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Contact Info.

Address : Fatih Sultan Mehmet Vakıf University, Faculty of Education, Department of Educational Sciences Istanbul - Türkiye
Telephone : + 90 542 325 1923
E-Mail : info@iojes.net
Web Site : www.iojes.net

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Contact Info.

Address : Fatih Sultan Mehmet Vakıf University, Faculty of Education, Department of Educational Sciences Istanbul - Turkey
E-Mail : info@iojes.net
Web Site : www.iojes.net

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Evaluation of the Concept of Democracy from the Perspective of Teacher Candidates

Research Article

Murat SALUR[1], Irfan ARIKAN[2]

[1]Fırat University, Faculty of Education, Department of Social Science Education, Elazığ, Türkiye 0000-0002-2569-4788

[2]Harran University, Faculty of Education, Department of Social Science Education, Şanlıurfa, Türkiye 0000-0002-1546-4786

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ABSTRACT

Democracy should not be considered briefly on the basis of government or state; because democracy is also a way of life. Democracy is a political system in state administration based on the idea that sovereign rights belong to the people. Democracy, which is handled by different people and different thought systems, has given very different meanings. The purpose of this research is to evaluate the concept of democracy from the perspective of teacher candidates. In order to reveal how the concept of democracy is understood by teacher candidates, the phenomenology design, which is one of the qualitative research designs, was used in the research. The study group of the research consists of 50 social studies teacher candidates studying at the Faculty of Education at Fırat and Alparslan Universities in the 2022-2023 academic year. The opinions of the pre-service teachers were taken with a semi-structured interview form consisting of open-ended questions. The obtained data were analyzed by using qualitative data analysis technique. Computer-assisted qualitative data analysis was performed. The NVivo program was used in the analysis of the data and in the creation of the models. As a result of the research, it was seen that social studies teacher candidates have different perceptions about the concept of democracy and they justify this situation differently from each other.

Keywords:

Teacher Candidates, Democracy, Individual, Society, State, Social Studies

Introduction

Although democracy is a political term, it is a management approach based on the idea that the source of sovereignty is the people. The concept of democracy, which has a structure that is too broad and comprehensive to be expressed with a single definition, has been handled in different ways by different people and different paradigms, and different meanings have been attributed to it (Koçoğlu, 2008). Democracy is essentially a form of government based on the consent of the people, as emphasized by Ringen (2010). It is

[1]Corresponding author's address: Fırat Üniversitesi
Telephone: +905380149766
e-mail: murat.salur.4949@gmail.com
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known that the etymological origin of democracy goes back to ancient Greece. Indeed, democracy comes from the Greek words "Demos" meaning people and "Kratos or kratein" meaning government or force. The word democracy is used in the meanings such as "rule of the people, power of the people" (Altunya, 2003; Başgil, 2019; Demir, 2010; Erdoğan, 2010; Şaylan, 1998).

In the most general and classical expression, democracy is the self-government of the people (Başaran, 1986; Derdiman, 2006; Doğan and İnankul, 2021; Doğan, 2005; Köse, 2009; Şaylan, 1998; Yeşil, 2002). Abraham Lincoln defined democracy more succinctly as "government of the people by the people and for the people" (Derdiman, 2006).

Democracy states that the rights of individuals to participate in government should be general and wide-ranging. In addition, democracy includes the rooting of individual freedoms in private law, public law and political law, the diversification and expansion of ideologies, and full respect for minorities even though the majority decision is always valid (Akçalı, 1994; İbret et al. 2018). In addition, according to Levin (1998), democracy is a management process in which individuals are politically active, vote for parties with political symbols and ideologies, participate in elections and play an important role in the formation of political parties.

Lipset (1986) evaluates democracy as a political understanding that allows the change of administrators within a constitutional order. In addition, the fact that a large part of the population makes an election among those competing for political power, plays an important role in the political and social field, and that individuals manage all these processes in a very active way are considered as opportunities offered by democracy. Boyle and Beetham (1998) also define democracy as the ideal that decisions affecting organizations as a whole are taken by all members of the organization and everyone has equal rights in decision-making mechanisms. In this respect, democracy is based on open discussion, persuasion and compromise. Akşin (2003) emphasizes that the concepts of equality and freedom are at the core of democracy and that these concepts glorify democracy. Kıncal and Işık (2003) state that democracy includes the values of respect for life, justice, honesty, seeking the good, cooperation, self-confidence, tolerance, sensitivity and responsibility in addition to the concepts of equality and freedom.

It is possible to talk about multiple dimensions of democracy. One dimension of democracy is that it is a form of government. In this respect, democracy as a form of government is defined as the use of the state administration by the elites who came to power as a result of the elections in line with the demands of the people and the ability of the people to control and change this mechanism (Can, 2019; Şaylan, 1998). On the other hand, it is related to the fact that democracy is not only a form of government but also a lifestyle and covers more general and wider areas (Dewey, 2004; Maruf and Altıntaş, 2021; Oğuzkan, 1982). In this context, it can be said that democracy is an important concept both in terms of the perception of individuals as a lifestyle and in terms of having the power to govern on the basis of the state and politically, and the power to govern on behalf of the people.

It can be stated that democracy is a very important concept for individuals and societies and has become an inseparable part of life. In this respect, there are some factors that bring democracy to such an important position and ensure that it is among the indispensables of society. As a matter of fact, it is seen that democracy prevents tyranny, restrains oppressive regimes and understandings, and prioritizes fundamental rights. It has been understood that democracy provides general freedoms, enables individuals and peoples to make their own choices, decisions and determine their future, and facilitates them to have a say in the administration. It is seen that democracy provides moral autonomy, contributes to human development, allows the protection of basic personal interests, and creates environments of political equality, peace and prosperity. Due to these opportunities offered by democracy, it is adopted and practiced by people as a form of government and lifestyle. In addition, these values and opportunities offered by democracy have made it more preferable than other political regimes. As a matter of fact, democracy offers many advantages and possibilities over past and present forms of government; because democracy prioritizes the people at every opportunity, offers individuals and societies fair living opportunities, paves the way for individuals to freely participate in government in the context of political equality, and prioritizes human values. If the system is democratic, it becomes much easier for people to live in freedom, participate in political processes in the context of equal rights, and respect values, ideas, beliefs and understandings.

Universities play a vital role in promoting and spreading democratic values. They are places where skilled individuals are educated and where a democratic ethos is fostered. Instilling these values in teacher training programs within education faculties is also crucial. The study focuses on social studies teacher candidates because a large portion of human rights, democratic principles, and civic education is taught through social studies courses in schools. Therefore, the views of these teacher candidates, who will become educators of democracy and human rights, are significant.

The Aim of the Research

The general aim of the research is to reveal how the concept of democracy is understood from the perspective of teacher candidates and to make general evaluations in this context. Within the framework of this general purpose, answers to the following questions were sought:

- Based on contemporary democracies, what are the underlying reasons for the differentiation between countries in terms of the perception and implementation of democracy?
- What is the most basic feature of democracy as a form of government? Please explain.
- What are the approaches of democracy to life? How do these approaches reflect?

Method

This study has been conducted under the approval of Harran University, Human Research in Social Sciences, Ethical Committee (Protocol Number: 2022/236; date: 16/12/2022).

Qualitative research method was used in this study, which was conducted to evaluate the concept of democracy from the perspective of teacher candidates. The best way to uncover teacher candidates' views on democracy is through qualitative research. Qualitative research is a method that aims to conduct research by using a number of data collection (observation, interview and document analysis) methods to investigate events, phenomena, perceptions and concepts in a holistic way and in a natural environment with a realistic approach and following a qualitative process (Yıldırım and Şimşek, 2011). Qualitative research, conducted with an interdisciplinary approach, exhibits a holistic view of events and phenomena and uses an interpretative approach to the research problem. In addition, the facts and events on which the research is conducted are not detached from their context, the meanings that people ascribe to them, and evaluations and interpretations are made in this approach (Altunışık et al, 2010: 302).

Research Model (Pattern)

The research design used in this study is phenomenology, a type of qualitative research design. The phenomenology design aims to examine the events from the perspective of the meanings they ascribe to individuals by referring to their views about any phenomenon, situation or concept. In this respect, phenomenology is complementary research; Beyond generalizing, it is more important to make sense of and define facts. Thus, this pattern concentrates on personal experiences and focuses on individuals' insights and perceptions (Akturan and Esen, 2008). In addition, the phenomenology pattern focuses on phenomena that we are aware of but do not have a detailed understanding of. Phenomenology helps us to recognize a phenomenon in more detail and to make sense of it better. Briefly, this pattern tries to describe phenomena, events or concepts in detail with all their dimensions and to reveal people's views, perceptions and thoughts in detail (Yıldırım and Şimşek, 2011).

Study Group

The study group of the research consists of 50 social studies teacher candidates studying at the Faculty of Education at Fırat University and Alparslan University in the 2022-2023 academic year. In the determination of the study group, convenience sampling method was preferred; because convenience sampling method not only makes the study practical, but also saves time and facilitates faster access to data (Yıldırım & Şimşek, 2011). This convenient and cost-effective sampling method carries the risk of introducing sampling bias. 24 of the participants are male and 26 of the participants are female social studies teacher candidates.

In this study, the names of pre-service teachers were not included within the scope of research ethics. Instead, abbreviations are preferred. After the sample opinions of the participants were written, the form number of the participants in the form of P1, P2…P50, followed by the gender and finally the sub-category that the opinion represented was stated.

Data collection tool

In this study, which is based on "the evaluation of the concept of democracy from the perspective of teacher candidates", a semi-structured interview form was prepared to get the opinions of the social studies teacher candidates, who are the members of the study group, related with the research topic. While preparing the interview form, the questions to be asked were determined first. While creating the questions, attention was paid to the principles such as writing easy-to-understand questions, asking open-ended questions, preparing focused questions, avoiding directing, avoiding asking multidimensional questions, and arranging the questions in a logical way (Yıldırım & Şimşek, 2011). The data obtained from the participants with a semi-structured interview form were analyzed and dumped. Field experts working at Muş Alparslan University and Fırat University Education Faculties were consulted for their opinions in order to ensure content validity. In line with the opinions and suggestions from the field experts, the interview form was finalized and the number of questions was reduced from 5 to 3.

Analysis of Data

The analysis of the research about the semi-structured interview form was carried out in the qualitative dimension. Computer-assisted qualitative data analysis was performed. The NVivo program was used in the analysis of the data and the creation of the models. The codes were created in line with the common opinions of the researchers. In this framework, the views of prospective teachers on the evaluation of the concept of democracy were tried to be analyzed by grouping these views under certain themes with descriptive and content analysis techniques. The expert opinion reached in the research was consulted to ensure the reliability of the research. First of all, main themes and then sub-themes related to these were created by researchers and experts. The themes that emerged as a result of the analysis were modeled and visualized in a way that shows the ties between them. The number of people (frequency) determined the theme showing the relationships in the model.

Findings

The findings obtained from this research, which is based on the evaluation of the concept of democracy from the perspective of teacher candidates, are presented below.

Findings Regarding the Reasons for the Differences in the Practice of Democracy

“What are the underlying reasons for the differentiation between countries in terms of the perception and implementation of democracy, based on contemporary democracies?” The question was answered in a semi-structured interview form by the social studies teacher candidates who are the members of the study group. The answers given by the pre-service teachers and the main and sub-themes within the framework of these answers are shown in Figure 1:

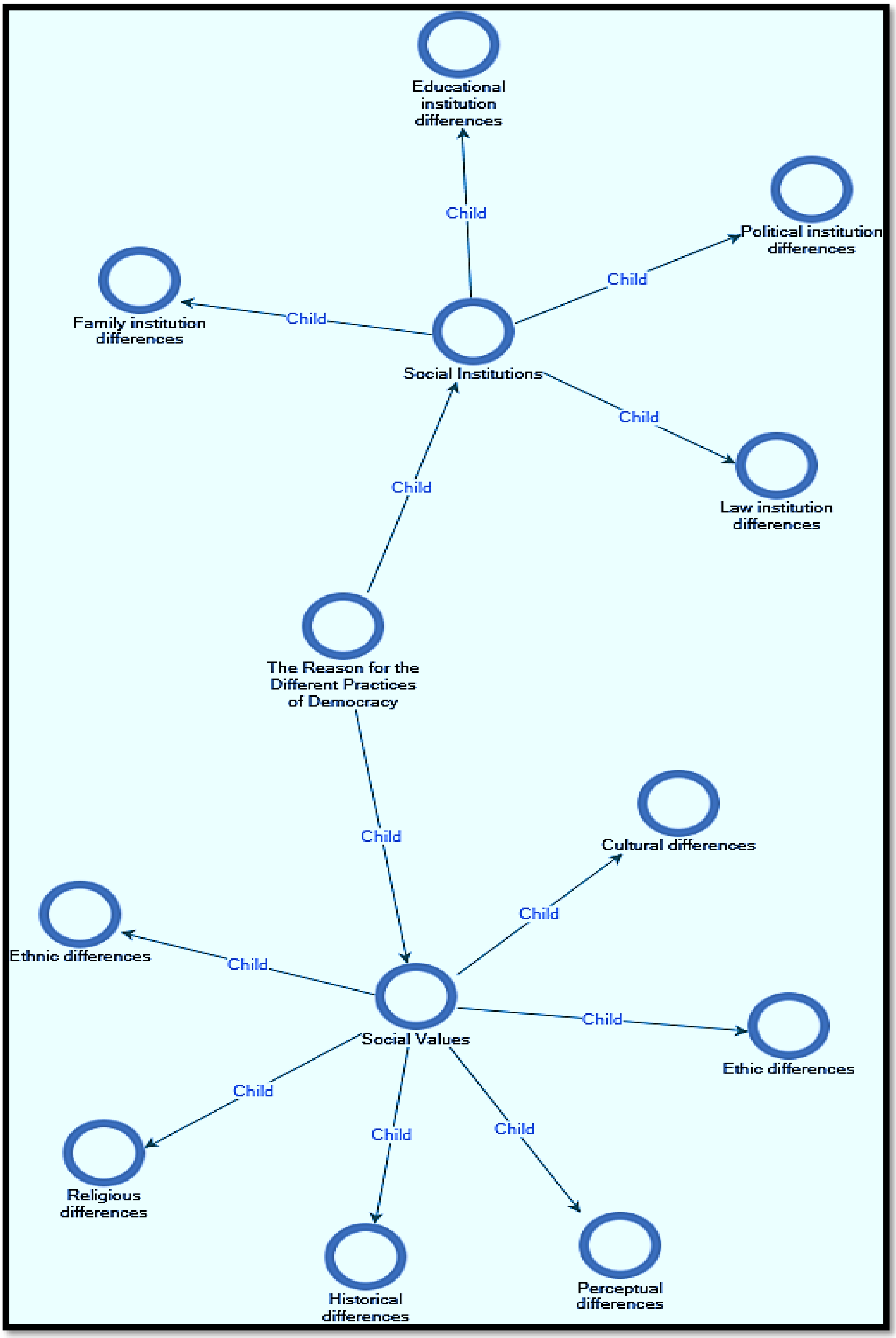

Figure 1. Results of the data on the reasons why democracy differs in its practice

When the above results were examined in the light of the answers given by the pre-service teachers, 2 main themes and 10 sub-themes related to them were produced as the reason for the differentiation in the implementation of democracy. While there are 20 participants under the main theme of social institutions, there are 30 participants under the main theme of social values. In this direction, pre-service teachers produced sub-themes of family institution differences (f=8), educational institution differences (f=2), political institution differences (f=4) and legal institution differences (f=6) within the main theme of social institutions. Ethnic differences (f=5), religious differences (f=7), historical differences (f=5), perceptual differences (f=3), moral differences (f=3) and cultural differences (f=7) were produced under the main theme of social values sub-themes by pre-service teachers.

The pre-service teachers showed social institutions and social values for the reasons underlying the differentiation between countries in terms of the perception and implementation of democracy. Although a distinction is made in the form of social institutions and social values on the basis of this differentiation, it is understood that these two elements complement each other and are interconnected with an intricate understanding. For example, family, education, politics and legal institutions are the most basic institutions in a society. They gain meaning in unity. In this respect, it can be said that these institutions are influenced by other social values as well as influencing each other and are shaped accordingly.

Some of the statements of the social studies teacher candidates, who constitute the members of the study group, regarding the following question in the semi-structured interview form are presented below: *"Based on contemporary democracies, what are the underlying reasons for the differentiation between countries in terms of the perception and implementation of democracy?"*

"There are many different practices at the point of applying or perceiving democracy. I think the most important factor underlying these differences is the family; because family structure is the most important indicator of society. Undoubtedly, family structures vary considerably from society to society or from country to country. Some family practices, perceptions and situations in life conditions vary. Therefore, these differences in families are reflected in society. Since society and administration are intertwined, administrations get their share of this differentiation and different practices are implemented on the basis of administration or in terms of democracy." **(P3, male; family institution differences)**

"When we look at history, we see that the religion factor has always remained in a very important position. Religions have influenced societies, individuals, lifestyles, forms of government, the state and many other areas in every age. Perception of dominant religion in different countries directly or indirectly affects individuals as well as forms of government. There have been many forms of government based on religion, namely theocratic, in history. Thus, the principles and rules of that religion were reflected in the state and therefore in the administration. Different practices in democracy also result from religious-based differentiations. These differentiations reflect positively or negatively on the perceptions of the society in general and individuals in particular." **(P38, male; religious differences)**

"In my opinion, education is the basis of different practices in democracy; because new generations are raised through education. These generations are born with the knowledge and experience they get from school. Thus, they form the most dynamic structure of society. This dynamic structure directly affects the state or more specifically the administration. This also varies from country to country. The education policy of every country is not the same. Therefore, this difference also affects democracy and forms the basis of different perceptions and practices." **(P7, female; differences in educational institutions)**

"Every nation or state has a history. While the historical roots of some go back thousands of years, some have less historical background and accumulation. I think this fact is the basis of the perception of democracy among countries with such different understandings. A historical accumulation can be reflected in management in different ways. In this way, democracy can be understood and applied differently.." **(P9, female; historical differences)**

Findings Regarding the Most Basic Features of Democracy

The answers given by the participants to the following question in the semi-structured interview form and the sub-themes formed in the context of these answers are presented in Figure 2: "*What is the most basic feature that should be in democracy as a form of government*?"

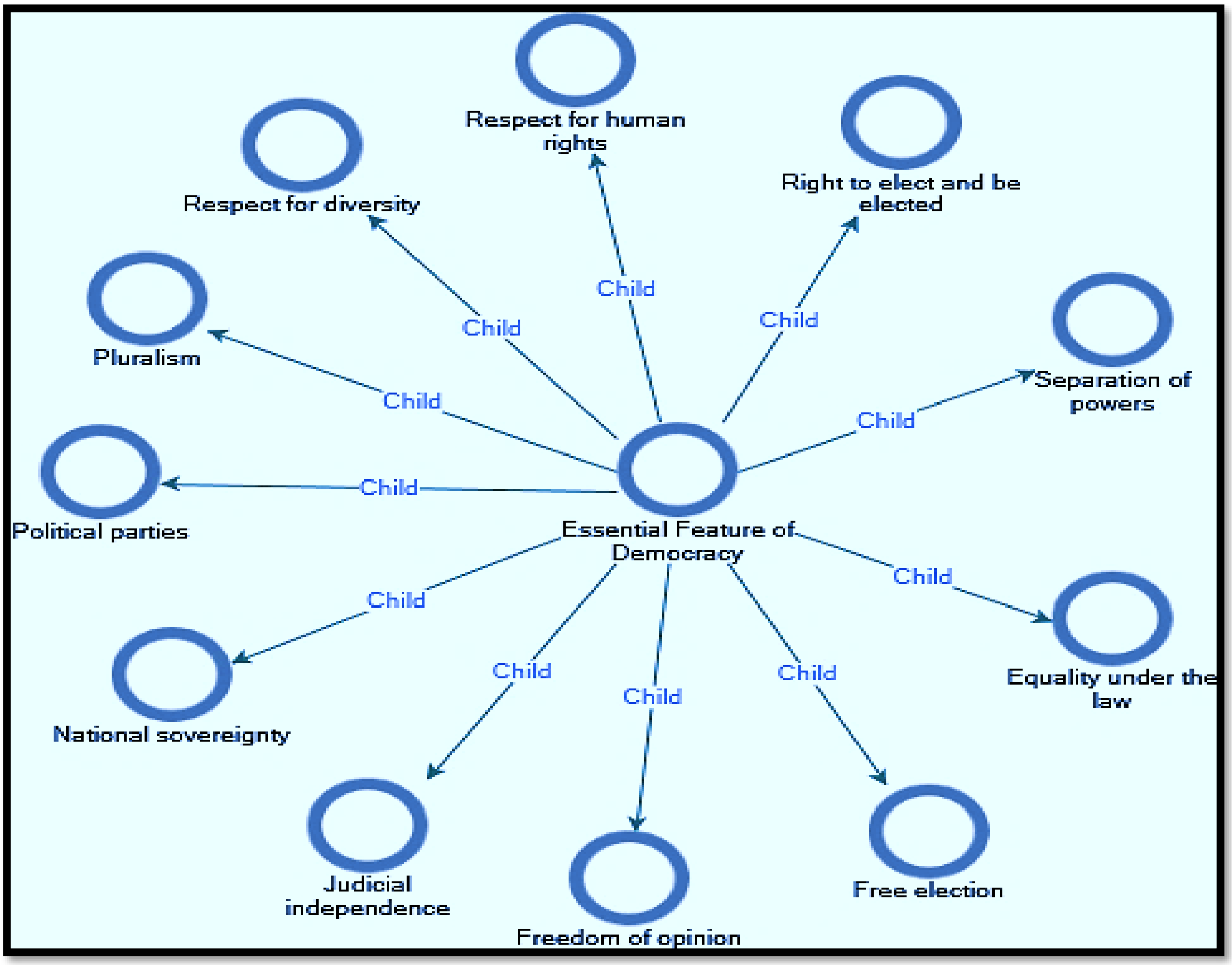

Figure 2. The results of the data on the most basic features that should be in democracy

When Figure 2 is examined, it is seen that social studies teacher candidates expressed the basic features that should be in democracy with sub-themes such as separation of powers (f=4), political parties (f=2), pluralism (f=2), respect for differences (f=8), independence of the judiciary (f=4), free elections (f=3), equality before the law (f=6), freedom of thought (f=7), right to vote and be elected (f=4) respect for human rights (f=4) and national sovereignty (f=6). It is seen that the pre-service teachers expressed different and wide-ranging opinions about the basic features that should be in democracy as a form of government.

Some of the remarkable answers given by the members of the study group to the following question in the semi-structured interview form are presented below with their own statements: "*What is the most basic feature that should be in democracy as a form of government*?"

"In my opinion, the most important thing that makes democracy a democracy is the respect for human rights. The more human rights are protected and respected in a country, the more democratic that country is. When we consider the countries where democracy is not dominant, we see that the value given to human beings is at the lowest level. This is true for both society and the state. As a state, human rights and freedoms are not under constitutional guarantee. Therefore, the existence of a democratic country is possible with the constitutional guarantee of human rights and freedoms and the observance of the society." **(P32, female; respect for human rights)**

"In my opinion, the most important element that should be in democracy is freedom of thought. Everyone should be able to think as they wish and act as they wish so as not to harm the rights and laws of others. Democracy must ensure this. The despotism and oppressive understanding that exists in some forms of government has taken away the freedom of thought of the people. It is very difficult to talk about the value given to human beings in such countries. The most important element expected from democracy is to make the freedom of thought dominant in the society." **(P47, male; freedom of thought)**

"Political parties are indispensable elements of democracy. This is the most important feature of democracy; because political parties are candidates for the current government. As such, it can hinder the arbitrary practices of the government. Political parties can criticize and control malpractices. The absence of political parties may cause the powers in power to act as they wish, and even to follow wrong policies, which may even lead to non-compliance with some laws. In other words, political parties act as a control mechanism. In addition, citizens who are not satisfied with the policies of the current government and who see that the country's course is getting worse, turn to other political parties as an alternative and can prevent this situation. Therefore, I think the most important element that should be in democracies is the existence of political parties." **(P2, female; political parties)**

"If a nation is not sovereign, how can one talk about democracy in that country? For this, when it comes to democracy, first of all, that country, that nation should be sovereign, that is, it should be able to carry out independent policies.. The state will primarily pursue policies by considering the interests of its own nation so that other wheels of democracy can gain meaning. Otherwise, if the nation has no sovereignty, neither does a democracy made of cardboard.." **(P3, male; National sovereignty)**

"I think there should be respect for differences in democracy. When I say diversity, I mean all kinds of differences. People may differ, believe in different beliefs, or have a different nationality and a different language. If democracy exists, all these and even more must be approached with tolerance.." **(P29, male; respect for differences)**

"One of the most important features of democracy is that everyone can be tried with an equal understanding in the courts. The court must be the heart of justice. It should never make judgments on the basis of persons or authorities. There should be equal judgment. But it should be equal for all. Nobody should be shown favor. Democracy starts at this point.." **(P26, female; equality before the law)**

"Election and to be elected are very important in democracies. The right to choose is given to every citizen who meets a certain criterion. But for some reason, it's not that easy when it comes to being selected. If you are not from an elite group, unfortunately, it is not easy even to become a mukhtar. Then, just as freedom of choice can easily be obtained by every citizen, obstacles such as the caste system in front of being elected must be removed! Therefore, I see this situation as the most important feature that should be present in democracy. Cause it's a real problem." **(P14, male; right to vote and to be elected)**

Findings on Democratic Approaches to Life

The answers given by the pre-service teachers, who are the members of the study group, to the following question in the semi-structured interview form, and the main and sub-themes formed in this context are presented in Figure 3: "*What are the approaches of democracy to life? How do these approaches reflect?*"

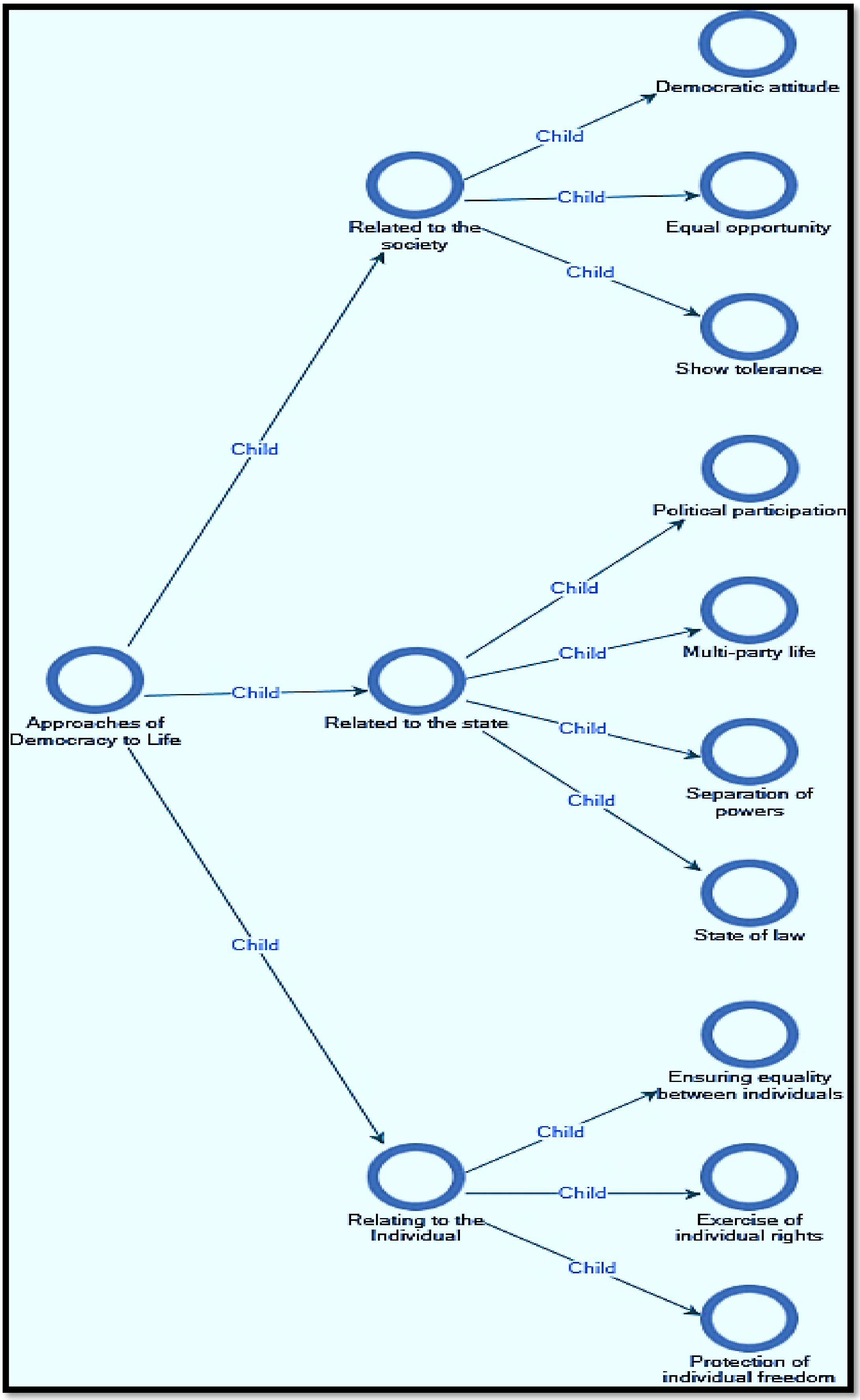

Figure 3. Consequences of democracy's approaches to life

When the views of the participants about the approaches of democracy to life are examined in Figure 3, it is seen that there is a result in the form of 3 main themes and 10 sub-themes related to them. In this context, there are 12 participants in the main theme of society, 18 participants in the main theme of the state, and 20 participants in the main theme of the individual. It is seen that the members of the study group produced sub-themes such as adopting a democratic attitude (f=7), providing equal opportunities (f=3) and being tolerant (f=2) under the main theme of society. It is seen that the participants produced sub-themes such as political participation (f=5), multi-party life (f=4), separation of powers (f=4) and rule of law (f=5) under the main theme of the state. Finally, it is seen that the participants produced sub-themes such as ensuring equality between individuals (f=5), exercising individual rights (f=4) and protecting individual freedom (f=11) under the main theme of the individual. Based on these data, it can be said that democracy is not only a political understanding, but also exhibits an encompassing feature and has separate reflections on the individual, society and the state.

The answers given by the pre-service teachers to the following question in the semi-structured interview form are exemplified below: "What are the approaches of democracy to life? How do these approaches reflect?

"Democracy has many different reflections on life. I think the most important of these reflections is that it offers freedoms to the individual. However, these freedoms are valid up to the limit where someone else's freedom begins. One of the requirements of democracy is that the individual can do whatever he/she wants within his/her own borders without harming others. We cannot talk about democracy in environments where freedom is restricted. The protection of individual freedom is not an event that can only be realized with words. The state should protect this with the constitution.." **(P47, male; protection of individual freedom)**

"Democracy's approaches to life are mostly political. In political life, democracy presupposes the separation of powers. Legislative, executive and judicial powers should act independently of each other. If the executive power dominates and dominates the legislature and the judiciary, it turns into a monarchy in a sense. Therefore, one of the most important elements of democracy in life is the separation of powers. I am of the opinion that it is absolutely necessary to make no concessions from the separation of Powers in order for democracy to be always dominant." **(P50, male; separation of powers)**

"In my opinion, the most obvious example of the reflection of democracy in life is the state's feature of being a state of law. The basis of the actions of governments should be law. Actions that are against the law or that are not approved by the law should not be applied. Only if we do so can we speak of a democratic state.." **(P4, female; constitutional state)**

"People are born with certain innate rights. Democracy offers people the guarantee of securing all other rights, especially the right to life. In this respect, I think that democracy has very important reflections and gains on the individual.." **(P18, female; exercise of individual rights)**

Discussion, Conclusion and Recommendations

When the data obtained in this study, in which the views of teacher candidates on the concept of democracy are evaluated, it is seen that the participants have similar perceptions at some points and different perceptions at some points regarding the concept of democracy (Figure 1, Figure 2, Figure 3). It was understood in the study that the pre-service teachers, who constituted the working group on the concept of democracy, made rich evaluations in very different dimensions and with different expressions. As a matter of fact, it was stated by the participants that democracy has a much broader and encompassing feature and content beyond being just a political phenomenon. In Oğuzkan's (1982) study, it was emphasized that democracy is a social concept as well as being a political concept. In this respect, it has been stated that democracy is a set of material and moral values for societies. In addition, Yeşil (2002) emphasized that democracy consists of basic values such as freedom, tolerance, participation, equality, respect for differences and human rights, and justice. These definitions of democracy and the findings obtained in this study are similar.

Gürbüz (2006) emphasized that democratic systems are against all kinds of discrimination and that all people are equal in terms of rights and freedoms. Pausch (2013), on the other hand, expressed democracy as a concept that is identified with the freedom of the individual and that people are equal and free by nature. In addition, democracy was introduced, the formation of political power was explained, the awareness of equality and freedom was emphasized, and the living conditions of the democratic system were revealed in Tocquevill's work "American Democracy" written in the 19th century (Tocqueville, 2016). Kitcher (2011), on the other hand, emphasized that individuals want to have control over the decisions that affect their lives, that there should be equality in freedom and liberty, and that all these possibilities are possible with democracy (Kitcher, 2011). Social studies teacher candidates, who constitute the members of the study group, also stated that democracy has egalitarian and libertarian values and strongly opposed discrimination and reinforces social unity (Figure 1 and Figure 2). In this context, these statements of the participants coincide with the emphasis of the above-mentioned studies on democracy.

Koçoğlu (2008) stated that the main purpose of democracy is personal freedom and in this context, democracy is indispensable for people to live and develop freely. A similar statement was made by Yücel (1998). According to Yücel, the most indispensable element of democracy is the freedom of the person and its guarantee. These definitions and statements about democracy are very similar to the data obtained in this study and support the data of the study.

It was determined that pre-service teachers evaluated democracy in the context of the state or administration and expressed democracy with different approaches in institutional terms (Figure 2 and Figure 3). Touraine (2004) emphasized that democracy means the right of the majority to rule and rather it is a concept related to the state, administration and their functioning. Demir (2010), on the other hand, emphasized the relationship of democracy with administrative concepts such as equality, political participation and the right to representation. All these expressions and emphases overlap with the data obtained in this study and support each other.

Another important finding obtained within the scope of the study is the opinions of the participants about the most basic features that should be found in democracy. In this context, the participants expressed the most basic features of democracy as separation of powers, political parties, pluralism, respect for differences, independence of the judiciary, free elections, equality before the law, freedom of thought, right to vote and be elected, respect for human rights and national sovereignty. Lipset (1986) stated that the most basic features of democracy are the right to vote and be elected within the constitutional framework, and that the majority makes it easier to take important decisions by choosing among those competing for political power. In addition, Gündüz and Gündüz (2002) emphasized that the basic features that should be in democracy consist of concepts such as separation of powers, the principle of election and representation, universal and equal votes, political parties, use of sovereignty, protection of fundamental rights and freedoms, and equality before the law. It has been seen that all these expressions and emphases and the findings obtained in the study support each other.

