is much more reasonable than attacking against religions. When such people do not consider the integration functions of religions, religions are regarded as negative in terms of their social and cultural implications. On the other hand, if educated people have relations with religious establishments, they will have effective tools for criticizing overconsumption trends and for avoiding radical religious approaches.

55.5 Conclusion

Bocock argues that religions all over the world may help in avoiding hazardous life styles for the world and also avoiding those socio-economical practices related to consumption ideology and consumption trends. Religious assumptions can provide necessary motivation and reasons to give up and/or limit desires for consumption goods and experiences. This function can also be true for recent period. However, religious authorities have many barriers to realize this function. Nevertheless such negative conditions can be overcome.

Such new value arrangements can be a beginning point for future ideology in criticizing consumption based on religious views. Capitalism towards consumption has begun to end since in order to have a world that is appropriate for people's healthy life, such a system should be abandoned. However, in order for religions of the world to achieve this function, they should not be in competition with sub-cultures in the countries.

The process of modernity influenced both religious beliefs and religious practices. However, religion sociologists argue that such changes have mostly occurred in social domains and that individual religious experiences have not been affected by these such changes. They use several terms to describe these facts, such as "belief without belonging" and "religion at home". Of them, the former term refers to the fact that individuals believe in the religion but they do not actively take part in religious activities and rituals in a systematic way. The latter term, namely, "religion at home", refers to the fact that such individuals experience a religious life at their

²⁹The term "life style" is one of the popular terms. If it is used to refer to different life styles of status groups, it may have more limited meaning. In regard to contemporary consumer culture, it refers to individuality, expressing oneself. Individual taste and preferences can be understood taking into consideration his body, clothes, speech, sparetime activities, eating habits, home, car, holiday choices and other similar choices. Bkz. Bocock, *Tüketim*, s. 121.

³⁰Bocock, *Tüketim*, s. 122.

homes. Therefore, unlike predictions of classical sociologists, modern life is not against religion but requires certain transformations in regard to religion.

Human beings beginning from the earliest periods have tried to make sense of their existence. Social life provides the use of certain cultural forms as a result of humans' activities. Within these cultural forms, religion has always an exceptional position. Therefore, the basic concern for people is always about religion. Thus, religion can also provide solutions to crises of consumption society and sociocultural distortions.

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