Finally, as stated by the social studies teacher candidates who constitute the members of the study group (Figure 2 and Figure 3), democracy is the assurance of the use and protection of individual rights. Democracy is the guarantee of freedom and equality. Similar views produced by the participants and the following statements of Büyükkaragöz and Kesici (1998) overlap with each other: *"Democracy is the guarantee of human rights and freedoms. A suitable environment is needed for people to enjoy these rights. Indeed, this environment is democracy; because it is the field of existence of basic human values such as democracy, right, justice, equality, freedom and reconciliation."*

The following suggestions can be presented in the light of these results obtained in the study:

- ✓ Some initiatives can be taken by the state in order to make the reflection of the gains and values of democracy both to the society and to the individuals more comprehensive. For instance, studies can be carried out for this purpose in folk culture centers as well as schools.
- ✓ Universities should encourage teaching democracy and human rights as a common elective course.
- ✓ Universities should encourage democratic participation and involve students in decision-making.
- ✓ Political leaders should exemplify democratic attitudes and behaviors for society.
- ✓ It is important for non-governmental organizations to actively participate in spreading and promoting democratic values.
- ✓ In order to root some values such as democratic values, tolerance, respect for differences, living together and taking responsibility in line with its necessities, courses can be given in these fields at all levels of education.
- ✓ Democratic values should be revived through written, visual and audio media. These areas should be focused on and efforts should be made to inform the society from these areas.

Ethics Committee Approval:

This study has been conducted under the approval of Harran University, Human Research in Social Sciences, Ethical Committee (Protocol Number: 2022/236; date: 16/12/2022).

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Development of the Perceived Parental Self-Efficacy Scale: Examining its Relationship with Trait Anxiety*

Research Article

Sezai DEMIR[1]

[1]*Hatay Mustafa Kemal University, Faculty of Education, Department of Guidance and Counselling, Hatay, Türkiye* 0000-0002-7767-4105

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ABSTRACT

This study develops the Perceived Parental Self-Efficacy Scale for adolescents, identifies its psychometric properties, and examines the relationship between the scores on the Perceived Parental Self-Efficacy Scale and trait anxiety through regression analysis. This study was performed in two steps. To develop the measurement tool, data were collected from a total of 560 female and male students between the ages of 11-18 in the first step, and then from a total of 616 female and male students in the second steps. The validity and reliability analyses performed to determine the psychometric properties of the scale yielded a 22-item form with 4 sub-dimensions. The second analysis confirmed the construct of the measurement tool; no significant difference was found in the perceived parental self-efficacy scores by gender. Further, this study determined that trait anxiety was predicted by perceived parental self-efficacy. This study discussed its findings with previous findings and concluded with some suggestions.

Keywords:

Parenting, Perceived Parental Self-Efficacy, Trait Anxiety, High School Students

Introduction

As proved by a number of experimental and descriptive studies to the date, cognitive processes shape behaviors related to parenting skills (Johnston and Mash, 1989; Eltanamaly et al., 2002; Mouton et al., 2018; Salo et al., 2022; Bohman et al., 2013; Caprara et al., 2004). Self-efficacy is a concept that pertains to a cognitive process shaping parenting skills and behaviors. According to the concept of self-efficacy, which is defined as the belief of individuals in their capacity to fulfill critical tasks and goals by organizing cognitive and socially based skills (Bandura, 1982), an individual is expected to be competent at their own capacity level, not necessarily the most competent. Certain major tasks in life are easy to fulfill for some, while certain trivial tasks are quite difficult for others. The important thing in perceived self-efficacy is that the individual recognizes their own capacity and believes that they will accomplish the tasks appropriate to their capacity

*This study was presented with the title "the Perceived Parental Self-Efficacy Scale" as a proceeding short abstract in the "22nd International Psychological Counseling and Guidance Congress".

[1]Corresponding author's address: Hatay Mustafa Kemal Üniversitesi, Antakya/Hatay
Telephone: +905304338028
e-mail: demirsezai01@gmail.com

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(Bandura, 2009). According to Bandura (2009), an integral aspect of the concept of self-efficacy is that in today's changing conditions, an individual needs to develop and organize beliefs for certain areas or certain tasks, rather than all areas or all tasks. In other words, it is not possible to conceptualize self-efficacy in a general sense; instead, self-efficacy should be defined in certain areas. Parenting represents one of the most challenging and critical areas for adults in changing social conditions. Although it comes with its difficulties, a successful management of the parenting process by parents brings satisfaction to them (Russell, 1974). It is prerequisite to develop beliefs related to capacity and to organize cognitive, socially based parental behaviors in order to describe someone successful in parenting tasks; in other words, it is necessary to define parental self-efficacy beliefs.

Parental self-efficacy is defined as the parent's judgments and beliefs about their own capacity to perform certain tasks related to the care and upbringing of their child (Caprara et al., 2004; de Montigny and Lacharite, 2005; Jones and Prinz, 2006). In a similar vein, Coleman and Karraker (1998) describe it as the individual's beliefs about their capacity in a set of tasks involved in child care, showing interest, responding to their emotional needs, discipline and taking responsibility in parenting. Parental self-efficacy has a direct impact on the development of children or adolescents (Ardelt and Eccles, 2001; Coleman and Karraker, 1998). The parental satisfaction of adolescents depends particularly on the dynamics of the parent-child relationship. Satisfaction with family relationships allows family members, particularly adolescents, to make decisions, to look forward to the future with hope, to receive support from the family, and to spend qualified time with them (Belsky et al., 2001). Determining and measuring parental self-efficacy, which has such a pivotal role in family relationships, has been a long-standing objective. Especially given that the developmental needs of individuals during adolescence are significant for personality development, measurement tools for the self-efficacy of parents who have a child in this period are of great significance too.

These being said, it should be noted that there is a limited number of tools that serve to directly measure parental self-efficacy in Turkey and in the rest of the world. In the literature over the past decade, a parental self-efficacy scale developed by Sevigny et al. (2016) for fathers with a pre-school child, which consists of 20 items and 3 sub-scales (engagement with familial affairs, direct care and financial responsibility), has appeared. As for the validity and reliability of the scale, the test-retest reliability was found as .81; the criterion scale-related validity was as .59, and the Cronbach's Alpha internal reliability coefficient was as .88. Further, in their study with 359 parents who have children between the ages of 12-15, Nicolas et al. (2020) designed a measurement tool, the initial version of which had 9 items, which then reduced to 8 items following the validity-reliability study (its criterion-related validity was .59, and McDonald's omega reliability coefficient was .91); these 8 items are as follows: care, social skills, ability to set family rules, approach to conflict, healthy habits, problem solving, ability to ask for help. Also, with a sample of 300 parents who had a child aged between 12-15 years, Zulfiqar and Subnan (2022) developed an 18-item 4-point Likert-type parental self-efficacy scale consisting of the dimensions of providing basic needs, educating morality, inculcating discipline and teaching autonomy, specific to Pakistani culture. Remarkably over the last decade, Yıldız et al. (2020) presented an adaptation of "the Berkeley Parenting Self-Efficacy Scale Revised" for parents with preschool children. This two-factor scale was tested for reliability; its Cronbach's Alpha internal consistency coefficient was calculated as 0.91, and the test-retest reliability coefficient was as 0.67.

In the relevant literature, parental self-efficacy has been mostly measured through measurement tools indirectly related to parenting. Witkowski et al. (2017), and Jones and Prinz (2005) examined the measurement tools for parenting and stated that although a measurement tool is available for each developmental period, self-efficacy is usually measured through skill-oriented measurement tools, particularly highlighting that there is no measurement tool for the self-efficacy of parents with an adolescent. Again, according to Witkowski et al. (2017), and Jones and Prinz (2005), most of the existing measurement tools were developed based on interviews with parents, or adaptations of other scales. The measurement tool developed under this study intends to measure the self-efficacy of parents with an adolescent through the perceptions of adolescents.

Taking care of children's physical health, providing emotional support to them, dealing with schoolwork and health-related issues are considered among the components of parental self-efficacy, and as mentioned above, they support all aspects of children's development (Coleman, 2000, and De Montigny and Lacharite, 2005). Considering these tasks assigned to parents from a social point of view, parental self-efficacy both influence and is influenced by all family-related processes (Caprara et al., 2004). One of these processes is the harmony between parents (Ardelt and Eccles, 2001) and the quality of the relationship between spouses (Ardelt and Eccles, 2001; Caprara et al., 2004). Emphasizing the importance of family in parental self-efficacy, Caprara et al., (2004) argued that both spouses have important roles and responsibilities in domestic relations and that the fulfillment of the shared responsibilities of spouses affects the level of parental self-efficacy and enriches domestic relations. Though parental self-efficacy is typically assessed with a focus on communication with children, there are various different dimensions to look at this.

It is evident that looking at parental self-efficacy only from the aspect of communication with children would be lacking given the basic experiences and physical emotional state, which are the bases of the concept of self-efficacy. An individual's self-motivation to be self-efficacious in a certain field, being consistent and healthy as much as possible, their basic life, and their physical and emotional health are among the emotional and physical state resources (Bandura, 2009). According to Jones and Prinz (2005), parental self-efficacy plays a key role both in the parents' own world and in their harmony with their partner. Similarly, in their study with 106 married mothers with children aged between 12 to 16 years, Bapat and Mardhekar (2021) found out that individuals with high parental self-efficacy felt they belonged to the family and were satisfied with their life. These being said, the existing measurement tools for parental self-efficacy failed to incorporate sub-scales of personal life, life satisfaction as well as spousal harmony. The measurement tool for parental self-efficacy develop under this study, unlike other tools, includes spousal harmony and personal life.

To put it another way, the most pronounced sub-dimensions of parental self-efficacy are: the ability to assure the child, self-esteem (Hess et al., 2004), beliefs about capacity for tasks such as providing the emotional and physical needs of the child, spending time with the child, and dealing with their academic issues (Caprara et al., 2004; Coleman and Karraker, 1998; Jones and Prinz, 2005). Based on these sub-dimensions, many studies have reported that anxiety is a prominent factor between the mental health of children and adolescents, and the self-efficacy levels of parents. The first of such studies is that of Wolfradt et al. (2003), who examined the relationship between depersonalization and trait anxiety in a sample of adolescents based on the perceived parenting attitudes. The researchers observed that the group with the authoritative and permissive parenting style scored lower on trait anxiety, whilst those who perceived a negative parenting style had higher levels of trait anxiety. Besides, in their study on adolescents through regression method, Bacchini et al. (2011) found a high level of correlation between the depression and trait anxiety levels of adolescents exposed to negative attitudes of their parents, and negative parental attitudes perceived as abuse. In a similar vein, Niditch and Varela (2012) conducted a study with 125 students aged between 12 to 18 years, and indicated that adolescents not accepted by their families had low levels of emotional self-efficacy and high levels of trait anxiety. One of the studies conducted in Turkey, that of Çapulcuoğlu and Gündüz (2013), determined that adolescents who perceive positive attitudes from their parents are successful in coping with stress and experience less social anxiety, which is an element of trait anxiety. Demirsu (2018) found a significant relationship between the perceived parental attitudes as over-protective and authoritative of university students and their trait anxiety levels. All these studies show that the level of anxiety experienced varies by the level of parents' attitudes towards their children.

In the light of these research, it is evident that a measurement tool on parental self-efficacy appropriate for Turkish culture is yet to be developed, and that the adapted or existing tools consist of items only related to interventions for the child. Moreover, the existing measurement tools measure the level of parental self-efficacy based on the perception of parents. This study, on the other hand, attempts to determine parental self-efficacy levels through the perceptions of children. Also, the "Perceived Parental Self-Efficacy Scale" developed under this study for the self-efficacy levels of parents, which is an significant factor in the anxiety level of children, examines the trait-anxiety levels of adolescents.

Therefore, this study seeks to determine the psychometric properties of the perceived parental self-efficacy and to reveal the relationship between the trait-anxiety levels of adolescents and the perceived parental self-efficacy. To achieve these objectives, this study presents two sections. The first section includes the development of perceived the parental self-efficacy; the second section probes into the relationship between the trait-anxiety levels of adolescents and the perceived parental self-efficacy. To achieve this two-fold objective, this study embraces the following sub-objectives:

Section 1:

Sub-objective: To determine the psychometric properties of the parental self-efficacy scale perceived from the perspectives of adolescents that aligns with Turkish culture.

Section 2:

Sub-objective 1: Do the perceived parental self-efficacy levels of the students differ by gender?

Sub-objective 2: To what extent are the trait-anxiety levels of the adolescents predicted by the perceived parental (mother and father) self-efficacy scores?

Methodology

Research Model

As mentioned earlier, this study consists of two sections; the first section seeks to assess the psychometric properties of the measurement tool, which is intended to measure the perceived parental self-efficacy levels, in order to determine the parental self-efficacy levels perceived by adolescents studying in a high school. The second section investigates the relationship between the perceived parental self-efficacy of these individuals in adolescence and their trait anxiety levels through this scale. This study is designed as a descriptive study based on the relational screening model.

Study Group

This study draws on convenience sampling, which is one of the random sampling methods. It is reflected in the literature that different groups should be used for exploratory factor analysis and confirmatory factor analysis in scale development studies. For this reason, this study performs both factor analyses with different groups. Moreover, selection of a sample group and size represents an important aspect of scale development studies. Different opinions exist on how to determine this size in the literature; however, some scholars recommend a sample group above 300 or the collection of data equal to the number obtained by multiplying the number of items by five or ten (Çokluk et al., 2014). The sample of this study consists of adolescents aged between 11 to 18 years. Two different groups were included in this study for the exploratory factor analysis (EFA) during the scale development process and the confirmatory factor analysis (CFA) and other analyses in the second section of this study. A total of 560 individuals aged between 11 to 18 years (x = 15.17) were reached for the exploratory factor analysis (EFA) in the scale development process. In this step, 314 (56.1%) female and 246 (43.9%) male students were included in this study. The second section of this study, where the confirmatory factor analysis (CFA) and other analyses were conducted, was based on the data obtained from 350 (56.8%) female students and 266 (43.2%) male students, totaling 616 students. The age range of this sample ranges from 11 to 18 (x = 15.29).

Data Collection Tools

The Trait-Anxiety Scale

The State-Trait Anxiety Scale is a scale developed by Spielberger et al. (1970) and consists of Likert-type questions. The Turkish version of this scale was performed by Öner and Le Compte (1983). This scale measures the state and trait-anxiety levels separately through a total of 20 questions. The scale is a 4-point Likert type measurement tool. Items 1, 2, 5, 8, 10, 11, 15, 16, 19 and 20 are scored in reverse. The highest score that can be obtained from the scale is 80, and the lowest score is 20. High scores indicate high anxiety levels; low scores indicate low anxiety levels. The reliability coefficients of the measurement tool are between 0.83 and 0.87. In this study, the Cronbach Alpha internal reliability coefficient was found to be 0.84. This study draws on the part of this scale that measures trait-anxiety levels only.

The Process of Developing the Perceived Parental Self-Efficacy Scale

The scale development efforts started with the generation of a pool of items. To do so, a literature review on the subject about which this scale development study was performed was conducted, and a pool of items was generated. In line with the consensus in the literature, the initial pool of items generated in this study was four times as large as the number of items actually needed. Then, the pool was submitted to two academics in the field of Guidance and Psychological Counseling, who were asked to examine it for content validity. Following that, the questions in the item pool were shared with the Turkish field expert for the correction of any linguistically incomprehensible expression or any issue with the expressions.

Consequently, the item pool consisted of a total of 63 statements, 57 of which were positive and 16 were negative. The items, scored on a five-point Likert type, were included in a form for the mother and the father to answer separately.

Procedures/Data Collection Process

In the first step of this study, the students were informed of the purpose of this study and the Perceived Self-Efficacy Scale, which was in the form of a pool of items, before the data were collected on a volunteer basis from them through an electronic form. As this study was performed in two steps, the data were collected gradually based on the results of the analyses conducted following the Ethics Committee Approval from the Scientific Research and Publication Ethics Committee of Hatay Mustafa Kemal University in the Field of Social and Human Sciences between the first semester of the 2021-2022 academic year and the first semester of the 2022-2023 (article dated 23.06.2021 and numbered 09).

Data Analysis

The analysis of the data in this study was performed in two steps. Based on the data obtained in the scale development process in the first step, the exploratory factor analysis of the scale was conducted via SPSS Statistics 22.0. In the second step, information on the scales and the purpose of this study was provided, and data were collected using an electronic form on a volunteer basis. The collected data were entered into SPSS Statistics 22.0 and AMOS 23.0 to perform the confirmatory factor analysis and other statistical analyses. The items containing negative expressions were reversely coded.

As part of the data analyses in the scale development process, first the exploratory factor analysis was applied. The missing and extreme values were determined and removed from the data set; the remaining 560 data were used for the analyses. Prior to the analyses on the construct validity of the scale, the KMO and Bartlett's analyses were performed to check whether the necessary conditions for the factor analysis were met.

The results of the analyses revealed KMO= 0,895 for the PPSES form for mothers and KMO= 0,906 for the PPSES form for fathers. A KMO value of .80 to.90 indicates that the sample size is sufficient (Çokluk et al., 2014). The Bartlett's Test of Sphericity was used to test the assumption of multivariate normality in the data, and it was found that the assumption was met ($p<.001$). As these imply that the necessary assumptions were met, the exploratory factor analysis was performed.

Exploratory factor analysis is a model intended to reveal the interrelationships between the unknown latent variables and observed variables (Çokluk et al., 2014). The principal component analysis was used in the factor analysis. The principal component analysis is widely applied as a factorization technique, particularly in the social sciences. In the principal component analysis, a factor loading should be more than 0.30 and the difference between the two load values should be at least 0.10. (Büyüköztürk, 2007). During the analyses, the factor loadings were also examined through the Varimax vertical rotation method. The above-mentioned criteria were taken into account before the analyses were conducted. The results of the analyses pointed to a 4-factor and 22-item scale.

In the second section of this study, the confirmatory factor analysis and other analyses were applied on the scale developed. To do so, the data on a total of 637 individuals were examined to remove the missing and extreme values. The analyses were conducted based on the remaining 616 data. The confirmatory factor analysis was applied using the maximum likelihood technique. It is recommended to report more than one compliance value in presenting the findings in the studies conducted with the structural equation model (Kline, 2005). Moreover, the criteria used in the evaluation of the fit indices proposed by different researchers were taken into account in the evaluation of the findings (Kline, 2005; Şimşek, 2007). Lastly, in the analysis of the data, as the measurement tools used showed normal distribution, stepwise regression analysis was used to determine how much of the variance the perceived parental self-efficacy would explain the trait-anxiety levels of the students.

Findings

Findings on the Validity of the Perceived Parental Self-Efficacy Scale

The construct validity analyses (EFA and CFA), item-total correlations and item distinctiveness were examined for the validity of the Perceived Parental Self-Efficacy Scale (the PPSES), and the findings are presented below.

Construct Validity

The results of the exploratory factor analysis: To test the validity of the construct of the PPSES, first the exploratory factor analysis was applied. Prior to the exploratory factor analysis, the necessary assumptions for the analysis were tested. The KMO and Bartlett's tests were performed: KMO= 0,895; Bartlett's test value was $\chi2$= 13558,133; sd=1953 (p=0,000) for the PPSES form for mothers, and KMO= 0,906; Bartlett's test value $\chi2$= 13408,3353; sd=1953 (p=0,000) for the PPSES form for fathers. In line with these findings, the factor analyses were initiated on the pool of 63 items.

As part of the exploratory factor analysis, the principal component analysis was performed first. Also, the scree plot indicated that the scale would have a multi-factor structure. As it was understood that the scale would have a multi-factor structure, the Varimax vertical rotation method was conducted. The items with a load below .32 and the difference between the two load values less than .10 were removed sequentially. Accordingly, a total of 41 items in the pool of items in the forms for mothers and for fathers of the scale were removed from the scale; the remaining 22 items were reviewed by the experts who previously examined the pool to evaluate the content validity of these items based on the literature. Once the field experts reported that the content validity of these 22 items was established, other analyses were carried out.

Following that, it was concluded that there were 4 factors related to the form for mothers and fathers in the 22-item scale. The KMO and Bartlett's tests were performed on this version of the scale: KMO= 0,871; Bartlett's test value was $\chi 2$= 3557,816; sd=231 (p=0,000) for the PPSES form for mothers, and KMO= 0,865; Bartlett's test value $\chi 2$= 3135,477; sd=231 (p=0,000) for the PPSES form for fathers. After the application of the Varimax method on the measurement tool, the factor loads for each form was found between 0,412 and 0,757 (the PPSES form for mothers), 0,466 and 0,724 (the PPSES form for fathers). The total variance explained was 48,649% for the PPSES form for mothers and 47,296% for the PPSES form for fathers. Then, the factors were named as seen in Table 1 below.

Table 3 offers findings on the item loads of the remaining 22 items in the scale as well as the eigenvalues of the factors and the extent to which they explained the variance.

Table 1. The item loads and eigenvalues of the factors by the factors of the scale items and the results of the variance

	The PPSES - Form for Mothers						**The PPSES - Form for Fathers**				
	Common variance	F1	F2	F3	F4	Item	F1	F2	F3	F4	Common variance
F1 - Personal Life	.556	.735				5	.710				.532
	.556	.726				7	.593				.355
	.535	.682				4	.671				.500
	.379	.470				2	.466				.406
	.210	.412				1	.574				.402
F2 - Communication	.470		.644			33		.600			.430
	.433		.630			37		.681			.474
	.424		.619			25		.575			.352
	.462		.617			23		.547			.442
	.411		.563			34		.612			.410
	.478		.525			21		.633			.575
F3 - Academic Support	.636			.757		46			.724		.576
	.589			.745		47			.702		.530
	.475			.655		51			.647		.473
	.474			.609		50			.556		.412
	.459			.586		54			.617		.449
F4 - Emotional	.614				.739	19				.684	.564
	.600				.696	20				.700	.579
	.475				.656	32				.636	.471
	.514				.582	29				.699	.560
	.454				.552	28				.657	.500

.520				.510	18				.501	.414
Eigenvalue	2.950	2.748	2.586	2.419		Eigenvalue	3.192	2.756	2.470	1.987
Explained Variance	13.407	12.49	11.755	10.997		Explained Variance	14.507	12.529	11.226	9.034

As seen in Table 1, the "Personal Life" factor of the scale includes 5 items, and the factor loads of the PPSES for mothers varied between 0,412 and 0,735, whilst the factor loads of the PPSES for fathers varied between 0,466 and 0,710. The eigenvalue of this factor in the PPSES for mothers within the scale as a whole was 2,95 and its contribution to the overall variance was is 13,407%; The eigenvalue of this factor in the PPSES for fathers within the scale as a whole was 3,192 and its contribution to the overall variance was 14,507%. The "Communication" factor of the scale includes 5 items, and the factor loads of the PPSES for mothers varied between 0,525 and 0,644, whilst the factor loads of the PPSES for fathers varied between 0,547 and 0,681. The eigenvalue of this factor in the PPSES for mothers within the scale as a whole was 2,748 and its contribution to the overall variance was is 12,49%; The eigenvalue of this factor in the PPSES for fathers within the scale as a whole was 2,756 and its contribution to the overall variance was 12,529%. The "Academic Support" factor of the scale includes 5 items, and the factor loads of the PPSES for mothers varied between 0,586 and 0,757, whilst the factor loads of the PPSES for fathers varied between 0,566 and 0,724. The eigenvalue of this factor in the PPSES for mothers within the scale as a whole was 2,586 and its contribution to the overall variance was is 11,755%; The eigenvalue of this factor in the PPSES for fathers within the scale as a whole was 2,470 and its contribution to the overall variance was 11,226%. The "Emotional Support" factor of the scale includes 5 items, and the factor loads of the PPSES for mothers varied between 0,510 and 0,739, whilst the factor loads of the PPSES for fathers varied between 0,501 and 0,700. The eigenvalue of this factor in the PPSES for mothers within the scale as a whole was 2,419 and its contribution to the overall variance was is 10,997%; The eigenvalue of this factor in the PPSES for fathers within the scale as a whole was 1,987 and its contribution to the overall variance was 9,034%.

The results of the confirmatory factor analysis: It is reflected in the literature that different groups should be used for exploratory factor analysis and confirmatory factor analysis in scale development studies. For this reason, this study performs the confirmatory factor analyses with a different group. The results of the exploratory factor analysis yielded a 4-factor PPSES form for mothers and fathers. The data collected from 616 individuals in total were used to validate the first-order factor structures of both forms of the scale. The values obtained in the initial analyses of the PPSES for mothers and the PPSES for fathers were not considered sufficient. It was determined that no item in the scale was incompatible with the factor structure; the items in the same sub-dimension and therefore considered to be related to each other were modified considering the recommendations of the software. Accordingly, a four-factor structure for the scale was supported.

The confirmatory factor analysis (CFA) demonstrated that the compliance values for the PPSES for mothers were as follows: $\chi 2/df = 2,674$, $p<.001$, RMSEA= 0,052, GFI= 0,93, AGFI= 0,91, CFI= 0,92, NNFI= 0,90 and IFI= 0,92. The compliance values for the PPSES for fathers were as follows: $\chi 2/df = 2,972$, $p<.001$, RMSEA= 0,057, GFI= 0,92, AGFI= 0,90, CFI= 0,91, NNFI= 0,90 and IFI= 0,91. These values imply that the compliance values of the PPSES for mothers and fathers were acceptable. Figure 1 presents the model containing the standardized parameter estimates of the factors and items in the PPSES for mothers; Figure 2 shows the model for the PPSES for fathers.

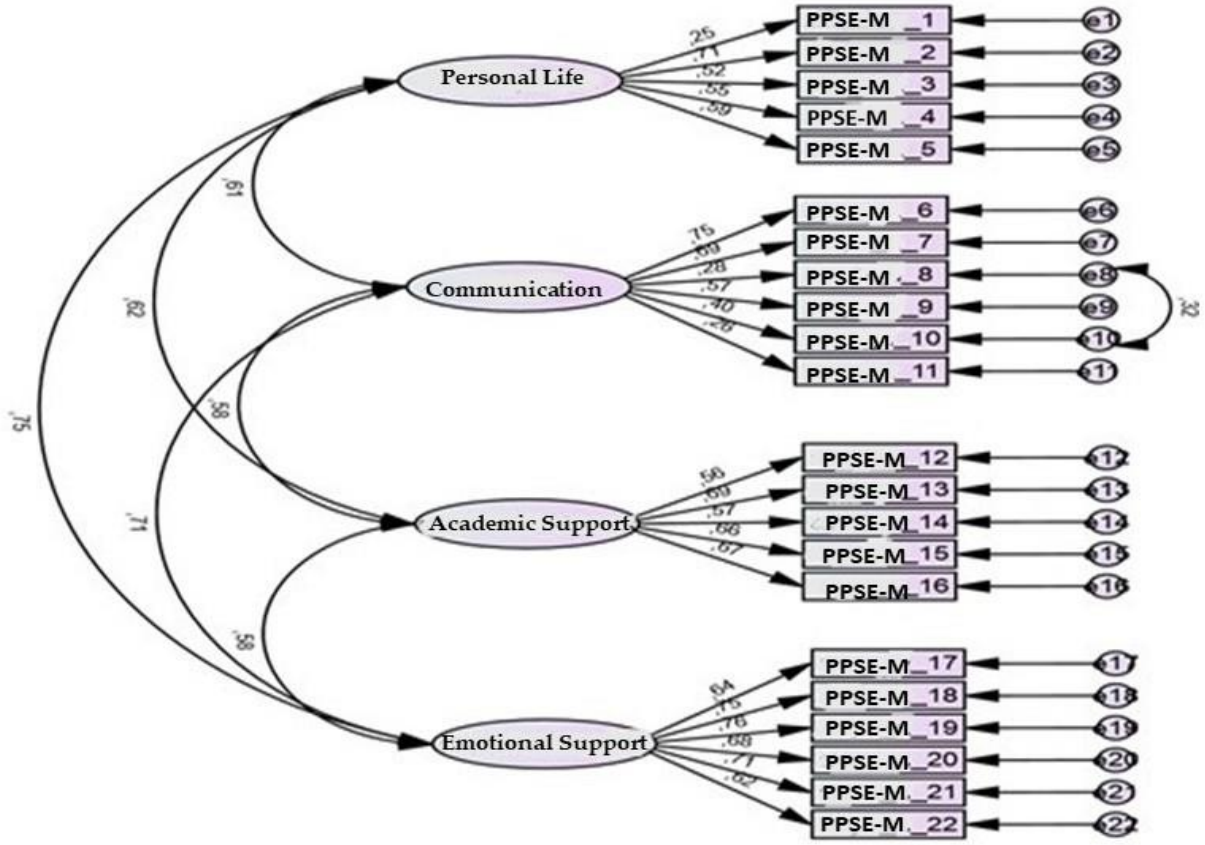

Figure 1. The First-Order Confirmatory Factor Analysis of the PPSES for Mothers - Standardized Path Coefficients

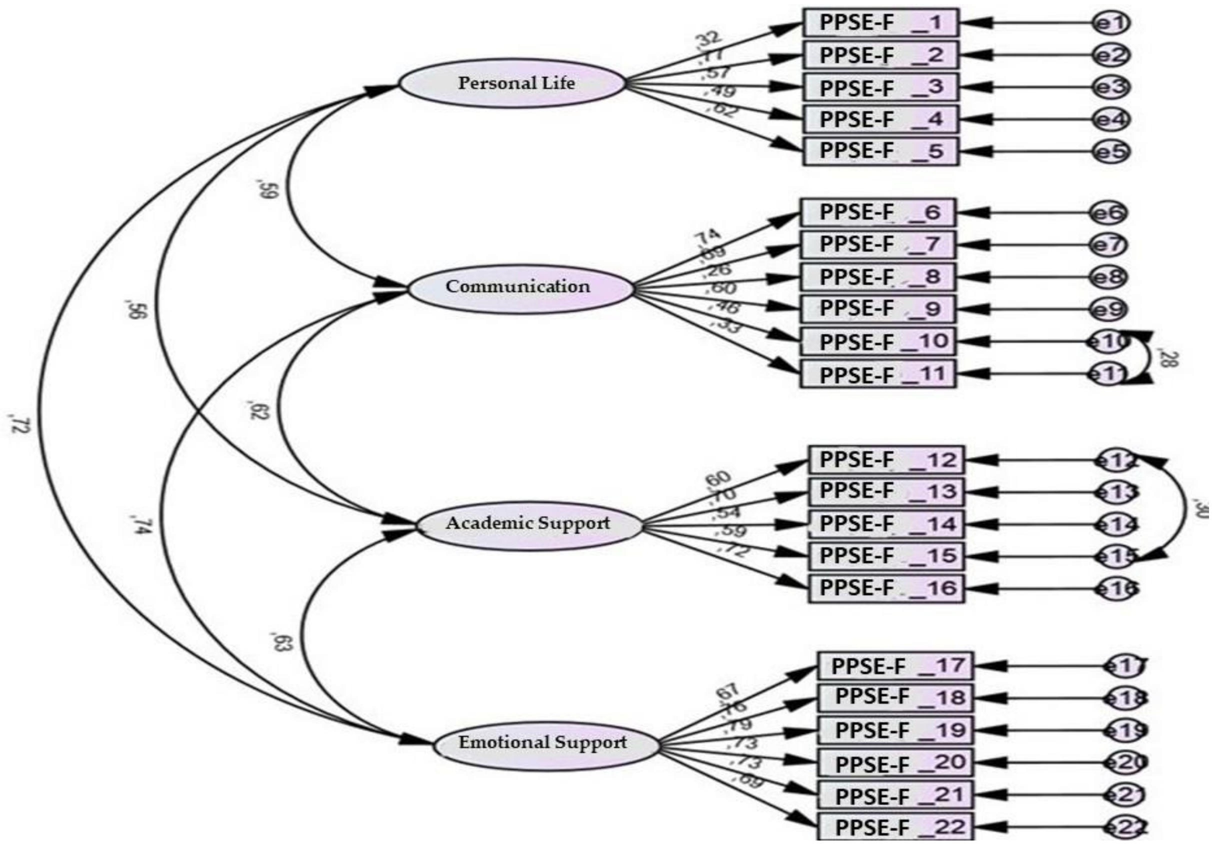

Figure 2. The First-Order Confirmatory Factor Analysis of the PPSES for Fathers- Standardized Path Coefficients

The second-order confirmatory factor analysis was applied to prove that the four factors of both forms of the scale, obtained by the first-order confirmatory factor analysis, together expressed the parental self-efficacy perceived as a meta-concept. For the second-order confirmatory factor analysis, the relations between the latent variables at the first level were taken into consideration. Thus, the variances explained by the high-order perceived parental self-efficacy variable at the first order were also considered.

The second-order confirmatory factor analysis found: χ2/df= 2,693, p<.001, RMSEA= 0,052, GFI= 0,93, AGFI= 0,91, CFI= 0,91, NNFI= 0,90 and IFI= 0,91 for the PPSES for mothers, and χ2/df= 3,150, p<.001, RMSEA= 0,059, GFI= 0,91, AGFI= 0,89, CFI= 0,90, NNFI= 0,90 and IFI= 0,91 for the PPSES for fathers. These fit values for both forms were within the acceptable range. Figure 3 presents the model containing the standardized parameter estimates of the factors and items in the PPSES for mothers; Figure 4 shows the model for the PPSES for fathers.

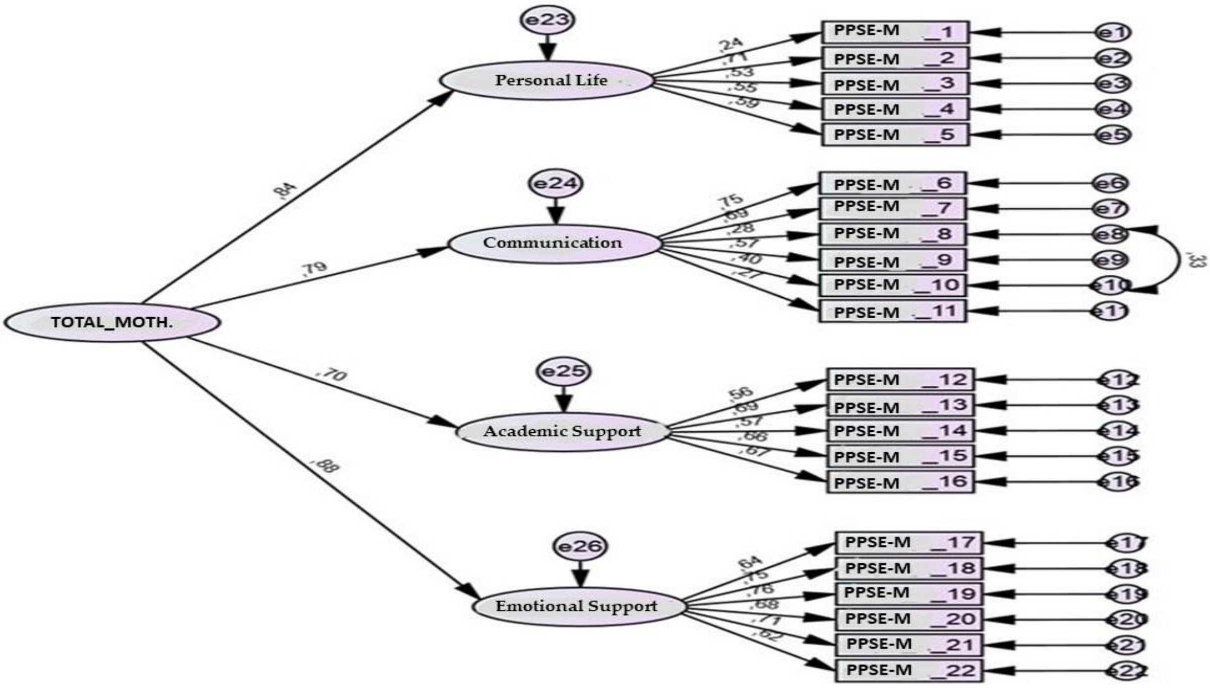

Figure 3. The Second-Order Confirmatory Factor Analysis of the PPSES for Mothers - Standardized Path Coefficients

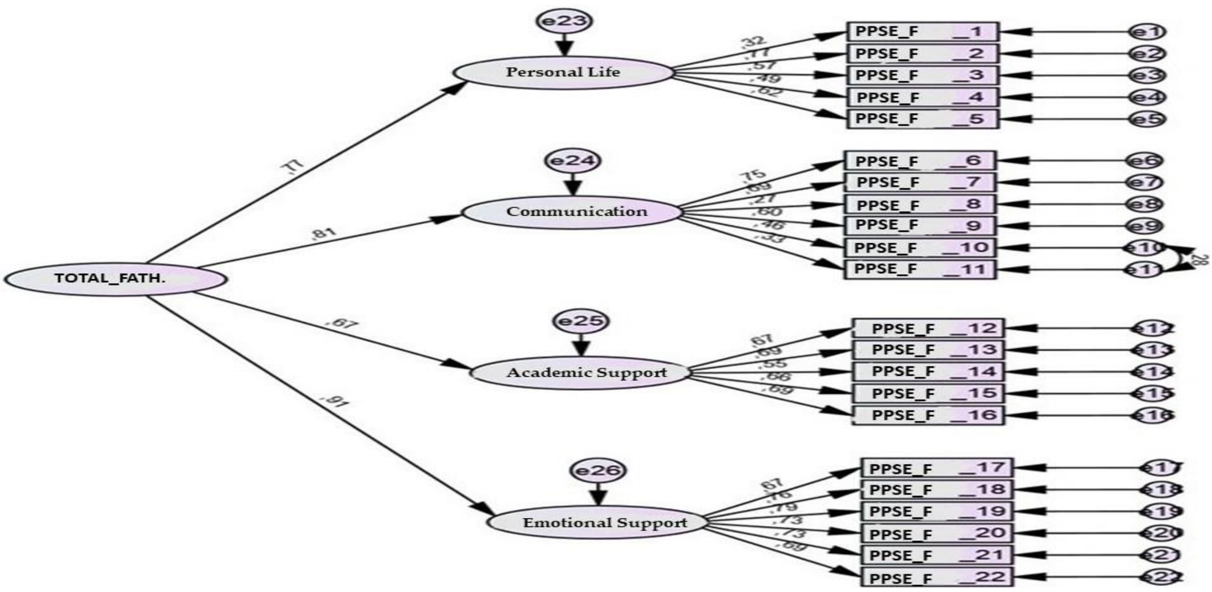

Figure 4. The Second-Order Confirmatory Factor Analysis of the PPSES for Fathers - Standardized Path Coefficients

Table 2 indicates the calculations related to the discrimination power of the items in the measurement tool. The raw scores obtained from each item were ranked, and then the lower 27% and upper 27% segments that each consisted of 166 people were determined. Table 2 also offers findings on the discrimination power.

Table 2. Distinctiveness levels of the items (sub-dimensions for mothers and fathers)

Factor		PPSES _Mother t	PPSES _Father t
F1-Personal Life	1	-4,857***	-4,266***
	2	-14,239***	-19,240***
	3	-9,557***	-10.809***
	4	-8,919***	-9,095***
	5	-10,659***	-15,722***
F2 - Communication	6	-15,429***	-22,476***
	7	-13,716***	-17,703***
	8	-7,204***	-7,289***
	9	-11,456***	-14,314***
	10	-7,364***	-11,051***
	11	-6,205***	-9,662***
F3 - Academic Support	12	-10,337***	-13,599***
	13	-15,635***	-18,170***
	14	-11,984***	-14,144***
	15	-11,590***	-14,022***
	16	-14,389***	-19,230***
F4 - Emotional support	17	-14,021***	-20,195***
	18	-15,029***	-21,671***
	19	-13,589***	-18,578***
	20	-13,672***	-17,253***
	21	-14,992***	-17,856***
	22	-13,926***	-18,913***
Total		-66,521***	-48,185***

Table 2 shows that the t values of the PPSES for mothers varied between -4,857 and -15,635, and the t values of the PPSES for fathers ranged between -4,266 and -21,671. The t value for the scale as a whole was calculated as -66,521 and -48,185, respectively. The level of each identified difference was found to be significant ($p<0,001$). Thus, it seems that both the scale as a whole and each of the items of the scale met the threshold of distinctiveness.

Item Total Correlations

Table 3 offers the item-total correlations obtained for each item.

Table 3. Results of the Item-Total Correlation Analysis

	F1 Personal Life		F2 Communication		F3 Academic Support		F4 Emotional Support	
	M	**r**	**M**	**r**	**M**	**r**	**M**	**r**
PPSES_Mother	1	.211***	6	.582***	12	.398***	17	.573***
	2	.557***	7	.564***	13	.535***	18	.605***
	3	.382***	8	.252***	14	.464***	19	.573***
	4	.421***	9	.436***	15	.450***	20	.576***
	5	.463***	10	.329***	16	.509***	21	.586***
			11	.230***			22	.537***
PPSES_Father	1	.248***	6	.612***	12	.419***	17	.630***
	2	.579***	7	.554***	13	.535***	18	.647***
	3	.371***	8	.202***	14	.452***	19	.631***
	4	.323***	9	.462***	15	.426***	20	.627***
	5	.548***	10	.369***	16	.591***	21	.610***
			11	.300***			22	.603***

*** p<.001

As shown in Table 3, the item test correlation coefficients for the PPSES_Mother form varied between .211 and .557 for the first factor, .230 and .582 for the second factor, .398 and .535 for the third factor, and .537 and .605 for the fourth factor. Each item had a significant and positive relationship with the overall factor (p<0,001). As for the PPSES_Father form, these coefficients ranged between .248 and .579 for the first factor, .202 and .612 for the second factor, .419 and .535 for the third factor, and .603 and .647 for the fourth factor. Each item had a significant and positive relationship with the overall factor (p<0,001). Büyüköztürk (2007) reported that items with an item-total correlation of .30 and above distinguish individuals well; items with a value between .20 and .30 can be used if deemed necessary. Table 4 demonstrates that 1st, 8th and 10th items in the scale form for mothers as well as 1st and 8th items in the scale form for fathers had a correlation value between .20 and .30 However, as the analyses revealed that these items supported the factor structure, they were not excluded from the scale. Considering all these, it seems that the item-total correlations of the scale were satisfactory.

Findings on the Reliability of the Scale

To test the reliability of the scale, internal consistency analyses were performed on the data. The procedures followed and the findings are presented below:

Internal Consistency Levels

The reliability of the items of the scale and the scale itself was tested using the Cronbach's Alpha reliability coefficient, the split-half correlation value, the Spearman-Brown formula and the Guttman split-half reliability formula. Table 4 presents the values of the reliability analysis for each factor and the scale as a whole.

Table 4. Internal Consistency Levels

	Factors	Number of Items	Split-Half Correlation	Spearman Brown	Guttman Split-Half	Cronbach's Alpha
PPSES_Mother	F1 Personal Life	5	.474	.643	.650	.640
	F2 Communication	6	.559	.717	.717	.690
	F3 Academic Support	5	.670	.802	.776	.764
	F4 Emotional Support	6	.692	.818	.818	.841
	Total	22	.650	.788	.780	.871
PPSES_Father	F1 Personal Life	5	.528	.691	.682	.692
	F2 Communication	6	.565	.722	.722	.705
	F3 Academic Support	5	.703	.825	.799	.787
	F4 Emotional Support	6	.760	.864	.864	.870
	Total	22	.651	.789	.771	.884

Table 4 shows that the Cronbach's Alpha values of the PSSES for mothers were, respectively, .64 for the factor personal life, .69 for communication, .76 for academic support, and .84 for emotional support. The total value of the scale was .87. The Cronbach's Alpha values of the PSSES for fathers were, respectively, .69 for the factor personal life, .71 for communication, .79 for academic support, and .81 for emotional support. The value of the scale as a whole was calculated as .88. Büyüköztürk (2007) argued that a Cronbach's Alpha coefficient of .70 and above is acceptable. According to Kayış (2010), a Cronbach's Alpha coefficient between .60 and .80 indicates a very reliable scale. In conclusion, given that the internal consistency coefficient of the factor "Personal Life" in the PPSES form for mothers was low, still acceptable and that the internal consistency coefficients of the other two factors and the scale as a whole were high enough, confidence in the ability of the scale to make consistent measurements can be established.

Section 2

In the second section of this study, the perceived parental self-efficacy of the students was examined by gender through the t-test based on the forms for mothers and fathers. Table 5 presents the results of this analysis.

Table 5. The t test results of the scores of the students on the perceived parental self-efficacy scale by gender

	Gender	N	x	S	sd	t	p
1. The PPSES - Form for Fathers	Female	350	81.05	16.41	614	1.135	.257
	Male	266	79.64	13.64			
2. The PPSES - Form for Mothers	Female	350	83.99	14.80	614	1.164	.245
	Male	266	82.66	13.14			

*The PPSES Perceived Parental Self-Efficacy Scale

Table 5 demonstrates that the scores of the students on the perceived parental self-efficacy scale on the form for fathers [t(614)= 1.135, p>.05] and on the form for mothers [t(614)= 1.164, p>.05] did not show a significant difference by gender.

Table 6. Results of the relationships between the variables, Cronbach's Alpha values and descriptive statistics

Variables	1	2	3
1. The Trait-Anxiety Scale	1		
2. The PPSES - Form for Fathers	-.38*	1	
3. The PPSES - Form for Mothers	-.41*	.66*	1
Average	46.68	80.45	83.42
Standard Deviation	9.54	15.29	14.11
Cronbach's Alpha	.83	.87	.88

*p<.001

The relationship between the scales in Table 6 implies a significant negative correlation between the trait-anxiety scale, and the PPSES form for fathers (r = -.38) and the PPSES form for mothers (r = -.41) (p<.001). In addition, a significant positive correlation was found between the PPSES form for fathers and the PPSES form for mothers (r = .66) (p<.001).

This study carried out multiple regression analysis to find the factors that predicted the trait-anxiety levels of the students in the form for mothers and the form for fathers in the perceived parental self-efficacy scale. Table 7 presents the results of the multiple regression analysis.

Table 7. Results of the stepwise regression analysis on the predictors of the trait-anxiety levels

Variables								
	B	SE_B	β	t	p	R	R^2	F
Regression coefficient								
The PPSES - Form for Fathers	-.120	.030	-.192	-3.947	.000	.44	.19	71.361*
The PPSES - Form for Mothers	-.191	.033	-.283	-5.820	.000			

*p<.001

As shown in Table, the results of the multiple regression analysis performed to ascertain the exploratory effect of the PPSES form for mothers and fathers on the trait-anxiety levels, indicated that the PPSES form for mothers and fathers together significantly explained about 19% of the total variance in the trait-anxiety scores of the students (p<.001). Based on the standardized regression coefficients (β), the order of importance of the predictor variables on the trait-anxiety levels was the PPSES form for mothers and the PPSES form for fathers. The results of the t-test on regression coefficients indicated that the PPSES form for mothers (t= -5.820, p<.001) and the PPSES form for fathers (t= -3.947, p<.001) were identified as significant predictors on the trait-anxiety levels (p<.001).

Conclusion and Discussion

This study was performed in two steps. The first step included the development of the Perceived Parental Self-Efficacy Scale to measure the parental self-efficacy levels through the perception of adolescents or their children. The psychometric properties of the measurement tool were determined, and the 22-item tool consists of 4 sub-dimensions of Personal Life (5 items), Communication (6 items), Academic Support (5 items) and Emotional Support (6 items). The finalized version of the scale has been established as an instrument for measuring the parental self-efficacy perceived by the individuals aged between 11-18 in the Turkish culture. In the second step of this study, the parental self-efficacy perceived by the adolescents aged between 11-18 from their mothers and fathers in the Perceived Parental Self-Efficacy Scale, which was developed in the first step, was found to significantly differ for the female participants. Also, the regression analysis found out that the trait-anxiety level was significantly predicted by perceived parental self-efficacy.

The psychometric properties of the parental self-efficacy scale perceived from the perspectives of adolescents that aligns with Turkish culture were established as valid and reliable, which is the first objective of this study. It is remarkable that there are only few measurement tools in the literature to measure parental self-efficacy; attempts have been made to fill such gap with measurement tools designed for parenting skills, perceptions and attitudes. What's more, it is reported that no measurement tool to measure parental self-efficacy specific to the adolescent period is available in the literature (Witkowski et al., 2017; Jones and Prinz, 2005). Given the personality development in adolescence, the support adolescents receive or perceive from their families shape all their developmental areas (Ardelt and Eccless, 2001). Besides, according to Belsky et al. (2001), the level of satisfaction that adolescents receive from their families can allow them to be able to solve problems in the future, fulfill their responsibilities, and even more, they can carry the satisfaction they receive from their families to future generations. Considering the abstract thinking styles of adolescents and their desire to have a say in family relations, their perceptions of their parents are also considered as an issue that needs to be addressed. From this standpoint, a measurement tool for the perceived parental self-efficacy for adolescents, especially one that aligns with our own culture, will perhaps help adolescent-centered family life.

The measurement tool developed in this study differs from other measurement tools in that the self-efficacy levels of the parents are determined not by the statements answered by the parents, but by the adolescents. Allowing the children to be involved in family decisions and preventing the parents from being the only ones who have a say in the family would greatly strengthen family relationships, and consequently boost the self-efficacy levels of parents. It is acknowledged that adolescents who are satisfied with their family life and the approach of their parents are more adaptable and have higher self-esteem in their post-family social life (Gilman, 2001; Gilman and Huebner, 2000). For this reason, due to the nature of this measurement tool, adolescents or children are asked about the self-efficacy levels of their parents, which may enable them to become more involved in family relationships and aware of these relationships. Furthermore, the availability of a measurement tool that can provide insights into the parental self-efficacy levels through the perception of the child or the adolescent, will hopefully contribute to the field.

Another peculiarity of the Perceived Parental Self-Efficacy Scale developed in this study is that it features a sub-dimension related to the perceived personal life of the parents, unlike other measurement tools. Bandura (2009) argued that the basic experiences associated with being able to act independently, making plans, and being motivated, which are the resources of self-efficacy influence the physical emotional state linked to emotional self-sufficiency and taking care of one's health. From this point of view, it is not surprising that an individual with parental self-efficacy has a harmonious and satisfying life. In addition, Caprara et al., (2004) and Ardelt and Eccles (2001) stated that spousal harmony and the consistency of the parents both internally and in their relationships have an effect on self-efficacy levels. These being said, it is reasonable to argue that parenting is not only about taking care of the child, but also about being self-sufficient in personal life. The inclusion of a dimension related to the personal life of parents in the measurement tool in this study will hopefully fill the scholarly gap in research on parents and add to the existing literature.

The Perceived Parental Self-Efficacy Scale developed in this study has both a form for mothers and a form for fathers. It is remarkable that the existing measurement tools on parental self-efficacy are intended to be answered by the mother only (Coleman and Karraker, 2000), or by the father only (Sevigny et al., 2016) or by both of them. The measurement tool in this study provides insights into the perceived self-efficacy of the parents together and the self-efficacy of the mother and the father separately. This makes it a versatile instrument.

This study concluded that the parental self-efficacy by the adolescents did not differ by gender. In other words, the boys and the girls in this study perceived the self-efficacy of their parents at the same level. Similarly, Sansom (2010) highlighted that parenting dynamics incorporate gender-specific roles, and these do not change later by gender. Pruett and Pruett (2009) reported that children adopt roles related to each of their parents, and then view their parents as equal partners when these roles are fulfilled. For that reason, the reason why there was not a significant difference in the perceived parental self-efficacy by gender may be because the socially-assigned roles of parents are fulfilled by them.

The final findings of this study emphasized that the trait-anxiety of the adolescents was predicted by the scores on the Perceived Parental Self-Efficacy Form for Mothers and the Perceived Parental Self-Efficacy Form for Fathers in order of importance. According to Jackson (1998), young people who are encouraged to communicate well with their parents feel better emotionally. It is further known that establishing open and close relationships with adolescents as their parents are effective in strengthening their social and emotional skills, helping them cope with life problems, increasing the quality of their adulthood in the future and being psychologically healthy (Ben-Zur, 2003; Best et al., 1997). Besides, confidence given by parents to their children supports their belief in family dynamics and allows them to be more transparent (Hess et al., 2004). Spending active time with children strengthens family belonging (Albenese et al., 2008), and providing academic support to children boosts their academic success, and ensures that the mother and the child experience less anxiety (Çapulcuoğlu and Gündüz, 2013; Hess et al., 2004; Wolfradt et al., 2003). Similar to this, Erkan (2002) determined that adolescents with high levels of social anxiety, which is a part of trait-anxiety, are exposed to negative parental attitudes. In short, also in consideration of other studies, it is clear that the perceived self-efficacy levels of parents are affected by the trait-anxiety levels of their children.

Based on the results of this study, more measurement tools that align with the Turkish culture can be designed for age groups other than adolescents. Also, taking into account that the parental self-efficacy perceived by girls and boys may differ by gender, further studies may focus on determining the psychometric properties of the measurement tools specific to this difference. As with any quantitative research, the characteristics to be measured in this study are limited to the scale. Also, research drawing on qualitative methods can be conducted to support the findings of this study. Building on the finding that the trait-anxiety predicts the perceived parental self-efficacy, future research may develop measurement tools to control anxiety both for the parents themselves and their children or investigate it. In this measurement tool, the discipline sub-dimension did not adapt. Discipline sub-dimension can be created by developing appropriate items in other parental self-efficacy measurement tools.

Statement of the Author(s)

Ethics Committee Decision: The Ethics Committee Approval from the Scientific Research and Publication Ethics Committee of Hatay Mustafa Kemal University in the Field of Social and Human Sciences (article dated 23.06.2021 and numbered 09)

Declaration of conflict: There is no conflict of interest.

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EK.1: ALGILANAN EBEVEYN YETKİNLİK ÖLÇEĞİ

ANNEM İÇİN					**ALGILANAN EBEVEYN YETKİNLİK ÖLÇEĞİ**		**BABAM İÇİN**				
HİÇ KATILMIYORUM	**KISMEN KATILMIYORUM**	**KARARSIZIM**	**KISMEN KATILIYORUM**	**TAMAMEN KATILIYORUM**	Sevgili Öğrenciler; aşağıdaki maddeler ebeveynlerinizin (anne/babanızın) size karşı tutumlarını ifade etmektedir. Ebeveyninizin (anne / babanızın) aşağıdaki maddelere **göre ne kadar yetkin olduğunu düşünerek; (1) hiç katılmıyorum, (5) tamamen katılıyorum arasındaki rakamlara denk gelecek şekilde** cevaplarınızı işaretleyiniz. Maddeleri, lütfen anneniz ve babanız için ayrı düşünerek cevaplayınız. Anne baba birlikte yaşamıyor ise kimle yaşıyorsanız sadece ona göre cevaplayınız.		**HİÇ KATILMIYORUM**	**KISMEN KATILMIYORUM**	**KARARSIZIM**	**KISMEN KATILIYORUM**	**TAMAMEN KATILIYORUM**
1	**2**	**3**	**4**	**5**	**MADDELER**		**1**	**2**	**3**	**4**	**5**
					1	Ebeveynimin (anne/babamın) ev dışında görüştüğü arkadaşları vardır.					
					2	Ebeveynimi mutlu birisi olarak bilirim.					
					3	Ebeveynim insanlarla kolay iletişime geçer.					
					4	Ebeveynim ev dışında rahatsız olduğu durumlarda hakkını savunur.					
					5	Ebeveynlerim ailemizle ilgili bir sorunla karşılaştıklarında birlikte çözerler					
					6	Ebeveynim benimle ilgili hoşlanmadığı durumları beni kırmadan yansıtır.					
					7	Ebeveynime sorunlarımı anlatırken yargılandığımı hissetmem.					
					8	*Ebeveynim beni başkalarıyla kıyaslar.					
					9	Evde benimle ilgili bir sorun olduğunda ebeveynim sesini yükseltmeden konuşur.					
					10	*Ebeveynimle iletişim kurduğumda bana karşı baskıcı olduğunu hissederim.					
					11	*Bir sorun yaşadığımda ebeveynim olaya tek taraflı bakar.					
					12	Ebeveynimin öğretmenimle iş birliği yaptığını / görüştüğünü bilirim.					
					13	Ebeveynim okulum ile ilgili faaliyetlere katılmada isteklidir.					
					14	Ebeveynim evde yemek saati, misafir davet etme gibi durumlarda ders çalışma programımı göz önüne alır.					
					15	Ebeveynim okul rehberlik servisiyle iletişim halindedir.					
					16	Ebeveynim okuldaki sosyal etkinliklere katılmam konusunda beni teşvik eder.					
					17	Zor zamanlarımda ebeveynim yanımda olma konusunda yeterlidir.					
					18	Ebeveynim beni sevdiğini ifade eder.					
					19	Ebeveynimin beni sevdiğini davranışlarından anlarım.					
					20	Ebeveynim bana güvendiğini hissettirir.					
					21	Ebeveynimi üzen bir davranış yapsam bile onun tarafından sevildiğimi hissederim.					
					22	Ebeveynim benimle ilgili olumlu düşüncelerini yüzüme karşı ifade eder.					

* Tersten puanlanan maddeler

BOYUT	MADDELER
KİŞİSEL YAŞAM	1,2,3,4,5,
İLETİŞİM	6,7,8,9,10,11
AKADEMİK DESTEK	12,13,14,15,16,
DUYGUSAL DESTEK	16,17,18,19,20,21,22

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Innovation Scale in Educational Organizations: Development, Validity and Reliability Study

Research Article

Ali DEMIR[1], Cemal AKUZUM[2]

[1]*Dicle University, Institute of Educational Sciences, Diyarbakır, Türkiye* 0000-0002-5120-165X

[2]*Dicle University, Faculty of Education, Department of Preschool Education, Diyarbakır, Türkiye* 0000-0001-8011-6027

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ABSTRACT

In the knowledge age of mankind, one of the most important organisations in society can be said to be educational organizations that produce knowledge or schools in general. That's because schools are organisations that process, produce, present information and spread it across society. In achieving success in education organisations, the role of teachers with an innovative structure and a high perception of innovation is important. It is therefore thought that identifying teachers' perceptions of innovation will contribute to innovation-related research. Moving from the information in question, the purpose of this research is to develop a scale that will enable measuring teacher perceptions of innovation in education organisations. Research data by measuring tool consisting of 39 substances; from sample groups where 120 teachers were included for pre-application and 219 teachers for the original application. After the Exploratory Factor Analysis (EFA) was conducted, 3 subscales and 32 substances were obtained. The scale accounts for 70.92% of the total variance. " The total Alpha ratio of the scale was found to be .962. The structure of the resulting scale with EFA, Confirmatory Factor Analysis (CFA), has been tested and verified. Based on the results revealed, the scale can be said to be a valid and reliable data collection tool.

Keywords:

Educational organizations, innovation, innovation scale in educational organizations

Introduction

Throughout history, people who cannot afford all their aspirations, needs and desires have come together and formed organisations, needing other people to be able to afford them. Globalization as a result

[1] Corresponding author's address: Dicle University
Telephone: +904122411000
e-mail: alidemir_6373@hotmail.com
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of changes in information and communication technology has led to the relentless change and development of organisations as well as economic life. Innovation, one of the effective tools that enables organisations to fight against their competitors in a climate of intense competition that has formed together with globalization today, has become very important for organisations to respond to the changing desires and needs of individuals (Ateş, 2020; Döner & Akyüz, 2016; Tabancalı, 2000).

The first foundations of the concept of innovation, which is mostly tackled in conjunction with technology, were laid by Joseph Schumpeter, an economist. In his work on economic development theory, Schumpeter expressed this concept as a key element of economic development outside the context of technology, adding that innovation should take the innovative individual into its center by taking into account the social field (Ateş, 2020; Bardakçı, 2019; Fidan, 2019). Schumpeter considers innovation as activities such as the introduction of a new product, the introduction of a new production method, developing new resources for the supply of raw materials or semi-goods, and the creation of a new organizing process ((Esen & Çetin, 2012; Işık & Kılınç, 2016).

Innovation

Innovation is derived from the Latin word "innovatus," and the English equivalent of "innovation" means turning an idea into improved goods or services (Altun, 2008; Türk Sanayicileri ve İş İnsanları Derneği [TÜSIAD], 2003). Although innovation and newness are interchangeable, Drucker (1999) stated that mixing innovation with newness is the biggest mistake to be made. In Turkish, these two concepts are used in the same sense, and the (Türk Dil Kurumu [TDK], 2021) describes innovation as "newness." The concept of innovation in field writing: developing existing products and processes, finding new methods and abandoning old ones (Matthews, 2003), new ideas developed by the organization in its output, structure and processes (Damanpour, 1991), any method, policy, structure, process, product and market opportunity perceived as new (Nohria & Gulati, 1996), the process of being able to implement sustainable competitive advantages by converting them into new ideas and mainstreaming them (Flynn, Dooley, O'Sullivan & Cormican, 2003), the process involving the implementation and integration of new ideas in organizations by turning them into a new product or service (Ramadani & Gerguri, 2011), the new way to put things forward (Pla-Barber & Alegre, 2007), taking risks by stepping outside of what exists (Demirel & Seçkin, 2008) is defined as making science and technology useful to the community (TÜSIAD, 2003).

Innovation entered the realm of many disciplines and was defined in various ways by different perspectives, which prevented a common definition in field writing. But with globalization, changes in the economic, social and cultural spheres can also be said to standardize concepts of these areas. Although there are certain standard definitions concerning innovation, the internationally valued definition is the definition in the Oslo Guidelines co-authored by the Organisation for Economic Cooperation and Development (OECD) -The European Commission (Ateş, 2020; Oslo Klavuzu, 2005). The Oslo Guide defines innovation as the transformation of new and significantly improved product or process for organisations-product, process, organizational and marketing-into a new or improved method of production and marketing, whether in organizing or dealing with the external environment (Oslo Kılavuzu, 2005).

Innovation-Related Concepts

Innovation in the language of everyday life in Turkey; Although these concepts are expressed in concepts such as innovation, invention, discovery, newness, innovativeness and renewal, these concepts can be said to not fully encompass innovation in terms of researchers (Altan & Özpehlivan, 2019; Ateş, 2020; Esen & Çetin, 2012; Yavuz, Alben & Kaya, 2009). Since there is no common definition in Turkish field writing regarding innovation, it can be said that it would be more accurate to accept this concept as a technical word.

When innovation is considered as an organizational value creation of new and innovative ideas, it can be said that innovation and newness are different concepts, and this difference is due to value creation (Altan & Ozpehlivan, 2019; Drucker, 1999). The same could be said to apply to invention and innovation, and these two concepts do not mean the same. Invention is an activity to reach a new system, method, or tool that has not previously been discovered and improved by leveraging the information at hand. Innovation, on the other hand, is an activity in which existing inventions create value addition in practice, leading to innovations and enabling widespread use (Ateş, 2020; Sönmez, 2016). Roberts' (1987) definition of innovation: innovation = invention + usage process. In this respect, the use and application of "invention" can be considered innovation.

Creativity is defined as original ideas emerging and imagined on an individual level, while innovation is the transformation of these ideas into an economic value and into practice Creativity arises on an individual level, while innovation remains on an organizational level, so creativity builds the infrastructure of innovation (Amabile, 1996; Akyürek, 2020). This can be said that creativity and innovation activities complement each other, while in terms of organisational competition the innovation process involves creativity. Another concept, Research and development (R&D), is a step in the innovation process; so it's a prerequisite for innovation. Innovation covers activities after pre-production not included in R&D (Oslo Guide, 2005). Elçi (2006), stated that R&D is a work that promotes innovation but that people or organisations who participate in R&D activities must have entrepreneurial qualities for them to create value; the conversion of money into knowledge is R&D, and the conversion of information into money is innovation. Within this framework, we can say that R&D and innovation do not mean the same.

Another concept that is a promoter and complement to innovation is entrepreneurship. Exploring and developing opportunities to add value to life for entrepreneurship, start-ups or existing organisations; the most economical use and mobilization of resources (Brenkert, 2009; Marangoz, 2012). Innovation and entrepreneurship are complementary elements, as innovation constitutes one of the sources of entrepreneurship. Entrepreneurship plays an important role in the development of innovation and understanding of its economic value (Elbaz, Binkour & Majdouline, 2013). Drucker (1999) saw innovation as a specific tool of entrepreneurship; to create wealth, he considers it to be a mobilization of resources. This is where innovation is at the core of entrepreneurship; for a sustainable life in terms of organisations, these two concepts can be said to be an intertwined activity.

Innovation Resources

In conjunction with globalization, the state of organisational competition, technological innovation, sociological change, and reforms drive high-performance organizations to innovate. Drucker (1999) stated that there are seven sources of innovation resulting from natural and human intelligence, four internally and three externally. Sources of innovation for unexpected developments within the organization, situations of non-compliance, process requirements and changes in industry structures; changes in the demographic structure outside the organization, changes in perception and new information are sources of external innovation.

Unexpected successes and failures that give unplanned advantages to organisations but can become sources of success in the later process are the first of the internal sources of innovation (Odabaşı, 2004). Improvements that reach beyond the projected success can be expressed as unexpected successes, and developments that do not. Unexpected developments that create a significant resource for innovation in a crisis environment are also indicative of a unique opportunity (Drucker, 1994; Durna, 2000; Keleşoğlu, 2017). The dissonance that makes up the difference between what should be and what is happening is another factor that is sourcing the innovation work of organisations. Most of the time we may not understand or take into account the reason for this difference. But this state of affairs is symptomatic of an opportunity for the formation of innovation. Applications that we ignore or overlook in the process create discord, while taking advantage of it can become the starting point of innovation (Drucker, 1994, 1999). Innovation arising from the necessity of the process can occur in organisations when organisations can turn their needs arising in this process into opportunities when analyzing their domestic and international environment. Unlike other sources of innovation, process requirements start not with an event in the internal or external environment, but with a work done due process and focus on the task rather than focusing on the situation. Rapidly evolving industry structures, on the other hand, create resources for organizational innovation by providing unique new opportunities for those outside the industry while perceiving them as a threat to those within the industry (Drucker, 2002; Durna, 2002).

Data in demographic structure from the external sources of innovation leads to great opportunities for innovation, offering unique possibilities in front of service organizations as well as financial organizations as it reduces uncertainty and unknown in terms of innovation opportunities. By leveraging this data, organizations can regulate the actions they will take going forward and drive innovation strategies. Organisations have the ability to see the environment more clearly, thanks to demographic variables (Bardakçı, 2019; Bickes, 2011; Drucker, 1994, 2002). Drucker (2010) considers changes in demographic structure as the most reliable prediction factor and believes that these factors source innovation. Thanks to the proliferation of mass media in recent years and social media, music, sports, series, videos and movies have played an important role in changing our perceptions. While these seriously alter the perceptions, beliefs and attitudes of individuals, it has become indispensable for organisations to exploit these tendencies to achieve their goals (Bickes, 2011; Durna, 2002; Sönmez 2016). Connecting with customers by capturing changes in an individual's perceptions constitutes the new source of innovation for organisations (Wulfen, 2013). The basis of innovations -- especially radical innovations -- is based on new information (Luecke, 2008). Organisations, on the other hand, must constantly refresh their information resources to improve their knowledge (Kelly & Litmann, 2007). In this respect, Keyes (2006) points to new knowledge as the traditional source of innovation.

Types of Innovation

When examining the field summer on innovation, some researchers examined innovation for product, process, marketing, organizational and business innovation (Dealtry & Rademakers, 2005); some classify it as product, process, organizational and marketing innovation (Gadrey, Gallouj & Weinstein, 1995). Dumanpour (1991) divides the types of innovation into three as managerial and technical, product and process, radical and incremental innovation. The Oslo Guide states that there are four different types of innovation. These are: product, process, marketing and organizational innovation (Oslo Kılavuzu, 2005).

Product innovation is the customer enjoyment of a new product or service produced by organisations in terms of existing properties, or whose substantial features have been improved (Oslo Kılavuzu, 2005). *Process innovation*, developing applications that will enable fast and quality production of existing products at low cost; new to industry, organization, or department, and defined as tools, devices, and information in technology that converts product input into output (Cumming, 1998). *Marketing innovation* is innovation that includes significant development steps in designing and packaging the product, placement of the product, promotion or pricing of the product. This type of innovation involves activities aimed at boosting organisations' customers, profits and recognition by the external environment. *Organizational innovation* is the implementation of a new organizational method in the organization's business practices, workplace organization or external relations (Oslo Kılavuzu, 2005). Organizational innovation does not offer a new service or product but affects the production process of new products or services (Carayannis, Samara & Bakouros, 2015). *Incremental innovation* is the innovation that results from studies involving a number of development and remediation activities that take place step by step (Elçi, Karataylı & Karaata, 2008). Instead of improving the products and processes that are available, *radical innovation* is to be uncovered as converting a product or process that wasn't there before to benefit by designing and refreshing. (Bickes, 2011; Elçi, 2006).

Innovation Process

The innovation process covers activities that start with the formation of new knowledge to enhance systematic and quality, and continue with the discovery of new products and processes, and end with them turning a profit (Kotey & Sorensen, 2014). The innovation process at the organisation level can be referred to as a learning and development process in the corresponding field writing. The innovation process covers the stages leading up to commercial transformation, starting with a new idea, activated by training, R&D support structures in this process, technology transfer, management, marketing and investment (Konyalılar, 2020). When the innovation process is treated as a system, the innovation field summer is able to provide information on the methods they use to protect their connections and existing innovation with other actors while providing products/services to organisations. (Oslo Klavuzu, 2005). So the process that starts with the emergence of a new idea and goes back to the formation of elements that express a value in terms of the consumer/users is called the innovation process (Frambach & Schillewaert, 2002). The innovation process needs to be planned and anticipated rather than a process that occurs by chance. It can be said that a systematically implemented innovative behavior in terms of organisations can be more cultivated (Özdaşlı, 2006).

Flynn (1985), ranks the innovation process as the production of ideas, the development of ideas, and the implementation phase. Sattler (2011), divided this process into stages of the emergence of an idea, the development of the idea, and the commercialization of the idea. Elçi (2006), stated that opportunities to learn about the innovation process are seized, strategic choice, acquisition of necessary information, development of solutions and commercialization. This can be said that innovation refers to a continuity process, not a one-off-ends activity.

Education Organizations and Innovation

The most important element of education organisations, the readings, is important for the production, implementation and adoption of innovations. Innovation in our present day, where the inevitable change that happens with technology enters the center of our lives, is no longer part of life, it can be said, that it has become the position of life itself. Today, it can be said that the competition between the organisations by not only educational technology instruments is considered adequate, that innovative activities are created by forcing a continuous change in the way of products, services and production in the field of education, and that teachers who are the most important part of these organisations should not be indifferent to change and development.

While applying innovation in educational organizations, there are studies that increase academic performance by aiming to improve and develop learning and teaching processes; It can be said that the innovation in these organizations includes all activities aimed at improving the educational process. (Akarsu, 2022). It can be said that teachers who are a strategic part of education organisations being able to overcome innovation, which is a complex process, depends on their ability to think differently, be courageous and take risks when needed. Teachers who lack these abilities cannot be expected to carry out successful innovative activities. Teachers with high innovative skills and a perception of positive innovation can be said to be a factor in the success of innovation in education organizations by taking an active role.

Changes and developments in communication, information and IT technologies have altered organisational structures and potential for innovation in parallel. Innovation, which is instrumental in ensuring the continuity of today's organisations, also plays an important role in schools. Teachers' positive perceptions of innovation are one of the factors influencing their profession in high performance. Therefore, teachers' negative perceptions of innovation are thought to reduce teachers' performance. To perform highly, teachers need to be aware of their own perception of innovation. The history of innovation in international field education organizations dates back 5-10 years. In the summer of the international and national field, innovation research has been studied in educational organizations, but these research appears to be innovation or innovation research rather than innovation (Aslan & Kesik, 2016; Kılıçer & Odabaşı 2010; Koyuncu, 2018; Sarıçan, 2018). That this research is a scale improvement study; may contribute to field writing, unlike theoretical. In this context, the purpose of this work is to develop a scale for identifying teachers' perceptions of innovation that have become important in educational life and organisational life today. The development of a measurement tool to measure teachers' perceptions of innovation in education organizations could contribute to the data collection process for scientists who will conduct research in this area. Furthermore, the results of the research are expected to contribute to teachers' education and professional development. In this regard, the main purpose of this research is to develop a valid and reliable "Scale of Innovation in educational organizations."

Method

Research Model

This research, aimed at developing the "Scale of Innovation in Education Organizations," a scale that can be harnessed in measuring teachers' perceptions of innovation in education organizations, is a quantitative screening research. General scanning patterns are research approaches on a sample with the ability to represent or all of the universe to reach general judgment on the universe, which consists of numerous elements, to describe a situation that existed in the past or still (Karasar, 1995).

Sample and Universe

The universe of research consists of 39168 teachers serving in official secondary schools located in the Istanbul provincial centre during the 2022-2023 school year. Since two applications (pilot and original) were done in the research, the pilot included a simple unselected sampling method and 120 teacher sampling, while the original application included 219 teacher sampling with a simple unselected sampling method. The simple unselected sampling method is to give each sampling from the universe list the possibility of being selected equally. In other words, each unit is selected without selection, and selecting one unit does not affect the others (Büyüköztürk, Kılıç-Çakmak, Akgün, Karadeniz & Demirel, 2008). The research was based on volunteering and was conducted on 339 teachers, including 120 teachers in pilot practice and 219 teachers in actual practice. When examining the demographics of the participants where the original application was performed, 120 (54.8%) of the 219 participants were women, 99 (45.2%) men; 32 (14.6%) 21-30 years, 102 (46.6%) 31-40 years, 60 (27.4%) 41-50 years, 25 (11.4%) 51 years or older; 2 (.9%), 185 (84.5) undergraduate, 29 (13.2) master's, 3 (1.4) PhD graduate by education level; 21 (9.6) 1-5 years, 48 (21.9%) 6-10 years, 46 (21.0%) 11-15 years, 45 (20.5%) 16-20 years, 35 (16.0%) 21-25 years, 24 (11.0%) 26 years and above; 2 (.9%) 1-10, 18 (8.2%) 11-20, 18 (8.2%) 21-30, 36 (16.4%) 31-40, 66 (31.1%) 41-50, 79 (36.1%) 51 and above teachers.

Data Collection Tool

"The Scale of Innovation in Education Organizations" has been developed by researchers for this research. In the first phase, the corresponding field writing aimed at measuring education organization employees' perceptions of innovation was examined in detail to create a pool of measurement tools and theoretical resources developed. In the second phase, educational organisations have tried to determine dimensions that can measure innovation. After scanning the field in summer, 10 teachers were interviewed face-to-face, creating a pool of 87 substances. Information, opinions and recommendations from faculty members who are experts in educational management, training programmes and measurement assessment to ensure the scope validity and intelligibility of substances have been consulted on the substance pool established in the third phase. In line with expert examinations, 37 items were removed from the scale outline by editing the wording on the measurement tool. 15 teachers (3 "Turkish teachers) in secondary schools in 50 articles, which are organized in terms of expression. draft scale reduced to 39 items called "Innovation Scale in Educational Organizations," "I Disagree at All (1)," "Disagree (2)," "Partially Agree (3)," "Agree (4)," "Agree

(4)" "and" I Completely Agree (5) "are ranked in items to determine teachers' perceptions with a liquid type 5 rating; The purpose of the study to the scale was to make the scale, ready for implementation, with a directive to determine the expected answering guidelines from participants and clauses to obtain personal information (article 4).

Collection of Data

The data was collected in two phases. In the 2022-2023 school year, a draft measurement tool will be implemented by piloting teachers in secondary schools located in central districts of Istanbul province on September 15-30, 2022.

Data Analysis

The Expander Factor Analysis (AFA) and Confirmatory Factor Analysis (DFA) were conducted for the structure validity and reliability study of the scale in line with the data obtained to determine the extent to which the substances contained at the scale measured the properties. Identifying statistics were calculated in the analysis of the data, t-testing in unrelated samples and one-way variance analysis in unrelated measurements. Analysis of the data used SPSS 26, LISREL 8.8, and R Studio programs.

Findings

Findings on the Validity and Reliability of the Scale of Innovation in Education Organizations

As part of the research, the AFA and then the DFA were conducted to examine the structure validity. The findings available are provided below.

Results of Exploratory Factor Analysis (EFA)

127 teachers have been reached for pilot application of the scale. 7 scales determined to be inconsistent between the responses to the substances were excluded from the analysis and the Exploratory Factor Analysis (EFA) was conducted to examine the structure validity on the remaining 120 scales. Exploratory factor analysis provides clues to the reliability of substances and testing; an analysis by the researcher to determine and group those intended to measure the same trait from the specified substances (Büyüköztürk, 2006). Before the EFA was implemented; sample size, lost values, normality, linearity, multiple connectivity and singularity, and edge values were examined. First, lost values and extreme values were examined. The data set showed there was no lost value. Adverse items (M1, M2, M3, M4, M5, M6, M7, M8, M9 and M10) are encoded in reverse. Edge value review has been conducted. For single-variable tip values, scales and sub-dimensions were converted to the Z standard score, and there was no value outside the range of -3 to + 3. The Mahanalobis score for multi-variable tip values was calculated and found to have no less than 0.01 in value. Analysis was continued with data on 120 individuals.

It was determined using the Kaiser-Mayer-Oklin (KMO) sample proficiency test and the Barlett Sphericity test (BS) to test the globality (meaningfulness) of the correlation matrix for factor analysis. The fact that the KMO is higher than 0.60 and the Barlett test is meaningful indicates that the data is suitable for factor analysis (Büyüköztürk, 2006). According to the EFA result, the CMO test was calculated at .93 and shows that the sample size was perfectly sufficient. Barlett's globality test results show that the data meet the assumption of multiple normalcy ($p < .01$). In this case it was concluded that the data from the trial application of the scale was appropriate for conducting factor analysis.

To determine the number of factors, self-values are both a value considered in the variance calculation described by the factors and in deciding the number of factors. In factor analysis, factors with overall self-worth above 1 and 1 are considered important factors (Büyüköztürk, 2006). In line with this view, self-values have been studied. Factor analysis found 4 factors with a greater self-value than 1. When evaluated in conjunction with the Scree Plot, the graph appeared to run horizontally after the fourth factor. Based on the results of the factor analysis, the resulting Screen Plot Figure 1 is also given.

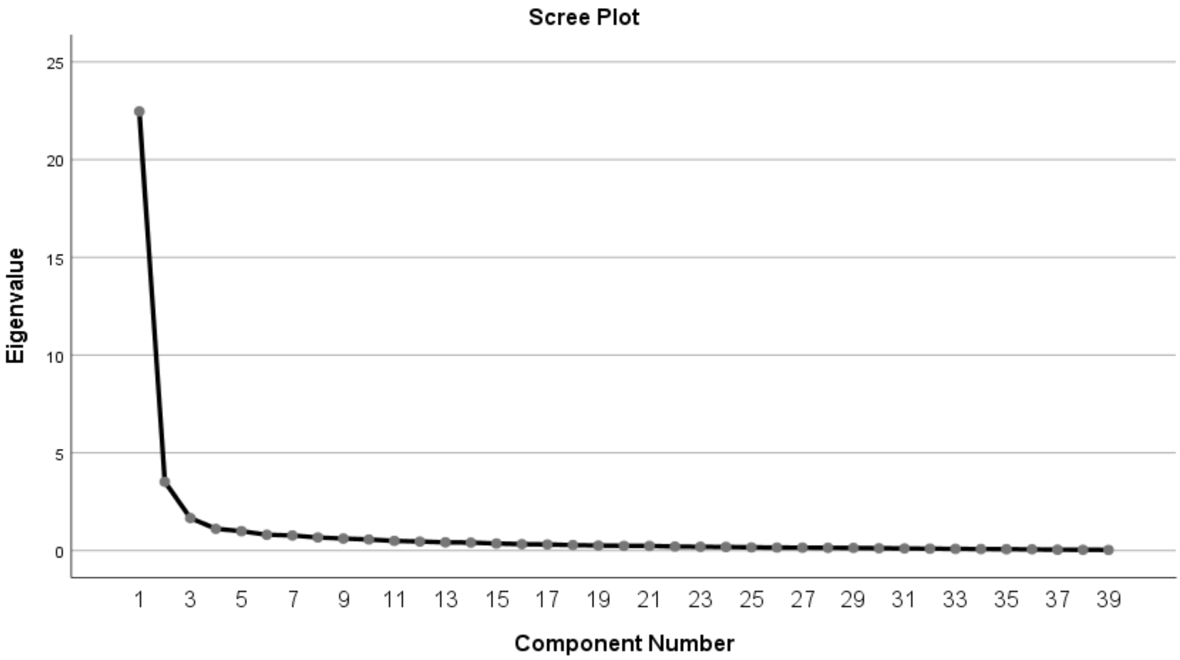

Figure 1. First screen plot from scale

The scale based on figure 1 was assessed as four-factor. After the analysis was repeated with four factors, the items that were binding and had a factor load value below .30 were identified, a total of 7 items that were binding and had a low factor load value (items 23, 19, 24, 25, 22, 20, 12 respectively.) were extracted from the dataset one by one and analyzed (Büyüköztürk, 2006). As a result of these analyses, the initially 4-factor scale was down to 3 factors.

According to the results of the analysis, the CMO was again calculated at .93. Barlett's globality test shows that multi-variable normalcy is achieved ($p < .01$). Together, the three emerging factors account for 70.92% of the total variance. The first factor accounts for 32.90%, the second factor is 19.76%, and the third factor is 18.26%. Factor load values of items are given in Table 1.

Table 1. Factor load values of substances at scale

			Faktor		
Item Number	**New Item Number**	**Item-total correlation**	**1**	**2**	**3**
V29	V1	.817	.840		
V37	V2	.781	.836		
V26	V3	.820	.833		
V35	V4	.804	.822		
V33	V5	.831	.821		
V31	V6	.826	.818		
V36	V7	.803	.817		
V27	V8	.806	.810		
V30	V9	.847	.770		
V38	V10	.777	.736		
V32	V11	.852	.727		
V28	V12	.792	.718		
V34	V13	.701	.690		

V39	V14	.692	.625		
V8	V15	.579		.835	
V2	V16	.712		.787	
V10	V17	.665		.762	
V3	V18	.648		.748	
V4	V19	.650		.729	
V7	V20	.488		.688	
V5	V21	.643		.679	
V9	V22	.449		.674	
V6	V23	.691		.674	
V1	V24	.492		.564	
V16	V25	.822			.783
V13	V26	.773			.768
V14	V27	.796			.726
V15	V28	.824			.716
V17	V29	.814			.697
V18	V30	.831			.675
V21	V31	.833			.656
V11	V32	.646			.591

Table 1 shows a total of 32 items on the scale, including 14 in the first factor, 10 in the second factor and 8 in the third factor. Factor load values of the items range from .564 to .840. The total correlations of matter are above .30, and there appears to be no problem in this sense. Scree Plot Figure 2, which is the final version of the scale.

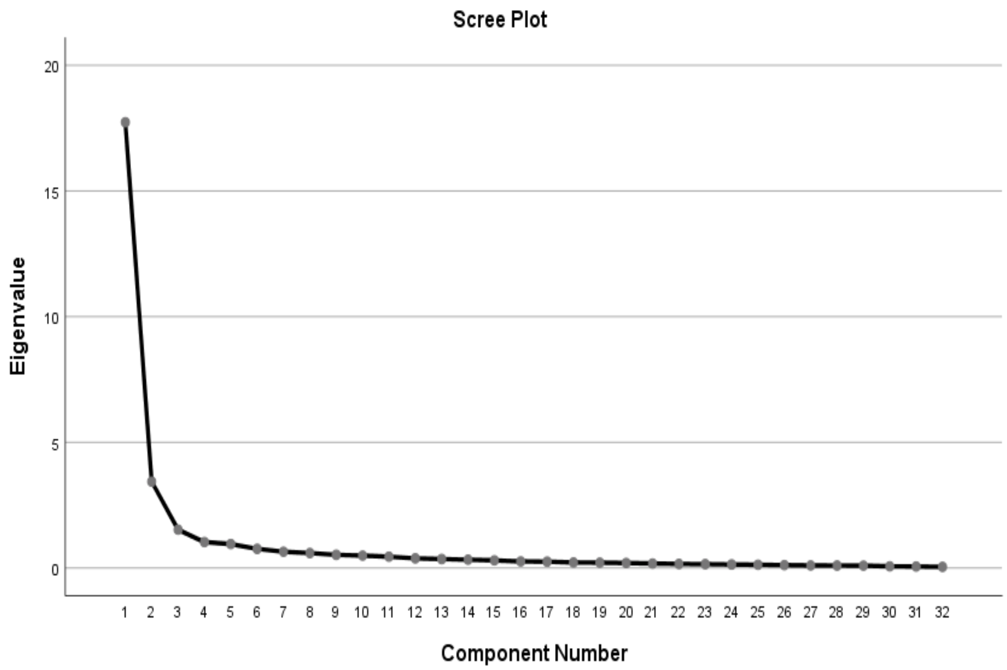

Figure 2. Screen Plot of the final version of the scale

Cronbach's α coefficient is calculated, which determines the measure of internal consistency to determine the level of reliability of scale and factors. Cronbach's α values are given in Table 2.

Table 2. Cronbach's α reliability coefficients of scale and lower dimensions

	Scale Total	Faktor 1	Faktor 2	Faktor 3
α	.972	.973	.921	.955

As seen in Table 2, the α reliability coefficient obtained from the scale in general is .972. For scales, .70 is considered an acceptable value (Buyuköztürk, 2006). In this sense, high reliability appears to have been achieved at scale. Reliability coefficients from the lower dimensions of the scale range from .921 to .973. Again, each sub-dimension appears to be above the acceptable level and of very high reliability.

Results of Confirmatory Factor Analysis (CFA)

Further analysis after the EFA to examine the building validity of the Innovation Scale in Education Organisations developed under the research is the CFA. A total of 238 teachers answered the scale prepared for this purpose; 19 scales determined to be inconsistent between the responses to the substances were taken out of analysis and the remaining 219 were analysed. Before CFA is implemented; sample size, lost values, normality, linearity, multiple connectivity and singularity, and edge values were examined.

An examination of lost values and extreme values found that there was no lost value in the dataset. Adverse substances (M15, M16, M17, M18, M19, M20, M21, M22, M23 and M24) are encoded in reverse. Edge value review has been conducted. For single-variable tip values, scales and sub-dimensions were converted to the Z standard score, and there was no value outside the range of -3 to + 3. The Mahanalobis score for multi-variable tip values was calculated and found to be no less than 0.01. Analysis was continued with data on 219 individuals. Comrey and Lee (1992) describe the 219 sample size as acceptable. Another benchmark is the KMO test results. The KMO results calculated as part of the research are provided in Table 3.

Table 3. KMO value calculated for the scale

KMO	p
.947	.000

As seen in Table 3, the KMO value appears to be .947. According to Leech, Barrett, and Morgan (2005), the KMO value of .90 and above indicates that the sample size is excellent. A total score was taken from each scale matter to measure normality, the Kolmogorov-Smirnov test was conducted, the distortion values were examined. According to the Kolmogorov-Smirnov test results, the scale shows normal distribution ($p > .05$). Furthermore, the distortion and distortion values are between -1 and + 1 (distortion = -.21, obliteration = -.18). In this case, scores from the scale showed normal distribution.

Tabachnick and Fidell (2001) recommend using the number of variables when asked to determine or verify the number of factors. That number was also used in this research. After testing assumptions, CFA analysis was switched. The CFA result t values are given in Table 4.

Table 4. Innovation Scale in Educational Organizations CFA t values

Item number	t	Item number	t
1	16.19	17	11.36
2	14.93	18	11.46
3	14.61	19	13.35
4	14.70	20	10.88
5	16.05	21	12.44
6	17.07	22	11.15
7	15.27	23	13.76

8	14.81	24	9.16
9	16.39	25	15.95
10	14.34	26	13.72
11	15.47	27	11.64
12	14.09	28	14.18
13	14.20	29	14.89
14	12.39	30	16.28
15	14.18	31	14.87
16	11.97	32	10.99

The CFA first examined t-values. The T value exceeds 1.96" at .05 and exceeds 2.56" at .01. As seen in Table 4, all items are meaningful at the level .01 based on t values. This suggests that hidden variables accurately explain the observed variables. The standardized solution (error) values were then examined. These values are given in Table 5.

Tablo 5. Innovation Scale in Educational Organizations CFA standardized solution results

Item number	Error	Item number	Error
1	0.24	17	0.52
2	0.32	18	0.51
3	0.34	19	0.40
4	0.33	20	0.55
5	0.25	21	0.45
6	0.19	22	0.53
7	0.30	23	0.37
8	0.32	24	0.66
9	0.23	25	0.25
10	0.35	26	0.38
11	0.28	27	0.51
12	0.37	28	0.35
13	0.36	29	0.31
14	0.47	30	0.23
15	0.34	31	0.31
16	0.48	32	0.55

Error variances of all items can be considered small, according to Table 5. Values are between .19 and .66. According to the results of t values and error values, the errors of the items appear to be low. The CFA also needs to examine compliance goodness indices. The error values of the following items have been linked to each other in line with modification recommendations for better compliance goodness values from the scale:

Item 8 and item 3, item 20 and item 15, item 6 and item 1

After making the modifications mentioned above, the schematic representation of the model is given in Figure 3.

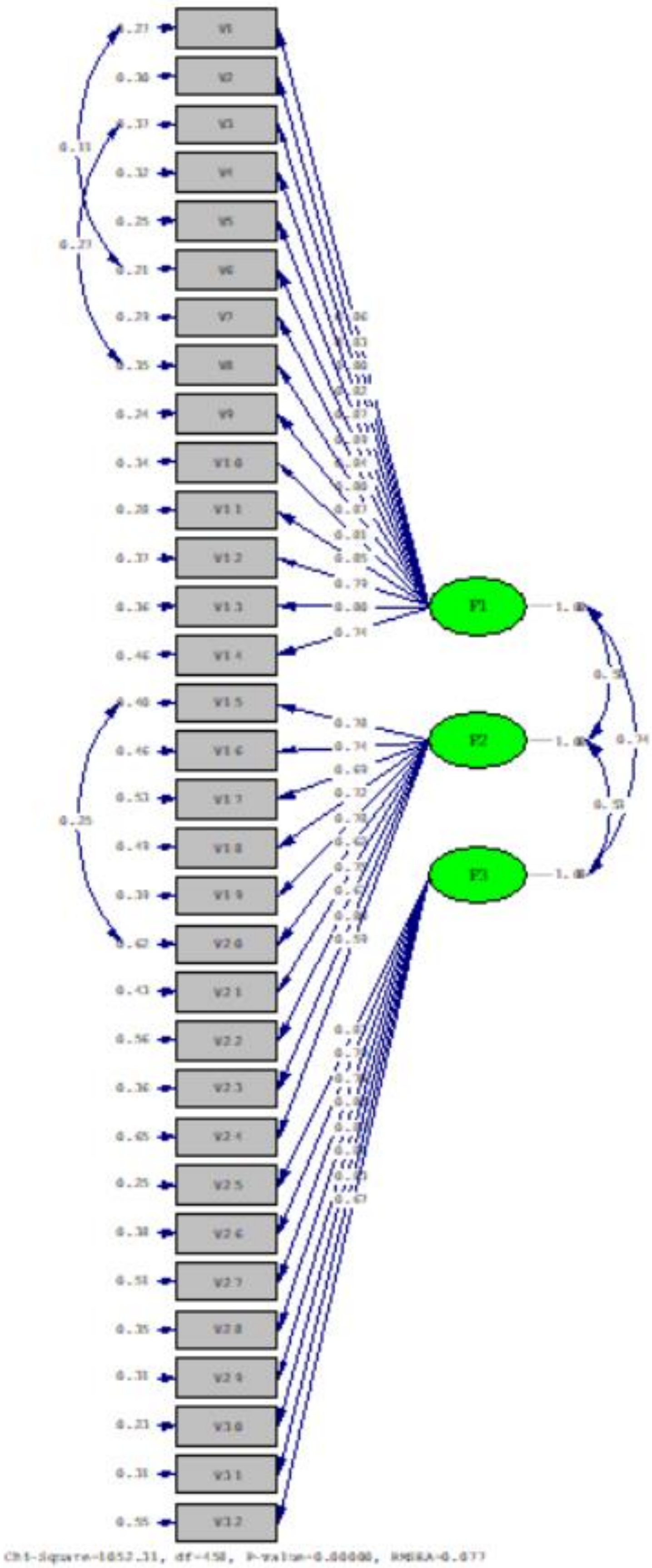

Figure 3. Model after modifications

Post-modification compliance goodness values are given in Table 6.

Table 6. The Goodness of Fit Statistics of Scale CFA Results

Indices	Values for Items	Perfect fit	Good fit
χ^2	1052.31		
sd	458		
p	0.0		
χ^2/sd	2.30	χ^2/sd ≤ 3.00	3.00 < χ^2/sd ≤ 8.00
RMSEA	0.077	0 ≤ RMSEA ≤ .05	.05 < RMSEA ≤ .08
RMSEA (.90 GA)	0.071-0.083		
SRMR	0.059	0 ≤ SRMR ≤ .05	.05 < SRMR ≤ .10
GFI	0.77	.95 ≤ GFI ≤ 1.00	.90 ≤ GFI < .95
AGFI	0.73	.90 ≤ AGFI ≤ 1.00	.85 ≤ AGFI < .90
CFI	0.98	.97 ≤ CFI ≤ 1.00	.95 ≤ CFI < .97
NFI	0.96	.95 ≤ NFI ≤ 1.00	.90 ≤ NFI < .95
NNFI	0.97	.97 ≤ NNFI ≤ 1.00	.95 ≤ NNFI < .97

When Table 6 is examined, the compliance goodness values of substances on the scale appear to be found on the left of the table, and the measurement values taken in the two columns on the right of the table. The significant availability of χ^2 "at the level of .01 (p < .01) means that there is a significant difference between the observed covariance matrix and the shortened covariance matrix, and thus there is no harmony here. On the other hand, χ^2 the sample can make sense as it grows. So the 2.30 from the χ^2 degree of freedom section shows the perfect match. Similarly, CFI, NFI and NNFI values demonstrate the perfect fit. The RMSEA and SRMR values indicate good harmony, while GFI and AGFI received below good compliance. A holistic assessment can indicate that the articles of the "Innovation Scale in Education Organizations" generally show good compliance (Hu & Bentler, 2004; Jöroskog & Sörbom, 1993; Kline, 2005; Steiger, 2007; Sümer, 2000; Şimşek, 2007; Tabachnick & Fidell, 2001).

Cronbach's Alpha coefficient was calculated for the reliability of scores from the scale and given in Table 7.

Table 7. Confidence values for scale and dimensions

	Scale total	F1	F2	F3
Cronbach'ın Alpha'sı	.962	.968	.913	.931

Table 7 shows reliability above .90 for both scale and lower dimensions. This data shows that the value of reliability of the scale is very high.

Discussion and Conclusions

Today, mankind's ability to keep up with the age depends on its ability to quickly and in line with the conditions of the era to address the new problems it may face. This also applies to organisations. No organization with a static structure can develop and advance or even survive. All organisations have to revamp their own structures, processes and products. 21 of the educational organizations that have an important role in socializing the individual and transferring social values to future generations. We can say that it is important for the future of society that they keep up with the age in the century, that they can resolve new problems that an individual may face quickly and in accordance with the period. The most important role for educational organizations to emerge from a complex innovation process falls to teachers who discover, use and implement knowledge (Sarıçan, 2018). In this respect, studying the perceptions of teachers with a critical role in education organisations regarding innovation is important for educational research.

This study by the researchers applied a scale measuring innovation perceptions of 5 "liquert type teachers, consisting of" Innovative Atmosphere, "" Resistance to Change "and" Sensitivity to Change, "coinciding with 32-item, factor structure field writing aimed at developing the Innovation Scale in Education Organizations; findings of the scale's validity and reliability have been made. The scale was taken off the scale by researchers taking expert opinions in three phases, substances that meant the same from a substance pool of 87 substances, and 39 substances remained in the substance pool. The remaining 39-item measurement instrument was applied to teachers in secondary schools, 120 teachers in pilot and 339 teachers in original practice, giving validity and reliability analysis. It has been concluded that the Innovation Scale in Education Organisations is a valid and reliable measurement tool.

The Innovation Scale in Education Organizations is a measuring tool consisting of 3 sub-dimensions. There are 14 substances in the "Innovative Atmosphere" lower size, 10 in the "Resistance to Change" lower size and 8 in the "Sensitivity to Change" lower size. Factor correlation values of the scale have been calculated to determine the extent to which substances at the scale measure desired properties. Alpha reliability coefficients for the lower dimensions of the scale (Innovative Atmosphere = .968, Resistance to Change = .913, Sensitivity to Change = .931) are sufficient. Scale matter appears to be consistent with each other. The AFA and DFA results also confirm the validity of the scale. Findings from the research show that scale has valid and appropriate qualifications in determining the perceptions of teachers who serve in education organizations regarding innovation.

In this study, participants demonstrate that research is limited to select from secondary schools in the province of Istanbul. The scale for generalisation of research findings can also be applied in different provinces and different educational organizations. Furthermore, scale can be examined in different demographic variables in education organizations across the country, and research results can be compared. This scale developed is thought to address a shortfall in field writing and could be used by researchers.

Ethics Committee Approval

Ethical approval was obtained for the current study with the decision of Diyarbakır Dicle University dated 31.05.2022 and numbered 2022/140.

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An Examining the Relationships Between Organizational Structure, Organizational Commitment and Organizational Support in Teachers Through Structural Equation Modeling

Research Article

Murat DEMIRKOL[1]

[1]Firat University, Kovancılar Vocational School, Computer Programming, Elazig, Türkiye 0000-0003-3108-3219

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ABSTRACT

The structural characteristics of educational institutions play a significant role in the functioning of the system. The organizational structure of educational institutions is a crucial concept that reveals how institutions are organized, managed, and operated. Organizational structure describes the internal framework and operation of any institution or educational institution. The purpose of organizational structure is to describe the responsibilities of the institution, regulate internal and external communication, and facilitate the achievement of institutional goals. In educational institutions, this structure involves internal collaboration channels, communication, hierarchical processes, control mechanisms, and decision-making processes. The effectiveness of the organizational structure can be improved through the clarification of the duties and responsibilities of employees which in turn fosters effective collaboration and communication. The robustness of this structure positively influences the quality of learning by increasing interactions among school administrators, teachers, students, and staff. Organizational structures in educational institutions consist of functional, hierarchical, decision-making processes, communication processes, and control and supervision.

Keywords:
Organizational structure, Organizational commitment, Organizational support

Introduction

The structural characteristics of educational institutions play a significant role in the functioning of the system. The organizational structure of educational institutions is a crucial concept that reveals how institutions are organized, managed, and operated (Alev, 2019). Organizational structure describes the internal framework and operation of any institution or educational institution (Robbins et al., 2017). The

[1]Corresponding author's address: Firat University
Telephone: +90 505 560 03 95
e-mail: mdemirkol@firat.edu.tr
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purpose of organizational structure is to describe the responsibilities of the institution, regulate internal and external communication, and facilitate the achievement of institutional goals (Özdemir and Taşcı, 2020). In educational institutions, this structure involves internal collaboration channels, communication, hierarchical processes, control mechanisms, and decision-making processes (Robbins and Judge, 2020). The effectiveness of the organizational structure can be improved through the clarification of the duties and responsibilities of employees which in turn fosters effective collaboration and communication. The robustness of this structure positively influences the quality of learning by increasing interactions among school administrators, teachers, students, and staff (Özdemir and Küçüker, 2022). Organizational structures in educational institutions consist of functional, hierarchical, decision-making processes, communication processes, and control and supervision (Alev, 2019; Tonbul, 2003).

In the organizational structure, there are two sub-dimensions: coercive bureaucracy and enabling bureaucracy (Burak, 2022). Coercive bureaucracy is a heavy and complex structure in the organization that weakens efficiency, slows down operations, and involves excessive and complicated bureaucratic processes (Faedlulloh et al., 2021). On the other hand, enabling bureaucracy is a functional structure with characteristics opposite to coercive bureaucracy (Martela, 2019).

The organizational structure in educational institutions is highly significant in terms of the institution's productivity and effectiveness (Özdemir and Taşçı, 2020). Another vital factor that increases the effectiveness of educational institutions is organizational commitment.

Organizational commitment refers to the loyalty and dedication of employees towards their workplace (Mathis et al., 2015). It includes the adoption of the organization's attitudes and values by employees (Vural and Değirmen, 2020), the extra effort put forth by individuals to achieve organizational goals and objectives in order to remain with the organization (Mowday et al., 2013; Celep, 2000), the establishment of a strong connection between the individual and the organization, and the development a sense of identity within the institution (Balay, 2000; İnce and Gül, 2005). Organizational commitment includes factors such as employee satisfaction, adaptation to the organization's culture, relationships within the organization, and the decision to stay or leave. In the field of education, organizational commitment reflects the interest, value, dedication to duty, and efforts of administrators, teachers, and staff members in educational institutions towards achieving the institution's goals (Allen and Meyer, 1990). Organizational commitment is crucial in education as it significantly impacts employee motivation, productivity, and performance (Riketta, 2002). In the literature, organizational commitment is generally divided into three dimensions (Meyer and Herscovitch, 2001). These are as follows:

Calculative commitment: This dimension represents an individual's commitment to the organization based on their self-interest. Typically, individuals are committed to the organization in terms of concrete benefits it offers, such as personal and material gains (Ergün and Çelik, 2019; Hasan, 2002).

Alienative commitment: This type of commitment reflects the attachment of individuals towards their organizations due to external pressures, rules, or coercions. In this dimension, individuals may not establish a belief or motivation-based connection (Özkan Hıdıroğlu, 2021).

Moral commitment: Moral commitment is characterized by an individual's commitment to the organization embedded in personal and moral values as well as ethical principles. This commitment is related to an individual's dedication to the organization's values and ethical standards (Ateş and Tecen, 2023).

Another important factor for organizations is organizational support. The classical management approach, in which individuals are considered mere machines, has evolved over time to a new concept referred to as organizational support which aims at raising and retaining qualified human resources (Yirci, 2014). Organizational support involves possessing the qualities necessary for employees within the organization to feel comfortable and happy (Eisenberger et al., 1986). In other words, it covers shaping the psychological and physical design of the organization's operation and structure in a way that promotes employee well-being, happiness, and job satisfaction (Kartal et al., 2015; Tutar, 2016).

In the field of education, organizational support signifies the access of administrators, teachers, and staff to the organizations’ resources and support (Köse and Gönüllüoğlu, 2015). These resources can assist teachers in establishing better communication with their students, providing more support to students in their learning process, and creating an overall improved learning environment (Turhan, 2021). Organizational support can also contribute to enhancing student success since it helps teachers and other employees perform their jobs more effectively. Such support can provide teachers with resources such as student assessment tools, educational materials, systems for tracking student achievements, technological tools, and professional development opportunities (Engin et al., 2020).

Organizational support is generally examined under several dimensions, which may vary according to the needs of employees and the goals of the organization. Some common dimensions of organizational support are as follows (Nayır, 2013):

Organizational justice: In education, organizational justice refers to the fair management and perception of relationships among teachers, administrators, staff, and students in educational institutions (Doğan, 2020). This concept examines how the sense of justice is perceived and experienced in educational institutions.

Organizational rewards and working conditions: play a vital role in enhancing the motivation of teachers, administrators, and other staff in educational institutions, increasing job satisfaction, and creating an effective learning environment (Candan and Kaya, 2016).

Administrative support: In education, administrative support refers to the resources and assistance provided to teachers and staff to help them perform their jobs more effectively (Tüysüz, 2021). These forms of support can take several shapes, including instructional tools, educational materials, student progress monitoring systems, technological resources, and opportunities for professional development

The aforementioned concepts are interconnected. In line with the overall goals of the organization, their relationships with each other are of significant importance in enhancing organizational success. In this sense, a well-functioning organizational structure in organizations can potentially increase employee job satisfaction and organizational commitment levels (Ahmada and Fakhr, 2022; Al-Qatawneh, 2014; Aydınoglu, 2020). Specifically, when the organizational structure influences decision-making processes, communication channels, and the organization of tasks within the business, a positive impact on organizational commitment is observed (Babaoğlu, 2021; Bayram, 2005; Örücü et al., 2022). The level of commitment among employees is also crucial in terms of their willingness to remain within the organizational structure and their alignment with organizational goals (Arslan, 2019; Saydam and Selvi, 2023).

Furthermore, organizational structure and organizational support are two interrelated critical factors (Tilki and Gürel, 2021; Yürür, 2016). A well-structured organization provides a foundational framework for delivering effective support to employees, and organizational support can be employed to enhance the organizational structure and assist employees in performing their jobs more effectively (Gupta et al., 2016; Öztürk and Eryeşil, 2016). By considering both of these concepts, organizations can enhance employee satisfaction and improve their overall performance (Akgündüz and Çakıcı, 2015; Gutierrez et al., 2012). Operational practices within the organization are often not isolated; instead, they are frequently interconnected, intertwined, and sometimes overlapping. This highlights the complementary nature of organizational structure and support (Yüksel, 2006).

Organizational commitment refers to employees' emotional, financial, or normative relationship to the organization, whereas organizational support includes the resources and assistance provided to improve employees' job performance (Avunduk, 2021; Özdevecioğlu, 2013). There is a strong and complementary relationship between these two concepts (Alcan, 2018; Eğriboyun, 2015). It has been reported that the ability of organizations to achieve their goals and objectives strengthens the connection between organizational commitment and support (Kim et al., 2016; Tamer and Bük, 2020; Zagenczyk et al., 2021). The significance of this study becomes apparent when we consider how these closely related concepts impact the organization.

Conceptual Model

The concepts of organizational structure, organizational commitment, and organizational support have been examined in a number of studies. However, there are few studies that specifically investigate the relationships between these concepts or demonstrate their interconnected nature. For example, in the literature, there are studies indicating that organizational structure has an impact on organizational commitment (Ahmada and Fakhr, 2022; Al-Qatawneh, 2014; Aydınoglu, 2020; Babaoğlu, 2021; Arslan, 2019; Saydam and Selvi, 2023). It was also reported that organizational structure influences organizational support, and both concepts are significant for the organization (Tilki and Gürel, 2021; Yürür, 2016; Eroğluer and Boztoprak, 2021). Furthermore, it was identified that organizational support is associated with organizational commitment (Kim et al., 2016; Tamer and Bük, 2020; Zagenczyk et al., 2021; Özdevecioğlu, 2013).

In the literature, there is a lack of studies that examines organizational structure, organizational commitment, and organizational support. This study aims to investigate the relationships among organizational structure, organizational commitment, and organizational support. Therefore, it is believed that the findings of this study will make significant contributions to the literature. The conceptual model was based on in prior research findings. In the study, organizational structure (OS) was selected as the independent variable, organizational support (OS) as the dependent variable, and organizational commitment (OC)as the mediating variable, and the model was tested. The conceptual model tested in the study is presented in Figure 1, including the hypotheses.

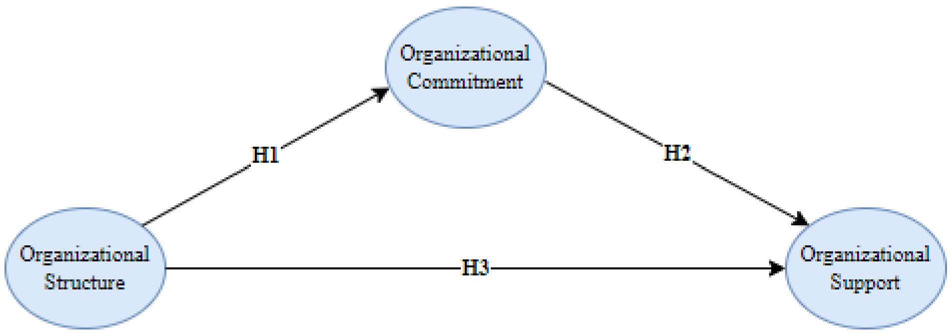

Figure 1. Conceptual Model

Hypothesis 1 (H1): Organizational structure significantly and positively predicts organizational commitment.

Hypothesis 2 (H2): Organizational commitment significantly and positively predicts organizational support.

Hypothesis 3 (H3): Organizational structure significantly and positively predicts organizational support.

Method

This study adopted a relational research to investigate the relationships between the teachers' perceptions of organizational commitment, organizational support, and school structure in primary education institutions. Relational research is a type of study that investigates relationships between variables (Sönmez and Alacapınar, 2016, p. 50).

Population and Sample

In the study, the structural equation modeling was used. It was anticipated that reaching a sample size that aligns with the volume required by structural models would be appropriate. Structural equation models are sensitive to sample size (Kline, 2011, pp. 11-12), and it is suggested that it is suitable to have a sample size that is a minimum of ten times greater than the number of variables (Kline, 1994). Since the Simplified School Structure Scale was suitable for second-level confirmatory factor analysis, each dimension was included separately in the model. Therefore, since each model had 49 items, a sample size consisting of at least 490 participants was considered sufficient for the study. However, the scale was administered to more participants to ensure an adequate number of participants since it was considered that some participants might complete the scale in an incomplete or inaccurate manner.

The study was conducted with the involvement of teachers in Elazığ during the 2022-2023 academic year. The study's intended population consisted of 6,494 teachers, while the accessible population comprised 520 teachers. A simple random sampling method was employed to select 520 participants for the sample. In the analysis, 21 data were removed from the dataset due to being outliers. The demographic characteristics of the participants are presented in Table 1.

Table 1. Demographic Characteristics of Participants

Item	Description	Frequency (n=499)	Percentage (%)
Gender	Female	280	56,11
	Male	219	43,89
Discipline	Primary School	175	35,07
	Science	27	5,41
	Turkish Lan.	45	9,02
	Guidance	30	6,01
	P.E	4	0,80
	English	43	8,62
	Religion	30	6,01
	Mathematics	49	9,82
	Pre-School	43	8,62
	Technology Design	11	2,20
	Social Studies	26	5,21
	Informatics	4	0,80
	Music	6	1,20
	Art	6	1,20
School Type	Pre-school	55	11,02
	Primary School	214	42,89
	Secondary School	230	46,09

Data Collection Instruments

In the study, data was collected using the Organizational Commitment Scale (OCS), Organizational Support Scale (OSS), and the Enabling School Structure Scale (ESSS), as well as a personal information form developed by the participants.

1- Organizational Commitment Scale (OCS)

OCS, originally developed by Penley and Gould (1988), was adapted into Turkish by Ergün and Çelik (2018). The Cronbach’s Alpha value was.94 for the first sub-dimension "moral commitment," .93 for the second sub-dimension "calculative commitment," and .92 for the third sub-dimension " alienative commitment." The

Calculative commitment dimension consists of items 1, 4, 7, 10, and 13, while the Affective commitment dimension includes items 3, 6, 9, 12, and 15, and the Moral commitment dimension consists of items 2, 5, 8, 11, and 14. The results of the confirmatory factor analysis (CFA) indicated good model fit indices: χ^2 = 126.899, df = 87, χ^2/df = 1.459, RMSEA = 0.055, RMR = 0.078, SRMR = 0.046, GFI = 0.892, AGFI = 0.851, NFI = 0.943, CFI = 0.981. These findings indicate that the scale demonstrates structural validity. The goodness-of-fit indices of the Organizational Commitment Scale suggested an acceptable level of fit In addition, the scale did not include any items with reversed wording.

2- Organizational Support Scale (OSS)

The scale was developed by Nayır (2013). The scale consists of 28 items. To establish the structure of the scale through confirmatory factor analysis, a second-level CFA was conducted in order to demonstrate that the dimensions of "organizational justice," "administratice support," and "organizational rewards and working conditions" collectively represented the higher-level concept of perceived organizational support. The results (χ^2 = 1098.96; p = 0.00, df = 346, χ^2/df = 3.17) indicated the following fit indices: IFI = .97, RFI = .95, RMR = .057, GFI = .83, AGFI = .80, CFI = .97, NNFI = .97, NFI = .96, and RMSEA = .075. Reliability analyses were conducted using Cronbach's alpha and split-half reliability. The Cronbach's Alpha was found to be .94 for organizational justice, .86 for administrative support, and .90 for organizational rewards and working conditions. The overall Cronbach's alpha for the scale was found to be .94. In conclusion, the scale showed structural validity. In addition, the scale did not include any items with reversed wording.

3- Enabling School Structure Scale (ESSS):

The "Enabling School Structure" scale was originally developed by Hoy and Sweetland (2000) and later adjusted for use in Turkish by Buluç (2009) (2009). Further, it underwent further validation and reliability assessments by Özer and Dönmez (2013). The original form of the scale contains twelve items assessed on a five-point scale ranging from "Never" to "Always," aimed at determining whether the bureaucratic structure in schools facilitates or hinders teachers in their work. The scale consists of coercive bureaucracy and enabling bureaucracy dimensions. The Cronbach's Alpha coefficients for the scale were calculated as ".806" for the first dimension and ".774" for the second dimension. Subsequently, confirmatory factor analysis (CFA) was conducted separately to evaluate the model-data fit for the two-factor structure. The results of the CFA provided the following fit indices: χ^2 = 215.48, df = 51, χ^2/df = 4.22, RMSEA = 0.056, RMR = 0.036, SRMR = 0.040, GFI = 0.97, AGFI = 0.95, NFI = 0.94, CFI = 0.96, IFI = 0.96. These findings indicated that the scale had structural validity Finally, the scale did not include any items with reversed wording.

Data Collection and Analysis

Before data collection, the compulsory permissions were achieved. The data were gathered via the internet. The data was then transferred to the SPSS 22.0, and analyses were conducted using both AMOS 22.0 and SPSS 22.0. The Maximum Likelihood technique was performed in AMOS.

Several prerequisites were taken into considereation in the data analysis, including sample size, multicollinearity, normality, and the examination of outliers, as required by Structural Equation Modeling (SEM) (Çokluk, Şekercioğlu, & Büyüköztürk, 2014). First, 21 data outliers were removed from the dataset, as the Z-score values of variables did not fall between -1 and +1. Subsequently, a correlation analysis was run to evaluate the presence of multicollinearity among the variables. If the correlation values were below .90, it was concluded that there was no multicollinearity issue (Çokluk et al., p. 35).

The examination of the correlations among the variables indicated that the correlations among the variables were less than 0.90. (Table 2). An examination of the VIF (Variance Inflation Factor) and tolerance values for the independent variables was conducted to assess multicollinearity. The findings suggested that multicollinearity problems were not evident. (Table 3). Another essential requirement for Structural Equation Modeling analyses is that the data have a normal distribution. To fulfill this requirement, the kurtosis and skewness values of the variables were examined. The findings showed that the dataset displayed a normal distribution (Table 4). In the study, it was considered that the data displayed a normal distribution, the sample size was deemed adequate, and there were no issues regarding linearity or multicollinearity. For the evaluation of both measurement and structural models, the Maximum Likelihood method was applied to analyze the covariance matrix..

Initially, the models of Organizational Commitment, Organizational Support, and Enabling School Structure were tested using Confirmatory Factor Analysis (CFA). The confirmation of the measurement models was assessed through fit indices such as Chi-square (χ^2)/df, GFI, AGFI, CFI, RMSEA, IFI, and TLI (NNFI). Subsequently, the validation of the proposed hypothetical model was examined based on these fit indices.

Findings and Interpretation

The findings on the correlation data for the data collection instruments used in the research is presented in Table 2:

Table 2. Findings on the Correlations Between Variables

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Organizational Support Scale Organizational Justice	**(1)**	1	.803**	.735**	0.036	-.458**	.380**	-.485**	.640**
Organizational Support Scale Organizational Rewards and Working Conditions	**(2)**		1	.721**	.145**	-.439**	.462**	-.490**	.663**
Organizational Support Scale Administrative Support	**(3)**			1	0.044	-.300**	.257**	-.364**	.595**
Organizational Commitment Scale Calculative Commitment	**(4)**				1	0.096	.219**	0.021	0.101
Organizational Commitment Scale Alienative Commitment	**(5)**					1	-.391**	.480**	-.425**
Organizational Commitment ScaleMoral Commitment	**(6)**						1	-.290**	.416**
Enabling School Structure Scale Coercive Bureaucracy	**(7)**							1	-.582**

Enabling School Structure Scale Enabling Bureaucracy	(8)	1

Table 2 revealed that there were statistically significant relationships among the variables. Specifically, a positive relationship was found between Organizational Support Scale's Organizational Justice dimension and Organizational Rewards and Working Conditions dimension (r= .803, p<.01), Administrative Support dimension (r= .735, p<.01).and Organizational Commitment Scale's Affective Commitment dimension (r= .036, p<.01) In addition there was a negative relationship was observed between scores on the dimension of Continuance Commitment (r= -.458, p<.01). Additionally, a positive relationship was identified between scores on the Organizational Commitment Scale's dimension of Normative Commitment (r= .380, p<.01). There was a negative relationship between scores on the Facilitating School Structure Scale's dimension of Hindering Bureaucracy (r= -.485, p<.01), and finally, a positive relationship was noted between scores on the dimension of Facilitating Bureaucracy (r= .640, p<.01). All of these relationships were statistically significant.

In addition, a positive relationship was found between Organizational Rewards and Working Conditions and Administrative Support (r= .721, p<.01), Affective Commitment and scores on the dimension of Moral Commitment (r= .803, p<.01), Calculative Commitment (r= .145, p<.01) and the dimension of Alienative Commitment (r= -.439 p<.01). On the other hand, there was a negative relationship between Organizational Rewards and Working Conditions and Administrative Support and Coercive Bureaucracy (r= -.439 p<.01) and Enabling Bureaucracy (r= -.145, p<.01). These relationships were statistically significant.

As shown in Table 2, a statistically significant positive relationship was found between Administrative Support and Calculative Commitment (r= .044, p<.01). Similarly, correlation analysis revealed a negative association between Administrative Support and Alienative Commitment (r= -.300, p<.01). Additionally, there was a positive relationship between Administrative Support and Moral Commitment (r= .257, p<.01). Furthermore, there was a negative relationship between Administrative Support and Coercive Bureaucracy (r= -.364, p<.01). Lastly, a positive relationship was identified between Administrative Support and Enabling Bureaucracy (r= .595, p<.01).

In addition, Calculative Commitment was identified as having a positive correlation with Calculative Commitment (r= .096, p<.01), Moral Commitment (r= .219, p<.01), Coercive Bureaucracy (r= .021, p<.01), and Enabling Bureaucracy (r= .145, p<.01).

As seen in Table 2, Coercive Commitment had a statistically significant negative relationship with Moral Commitment (r= -.391, p<.01) and Enabling Bureaucracy (r= -.391, p<.01) as well as a statistically significant positive relationship with Coercive Bureaucracy (r= .480, p<.01).

In addition, Table 2 indicated that Moral Commitment had a negative relationship with Coercive Bureaucracy (r= -.290, p<.01), a positive relationship with Enabling Bureaucracy (r= .416, p<.01). Finally, a negative relationship was found between Coercive Bureaucracy and Enabling Bureaucracy (r= -.582, p<.01). In general, the correlations ranged from -.490 to .803, which indicated the absence of multicollinearity problem.

The mean, standard deviation, skewness, and kurtosis values for the variables included in the model are provided in Table 3.

Table 3. Mean, Standard Deviation, Skewness, and Kurtosis Values (n=578)

	Min	**Max**	**X**	**ss**	**Skewness**	**Kurtosis**
Organizational Support Scale Organizational Justice	1.07	5.00	3.65	.915	-.340	-.529
Organizational Support Scale Organizational Rewards and Working Conditions	1.00	5.00	3.99	.856	-.723	-.082
Organizational Support Scale Administrative Support	1.00	5.00	3.32	1.089	-.335	-.622
Organizational Commitment Scale Calculative Commitment	1.40	5.00	3.64	.759	-.142	-.418
Organizational Commitment Scale Alienative Commitment	1.00	4.80	1.80	.795	1.285	1.440
Organizational Commitment ScaleMoral Commitment	1.80	5.00	4.16	.713	-.775	.089
Enabling School Structure Scale Coercive Bureaucracy	1.00	5.00	2.29	.905	.502	-.278
Enabling School Structure Scale Enabling Bureaucracy	1.33	5.00	3.78	.796	-.377	-.256

Finally, an assessment was performed to ascertain if the data followed a normal distribution. Table 3 revealed that the Skewness and Kurtosis values for each were within acceptable limits. This finding indicated that the dataset had a normal distribution. In Table 3, It can be seen in Table 3 that the scores for the Organizational Support Scale's Organizational Justice dimension ranged from 1.07 to 5.00. Participants' opinions indicated an average score of 3.65 (SD=0.915).

The scores for the Organizational Support Scale's Organizational Rewards and Working Conditions dimension ranged from 1.00 to 5.00. In addition, the skewness and kurtosis values showed that the dataset exhibited a normal distribution. The participants' opinions for this dimension had an X of 3.99 and a SD of .856. Participants' opinions for Administrative Support dimension ranged from 1.0 to 5.0. The X values for this dimension was 3.32, and SD was 1.089. The skewness and kurtosis values indicated that the dataset met the conditions for a normal distribution. It was also found that the participants' opinions for Calculative Commitment ranged from 1.40 to 5.00. It had an X values of 3.64 and a SD of .759. The kurtosis value was -.142, and the skewness value was -.418. The scores for Alienative Commitment ranged from 1.00 to 4.80. Participants' opinions had an X value of 1.80 (SD=.795). The skewness value was 1.285, and the kurtosis value was 1.440. The scores for the Moral Commitment ranged from 1.80 to 5.00. The dimension had an X score of 4.16 and a SD of .713. The skewness value was -.775, and the kurtosis value was .089. Participants' opinions for Coercive Bureaucracy dimension ranged from 1.0 to 5.0. The dimension had an X value of 2.29 and a SD of .905. The skewness value was .502, and the kurtosis value was -.278. Finally, Enabling Bureaucracy ranged from 1.33 to 5.00. This dimension had an X of 3.78, and a SD of .905. The skewness value was -.377, and the kurtosis value was -.256.

Measurement Model

It is necessary to perform CFA for the tools used in SEM studies with the current dataset. To achieve this, the relevant analyses of the scales were conducted. The AVE and CR values are presented in Table 4, fit indices in Table 5, and criteria for acceptable fit indices in Table 6.

Table 4. Cronbach's Alpha, CR, and AVE Scores of the Scales

Constructs	Cronbach's Alpha	CR	AVE
Organizational Support Scale Organizational Justice		.52	.94
Organizational Support Scale Organizational Rewards and Working Conditions		.52	.89
Organizational Support Scale Administrative Support		.62	.92
Organizational Commitment Scale Calculative Commitment		.58	.87
Organizational Commitment Scale Alienative Commitment		.64	.90
Organizational Commitment ScaleMoral Commitment		.52	.84
Enabling School Structure Scale Coercive Bureaucracy		.50	.84
Enabling School Structure Scale Enabling Bureaucracy		.51	.86

Table 5. Confirmatory Factor Analysis Results of the Scales

	$\chi 2$/sd	GFI	AGFI	IFI	TLI	CFI	RMSEA
OSS	3.507	.904	.907	.906	.899	.902	.079
OCS	2.802	.935	.904	.902	.898	.900	.070
ESSS	2.825	.933	.901	.948	.932	.948	.071

The Organizational Support Scale consisted of 28 items and three dimensions: "Organizational justice," "Organizational rewards and working conditions," and "Administrative support". The "Organizational justice" dimension included 14 items, while the other two dimensions consisted of 7 items. All items on the scale and the paths to the dimensions were statistically significant at the .01 level. The fit index values were as follows: $\chi 2$/sd= 3.507, GFI=.904, AGFI=.907, IFI=.906, TLI=.899, CFI=.902, and RMSEA=.079 (See Table 5). CFA indicated that $\chi 2$/sd, GFI, IFI, TLI, CFI, and RMSEA values were within an acceptable range of fit indices (See Table 6).

The Organizational Commitment Scale consisted of 15 items. In the first-level CFA, items 1, 4, 7, 10, and 13 were found to belong to the "Calculative Commitment" dimension, items 2, 5, 8, 11, and 14 belong to the "Alienative commitment" dimension, and items 3, 6, 9, 12, and 15 belong to the "Moral commitment" dimension. All items on the scale were statistically significant at the .01 level. The fit indices for the scale were as follows: $\chi2/sd= 2.802$, GFI=.935, AGFI=.904, IFI= .902, TLI= .898, CFI= .900, and RMSEA= .76. These values were within an acceptable range of fit indices (See Table 6).

The Enabling School Structure Scale consisted of 12 items and two dimensions: "Coercive Bureaucracy" and "Enabling Bureaucracy". In the first-level CFA, all paths for the 12 items in the scale were found to be statistically significant at the .01 level. The fit indices for the Enabling School Structure Scale were as follows: $\chi2/sd= 2.825$, GFI=.933, AGFI=.901, IFI=.948, TLI=.932, CFI=.948, and RMSEA=.071 (See Table 5). Accordingly, the fit indices values were within an acceptable range (See Table 6).

Table 6. Fit Index Values Used in Structural Equation Model Research

Source	Fit Indices	Perfect Fit Index Values	Acceptable Fit Index Values
Sümer, 2000; Meydan and Şeşen, 2011	**X^2/sd**	**0≤ X^2/sd≤3**	**3< X^2/sd≤5**
Sümer, 2000	***GFI**	≥.95	≥.90
Sümer, 2000	***AGFI**	≥.95	≥.90
Meydan and Şeşen, 2011	**IFI**	≥.95	-90 - .94
Meydan and Şeşen, 2011	**TLI (NNFI)**	≥.95	90 - .94
Sümer, 2000	**CFI**	≥.95	≥.90
Çokluk et al., 2014	**SRMR**	.08≤	.10≤
Çokluk et al., 2014	**RMSEA**	.05≤	.08≤

* Meydan and Şeşen (2011) indicate good fit if GFI and AGFI values are ≥.90; They stated that between .85 and .89 was an acceptable fit index.

Structural Model

Based on the research questions, the hypothetical models presented in Figure 1 and Figure 2 were examined using structural equation modeling. In this sense, the relationships between the Organizational Support Scale, Organizational Commitment Scale, and the dimensions of the Enabling School Structure Scale (Coercive Bureaucracy and Enabling Bureaucracy) were investigated using structural equation modeling. Prior to testing the model, modifications were made to the models to improve the fit indices and then were integrated into the model. Besides these adjustments, no other modifications were considered necessary in the model. Initially, the hypothetical model including enabling bureaucratic structure, as shown in Figure 1, was tested, and the results confirmed that the hypothetical model was validated. The structural equation modeling is illustrated in Figure 3. The Standardized Path Coefficient (SPC) between Enabling Bureaucracy (EB) and Calculative Commitment (CC) was .87. The SPC between Enabling Bureaucracy (EB) and Alienative Commitment (AC) was -.53. The SPC between Enabling Bureaucracy (EB) and Moral Commitment (MC) was .60. The SPC between Organizational Calculative Commitment (CC) and Organizational Justice (OJ) was .95. The SPC between Calculative Commitment (CC) and Administrative Support (AS) was .98. The SPC between Calculative Commitment (CC) and Organizational Rewards and Job Conditions (OR) was .95. The SPC between Alienative Commitment (AC) and Organizational Justice (OJ) was -.09. The SPC between Moral Commitment (MC) and Organizational Justice (OJ) was -.14. The SPC between Moral Commitment (MC) and Administrative Support (AS) was -.28All remaining paths were statistically significant with a significance level of .01.

The fit indices of the hypothetical model revealed that $\chi2/sd$ was calculated as 2.485. Additionally, it was found that it had GFI= .898, AGFI= .897, IFI= .917, TLI (NNFI)= .918, CFI= .929, and RMSEA=.064 values. These findings indicated that the fit indices of the model were within an acceptable range. Based on these findings, the hypothetical model was confirmed. The structural equation modeling is shown in Figure 3.

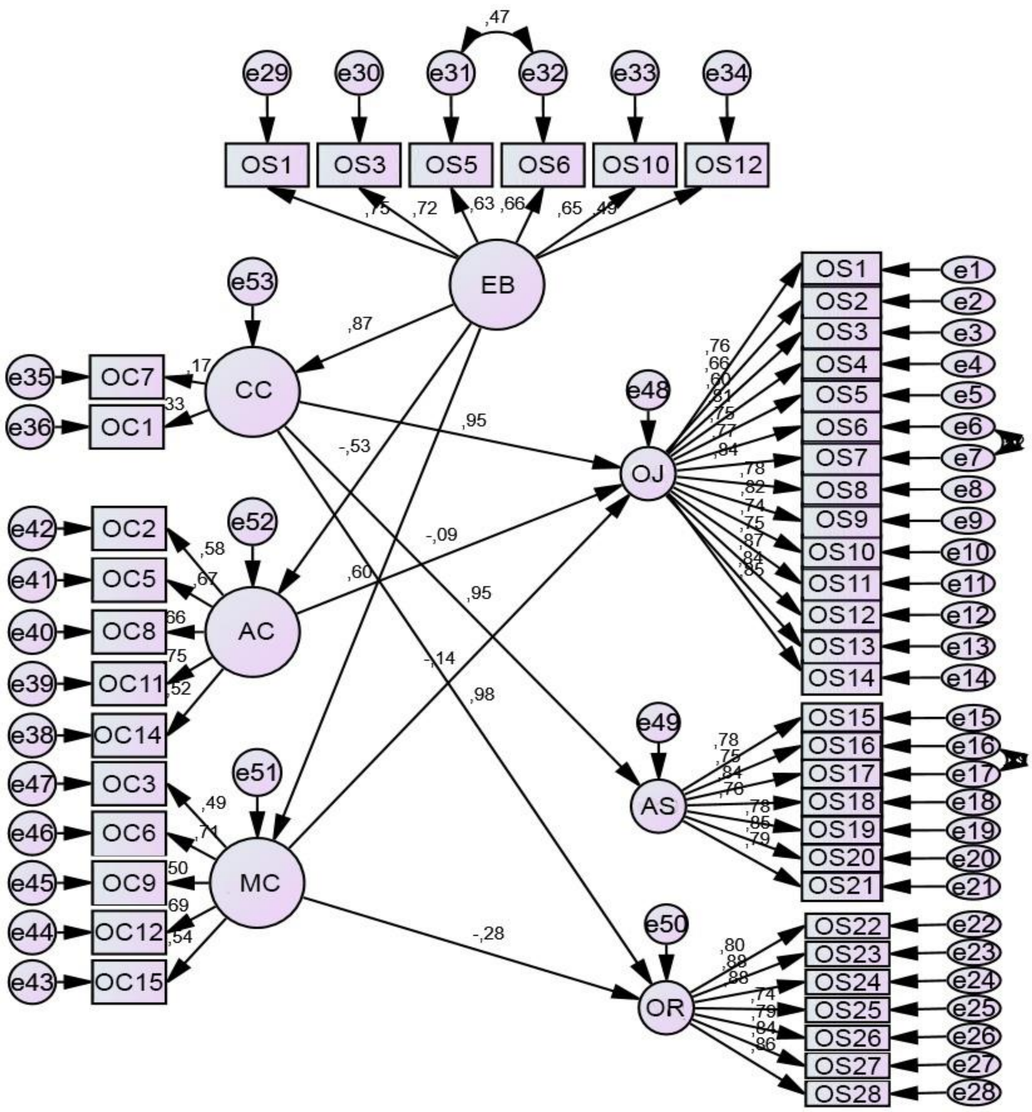

Figure 3. Testing the final hypothetical model

EB: Organizational Structure Enabling Bureaucracy Sub-Dimension

CC: Organizational Commitment Calculative Commitment Sub-Dimension

AC: Organizational Commitment Alienative Commitment Sub-Dimension

MC: Organizational Commitment Moral Commitment Sub-Dimension

OJ: Organizational Support Organizational Justice Sub-Dimension

AS: Organizational Support Administrative Support Sub-Dimension

OR: Organizational Rewards and Job Conditions

Finally, the hypothetical model presented in Figure 2, which includes the coercive bureaucratic structure, was tested. It was concluded that the hypothetical model was confirmed. The structural equation modeling is shown in Figure 4.

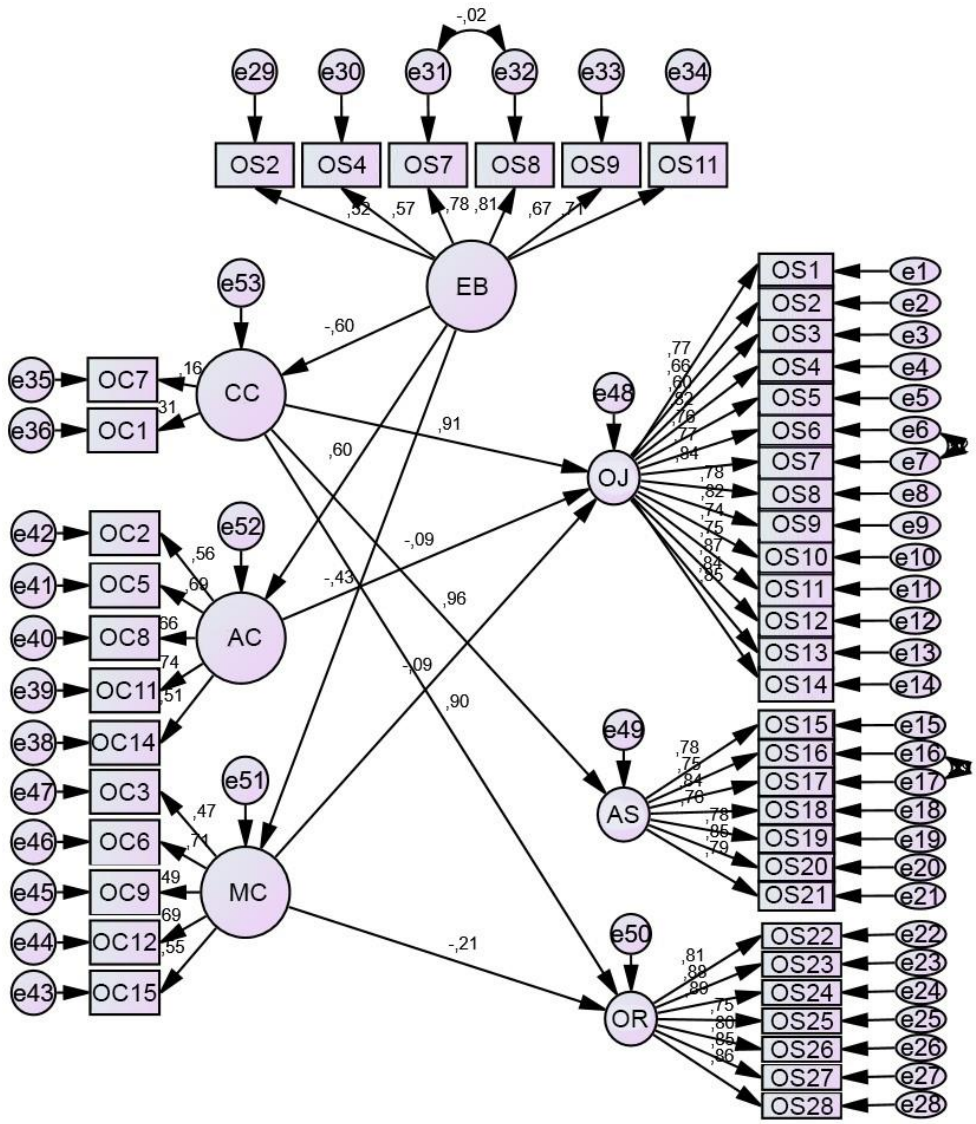

Figure 4. Testing the Final Hypothetical Model

EB: Organizational Structure Enabling Bureaucracy Sub-Dimension

CC: Organizational Commitment Calculative Commitment Sub-Dimension

AC: Organizational Commitment Alienative Commitment Sub-Dimension

MC: Organizational Commitment Moral Commitment Sub-Dimension

OJ: Organizational Support Organizational Justice Sub-Dimension

AS: Organizational Support Administrative Support Sub-Dimension

OR: Organizational Rewards and Job Conditions

The SPC between Coercive Bureaucracy (CB) and Calculative Commitment (CC) was -.60. Also the SPC between Coercive Bureaucracy (CB) and Alienative Commitment (AB) was .60 Finally, the SPC between Coercive Bureaucracy (CB) and Moral Commitment (AB) was -.43.

The SPC between Calculative Commitment (CC) and Organizational Justice (OJ) was .91. The SPC between Calculative Commitment (CC) and Administrative Support (AS) was .90. The SPC between Calculative Commitment (CC) and Organizational Rewards and Working Conditions Dimension (OR) was .96. Furthermore, the SPC between Alienative Commitment (AC) and Organizational Justice (OJ) was -.09. The

SPC between Moral Commitment (MC) and Organizational Justice (OJ) was -.09. Finally, the SPC between Moral Commitment (MC) and Administrative Support (AS) was -.21. All other paths were statistically significant at the .01 level.

Conclusion and Discussion

Organizational commitment is crucial for the sustainability of educational organizations. The structure of the organization and the support of its members are also significant factors. In this study, the relationship between organizational commitment (OC), enabling school structure (ESS), and organizational support (OS) was examined. The relationships between these variables are discussed below.

The relationship between OS and OC was examined in the study. The findings indicated a positive and significant relationship between the "coercive bureaucracy" and the "calculative commitment" and "alienative commitment", while a negative and significant relationship was observed between the "moral commitment". It was found that there was a positive and significant relationship between the "enabling bureaucracy" and "calculative commitment" and "alienative commitment" and a negative and significant relationship found in the "moral commitment" dimension. Many studies in the literature indicated that OS had a positive influence on OC (Ahmad and Fakhr, 2022; Al-Qatawneh, 2014; Aydınoğlu, 2020; Babaoğlu, 2021; Arslan, 2019; Saydam and Selvi, 2023). Fauzi et al. (2021) indicated a positive influence of OS on OC. Similarly, Taboli and Rahmani (2014) reported a significant relationship between OC and OS. In a study involving teachers, Sinden et al. (2004) emphasized the importance of both administrative leadership and OC in enhancing school structures. Factors such as human resource management practices, leadership, and organizational structure were defined as strong predictors of organizational learning.

Another relationship examined in the present study was between OC and OS. A positive and significant relationship was observed between the "calculative commitment" and "organizational justice," "organizational rewards and working conditions," and "administrative support." On the other hand, the "alienative commitment" was found to have a negative and significant relationship with all dimensions of OS. In addition, "moral commitment" showed a positive and significant relationship with all dimensions of OS. Eğriboyun (2015) examined school administrators and teachers, and concluded that organizational trust and OS were the most significant factors influencing OC. Aube et al. (2007) also reported a positive and significant relationship between perceived OS and OC. Alcan (2018) emphasized the strong and complementary relationship between OS and OC. Tansky and Cohen (2001) indicated a positive relationship between employees' OC and OS. Nayir (2012) found a moderate and significant relationship between teachers' identification and internalization of OC and the sub-dimensions of OS. Ridwan et al. (2020) investigated university employees and reported that OS had a simultaneous and partially positive impact on employee performance, OC, and organizational citizenship behavior. Makanjee et al. (2006) identified a positive relationship between perceived OS and various antecedents of OC, primarily emotional and normative factors. It was found that the ability of organizations to achieve their goals and objectives strengthened the connection between organizational commitment and support (Kim et al., 2016; Tamer and Bük, 2020; Zagenczyk et al., 2021).

In the study, the relationship between organizational structure and organizational support was also examined. It was found that the "coercive bureaucracy" had a negative and significant relationship with all dimensions of organizational support. On the other hand, the "enabling bureaucracy" exhibited a positive and significant relationship with all dimensions of organizational support. Previous studies (Tilki and Gürel, 2021; Yürür, 2016; Gupta et al., 2016; Öztürk and Eryeşil, 2016; Ambrose and Schminke, 2003) reported a positive relationship between organizational structure and organizational support. In this sense, Yüksel (2006) emphasized that organizational structure and support complemented each other in the functioning of the organization. Similarly, Patrick and Laschinger (2006) stated that structural empowerment and perceived organizational support were positively related.

In conclusion, this study examined the relationship between organizational commitment, organizational structure, and organizational support. Relationships among these variables were identified. A positive influence on organizational commitment and organizational support was observed when the organizational structure was positive. It can be stated that as employees' commitment to the organization increases, their support for the organization also increases.

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Readability of Advanced Level Turkish Textbooks Designed for Foreigners: The Case of Anahtar-Turkish Textbook

Research Article

Osman Kursat YORGANCI[1]

[1]Yıldız Teknik University, Faculty of Education, Department of Turkish Education, Istanbul, Türkiye 0000-0002-2569-4788

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ABSTRACT

Textbooks are essential resources for both learners and teachers when teaching Turkish as a foreign language. Texts in textbooks are the most fundamental documents used to instruct foreigners in Turkish. Texts in textbooks should be appropriate for the student level in terms of a variety of characteristics. Readability is one of the characteristics cited in the literature for determining the appropriateness of textbook texts to the student level. This study analyzed the text readability levels of the Anahtar-Turkish for Foreigners C1 textbook. Document analysis was utilized in the data collection process of the study. Two different formulas were used to determine the readability of the texts in the textbook: the Ateşman and Çetinkaya-Uzun formulas. The data were descriptively analyzed. The texts were categorized according to their levels of difficulty, and the results were tabulated. The study concluded that according to both formulas, the readability levels of the texts in the Turkish for Foreigners C1 textbook are similar; the texts are at a medium level according to Ateşman and an educational level according to Çetinkaya-Uzun, and the related textbook is easier in terms of readability level than similar textbooks in the literature.

Keywords:
Teaching Turkish as a foreign language, textbooks, text, readability

Introduction

In the process of teaching a language as a foreign language, textbooks and learning sets take an important place among the basic resources used as guidance. Textbooks are guide-like instructional materials designed in accordance with the curriculum in order to conduct a healthy education process. Textbooks, which are the most effective learning tools used in learning environments for the development of language skills, are the most important materials in the education process in terms of being easily accessible and presenting learning processes to students in a planned manner (Harmankaya & Taşkın, 2019). Textbooks for teaching

[1] Corresponding author's address: Yıldız Teknik Üniversitesi
Telephone: +905554366605
e-mail: yorganci@yildiz.edu.tr
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Turkish to foreigners are created according to the procedures and principles outlined in the Common European Framework of Reference for Languages (CEFR) (Council of Europe, 2020), considering language levels and other national norms.

The primary objective of teaching a foreign language is to develop reading, writing, speaking, and listening skills through communicative and functional activities. Accordingly, in Turkey, the textbooks widely preferred and taught in Turkey have adopted the CEFR-based approaches and aim to develop the four basic language skills in this direction. With the help of these resources, students are expected to become language users, gain communicative skills, and use the language in different situations and contexts. Texts in textbooks are the primary source that help individuals who are learning a foreign language acquire these characteristics. "Language instruction is founded on texts of various contents and formats. In other terms, text-based instruction is essential in language instruction." (Maden & Maden, 2019, p. 206). Texts comprise language norms, structures, real usage contexts, and cultural elements. Therefore, texts play an important role in the activities conducted to acquire and develop basic language abilities. Therefore, the texts to be used in textbooks should be carefully selected.

Texts designed for teaching Turkish to non-native speakers must have specific characteristics in order for the reader to comprehend them accurately (Şimsek, 2011, p. 9). According to Karakoç Öztürk (2016, p. 336), the level of readability should be considered when selecting texts for use in the Turkish instruction process. According to Yazıcı (2021, p. 18), it is quite challenging to determine the text's level due to its complex structure. In this framework, readability for quantitative text features and comprehensibility for qualitative text features come to the fore. The fact that reading texts in textbooks are readable and understandable facilitates both the learning and teaching processes (Karatay, Bolat & Güngör, 2013, p. 605). In this regard, the concept of readability can be utilized to determine the level-appropriateness of texts in the process of teaching Turkish as a foreign language (Ateşman, 1997; Biçer & Alan, 2017; Erol, 2015).

Ateşman (1997, p. 71-72) defines readability as "the ease and difficulty with which the reader can comprehend the text." Klare (1963) provides three distinct definitions of readability. One of these is "the ease of comprehension arising from the writing style" (as cited in Çetinkaya & Uzun, 2020, p. 141). According to Çetinkaya and Uzun (2020, p. 142), this definition "associates readability with the degree of reading difficulty by analyzing sentence, word, and phrase structures." According to Bezirci and Yılmaz (2010, p. 50), readability is the ability to determine if a text in any language is easy for the reader(s) to comprehend. This information is obtained by analyzing the relationships between the number of syllables, words, and sentences in the target language to determine a number of defining characteristics.

Readability can be determined under three main headings: the expert opinion technique, in which the text is examined in terms of sentence characteristics, lexical features, content information, etc. and classified by experts in the field of reading according to its suitability for the target reader group; the subtractive readability process, which is primarily used to determine the structural difficulty of texts; and the readability formula, which determines the reading levels of learners (Ministry of National Education, 2021, p. iv). According to Karatay et al. (2013, p. 608), teacher opinions cannot accurately anticipate the text's difficulty in studies where readability is determined based on teacher opinions. As a result, researchers rely on readability formulas as a more accurate method for determining readability.

Traditional readability formulas, simple algorithms that measure text readability based on sentence and word lengths (Kınay, 2016, p. 298), are structured with few variables, simple to implement, and objective measurement instruments (Çetinkaya & Uzun, 2020, p. 143). In the calculation of readability, international formulas including "Dale-Chall readability formula; Gunning Fox Index, Flesch Readability Formula, Flesch-Kincaid Value, ARI-Automatic Readability Index, Fry Readability Graph, McLaughlin SMOG Formula, Raygor Formula, Coleman Readability Formulas, Power-Sumner-Kearn Formula and Bormuth Mean

Subtraction Formula" and various formulas adapted to Turkish such as "Ateşman Readability Formula, Çetinkaya-Uzun Readability Formula, Bezirci-Yılmaz Readability Formula and Sonmez Formula" are used (Ministry of National Education, 2021). The majority of readability studies in the field of Turkish education (Bağcı & Ünal, 2013; Okur et al., 2013; Baş & Yıldız, 2015; Erol, 2015; Şimsek, 2021) used the Ateşman and Çetinkaya-Uzun formulas.

Although there are numerous studies on readability in the field of teaching Turkish as a native language, there are far fewer and more recent studies in the field of teaching Turkish as a foreign language. The studies in this field are generally gathered under headings such as supplementary reading books (Aydın, 2021; Bozkurt, 2021; Erişik, 2021) and textbooks (Yılmaz & Temiz, 2014; Erol, 2015; Zorbaz & Köroğlu, 2016; Mutlu, 2020; Şimsek, 2021; Özdemir & Dastan, 2022; Harmankaya, 2022; Karşılayan, 2022), and they are examined under these headings according to different language teaching levels of Turkish. It is seen that the vast majority of these studies at C1 level focus on Turkish teaching sets published by public institutions or widely used by these institutions, such as Yeni Hitit Turkish for Foreigners (Yılmaz & Temiz, 2014; Biçer & Alan, 2017), Gazi University Turkish for Foreigners (Zorbaz & Köroğlu, 2016; Bağcı, 2020), İstanbul Turkish for International Student (Biçer & Alan, 2017) and Yedi İklim Turkish for Foreigners (Mutlu, 2020). However, studies on the readability of collections prepared by private publishing houses are limited in the literature. Besides, it is well known that language teaching sets prepared by private publishing houses are also widely used in private Turkish language teaching courses and centres. Therefore, it can be stated that these sets should be equivalent to other sets published or utilized by public institutions based on particular criteria. Based on the aforementioned reasons, the Anahtar-Turkish for Foreigners C1 textbook prepared by Bedil Publications, which is both a private publishing house publication and exhibits a unique characteristic compared to publicly published sets by addressing to Arabic-speaking learners, will be evaluated for its readability. In order to answer the question "How readable are the texts in the Anahtar-Turkish for Foreigners C1 textbook? ", the study sought answers to the following questions, based on the purpose of the research.

1. What are the average word and sentence lengths of the texts in the Anahtar-Turkish for Foreigners C1 textbook?
2. What are the readability levels of the texts in the Anahtar-Turkish for Foreigners C1 textbook according to the Ateşman and Çetinkaya-Uzun formulas?
3. How do the thematic and holistic readability scores of the texts in the Anahtar-Turkish for Foreigners C1 textbook change?

Methodology

This research was designed to determine the readability level of the texts in the Anahtar-Turkish for Foreigners C1 Textbook. This section provides information about the design of the study, research object, data collection and analysis processes.

Research Model

In order to determine the readability of the reading texts in the Anahtar-Turkish for Foreigners C1 textbook, a basic qualitative research design was employed in this study. The basic qualitative design is one of the most common types of qualitative research used in education, according to Merriam (2015), and data is collected through data collection techniques such as observation, interview, or document analysis.

Research Object

The object of the research is Bedil Publications' C1 level Anahtar-Turkish for Foreigners textbook. The selection of the Anahtar-Turkish for Foreigners C1 textbook as the object of the study was influenced by the fact that it is a publication of a private publishing house and that, unlike publicly published sets, its target audience was Arabic-speaking language learners.

Data Collection and Data Collection Tools

Document analysis was utilized in the research's data collection procedure. Document analysis is the process of analyzing written materials that contain information about the phenomenon or phenomena being examined (Yıldırım & Şimşek, 2013, p. 217). The study's reading materials were extracted from the Anahtar-Turkish for Foreigners C1 textbook and converted to an Office Word document. The texts were analyzed separately, and the number of syllables, words, and sentences was determined. According to Çetinkaya and Uzun (2020, pp. 149-150), "numbers, writing units, symbols, and writing unit clusters separated by spaces are accepted as words. Any unit that is grammatically independent of other sentences and clauses, a unit with a period (.), a question mark (?), a colon mark (:), and double brackets () is accepted as a sentence. Symbols and shapes were counted as they were pronounced". In order to increase the reliability, a Turkish education expert, apart from the researchers, determined the number of syllables, words, and sentences in the texts, and it was seen that the results did not differ. At the next stage, the average number of words was calculated by dividing the number of syllables by the number of words, and the average sentence length was calculated by dividing the number of words by the number of sentences. Consequently, the data based on formulas were obtained.

Data Analysis

The data obtained within the scope of this research were analyzed according to both Çetinkaya-Uzun and Ateşman formulas. There are mainly two reasons for this. Firstly, it is known that both formulas give similar results but differ at some border points. Secondly, studies in the literature have generally been carried out with only one of these two formulas. Therefore, both formulas have been used together in order to provide a comprehensive and detailed review of the relevant literature. The readability formulas of Ateşman (1997) and Çetinkaya-Uzun (2010) were implemented in the texts via coding into the Office Excel program. Thus, readability scores were determined for the documents that were analyzed. These are the readability formulas:

The Ateşman formula:

Number of Readability = 198.825 – (40.175.x1) – (2.610.x2)

x1= Average Word lenghth (total number of syllables/total number of words)

x2= Average sentence lenghth (total number of words/total number of sentences)

According to the Ateşman formula, the readability of Turkish texts is classified as follows: very difficult, difficult, medium, easy, and very easy. The levels of difficulty according to the scores are shown in Table 1.

Table 1. Classification of Turkish Texts Using the Ateşman Readability Formula Based on Readability Level

Number of Readability	**90-100**	**70-89**	**50-69**	**30-49**	**1-29**
Readability Level	Very easy	Easy	Medium	Difficult	Very difficult

The Çetinkaya-Uzun formula:

Number of Readability = 118.823 - (25.987 × AWL) - (0.971 × ASL)

AWL = Average Word lenghth (total number of syllables/total number of words)

ASL = Average sentence lenghth (total number of words/total number of sentences)

In accordance with the Çetinkaya-Uzun readability formula, Turkish texts are classified as challenged level, educational reading, and independent reading. The classifications of difficulty based on scores are shown in Table 2.

Table 2. Classification of Turkish Texts Using the Çetinkaya-Uzun Readability Formula Based on Readability Level

Number of Readability	**0-34**	**35-50**	**51-100**
Appropriate Grade Level	10-12.Grades (Challenged)	8-9.Grades (Educational)	5-7.Grades (Independent)

Findings

In this section, the results obtained in response to the study's predetermined research questions are presented.

Findings Related to the First Research Question

The data obtained for the question "What are the average word and sentence lengths of the texts in the Anahtar-Turkish for Foreigners C1 textbook?" are shown in Table 3:

Table 3. Average word and sentence lengths of the texts in the Anahtar-Turkish for Foreigners C1 Textbook

Order	**Text Title**	**AWL**	**ASL**
1	Karamsarlığa Kapılmamak	2.68	14.6
2	Stresi Nasıl Yönetebiliriz?	2.72	10.6
3	Kişisel Gelişim Kitapları	2.68	14
4	Neden Çok Okunuyor?	2.68	10.5
5	Son Yılların En Başarılı	2.64	13
6	Girişimcileri	2.44	12.9
7	Dünya Şampiyonları	2.52	15.6
8	Mimar Sinan	2.72	14.7
9	Mimar Sinan'ın Şaheseri	2.56	8.7
10	Süleymaniye Camisi	2.48	12.4
11	Türkiye'nin Güzellikleri	2.6	11.5
12	Heyecan Dolu Etkinlikler	2.4	14.4
13	Salda Gölü	2.56	10.6
14	Garip Ölüm Vakaları	2.52	6.7
15	Deli Dumrul	2.68	10.9
16	Sıra Dışı Beceriler	2.93	14.8
17	Trafik Kazası	2.52	15.3

*AWL: Average Word Length *ASL: Average Sentence Length

According to Table 3, the average word length of the words in the Anahtar-Turkish for Foreigners C1 textbook ranges from 2.40 to 2.93. The average length of a Turkish word, according to Ateşman (1997), is 2.6 syllables. 7 (41.17%) of the analyzed texts are shorter than the average Turkish word length, while 9 (52.94%) are longer. In addition, all texts except 3 texts show a distribution very close to 2.6. The average sentence lengths in the Anahtar-Turkish for Foreigners C1 textbook range between 6.7 and 15.6 words. According to Ateşman (1997), the average sentence length of Turkish consists of 9-10 words, and according to Bezirci and Yılmaz (2010), 10-11 words. When it is based on 10 words, 2 texts (11.76%) are below the average Turkish sentence length and 15 texts (88.23%) are above the average.

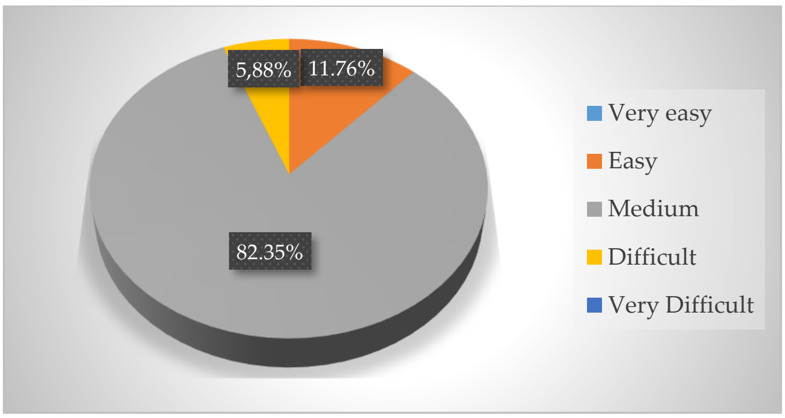
Findings Related to the Second Research Question

Table 4 displays the data obtained in response to the question, "What are the readability levels of the texts in the Anahtar-Turkish for Foreigners C1 textbook according to the Ateşman and Çetinkaya-Uzun formulas?"

Table 4. Readability Levels of the Texts in the Textbook According to the Ateşman Formula

Order	Text Title	Readability Score	Readability Level
1	Karamsarlığa Kapılmamak	53.1	Medium
2	Stresi Nasıl Yönetebiliriz?	61.9	Medium
3	Kişisel Gelişim Kitapları	54.6	Medium
4	Neden Çok Okunuyor?	63.8	Medium
5	Son Yılların En Başarılı	58.8	Medium
6	Girişimcileri	67.1	Medium
7	Dünya Şampiyonları	56.9	Medium
8	Mimar Sinan	51.2	Medium
9	Mimar Sinan'ın Şaheseri	73.3	Easy
10	Süleymaniye Camisi	66.8	Medium
11	Türkiye'nin Güzellikleri	64.4	Medium
12	Heyecan Dolu Etkinlikler	64.8	Medium
13	Salda Gölü	68.3	Medium
14	Garip Ölüm Vakaları	80.1	Easy
15	Deli Dumrul	62.7	Medium
16	Sıra Dışı Beceriler	42.5	Difficult
17	Trafik Kazası	57.7	Medium

According to the Ateşman formula, the readability scores of the Anahtar-Turkish for Foreigners C1 textbook range between 42.5 and 80.1 when Table 4 is analyzed. When the readability scores are compared to the Ateşman readability levels, it is determined that 2 of the 17 texts are simple, 14 are medium, and 1 is difficult. Graphic 1 shows the findings regarding the proportional distribution of the readability levels of the texts related to the textbook.



Graph 1. Proportional distribution of the Ateşman readability levels of the texts in the textbook

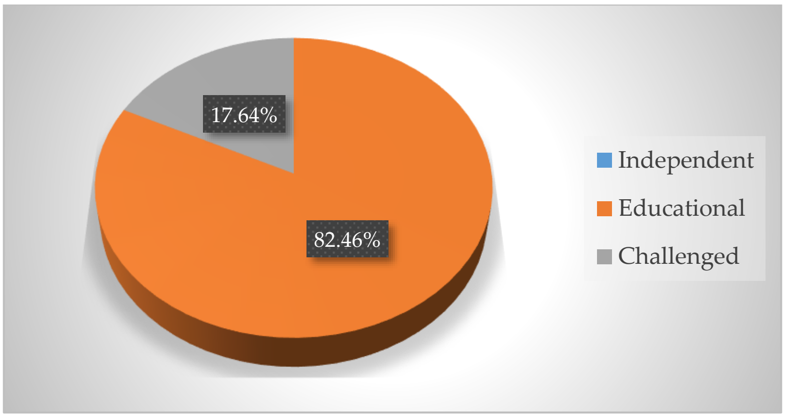
According to Graph 1, when the readability scores of the Anahtar-Turkish for Foreigners C1 textbook are compared to the Ateşman readability levels, 11.76% of the texts are easy, 82.35% are of medium difficulty, 5.88% are difficult. There are no very easy or very difficult texts in the book.

Table 5 provides readability scores according to the Çetinkaya-Uzun formula.

Table 5. Readability Levels of the Texts in the Textbook according to the Çetinkaya-Uzun Formula

Order	Text title	Readability Score	Readability Level
1	Karamsarlığa Kapılmamak	34.21	Challenged
2	Stresi Nasıl Yönetebiliriz?	37.85	Educational
3	Kişisel Gelişim Kitapları	36	Educational
4	Neden Çok Okunuyor?	38.99	Educational
5	Son Yılların En Başarılı	37.6	Educational
6	Girişimcileri	42.95	Educational
7	Dünya Şampiyonları	38.20	Educational
8	Mimar Sinan	32.8	Challenged
9	Mimar Sinan'ın Şaheseri	43.86	Educational
10	Süleymaniye Camisi	42. 34	Educational
11	Türkiye'nin Güzellikleri	40.10	Educational
12	Heyecan Dolu Etkinlikler	42.48	Educational
13	Salda Gölü	42.10	Educational
14	Garip Ölüm Vakaları	46.84	Educational
15	Deli Dumrul	38.60	Educational
16	Sıra Dışı Beceriler	28.38	Challenged
17	Trafik Kazası	38.49	Educational

When Table 5 is analyzed, the readability scores of the Anahtar-Turkish for Foreigners C1 textbook, according to the Çetinkaya-Uzun formula, range between 28.38 and 46.84. When the readability scores are compared to the Çetinkaya-Uzun readability levels, it is possible to conclude that 14 of the texts are written at an educational level, while 3 are written at a challenged level. Graphic 2 shows the findings regarding the proportional distribution of the texts' readability levels related to the textbook.



Graph 2. Proportional distribution of the the Çetinkaya-Uzun readability levels of the texts in the textbook

In Graph 2, when the readability scores of the Anahtar-Turkish for Foreigners C1 textbook are compared to the Ateşman readability levels, 17.64% of the texts are at the educational level, and 82.46% are at the challenged level. No text exists at the independent level.

In Table 6, a comparison of the readability levels of the texts in the Anahtar-Turkish for Foreigners C1 textbook, according to Ateşman (1997) and Çetinkaya-Uzun (2010) is given.

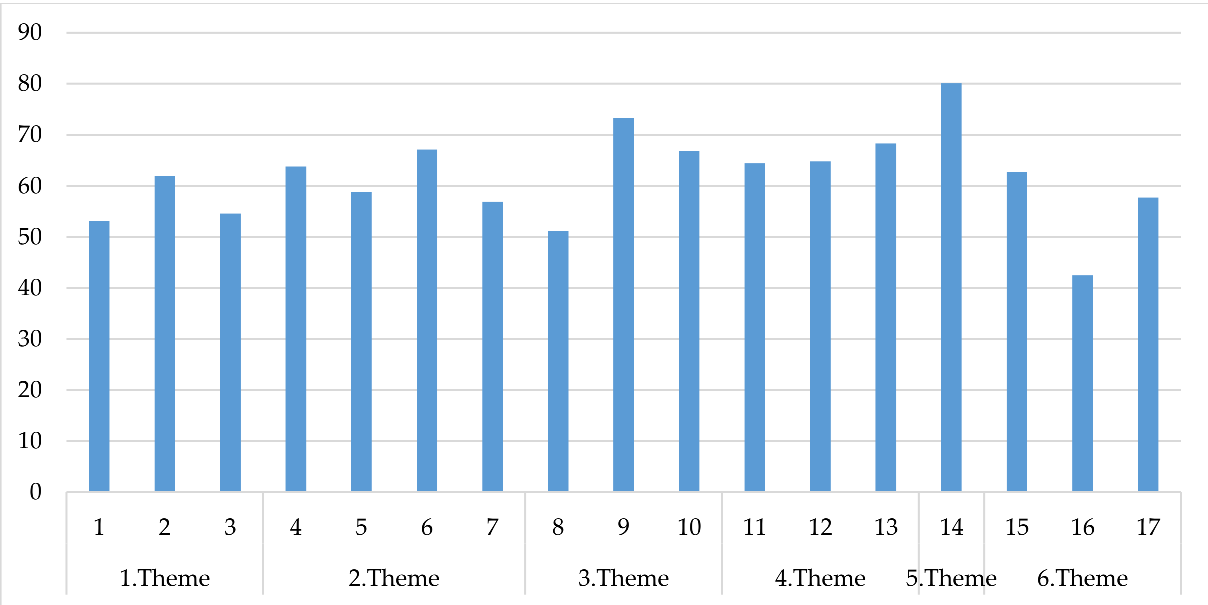
Table 6. General Average Scores of the Readability Levels of the Texts

Formulas	Average Word Length	Average Sentence Length	Average Readability Score	Readability Levels
The Ateşman Readability Formula	2.68	12.42	61.64	Medium
The Çetinkaya-Uzun Readability Formula	2.68	12.42	38.96	Educational

Analyzing Table 6 reveals that the average word length of the texts in the Anahtar-Turkish for Foreigners C1 textbook is 2.68, the average sentence length is 12.42, and the readability level is medium difficulty/educational level based on both formulas, which produce similar results. Based on these findings, the readability of the Anahtar-Turkish for Foreigners C1 textbook can be described as medium.

Findings Related to the Third Research Question

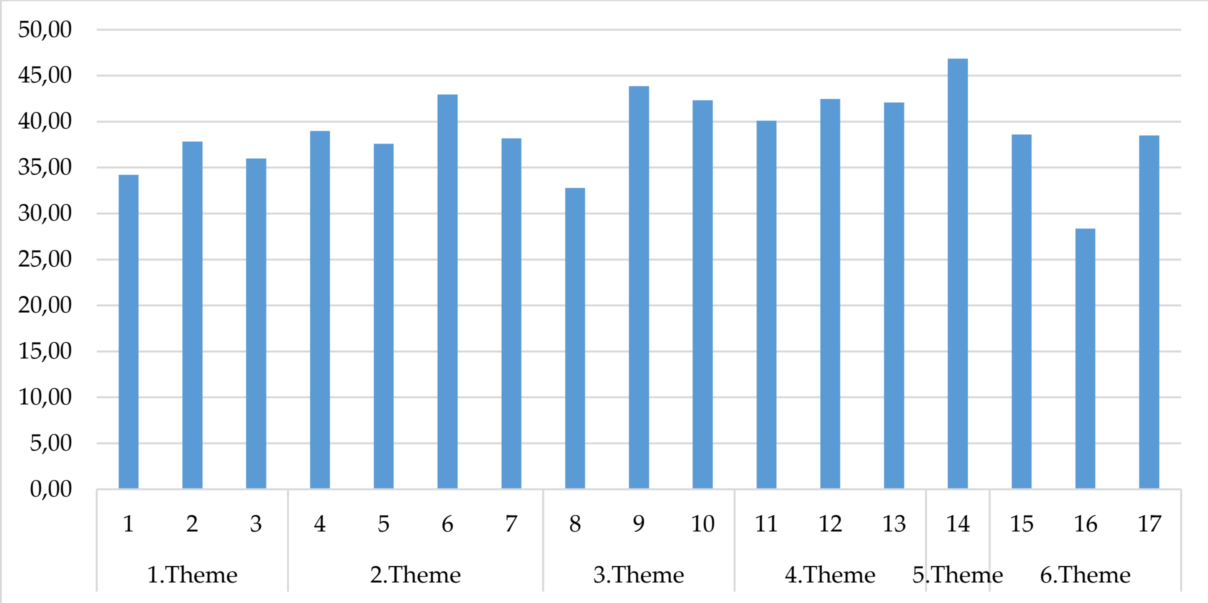
The data obtained from the Ateşman formula in response to the question, "How do the thematic and holistic readability scores of the texts in the Anahtar-Turkish for Foreigners C1 textbook change?" are displayed in Graph 3:



Graph 3. Order of Increase in Readability Scores in Accordance with the Ateşman Formula

When Graph 3 is considered, it can be concluded that neither thematically nor throughout the entire textbook, there is no increase in readability scores according to the Ateşman formula.

The data obtained from the Çetinkaya-Uzun formula for the related research question are shown in Graph 4:



Graph 4: Increase in Readability Scores According to the Çetinkaya-Uzun Formula

When Graph 4 is considered, it can be concluded that neither thematically nor throughout the entire textbook, there is no regular increase in readability scores according to the Çetinkaya-Uzun formula.

Discussion, Conclusion and Recommendations

This study analyzed the text readability levels of the Anahtar-Turkish for Foreigners C1 textbook. The findings of the study reveals that 11.76% of the texts in the Anahtar-Turkish for Foreigners C1 textbook are easy, 82.35% are of medium difficulty, and 5.88% are difficult, according to the Ateşman formula. The results obtained from Ateşman's formula show that the Anahtar-Turkish for Foreigners C1 textbook and the Gazi University, Yeni Hitit, Yedi İklim, and İstanbul textbooks have different levels of readability. In the study conducted by Yılmaz and Temiz (2014), it was determined that 10.52% of the texts in the Yeni Hitit 3 (advanced level) Textbook were easy 26.32% were of medium difficulty, 44.74% were difficult, and 18.44% were very difficult. Biçer and Alan (2017) used the Ateşman formula to determine the readability level of the texts in the Yeni Hitit 3 as 11% easy, 26% medium difficulty, 45% difficult, and 18% very difficult. In the İstanbul Turkish for Foreigners C1+ textbook, this percentage was determined to be 17% easy, 50% medium, 30% difficult, and 3% very difficult. In Mutlu's (2020) analysis of the readability of the Yedi İklim C1 Textbook, 16% of the texts were rated as easy, 42% as medium, 37% as difficult, and 5% as very difficult. In Bağcı's (2020) study, 18% of the Yedi İklim C1 Textbook's texts were rated as easy, 52% as medium, 19% as difficult, and 11% as very difficult. In addition, Bağcı (2020) determined that 3% of the materials in the Gazi University Turkish for Foreigners C1 Textbook were very easy, 12% were easy, 38% had a medium level of difficulty, and 47% were difficult. The results of these studies indicate that the texts in the Anahtar-Turkish for Foreigners C1 textbook are easier to read than texts in other learning sets at the same level. As a matter of fact, while the total rate of easy and medium difficulty texts in the Anahtar-Turkish for Foreigners C1 textbook is 94.11%, this rate is 36.84% (Yılmaz & Temiz, 2014) and 37% (Biçer & Alan, 2017) in the Yeni Hitit 3; 58% (Mutlu, 2020) and 70% (Bağcı, 2020) in the Yedi İklim; 53% in the Gazi and 67% in the İstanbul textbooks. This situation is similar in the evaluation made according to the Çetinkaya-Uzun formula. According to the Çetinkaya-Uzun formula, the results of this study indicate that 17.64% of the texts are challenged and 82.46 % are at an educational level. According to the Çetinkaya-Uzun formula, Zorbaz and Köroğlu (2016) determined that 40% of the texts in Gazi University Turkish for Foreigners C1 were at the educational level and 60% were at the challenged level. Consequently, the readability level of the Anahtar-Turkish for Foreigners C1 textbook is considerably less complex than that of the Gazi University Turkish for Foreigners C1 Textbook. Accordingly, it can be stated that increasing the difficulty levels of the texts in the Anahtar-Turkish for Foreigners C1 textbook will contribute to a balanced distribution of difficulty and will be beneficial for improving reading practices based on the levels of language learners.

Ateşman (1997) states that the average length of a Turkish word is 2.6 syllables. The average number of words per text in the Anahtar-Turkish for Foreigners textbook ranges between 2.40 and 2.93. 8 of the texts analyzed are shorter than the average Turkish syllable length, while 9 are longer. Bağcı (2020, p. 289) determined that the average word lengths of the texts in the Gazi University Turkish for Foreigners C1 textbook ranged from 2.03 to 3.33 and that 26 of the texts analyzed were longer than the average Turkish word length, while 8 were shorter. In the same study, it was determined that the average word lengths of the texts in the Yedi İklim Turkish for Foreigners C1 Textbook ranged from 1.70 to 3.18; the word lengths of 14 texts were longer than the average syllable length of Turkish, while the word lengths of 5 texts were shorter. In the study conducted by Biçer and Alan (2017), it was found that the average word length of the texts in the Yeni Hitit 3 textbook ranged from 2.35 to 3.16; 6 texts were below the average, and 32 texts were above the average length it. It appears that the average word lengths of the texts in the Anahtar-Turkish for Foreigners C1 textbook are similar to the average word length of Turkish but different from the average word lengths determined in the research findings of Bağcı (2020) and Biçer and Alan (2017).

The average sentence lengths in the Anahtar-Turkish for Foreigners C1 textbook range between 6.7 and 15.6 words. According to Ateşman (1997), the average sentence length of Turkish consists of 9-10 words, and according to Bezirci and Yılmaz (2010), 10-11 words. When it is based on 10 words, 2 texts (11.76%) are below the average sentence length of Turkish and 15 texts (88.23%) are above the average.

The average sentence lengths in the Anahtar-Turkish for Foreigners C1 textbook range between 6.7 and 15.6 words. According to Ateşman (1997), the average sentence length of Turkish consists of 9-10 words, and according to Bezirci and Yılmaz (2010), 10-11 words. When it is based on 10 words, 2 texts (11.76%) are below the average sentence length of Turkish, and 15 texts (88.23%) are above the average. According to Bağcı's (2020, p. 289) research, the average sentence length of the texts in the Gazi University Turkish for Foreigners C1 textbook ranges from 5.05 to 18.41, with 13 of the texts are below the average sentence length of Turkish and 21 are above the average. According to the same study, the average sentence length of the Yedi İklim Turkish for Foreigners C1 textbook ranges from 7 to 25 words. In the study conducted by Biçer and Alan (2017), it was determined that the average sentence lengths in the Yeni Hitit 3 textbook ranged from 5.36 to 39.33 words; 3 texts were below the average, and 35 texts were above the average. When these studies are taken into account, it can be stated that the average sentence lengths of the texts in the C1 textbooks vary considerably between the related sets and are significantly longer than the average sentence length of Turkish. This distinction may be related to the types of texts selected at the C1 level. CEFR (Council of Europe, 2020, p. 58) states that at the C1 level, (Learner) can comprehend a wide range of texts, including literary writings, newspaper or magazine articles, and academic and professional publications in his/her field of specialization, providing that he/she has the opportunity to reread them and has access to source materials. Due to the inclusion of long, complex, and academic texts in the relevant textbooks, it is understandable that there may be differences in terms of word and sentence lengths.

The difficulty level of the 17 C1-level texts analyzed in this study does not increase in a consistent manner, neither thematically nor throughout the book. In addition, it is recognized that the texts at the level of difficulty from easy to difficult are not presented in sequential or mixed order. It is seen that the majority of reading texts throughout the book are predominantly of medium difficulty. This situation is similar to Bağcı's (2020) research. Advanced language learners are expected to be able to use extended words, sentences, and grammatical structures. Just as purpose-oriented, simple narrative and brief texts, such as dialogues and short introductory texts, are used at the elementary level, reading texts with normal length, intense narrative, and strong discourse should be used at the advanced level (Şimsek, 2011, p. 45). As the principle of easy to difficult is applied between levels, it should also be applied within each level (Biçer & Alan, 2017, p. 1138). In this sense, it is recognized that it would be beneficial to include texts of simple, medium, and difficult levels in textbooks. Accordingly, it is believed that contemplating the language level in text difficulties and increasing the text difficulties in terms of readability for the C1 level according to the theme or time spent in the relevant course is also required by the easy-to-difficulty principle.

Readability provides information about the word and sentence structures of texts, and it is a form-focused evaluation of the information and structure the text provides (Harmankaya, 2022). Although discussions on readability demonstrate that a text's readability level may not be sufficient alone for comprehension, studies demonstrate that readability formulas are objective and useful for determining the text's difficulty level (Özdemir, 2021, p. 55). Consequently, the data obtained through readability formulas are related to the quantity of aforesaid texts in question and provide a certain perspective on the texts. In addition to the readability criterion, the process should also include different criteria regarding the text's quality, genre, subject, purpose, and comprehensibility. Thus, the relativity, suitability for the purpose, and quality of the chosen texts can be enhanced.

Recommendations

Within the scope of this study, the following recommendations are made:

1. In the Anahtar-Turkish for Foreigners C1 textbook, texts that are categorized as difficult and very difficult in terms of readability can be included.
2. In the order of the texts in the Anahtar-Turkish for Foreigners C1 textbook, texts whose difficulty level steadily increases in terms of thematic or holistic readability can be included in accordance with the principle of easy to difficult.
3. Textbooks such as İstanbul, Gazi, Yedi İklim, and Yeni Hitit are teaching resources prepared with public support and long years of experience. In this respect, it is thought that examining the textbooks prepared by private publishing houses by researchers and comparing them with the textbooks commonly used in public education environments will contribute to the formation of a common understanding of text selection.

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Principal Support, Organizational Citizenship, and Student Achievement: Implications for School Leaders

Research Article

Ufuk ERDOGAN[1], Davis CLEMENT[2]

[1]*Fırat University, Faculty of Education, Department of Educational Administration, Elazığ, Türkiye* 0000-0001-7248-1972

[2]*Eastern Michigan University, College of Education, Department of Leadership and Counseling, Michigan, USA* 0000-0003-1563-6776

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ABSTRACT

The purpose of this study is to examine the relationship between organizational citizenship behavior, principal support, and student achievement. It proposes that student achievement increases as teachers contribute beyond what is expected of them, and that they are driven to do this when they are emotionally supported by their principal. The study aims to expand the definition of instructional leadership to include expressive support and relationship-building. The paper employed multiple regression analysis of survey data from 1,104 teachers in 34 high schools in Virginia, USA, to examine the relationships between types of principal support and other school-level variables (i.e., OCB, student achievement, SES). The analysis revealed a strong, significant positive relationship between expressive principal support and OCB, and between OCB and student achievement. In addition, there was a strong, significant negative relationship between SES and student achievement. The results showed that OCB and expressive support together accounted for 39% of the variance in student achievement. The findings suggest that, compared to maintaining respectful professional relationships, instrumental support and professional development are less important in eliciting extra-role behaviors from teachers. The paper includes implications for the preparation of principals, for the development of instructional leadership standards, and for reform policies that focus on short-term gains over more distal school climate improvements. This paper extends current conceptualizations of instructional supervision and contributes to a more collegial, less managerial, understanding of leadership for school improvement.

Keywords:

Expressive support, leadership, organizational citizenship behavior, principal support, school improvement

[1]Corresponding author's address: Fırat Üniversitesi
Telephone: 7572547054
e-mail: ufukerdogann@gmail.com
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Introduction

Limited conceptions of accountability in schools have directed school leaders' attention to minimally acceptable levels of performance instead of maximal levels of teacher and student achievement. Notions of school improvement focused on baselines and cut scores undermine the potential for schools to improve beyond basic proficiency and flourish as vibrant centers of curiosity, creativity, and critical thinking. For schools to function, much less flourish, educators must go beyond what is measured or required by their contracts and job descriptions (DiPaola & Hoy, 2005a; Tschannen-Moran, 2002). Contributing during committee meetings, involvement in extracurricular programs, collaborating with other teachers—these kinds of activities and behaviors have been identified as organizational citizenship behaviors (OCB), and their relationship to student achievement is significant, strong, and important (DiPaola & Hoy, 2005b).

For research on organizational citizenship to make a difference in schools, however, leaders need to be aware of the antecedents of those behaviors. Fortunately, there are indicators in the literature. The amount of "going-the-extra-mile" that employees or subordinates are willing to contribute to an organization is related to their perception of how responsive the organization is to their needs and how they are supported by their leaders (Rhoades & Eisenberger, 2002). The purpose of this study was to determine how school leaders can support teachers in such a way that elicits OCB from them, thereby improving schools.

Conceptual Framework

Early research on OCB was based on the premise that if members of an organization (e.g., teachers) only carried out duties explicitly mandated of them, organizational success would be impossible (Organ & Ryan, 1995). Thus, measures of OCB have been created with the kinds of going the extra mile-type behaviors in mind, specific to the sectors to which they're applied (e.g., education (Oplatka, 2006; Somech & Ron, 2007); business (MacKenzie, Podsakoff, & Fetter, 1993; Morrison, 1994; Podsakoff, Ahearne, & MacKenzie, 1997); nursing (Lee & Allen, 2002). Conversely, the construct development of administrative and organizational support has relied on correlations with bare minimum expectations of employees, such as intent to remain on the job or in the field, or the tendency to burn out professionally (Tickle, Chang, & Kim, 2011). One initiating motivation of the current study was to find out how principals can do more than merely keep teachers from burning out and leaving the profession.

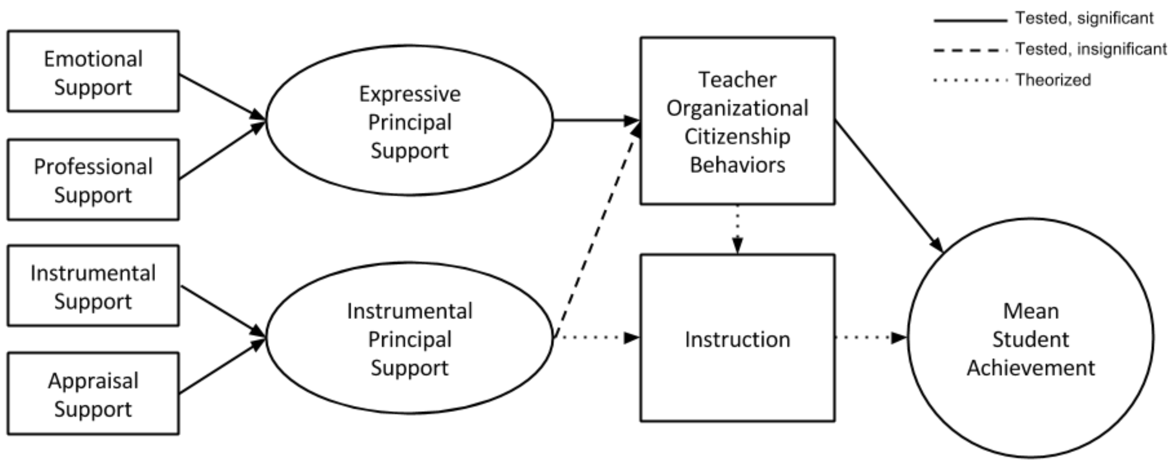

Figure 1. Conceptual framework of principal support and organizational citizenship behavior.

The current research concerns a portion of an overall conceptual framework of the leadership antecedents of teacher performance that result in positive student achievement outcomes (see Figure 1). In the case of principal support, we believe that expressive principal support, increases teacher OCB. Expressive support is comprised of relational behaviors such as principal trust, respect, honesty, and attentiveness toward teachers (DiPaola, 2012). According to this framework, OCB improves instruction by improving communication and collaboration between teachers (Berebitsky, Goddard, & Carlisle, 2014). In addition to validating a measure of principal support rooted in the literature on organizational and administrative support, our aim was to deepen our understanding of the specific actions school leaders can take in their schools to elicit organizational citizenship behaviors in the service of improving student achievement. If organizational citizenship behaviors (OCBs) are the teacher behavioral outcomes desired by school leaders, then research on OCBs should not only describe those behaviors, but also their antecedents. The purpose of this study was to describe the principal support behaviors that affect OCB, in order to answer the following guiding question:

What can principals do to elicit from teachers the extra commitment that leads to the above-and-beyond contributions that have such a positive impact on student achievement?

Development of Organizational Citizenship and Principal Support

In organizations, such as schools, there are certain informal activities that go beyond simple productivity to "lubricate the social machinery of the organization" (Smith, Organ, & Near, 1983) and improve organizational effectiveness. The construct of OCB was proposed to explain these aspects of organizational performance that are not addressed by the formal organization (i.e., structure, job descriptions, sanctions, rewards). Researchers have linked several constructs to OCB, including perceived organizational support (Randall et al., 1999; Somech & Ron, 2007); participative decision making (Somech, 2010); teacher empowerment (Shapira-Lishchinsky & Tsemach, 2014); organizational learning (Somech & Drach-Zahavy, 2004); organizational justice (Burns & DiPaola, 2013; LePine, Erez, & Johnson, 2002; Organ, 1997); organizational commitment (Dalal, 2005; LePine et al., 2002); positive school climate (DiPaola & Tschannen-Moran, 2001); trust (DiPaola & Hoy, 2005b); job satisfaction (Koys, 2001; Organ & Konovsky, 1989); teacher self-efficacy (Bogler & Somech, 2004); job attitudes (Organ & Ryan, 1995); and student achievement (Burns & DiPaola, 2013; Erdogan, DiPaola, &Donmez, 2022; Tarter & Cooper, 2011; Tindle, 2013).

Early studies of organizational citizenship behaviors were conducted with instruments in which supervisors rated their subordinates' levels of OCB, and the construct itself was conceived based on interviews with managers around the following question: "What kinds of things do you like to have people in your group do, but you know that you *can't actually force them to do it*, *can't promise any tangible rewards* for doing it, and *can't punish them for not doing it*?" (Organ, 1997). OCB instruments at the manager-level, instead of the employee- or subordinate-level, however, likely perpetuated both a managerial bias and a status quo bias by not accounting for the input of subordinates (Organ, 1997). For example, in educational research studies of school climate have shown that principals reliably overestimate the quality of school climate, rating it higher than teachers rate it (Hoy, Hannum, & Tschannen-Moran, 1998). Teacher self-report of OCB may give a more accurate sense of the level of OCB in a school.

Originally proposed with five behavioral characteristics—altruism, conscientiousness, sportsmanship, courtesy, and civic virtue—OCB has suffered from a lack of construct clarity (Organ, 1997; Organ & Konovsky, 1989; Organ & Ryan, 1995). The distinguishing characteristic of OCB, as opposed to other generally positive behaviors like competence and effectiveness, is the above-and-beyond nature of the behaviors. Labelled extra-role behaviors (ERBs) by Van Dyne et al. (1994), these behaviors are outside and in addition to those outlined in the job description or other mandated duties and responsibilities. They are not enforced or rewarded, and nonperformance is not punishable. They are fully discretionary, but they must be the kinds of behaviors that contribute to organizational effectiveness. Organ (1997) noted that, while ERBs are not technically rewarded, there are latent rewards for members of the organization when the organization is effective. Generating these behaviors in schools therefore requires of teachers a shift from the focus on immediate performance outcomes (i.e., yearly test scores), and toward more distal school-wide outcomes (i.e., average student achievement, positive school climate, collective efficacy, academic optimism).

Organizational, Administrative, and Principal Support

House's (1981) four-dimensional theory of social support was rooted in Durkheim's proposition that social relationships provide "a sense of meaning and purpose in life…and a set of constraints or controls on individual behavior" (House, Umberson, & Landis, 1988, p. 305). This sense of meaning and purpose, then, drives individuals not just to higher levels of performance, but to broader types of performance. In this model, social support is comprised of (a) *emotional support*, or communicating interest and value; (b) *instrumental support*, or providing physical and temporal resources; (c) *informational support*, or providing intellectual and developmental resources; and (d) *appraisal support*, or giving guidance and feedback. Conceptualizations of support have evolved since House's original proposal. Here we review the development of support as a construct related to schools.

Organizational Support

Perceived organizational support is based on the theory that members of an organization tend to "assign the organization human-like characteristics" (Rhoades & Eisenberger, 2002). In exchange for psychological and material resources, such as those comprising House's four dimensions, employees reciprocate toward the organization with increased commitment and improved performance. Moorman, Blakely, and Niehoff (1998) demonstrated that perceived organizational support (POS) was a mediator between perceptions of organizational justice and organizational citizenship behaviors. POS has also been shown to positively affect work attitudes and job performance (Randall et al., 1999), employee commitment (Wayne et al., 2002), and OCB (Randall et al., 1999; Wayne et al., 2002). Loi, Hang-yue, and Foley (2006) proposed a mediating role for POS between organizational commitment and intention to leave, and Moorman and colleagues (1998) also found that POS mediated the relationship between procedural justice and OCB. However, since employees and subordinates tend to view manager or leader behavior toward them as a proxy for how much the organization values them, researchers instead turned to a conceptualization of support tied to specific people (i.e., administrators) instead of to the organization in the abstract.

Administrative Support

Administrative support is frequently understood as social support applied to school settings, where school supervisors assist teachers with "issues such as student discipline, instructional methods, curriculum, and adjusting to the school environment" (Borman & Dowling, 2008, p. 380). This constitutive definition most closely resembles the instrumental and informational dimensions of support. Conceptually rooted in House's original four-factor model of social support (2013), administrative support in schools was identified as a significant contributor to teacher job satisfaction and intent to remain on the job or in teaching generally (Tickle et al., 2011). Administrative support has also been tied to retention of teachers of students with special needs (Cancio et al., 2013; Manning, 2008), and teacher self-efficacy (Hodge, 2002; Spearing, 2013). The problem with using studies of administrative support to inform leadership practice is its association with minimal indicators of organizational effectiveness, like teacher retention and job satisfaction. For a principal to work toward providing a school context in which both students and teachers realize their maximum potentials, more is needed. A more holistic model of support that includes affective, and not just technical, dimensions of leadership is needed. Emerging literature on principal support better addresses teachers' needs for meaning and purpose originally identified in House's work.

Principal Support

Several measures of principal support have been used to analyze teacher perceptions, and they tend to account for affective dimensions of leadership to a greater degree than the more managerial measures of administrative support. Berebitsky, Goddard, and Carlisle (2014) have studied principal support for change and its effects on teacher collaboration and communication. Adams and Olsen (2017) identified principal support for student psychological needs. Principal support has been correlated with increased teacher collaboration and communication (Berebitsky et al., 2014), teacher job satisfaction (Bressler, 2012), teacher expectancy (Kelley & Finnigan, 2003), and academic optimism (Krüg, 2015). Littrell, Billingsley, and Cross (1994), however, proposed a more general teacher-report measure of principal support that covers each of House's four dimensions, specifically worded for application in schools to a population of special education teachers. The current instrument is a substantially more parsimonious adaptation of Littrell's measure that redubs *informational* as *professional* support. In DiPaola's (2012) study, which used school-level means, the construct broke into only two dimensions, drawing instrumental and professional support into a single *instrumental support* factor, and emotional and appraisal support into a single *expressive support* factor.

Expressive principal support has been tied to faculty openness to community pressure for change (Cagle, 2012), trust in the principal (Trace, 2016), and OCB (Shanock & Eisenberger, 2006; Tindle, 2013). In these studies, instrumental principal support, which includes task-related supports (e.g., resources, time, feedback) was not related to the outcome variables. These results recall the literature on administrative support, which tied managerial types of support to minimal indicators like teacher retention and not to organizational outcomes like student achievement.

The current study tested the relationship of principal support to outcomes beyond mere teacher retention. What kinds of support generate in teachers the motivation to work beyond the contract and contribute to the work of the school in positive ways without reward or the threat of punishment? How do principals elicit the extra-role behaviors or going-the-extra-mile-type actions from teachers that contribute to improved school performance?

Method

The aim of this study was to explore the relationship between organizational citizenship behavior, principal support, and student achievement. The sample, data collection procedures, measures, and data analysis techniques used in this study are described below.

Sample

A cross-sectional design with convenience sampling was used to recruit participants for the study. The sample used in this study consisted of 34 high schools in Virginia, USA, which included responses from 1,104 licensed teachers. The sample was representative of Virginia with respect to geography, size, ethnicity, and student SES. Seven of the eight state education regions were represented. Because the school was the unit of analysis, organizational citizenship behavior, principal support, SES, and school student achievement data were aggregated at the school-level.

Measures

Organizational citizenship behavior and principal support are school-level characteristics, measured by aggregated teacher scores on those respective scales. Therefore, we also used school-level student achievement and school-level SES indicators rather than individual student achievement scores and indicators and indicator means tied to individual teachers. In addition, student achievement was operationalized as the grand mean of scores in four different subjects, as explained below.

Organizational Citizenship Scale

The OCB measure used was the 12- item Organizational Citizenship Behavior (OCB) Scale (DiPaola & Hoy, 2005a; DiPaola & Tschannen-Moran, 2001). All 12 OCB items exhibited strong loading on one factor, with factor loadings ranging from .42 to .88, and the single factor explained 59.48% of the variance. Cronbach alpha coefficients of reliability, α = .93 for elementary and middle schools and α = .86 for high schools, were reported in initial testing of the instrument (DiPaola & Hoy, 2005b). We screened the data and found some visually problematic items.

Many teachers did not respond to two negatively-worded items (*Teachers waste a lot of class time,* and *Teachers give an excessive amount of busy work*). Consequently, a substantial number of missing values exists for these two items. We checked the P-P plot (probability-probability plot), and calculated *z*-scores, skewness, and kurtosis. Skewness and kurtosis values for these two items were above ±1.00, and most of the survey's *z*-scores greater than ±2.56 (Field, 2013). Dalal and Carter caution that scales containing both positively- and negatively-worded items "are less reliable or have more measurement error than positively-worded or negatively-worded-only scales—a series of studies have shown that mixed-item scales results in an unexpected factor associated with the negatively worded items" (Dalal & Carter, 2015). Consequently, we decided to remove these two negatively-worded items and conducted a factor analysis with the remaining 10 items. The remaining 10 items loaded on a single factor that explained 56.54 % of the variance. The factor loadings ranged from .62 to .78. Participants were asked to indicate the degree to which they agree or disagree with statements (see Table 1) concerning organizational citizenship behaviors on a six-point Likert scale from *strongly disagree* to *strongly agree*.

Table 1. Organizational Citizenship Behavior Scale items

1. Teachers help students on their own time.
2. Teachers waste a lot of class time.*
3. Teachers voluntarily help new teachers.
4. Teachers volunteer to serve on new committees.
5. Teachers volunteer to sponsor extracurricular activities.
6. Teachers arrive to work and meetings on time.
7. Teacher take the initiative to introduce themselves to substitutes and assist them.
8. Teachers begin class promptly and use class time effectively.
9. Teachers give colleagues advance notice of changes in schedule or routine.
10. Teachers give an excessive amount of busy work.*
11. Teacher committees in this school work productively.
12. Teachers make innovative suggestions to improve the overall quality of our schools.

*Items reverse-scored.

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Principal Support Scale

The principal support measure we used was the 16-item Principal Support Scale (see Table 2) developed by DiPaola (2012), based on House's (1981) original study of social support, and organized according to the four dimensions identified by Littrell and colleagues (1994). Four distinct dimensions were not supported by Littrell's study, nor by the pilot studies conducted in the development of the current scale (DiPaola & Hoy, 2005a). Two more general types of principal support behaviors emerged instead: *expressive support*, comprised of emotional and professional support behaviors; and *instrumental support*, comprised of instrumental and appraisal support behaviors. Participants were asked to indicate the degree to which they agree or disagree with statements along these categories on a six-point Likert scale from *strongly disagree* to *strongly agree*.

Table 2. Principal Support Scale items

Expressive Support
Emotional support
1. My principal gives me a sense of importance that I make a difference.
2. My principal supports my decisions.
3. My principal trusts my judgments in making classroom decisions.
4. My principal shows confidence in my actions.
Professional support
5. My principal gives me undivided attention when I am talking.
6. My principal is honest and straightforward with the staff.
7. My principal provides opportunities for me to grow professionally.
8. My principal encourages professional growth.
Instrumental Support
Instrumental support
9. My principal provides adequate planning time.
10. My principal provides time for various nonteaching responsibilities.
11. My principal provides extra assistance when I become overloaded.
12. My principal equally distributes resources and unpopular chores.
Appraisal support
13. My principal offers constructive feedback after observing my teaching.
14. My principal provides frequent feedback about my performance.
15. My principal helps me evaluate my needs.
16. My principal provides suggestions for me to improve instruction.

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School Socioeconomic Status (SES)

SES is measure of the condition of student family backgrounds based on income level. The percentage of students in a particular school receiving free or reduced-price lunch (FRL) is used as a proxy for SES of the schools. The higher the percentage of students receiving free or reduced-price lunch, the lower the SES of the school.

Student Achievement

Student achievement was operationalized as the grand mean of scores on four different subject area Virginia Standards of Learning (SOL) exams. The SOL assessments provide a link between academic standards and graduation requirements for high school students. SOL student scores range between 200 and 600. In order to receive a passing score, a student must receive a score of at least 400. Student achievement for each school were based on four SOL assessments: algebra, biology, English, and history. We examined bivariate correlations of all the exam scores with grand mean student achievement. Algebra was strongly correlated with grand mean student achievement ($r = 0.92$, $p < 0.01$). Biology also exhibited a strong positive correlation with the grand mean achievement ($r = 0.88$, $p < 0.01$). Similarly, English showed a significant positive correlation with the grand mean achievement ($r = 0.92$, $p < 0.01$). And history showed a significant positive correlation with the grand mean student achievement ($r = 0.94$, $p < 0.01$). These scores were averaged per school to obtain a composite achievement score for each school.

Data Analysis

Prior to conducting the analysis, survey responses were screened at the teacher level and school level. Data were entered into and analyzed using SPSS 24. We checked outliers, skewness and kurtosis, missing values, and multicollinearity. The data were approximately normally distributed, with skewness ranging from –.097 to –0.90 and kurtosis values ranging from –0.85 to 1.15. We also assessed the assumptions of multiple regression analysis. The results showed that the assumptions were met and that there were no violations of the assumptions of regression analysis.

The unit of analysis for this study was the school. Before we tested the hypotheses, we examined the degree to which individuals' shared perception of the teachers could be aggregated at the school level to justify aggregation and avoid aggregation bias (James, 1982). When one uses individual perceptions to assess aggregate constructs, it is necessary to demonstrate within-group agreement (Klein & Kozlowski, 2000). Intraclass correlation coefficients (ICCs) and inter-rater agreement indeces (r_{wg}) are generally used to justify aggregation to the group level. ICC(1) may be interpreted as a degree of the extent to which individuals' perceptions were affected by group membership. ICC(2) indicates whether group means are reliably different from each other (Bliese, 2000). A common measure of inter-rater agreement is the r_{wg} index (James, Demaree, & Wolf, 1993), which assesses the extent of consensus, agreement, or within-unit variability within a single unit for a single measure (Klein & Kozlowski, 2000). When the variables showed sufficient within-group agreement, individual teachers' shared perceptions can be aggregated at the school level.

First, we computed descriptive statistics for all the variables and calculated bivariate correlations (Pearson coefficients) to examine the relationships among the variables. Next, we performed a hierarchical regression analysis, to examine the extent to which each variable predicts mean student achievement. In hierarchical regression, predictors are selected based on previous research, and the researcher decides in which order to enter the predictors into the model. Generally, known predictors from the literature should be entered into the model first in order of their importance in predicting the outcome (Field, 2013). After known predictors have been entered, the researcher may add any new predictors into the model. New predictors may be entered either all in one group, in a stepwise manner, or hierarchically, in which the new predictor hypothesized to be the most important is entered first. We first entered SES, followed by OCB, and then expressive principal support and instrumental principal support. We did not use the unidimensional construct of principal support as a predictor variable, because we wanted to see which dimensions of PS were significant predictors, since each dimension focuses on a different type of principal support. If we had used a one-factor structure, we would have been ignoring the differentiation in the dimension. Had we used the one-factor solution and the sub-dimensions together, we would risk multicollinearity in the model. For these reasons, we used the two-factor solution as predictors.

Data Collection

Because this project was part of a larger study of organizational properties, and because the unit of analysis was the school, a random group of licensed teachers from each of a convenience sample of 34 schools was selected to respond to the measures. Only licensed teachers completed the surveys. Participants were guaranteed anonymity, confidentiality, and the option to refuse, skip any question, or discontinue participation at any time. No attempt was made to gather data from faculty who were not present at the meeting, but virtually all teachers in attendance returned usable questionnaires.

Findings

Aggregation Analysis

To justify aggregating teacher-level data to the school level, we calculated intraclass correlation coefficients (ICC) and interrater reliability (r_{wg}). For OCB, the ICC(1) was .28, the ICC(2) was .73 and the r_{wg} was .92. F (33, 519) = 2.51, $p < .01$. For principal support, the ICC(1) was .33, ICC(2) was .86 and r_{wg} was .93. F (33, 474) = 6.70, $p < .01$. For expressive support, ICC(1) was .30, ICC(2) was .84 and r_{wg} was .90. F (33, 474) = 6.08, $p < .01$. For instrumental support, ICC(1) was .30, ICC(2) was .83 and r_{wg} was .94, F (33, 474) = 6.04, $p < .01$. Overall, these results provided sufficient evidence for the aggregation of responses to the school level. We concluded that the results of the analysis indicated that there was adequate within-school agreement and significant between-school variance in the aggregate measures (see Table 3).

Table 3. Aggregation Analysis of Variables

	ICC(1)	ICC(2)	r_{wg}	F-ratio
Organizational Citizenship Behavior	0.28	0.73	.90	2.51***
Principal Support	0.33	0.86	.94	3.53***
Expressive Support	0.31	0.84	.92	3.60***
Instrumental Support	0.30	0.83	.94	3.38***

*** $p < .001$

Descriptive Statistics

We calculated descriptive statistics for all school-level variables. Table 4 provides descriptive statistics and reliability coefficients for each scale of the study variables. All variables had high internal consistency, as demonstrated by Cronbach's alpha coefficients ranging from 0.88 to 0.95.

Table 4. School level descriptive statistics and Cronbach's a reliability score

Variables	**Mean**	**SD**	**Minimum**	**Maximum**	**Cronbach α**
OCB	4.49	0.26	3.81	5.16	0.88
Expressive Support	4.77	0.38	3.71	5.33	0.92
Instrumental Support	4.14	0.38	3.23	4.74	0.93
Principal Support	4.45	0.37	3.47	5.03	0.95
SES	30.21	14.94	8.00	65.00	
Student Achievement	462.88	18.90	423.50	508.33	

Note. N = 34; SD = Standard deviation; SES = socioeconomic status

Table 5 summarizes the correlation coefficients among variables. We found that OCB and expressive support were positively related to mean student achievement and that SES was negatively related to mean student achievement. No significant relationship was found between instrumental support and mean student achievement.

Table 5. Correlations for Study Variables

Variables	***1***	**2**	**3**	**4**	**5**	**6**
1. OCB	-	0.57**	0.37*	0.49**	-0.14	0.64**
2. Expressive Support			0.75**	0.92**	-0.16	0.61**
3. Instrumental Support				0.94**	-0.01	0.33
4. Principal Support					-0.09	0.49**
5. School SES						-0.57**
6. Student Achievement						-

Note. N = 34; OCB = Organizational Citizenship Behavior; SES = socioeconomic status; *$p < 0.05$; **$p < 0.01$

We conducted a three-step hierarchical multiple regression to determine the associations between OCB, expressive support, instrumental support, and student achievement after controlling for SES. Model 1 included only the control variable (SES); for Model 2, OCB was added; and expressive support and instrumental support were added for Model 3 (see Table 6). In the first model, as expected, the results of the regression analysis indicated that SES was a significant negative predictor of student achievement (β = -0.56, $p < 0.001$). SES accounted for 33% of the variance in mean student achievement. In the second model, OCB was entered into the regression equation and found to be a positive predictor of student achievement (β = 0.57, p <

0.001). OCB contributed an additional significant increase in the explanation of variance in the achievement score ($\Delta R^2 = 0.32$) in Model 2.

When including all four independent variables in Model 3, it was found that expressive support significantly and positively predicted student achievement ($\beta = 0.39$, $p < 0.001$). However, instrumental support was not a significant predictor of student achievement. Expressive support contributed an additional significant increase in the explanation of variance in the student achievement ($\Delta R^2 = 0.07$). The most important predictor of mean achievement was SES, which uniquely explained 33% of the variation in student achievement. Together the four independent variables—SES, OCB, expressive support, and instrumental support—accounted for 72.00% of the variance in mean achievement.

Table 6. Hierarchical Multiple Regression for Variables Predicting Student Achievement

	Model 1			**Model 2**			**Model 3**		
Variable	***B***	***SE***	***β***	***B***	***SE***	***β***	***B***	***SE***	***β***
(Constant)	484.95***	6.13		296.58***	35.02		279.80***	33.30	
SES	-73.05***	18.27	-0.58	-62.82***	13.43	-0.49	-58.13***	12.67	-0.46
OCB				41.26***	7.61	0.57	28.54**	8.54	0.40
ES							19.36*	8.36	0.39
IS							-4.80	6.61	-0.10
R^2	0.33			0.65			0.72		
F	15.993**			29.790***			19.098***		
ΔR^2				0.32			0.07		

Note. $N = 34$; OCB = Organizational Citizenship Behavior; ES = Expressive Support; IS = Instrumental Support; SES = socioeconomic status; * $p < 0.5$; ** $p < .01$; *** $p < .001$

Discussion

Much of the literature on organizational, administrative, and principal support has concerned correlations with employees' merely staying on the job or remaining in the profession (Tickle et al., 2011). Transformative school leaders, however, see teachers as more than seat fillers. They see them as change agents. Principals, like parents and families, should no more expect the bare minimum from teachers than they do of students. Just as teachers should inspire their students to excel beyond mere proficiency, principals expect more from teachers than what their job descriptions require (DiPaola & Hoy, 2005a; Tschannen-Moran 2002). But principals cannot make this demand without recognizing how vital their own leadership is in eliciting above-and-beyond performance from teachers (DiPaola & Hoy, 2005b). Our findings clarify the kinds of principal support of teachers that can do that. Organizational citizenship behaviors are distinct from skills and competence, and thus may not be as influenced by instrumental supports like feedback and training. OCBs are a form of reciprocal organizational support contributed by teachers when they perceive that the school, as represented by the principal, is responsive to their emotional needs as professionals (Rhoades & Eisenberger, 2002).

What happens in schools with teachers who are contributing organizational citizens? We can look to the original five dimensions of OCB—altruism, conscientiousness, sportsmanship, courtesy, and civic virtue (Organ, 1997; Organ & Konovsky, 1989; Organ & Ryan, 1995). Teachers exhibiting *altruistic* behaviors are helping colleagues when they have problems, need help, or ask for assistance (DiPaola, 2001). This benefits principals by spreading out supervisory responsibilities and diffusing professional development into the individual practice of teachers, which increases interdependence among teachers and strengthens social cohesion in the school. *Conscientious* teachers use time wisely, attend and participate in meetings and events, and follow the rules (DiPaola & Hoy, 2005a). When teachers are conscientious, principals do not have to serve as enforcers or heavy-handed supervisors, which increases teachers' sense of autonomy.

Teachers who are *sportsmanlike* avoid complaining about work, accept the outcomes of organizational processes, and maximize constructive use of resources. Good sports lend legitimacy to a principal's power and school procedures, increasing the principal's informal authority and influence in the school. *Courteous* teachers let each other know when they will be absent or late, make sure information makes it to the right people, and are respectful to each other and the principal. This pays off for principals when things are done on time, substitutions are made when they are needed, and information passes freely through informal networks. Courtesy lubricates the social machinery of the school. Finally, civically virtuous teachers sign up for committee work and extra duties, and they show up to public events like ballgames and concerts. This reflects positively on principals because it presents a positive image of the school to parents, families, and the community.

These behaviors are not easily written into teacher contracts, and rewarding or punishing them seems a patronizing or even manipulative approach to leading adults. Further, it is difficult to imagine that achievement for one teacher's students is higher because she serves on two committees and greets people in the hallway. OCB are, instead, visible signs in a school that something good is going on outside the job descriptions and evaluation rubrics. These behaviors are indicative of a healthy school climate (DiPaola & Hoy, 2001), and healthy school climates are associated with higher student achievement (Hoy et al., 1998). Our analysis is that expressive principal support (e.g., respecting teachers, honoring their expertise, asking for their input, expressing support for their decisions, encouraging their professional development) is a high-impact principal behavior when it comes to improving school climate.

Original theories of social support held that it generated, more than individual competence or technical effectiveness, a sense of purpose (House, 1981). Notions of principal support that are too focused on instructional improvement, supervision, or professional development may seem focused on achievement. But that focus may neglect the teacher's need for their work to have meaning and to be a part of something bigger than one person's performance. That kind of purposeful connection to an institution, to a school, comes by proxy of the teacher's connection to the principal (Shanock & Eisenberger, 2006), and connection to the principal is not cultivated by support that is merely administrative or managerial.

While instructional leadership and professional development increasingly dominate the literature on principal preparation and performance, greater attention could be paid to the soft leadership skills of collegiality and empathy. In the current study, the supposed four-factor construct of principal support demonstrated just two distinct factors: instrumental support and expressive support. Expressive support was shown to be significantly and strongly related to OCB and student achievement, while instrumental support had a weaker relationship with OCB and was not related to achievement. There are important implications for leaders and leadership programs in these findings.

Consistent with the theories of social support and organizational citizenship, our data show that there is a kind of devotion to school and to teaching that is not as dependent on teaching skill or effectiveness, but on feeling a sense of belonging in the school. The components of expressive support are relational and professional in nature, while instrumental support is comprised of technical and material aspects. In more vernacular, less clinical language, we might conceive of expressive and instrumental support, respectively, as respect and help. In a study of the multi-level relationships between principal, teacher, and student performance, Supovitz and colleagues (2010) found that most instructional support in schools was being provided by other teachers, not principals. In that study, principal leadership influenced student learning by lubricating the social machinery of the school that enabled and promoted that colleague interaction.

The "strong instructional advice networks" (Supovitz et al., 2010) in schools rely on teacher expertise and skill, which may be improved to a degree by instrumental support; but participation in these networks, for both veteran and new teachers, is not a contractual mandate, but a citizenship behavior. This is consistent with our finding that teacher citizenship behaviors (i.e., collaboration with and support of other teachers) are less dependent on help from the principal, and more dependent on the principal's respect of teachers as professionals who will autonomously collaborate and assist one another.

Limitations

Our study has some limitations that practitioners and researchers should note. First, even though we removed the two negatively-worded items in the OCB Scale, their impact on teacher responses to the other items is unknown. Additionally, because of their removal, we have a less-than-complete picture of the dimensions to which they belonged. Second, the predominance of organizational-focused and colleague-focused items in the OCB scale, as opposed to student-focused items, may inaccurately represent the degree to which teachers go the extra mile for the organization, for their colleagues, and for their students. Some studies on extra-role behaviors do distinguish between behaviors based on the recipients of the benefits of those behaviors (see, for example, Belogolovsky and Somech, 2010). Our sample is also from high schools in one state, and data are not connected at the teacher level, which limits the connections we can make between individual teacher perceptions and student outcomes.

Recommendations for Future Research

Studies of OCB should consider comparing the effects of its affective and technical dimensions on different types of teacher perceptions, practices, beliefs, and outcomes. Are the differing impacts of expressive and instrumental principal support related to other motivation dichotomies like hygienes/motivators (Herzberg, 1974) and task/ego orientation dichotomies like mastery/status orientation and fixed/incremental intelligence orientation? Additionally, our conceptual framework theorizes that the effects of OCB flow (eventually) through instructional improvement, so we advise testing this path. What are the independent contributions of teacher communication, collaboration, and other components of collegiality to teacher practice and school climate? We recommend future studies utilize teacher-level instruments and, when possible, classroom-specific student variables, so that individual differences in perceived support can be more closely examined. For instance, a veteran teacher requires different levels of and types of support from a principal than a novice teacher. What differences in teacher perceptions of principal support are there, and to what outcomes are they related?

Conclusion

Considering the tendency of the positive effects of OCB to be distal, and latent effects instead of immediate, proximate effects, a better understanding of school performance or effectiveness should include outcomes broader than just yearly or quarterly student achievement. It is not that OCB are associated with great teaching, but are instead associated with organizations in which great teaching is more common. The lesson from the first (faulty) conclusion would be that going the extra mile will improve test scores, and so the behaviors that comprise going the extra mile should be written into teacher contracts. Belogolovsky and Somech (2010) recommend just that: principals can elicit more OCBs from teachers if they simply "artificially" (p. 921) expand teachers' job responsibilities. This is contrary to Organ's theory of OCB, which is not about the activities themselves, but about the amount of extra work a teacher feels obligated to reciprocate.

The lesson from their second (correct) conclusion is that OCB arise from school climates that promote them—and school climates that promote OCB are characterized by respectful and supportive principals. Higher student achievement means in schools are likely indicative of stable patterns, rather than recent interventions. The contributions of OCB to organizational outcomes are through its norms and informal organizational mechanisms and outputs, not discrete teacher actions. Instructional improvement initiatives, then, must include broader attention to social cohesion and climate in schools, as well as on principal interactions that are respectful of teachers as professionals. The degree of above-and-beyond to which teachers are willing to go is related to their perception of how responsive the school, through its proxy the principal, is to their social and professional needs. To a greater degree than instructional supervision or professional development, which we conceive of as types of instrumental support or help, we suggest that expressive support may generate more extra-mile behaviors, resulting in higher student achievement. In other words, providing social and emotional support may pay more dividends than traditional support vehicles like resources, time, and feedback.

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An Artificial Intelligence-Based Approach to Assess and Classify University Students' Attendance in Live Sessions

Research Article

Feyzi KAYSI[1], Emrah AYDEMIR[2], Yusuf Islam SURUCU[3]

[1]Istanbul University-Cerrahpaşa, Vocational School of Technical Sciences, Department of Control and Automation, Istanbul, Türkiye 0000-0001-6681-4574

[2]Sakarya University, Faculty of Business, Department of Management Information, Sakarya, Türkiye 0000-0002-8380-7891

[3] Kırşehir Ahi Evran University, Mucur Vocational School, Department of Audiovisual and Media Design, Kırşehir, Türkiye 0000-0002-7043-8310

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ABSTRACT

Distance education, as a strategic instructional method, offers students significant advantages in maintaining the continuity and coherence of their learning processes. This study aims to investigate the actions and behaviors of students in live sessions, and prediction of attendance patterns using artificial intelligence. The data of the study were obtained by quantitative techniques. Two live sessions were recorded, and a five-second clip of each participant was extracted from these recordings. The meticulous annotation of 17036 images was conducted for the purpose of classification. Some results of the study shows, the highest attendance rates were observed at both the onset and culmination of the live sessions. Furthermore, it was discerned that, on average, three out of every four participants consistently adhered to the course content, exhibiting a commendable level of dedication. Intriguingly, some students displayed an elevated level of engagement during the sessions by actively participating in discussions, responding to queries, or expressing enthusiasm. On the other hand, a portion of the participants demonstrated disengagement from the course material through various indicators, such as diverting their attention, lowering their gaze, or physically disengaging from the camera's field of view. To accurately distinguish between active and passive course attendance, cutting-edge deep learning-based transfer learning models were employed, leading to an impressive 92.0% success rate in classification. In conclusion, this study underscores the significance of distance education as an efficacious pedagogical approach in ensuring the uninterrupted progression of students' learning experiences. Through the application of advanced deep learning techniques, the research elucidates the diverse

[1] Corresponding author's address: Istanbul University-Cerrahpaşa
Telephone: 90 0212 866 3700 - 41402
e-mail: fkaysi@iuc.edu.tr
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manifestations of student engagement during live sessions, providing valuable insights into their active involvement and disinterest.

Keywords:
Live Session, Distance Education, Online Course Attendance, Online Course Affect.

Introduction

The key concept for distance learning activities to be effective as expected is interaction (Çelen, Çelik, & Seferoğlu, 2018). The inadequacy of distance education in terms of interaction appears as an essential limitation (Gülüşen & Şimşek, 2011). In this case, there may be disruptions in the interest in the course between the instructor and the learners. For this reason, it should be aimed to provide two-sided interactions between instructors and learners in the design and development process of distance education (Reznicek, 2002). With today's technology that can allow simultaneous interaction, this limitation has disappeared to a great extent (Gülüşen & Şimşek, 2011). The monotony of live sessions in distance education can reduce the interest and interaction in the courses. Therefore, it will be adequate to design course materials to allow interaction (Porter, 2004). In this way, the motivation and success of the learners in the courses can be increased (Uşun, 2006). During distance education processes, learners are expected to interact with their friends and the course instructors (Porter, 2004). Interaction can be achieved through methods such as e-mail, videotape, discussion forums, audio conferencing, video conferencing, or web chats (Hunter, Deziel-Evans, & Marsh, 2003; MacLaughlin, Supemaw, & Howard, 2004).

Compared to the traditional face-to-face courses, the quality of the online course is the design and development dimensions of the courses (Haugen, LaBarre, & Melrose, 2001). However, online course development requires planning and special training (Cox & Egbue, 2014). The complexity of the technologies used in online courses causes difficulties in using these tools. Because the problems that arise in distance education courses cause students to leave the course early (D. Yang, Kraut, & Rose, 2016). In order to increase the interest in live sessions, essential components such as learning objectives, teaching and learning activities, and feedback and evaluation should be considered (Fink, 2015). The correct design of these components is critical to attracting students to an online environment (Khan et al., 2017).

Students' participation levels are lower in live sessions compared to face-to-face education (Hart, Friedmann & Hill, 2018). Therefore, low student participation in live sessions should be seen as a problem that needs to be addressed (Murphy & Stewart, 2017). Increasing the of interaction in live sessions can lead to increased learning and satisfaction (Bernard et al., 2009). For this reason, activities that increase interaction should be preferred. There are several factors that affect interaction in live sessions, such as group work, course environment, model use, community, discussion question and evaluation, feedback, and instructor participation (Richardson & Swan, 2003).

Artificial intelligence can support school management in systems that address issues such as classroom timetables, personnel planning, facility management, finance, security, and cybersecurity in schools (Holmes, Bialik & Fadel, 2019). In addition, artificial intelligence studies for distance education investigate students' participation in live sessions, interactions in processes, and improving learning processes. In this context, student participation and interest in live sessions can come to the fore. The participation rate in live sessions is lower than in face-to-face courses (Carr, 2000; Frydenberg, 2007). Students who do not attend live classes face the consequences of not completing the curriculum and being damaged in terms of time and finances (Tinto, 2006). Students who have withdrawn from any live sessions before are more likely to drop out of the next live sessions (Cochran, Campbell, Baker & Leeds, 2014).

Cognitive science and education examine how to help students learn and which teaching interaction styles are effective (Woolf, 2010). In this respect, it has become essential to develop artificial intelligence-based tools to support learning and to use these tools to help understand learning. For example, it can model how students act in solving an arithmetic problem and identify previously unknown misunderstandings for educators, researchers, and teachers. In this way, much more about the learning process can be revealed, and these results can be used in different classroom applications (Holmes et al., 2019).

When the face-to-face courses given with the traditional method and watching the video recordings of the courses were compared, it was understood that the students preferred video courses more over time (Zureick, Burk-Rafel, Purkiss, & Hortsch, 2018). In other words, instead of attending live sessions, students benefit from the opportunity to watch video recordings of the courses remotely (Lovell & Plantegenest, 2009). Students' interest in live sessions decreases after the first 10-15 minutes (Wilson & Korn, 2007). Therefore, although access to live session content does not affect motivation for the course, a significant portion of students follow the course through the content (Brennan, Sharma, & Munguia, 2019).

With the Covid-19 epidemic, the distance education method has been effective. Instructors and students, who had only face-to-face education experience before, suddenly started to carry out the learning processes with distance education. In this context, it was ensured that the course contents were shared in digital environments and the courses were conducted synchronously or asynchronously with the students. In order to keep the interaction level of university students high, both lecturers and students started to conduct courses using the interaction resources at the same time as live sessions. In this context, situations such as student participation or follow-up in live sessions come to the fore. Particularly, the learning processes and student participation in live sessions are essential in terms of the effectiveness of live sessions.

Various data mining techniques are used to predict students' performance and evaluate slow learners and dropouts (Kaur et al., 2015; Hardman et al., 2013). These techniques used in educational datasets are helpful in data-driven decision making (Waheed et al., 2018). Early forecasting is a new phenomenon in this field, which includes proposing appropriate corrective strategies and policies, then reducing dropout rates and timely assessment methods (Waheed et al., 2020). Various factors such as motivation, interaction, course prerequisites, course content are among the factors that cause students to withdraw from the course early (Hone & El Said, 2016).

Waheed et al. (2020) predicted the academic performance of students using deep learning models and artificial neural networks. Waheed proposed a new prediction model by analyzing clickstream data obtained from virtual learning environments over a 9-month period. As a result, he developed a model that classifies students at risk and students with the potential to leave the course early, with an accuracy rate of 85%. (Xu et al., 2019) estimated the academic performance of students using a range of internet usage behaviors such as online time, internet usage data, and connection frequency. As a result, he found a significant relationship.

Purpose of the Study

This study aims to investigate the engagement of students who attend live sessions in distance education, particularly focusing on their behaviors while being in front of the camera during the course. By doing so, the study seeks to assess students' active attendance in live sessions and the effectiveness of these synchronous interactions. Analyzing students' watching behaviors will offer valuable insights for instructors to tailor their teaching approaches accordingly. The monitoring of students' live session attendance situations can be consistently observable. Furthermore, the detection of students who leave the live session or show disinterest in the course will become easier. For students in such situations, it will be possible to alert educators to encourage their re-engagement in the class. Moreover, the findings from this research will support instructors in making data-driven decisions to enhance the efficacy of their educational practices, ultimately leading to improved academic performance and higher student retention rates. Additionally, the establishment of early-warning systems based on the study's results can facilitate the identification of students at risk of dropping out, enabling timely intervention and appropriate preventive measures.

Matherial and Method

In the study, the participation of university students in live sessions was examined. The study was conducted in two stages. In the first stage of the study, live sessions were conducted and recorded. Within this framework, images were obtained from the videos at five-second intervals where all participants appeared together. In each acquired image, participants were individually processed to appear separately. The behaviors of participants in the images obtained at five-second intervals for each participant were evaluated using quantitative techniques. In the quantitative data collection aspect of the research, a descriptive survey model was employed. Descriptive studies involve meticulously depicting a past or present situation in its original state without alterations (Karasar, 2008). Each participant's image was initially classified into whether they were watching the live session or not, and subsequently, their behavior was separately categorized based on whether they were watching the live session or not. These categories were analyzed as frequency (f), percentage (%), crosstabs, and Confusion matrix.

In the second stage of study, the analysis of watching situations was made by using machine learning methods and images obtained from videos that were open while the subjects were watching the live sessions. Thus, the students' attendance to the live lectures has been predicted using artificial intelligence.

Participants

The participants of the study consisted of students studying at a state university in Istanbul. The instructor, whose course will be recorded, agreed to participate in the study but did not want an analysis based on his images. Participants were reached with convenient sampling. This sampling is based on the presence of participants who are readily available or easily accessible (Berg & Lune, 2012). The student participants of the study were reached through the class representative on the internet. It was stated to these participants that any data that would directly or indirectly imply themselves or the institution they studied at will not be used in the study. In addition, it is clearly stated that no sanctions or scoring will be made for students based on the results of watching or not watching the live session. Among the 48 students who took the course, 31 participants voluntarily agreed to participate in the study. As a maximum of 25 participants could be seen on a screen during the screen recording, some participants were watched less than others. It was determined that some participants left the watching area as a result of the internet connection problem they experienced or the desire to leave the course. These participants were replaced by other participants whose cameras were on but did not fit into the watching area. For this reason, the number of participants and watching times may vary.

Data Collection

The study was conducted with ethical permissions obtained from the Scientific Research and Publication Ethics Board of Kırşehir Ahi Evran University, Faculty of Science and Engineering. In the information given to the participants of the study, they were asked to behave as in other courses during the live session. Before starting the live session recordings to be used in the study, pilot courses were conducted. In this context, a 20-minute trial course was taken. In this course, objectives such as seeing the participants' behavior in front of the camera, participating in the live session, and controlling the camera angles were considered.

Participants were informed one week in advance about the live sessions to be used in the study. In this context, the days and hours of the live sessions were communicated to them. During the live session, live sessions were recorded by two volunteers through software. In this way, it is aimed to prevent any loss of records. The recorded course times are 32 minutes and 20 seconds for the first course and 30 minutes and 15 seconds for the second course. In each image in the obtained recordings, camera images of up to 25 people can be seen. As a result of removing the instructor from these images, a maximum of 24 participant images was obtained from each of the images at five-second intervals. During the course, as a result of some participants leaving the course, breaking their internet lines, or reconnecting, the number of instant participants in each image changed to maximum 24 and minimum 20.

Analysis of Data

The video recordings of the two courses were divided into snapshots on a frame basis. Among these images, images were separated at five-second intervals and transferred to a folder. These five-second live session images were split so that each participant could be watched alone. The grid position, course number, durations, and frame number are assigned as names for each image in these operations. Among these images, the images of the instructor were deleted. Later, during the live session, the images recorded as instant black were also removed because the first image was dark during the reconnection of some participants. As a result of these processes, analysis studies were carried out with 17036 images. These images were labeled one by one by a software prepared. Participants who were watching the course; were labeled as (1) looking at the screen, (2) laughing at some statements of the instructor in order to eliminate the monotony of the course, or (3) answering questions. Participants who did not watch the course; were labeled as (1) leaving the camera, (2) looking to the right, left, or upwards, and (3) having their head tilted forward. After all the processes, the accuracy of the labeling processes was checked on some randomly selected images. In this labeling, the participant code, watching status, and positions on the screen were added in addition to the file name in the related images. The data are given as percentage and frequency or crosstabs of the codes in these filenames.

An application was written with the Visual Studio C # program for tagging participant-based course watching images. With this program, the images were checked in order, and the tag name selected for each image was saved as the file name. A quick labeling process was carried out with this program, which was written to facilitate the work of researchers. A screenshot of the program is given in Figure 1.

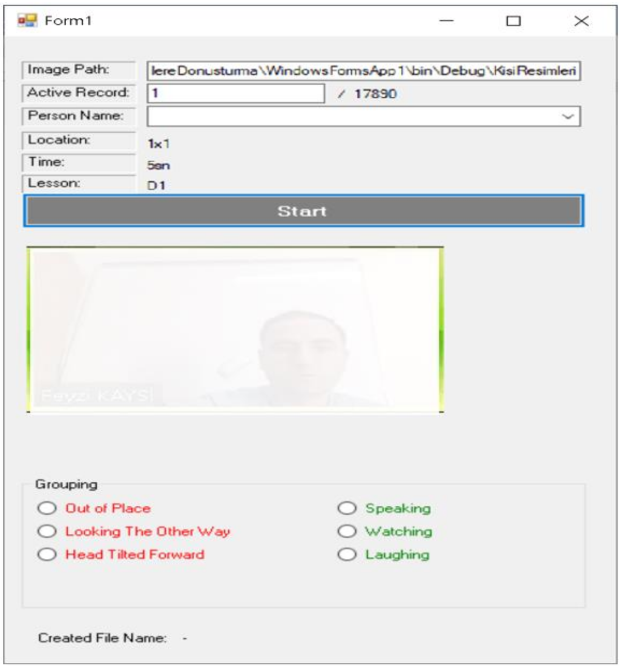

Figure 1. Sample Image from Picture Labeling Program

Transfer Learning and Deep Learning

Artificial intelligence methods were employed to predict participants' behaviors during the live sessions. Transfer learning methods allow transferring the experience obtained from previously learned related data to new learning. Especially in cases with insufficient training data, its importance becomes more evident (Hunt, Kabul, & Silva, 2017). Transfer learning is widely used for deep learning applications in visual data (Oquab, Bottou, Laptev, & Sivic, 2014).

Although it is known to have emerged in 1998 (LeCun, Bottou, Bengio, & Haffner, 1998), it became more popular with the Large-Scale Image Recognition Competition (ImageNet) in the field of Deep Learning object identification, which emerged in 2012. Although it has a long history, the increasing amount of data has impacted its recent success. The lowest error rate, which was 26.1% in the first competition won by the convolutional neural network, was reduced to 15.3% and decreased to 3.6% in the following years (Krizhevsky, Sutskever, & Hinton, 2017). Deep learning models perform the feature extraction process from the input data without any intervention from the user and reveal different features for the data in different layers (Bengio, Courville, & Vincent, 2013). Convolutional neural networks, which are the development of artificial neural networks, are accepted as the basic model of deep learning architectures. The essential feature that distinguishes convolutional neural networks from artificial neural networks is that they prevent memorization by randomly removing some network nodes in each iteration during the training phase (Srivastava, Hinton, Krizhevsky, Sutskever, & Salakhutdinov, 2014).

In this study, AlexNet, DenseNet201, GoogleNet, InceptionResNetv2, Inceptionv3, MobileNetv2, ResNet101, ResNet18, ResNet50, SqueezeNet, Vgg16 and Vgg19 models were used. ResNet (Residual Network) architectures are constructed by incorporating residual values and residual blocks into the model structure. This approach mitigates gradient vanishing concerns by introducing an additional value in between two consecutive layers (Tai, Yang, & Liu, 2017). DenseNet (Dense Convolutional Network), on the other hand, is similar to ResNet, with the only difference being that it adds a value at each layer and tries to make the network more trainable. Thus, it optimizes the problem of the formation of dysfunctional layers in high-layer networks (Huang, Liu, Van Der Maaten, & Weinberger, 2017). Inception, which is defined as a network within a network, is based on the simultaneous performance of filtering and pooling in convolution layers (Szegedy, Ioffe, Vanhocke, & Alemi, 2017). While the AlexNet method uses ReLu as the activation function, it prefers maximum jointing in the jointing layers. This method, which has approximately 60 million parameters, is the first model to run on parallel dual GPUs (Alom et al., 2018). The Visual Geometry Group (VGG) consists of two convolutional layers, both of which use the ReLu activation function. After the activation function, there is a single max-pooling layer as well as several fully connected layers using a ReLu activation function. The last layer is the softmax layer. Vgg16 and Vgg19 are named because they have 16 and 19 layers, respectively (Simonyan & Zisserman, 2014).

Separation of Training and Test Data

When presenting data to machine learning, it is divided into two different groups, training, and testing. It is aimed to provide learning from these data by presenting the training data to machine learning. Test data, on the other hand, is aimed to test the success of the training with data that has never been used before. In order to evaluate performance in machine learning methods both objectively and accurately, data that the model has not used for training before is used by the resampling method. With the cross-validation method, all data is tried to be used for educational purposes. For this, all samples are used for testing as well as for training (Bengio & Grandvalet, 2004). However, in machine learning approaches, in general, 1/3 of the data is randomly selected for testing, and 2/3 is parsed for training. In this method, it is a correct approach to use the cross-validation method in order to avoid incomplete learning due to the lack of some data in the training phase. The cross-validation approach is also preferred over other methods in terms of efficiency (Allix et al., 2014; Stone, 1977).

In the cross-validation method, the data is divided into ten parts for 10-fold cross-validation. The first of these parts is used for testing, while the other nine parts are used for training. This is the first dataset obtained in this way. In the second dataset, the second piece of 10 pieces is used for testing, and the remaining pieces are used for training. Thus, the second dataset is obtained. This situation is repeated for a total of 10 pieces. As a result, ten different datasets are created and presented to machine learning. Success analysis is performed by taking the averages for the results of the ten datasets. Thus, machine learning will use all the data for both testing and training purposes.

Success Criteria

For a categorical variable, it is possible to determine which category the data falls into with classification methods. There is various error analysis to determine the success of these methods. The most commonly used of these is the confusion matrix, shown in Table 1.

Table 1. Confusion matrix

		Predict Class	
		Class=1	Class=0
True Class	Class=1	TP	FN
	Class=0	FP	TN

A higher success level will be obtained if the higher the values at the intersection of rows and columns with the same class value. The abbreviations for the confusion matrix given above are explained below.

- Predicting positive when actually positive (TP: True Positive) - Correct Predict
- Predicting positive when actually negative (TN: True Negative) - Correct Predict
- Predicting negative when actually positive (FP: False Positive) - Wrong Predict
- Predicting negative when actually negative (FN: False Negative) - Wrong Predict

Using the values in the confusion matrix given above, different success criteria are calculated. Accuracy rate and error rate are among the frequently used success metrics. Calculations for these two success criteria are presented in Equation 1 and Equation 2 below.

$$Accuracy\ rate = \frac{TP + TN}{TP + TN + FP + FN} \tag{1}$$

$$Error\ rate = \frac{FP + FN}{P + TN + FP + FN} \tag{2}$$

The accuracy rate is calculated by dividing the correctly classified samples by the total samples. The error rate is calculated by dividing the incorrectly classified samples by the total samples.

Findings

Live Session Watching Findings

During the two courses, the participants' participation in the course included answering the questions asked by the instructor, laughing, and watching. Indicators for not watching the course are looking at a place other than the camera for a long time, having their head tilted for a certain period, and not being in place. In this respect, the change in the participation rate of the participants by watching the courses is presented in Figure 2.

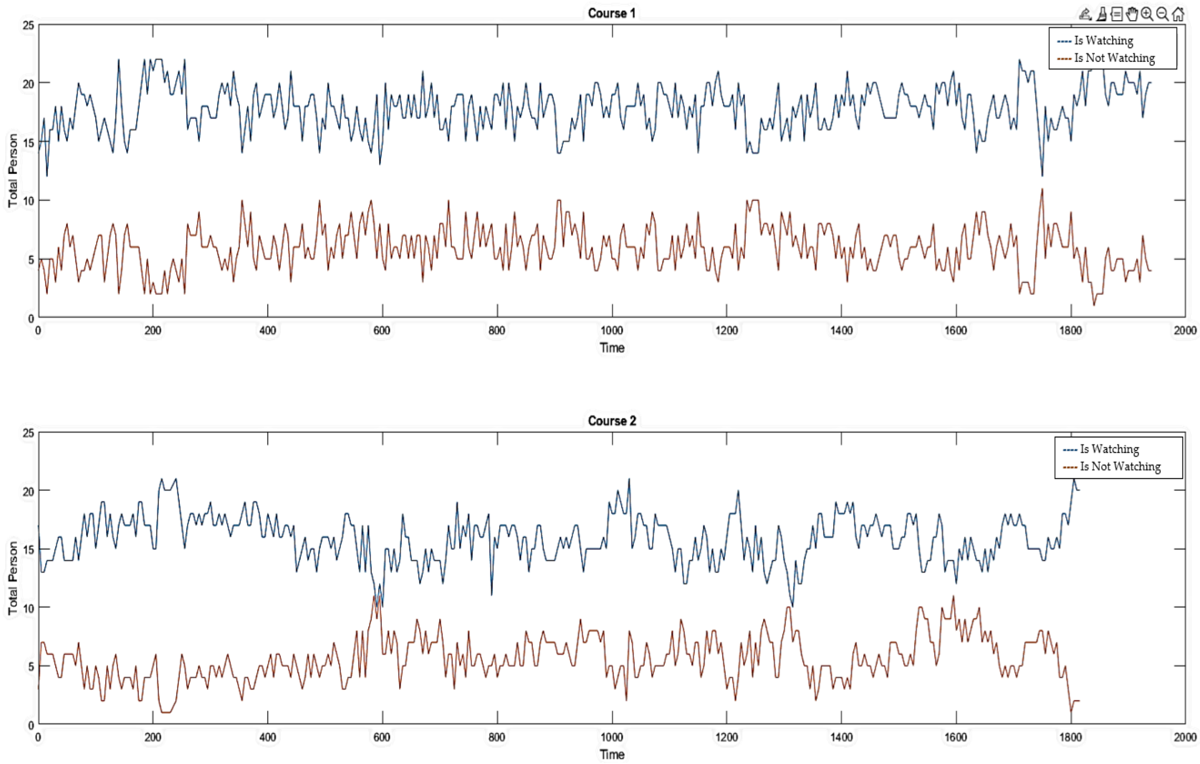

Figure 2. Course 1 and Course 2 Watching Status and Changes

When the participant course tracking chart of Course 1 is examined, it is seen that there are very frequent changes in the ratio of watching and not watching the course. However, it is seen that the rate of watching reaches the highest level in the first and last parts of the course. This rate shows a constant change in the following periods. Finally, it can be seen that the participation rate increases towards the end of the course. It was determined that the number of watches was at the lowest level, especially at the 29th and 30th minutes of the course. In this period, the number of participants watching was 12, and the number of participants not watching was 11. Compared to Course 1, the rates and numbers of not watching in Course 2 are higher. In particular, the rate of those who did not watch at the 10th minute of the course (11 participants) exceeded the rate of those who watched for the first time (10 participants). This took approximately 20 seconds. In addition, in the 20th minute of the course, the number of watching (10 participants) and non-watching (10 participants) was equal. Finally, in the 27th minute of the course, although 11 participants who did not watch the course were tagged, the number of those who watched the course increased to 12 participants with the increase in the number of people attending the course.

The duration of individual attendance in the live sessions of the participants was examined. As a result of these examinations, it was determined that some participants only attended Course 1. Participant-based Course 1 and Course 2 attendance rates are presented in Table 2.

Table 2. Participants' attendance informations in live sessions

Participant ID	Course 1 Image Count	Course 1 Attendance Rate	Course 2 Image Count	Course 2 Attendance Rate	Total Image Count	Total Attendance Rate
22	389	100.00	364	100.00	753	100.00
23	389	100.00	364	100.00	753	100.00
26	389	100.00	364	100.00	753	100.00
4	389	100.00	363	99.73	752	99.87
1	388	99.74	363	99.73	751	99.73
2	387	99.49	364	100.00	751	99.73
6	387	99.49	363	99.73	750	99.60
12	386	99.23	364	100.00	750	99.60
8	385	98.97	364	100.00	749	99.47
30	384	98.71	364	100.00	748	99.34
7	383	98.46	364	100.00	747	99.20
28	375	96.40	362	99.45	737	97.88
24	373	95.89	357	98.08	730	96.95
13	370	95.12	359	98.63	729	96.81
29	353	90.75	363	99.73	716	95.09
11	339	87.15	349	95.88	688	91.37
5	300	77.12	326	89.56	626	83.13
25	261	67.10	363	99.73	624	82.87
16	318	81.75	295	81.04	613	81.41
17	297	76.35	306	84.07	603	80.08
15	205	52.70	264	72.53	469	62.28
21	85	21.85	362	99.45	447	59.36
14	357	91.77	73	20.05	430	57.10
33	388	99.74	-	0.00	388	51.53
20	369	94.86	-	0.00	369	49.00
27	177	45.50	-	0.00	177	23.51
9	165	42.42	-	0.00	165	21.91
10	123	31.62	-	0.00	123	16.33
32	73	18.77	-	0.00	73	9.69
18	38	9.77	33	9.07	71	9.43
19	-	0.00	1	0.27	1	0.13
Total	9222	100.00	7814	100.00	17036	100.00

Examining the attendance durations in Table 2, it was determined that 20 of the participants attended almost all of the courses (80.00% and above). Three of these participants attendanced in both courses, one in Course 1 and five in Course 2 completely. On the other hand, it is understood that five participants attendanced at a moderate level (49% and 62.28%). Among these five participants, 21 coded participants in Course 2 and 20 and 33 coded participants were present in almost all of Course 1 with their cameras open. Finally, six participants showed an insufficient level of participation (23.51% and below). Four of these participants never attended Course 2. A participant who never attendanced in Course 1 entered Course 2 for only five seconds simultaneously.

The environments in which the participants attendance in the live session are classified as home and outside. 24 of the 31 participants attended live sessions from home and seven from outside (workplace and cafe). The rate of watching the live lessons of the participants is presented in Table 3.

Table 3. Participants' watching live sessions environment and their watching rates

		At Home		Out Home		Total	
		f	%	*f*	%	*f*	%
Course 1	Not Watching	1462	15.85	822	8.91	2284	24.77
	Watching	5768	62.55	1170	12.69	6938	75.23
	Total	**7230**	**78.40**	**1992**	**21.60**	**9222**	**100.00**
Course 2	Not Watching	1744	22.32	284	3.63	2028	25.95
	Watching	4941	63.23	845	10.81	5786	74.05
	Total	**6685**	**85.55**	**1129**	**14.45**	**7814**	**100.00**
Course 1 and Course 2	Not Watching	3206	18.82	1106	6.49	4312	25.31
	Watching	10709	62.86	2015	11.83	12724	74.69
	Total	**13915**	**81.68**	**3121**	**18.32**	**17036**	**100.00**

When the data in Table 3 are examined, it is understood that the majority of the participants attend from home. It is observed that participants who are connected to live sessions from home do not watch the courses in approximately 18.82% of both courses. Considering these participants, it was determined that the duration of not watching Course 2 was higher than Course 1. When watching the courses from home is examined, it is understood that there is a decrease in Course 2 compared to Course 1. Despite this, it was determined that the participants watched the courses in about 62.86% of the course time. It was observed that the watching times in Course 2 decreased significantly for the participants who were connected to the live sessions from outside, compared to Course 1. In addition, it was determined that the time of these participants to attend the course decreased significantly in Course 2 compared to Course 1.

Participating in the live sessions, participating in the course according to the course flow, answering the questions asked, and contributing to the flow of the course by conveying something they are curious or want to ask the instructor will increase the level of interaction in the course. In this context, two live session recordings examined in the study were labeled within this scope, and the data obtained are presented in Table 4.

Table 4. Live session behaviors of participants

Course	Watching Status	Behavior	At Home		Outside		Total	
			f	%	f	%	f	%
Course 1	**Is Not Watching**	Out of Place	68	0.74	92	1.00	160	1.73
		Looking the Other Way	951	10.31	559	6.06	1510	16.37
		Head Tilted Forward	443	4.80	171	1.85	614	6.66
	Total		**1462**	**15.85**	**822**	**8.91**	**2284**	**24.76**
	Is Watching	Speaking	65	0.70	19	0.21	84	0.91
		Watching	5593	60.65	1126	12.21	6719	72.86
		Laughing	110	1.19	25	0.27	135	1.46
	Total		**5768**	**62.55**	**1170**	**12.69**	**6938**	**75.24**
Course 2	**Is Not Watching**	Out of Place	153	1.96	39	0.50	192	2.46
		Looking the Other Way	897	11.48	195	2.50	1092	13.97
		Head Tilted Forward	694	8.88	50	0.64	744	9.52
	Total		**1744**	**22.32**	**284**	**3.64**	**2028**	**25.95**
	Is Watching	Speaking	33	0.42	9	0.12	42	0.54
		Watching	4734	60.58	825	10.56	5559	71.14
		Laughing	174	2.23	11	0.14	185	2.37
	Total		**4941**	**63.23**	**845**	**10.81**	**5786**	**74.05**

When examining the participant behavior data obtained by considering the watching times in Table 4, it was determined that the direct follow-up times for both courses were at the highest rate. However, the duration of the participant looking in the other direction instead of watching the course was 16.37% (1510 watches) for Course 1 and 13.97% (1092 watches) for Course 2 as the second-highest behavior. Also, the total time of participants having their heads tilted forward or being in front of the screen was approximately 8.39% (774 watches) for Course 1 and 11.98% (936 watches) for Course 2. Finally, participants' speeches (84 images for Course 1, 42 images for Course 2) and laughs (135 images for Course 1, 185 images for Course 2) to participate in the course were the lowest in both courses.

Deep Learning Findings

All files are divided into two groups as watching and not watching. Transfer learning methods were used for feature extraction after this process. A 1000 feature extraction was preferred, and thus a 1000 matrix with 17036 observation was obtained. The last value holds the label of each data. The data were separated as training and testing using the 10-fold cross-validation method. Using the Matlab program, the feature vector first obtained with the AlexNet method is presented to all classification methods. The classification success achieved with all classification methods is given in Table 5 below.

Table 5. Classification results obtained with the AlexNet method.

Classification Group	Classification Method	Classification Success (%)
Tree	Fine Tree	84.4
	Medium Tree	83.1
	Coarse Tree	79.7
Discriminant	Linear Discriminant	88.8
	Quadratic Discriminant	91.0
Logistic Regression	Logistic Regression	88.3
Naive Bayes	Gaussian Naive Bayes	74.9
	Kernel Naive Bayes	79.4
SVM	Linear SVM	86.7
	Quadratic SVM	90.5
	Qubic SVM	91.5
	Fine Gaussian SVM	86.7
	Medium Gaussian SVM	89.9
	Coarse Gaussian SVM	85.1
KNN	Fine KNN	90.7
	Medium KNN	89.4
	Coarse KNN	85.0
	Cosine KNN	89.8
	Cubic KNN	89.4
	Weighted KNN	90.6
Ensemble	Boosted Trees	85.9
	Bagged Trees	89.7
	Subspace Discriminant	88.1
	Subspace KNN	90.8
	RUSBoosted Trees	83.9

The AlexNet model has been tested with all classification methods. The highest success rate was obtained with the Cubic SVM method with a 91.5% classification rate. Other methods also appear to have a near-high successful classification rate. The lowest classification rate was obtained with 74.9% Gaussian Naive Bayes. All other methods range from 74.9 to 91.5. The feature vectors obtained by other transfer learning methods were tested only by Cubic SVM methods. It was preferred because the highest successful classification was obtained with this method. The classification results of other models obtained with Cubic SVM method are shown in Table 6 below.

Table 6. Classification results of other models obtained with Cubic SVM method

Deep Learning Model	Method	Accuracy Rate(%)
MobileNetv2	SVM - Cubic SVM	92.0
SqueezeNet	SVM - Cubic SVM	91.7
DenseNet201	SVM - Cubic SVM	91.5
Inceptionv3	SVM - Cubic SVM	91.5
ResNet50	SVM - Cubic SVM	91.5
AlexNet	SVM - Cubic SVM	91.5
ResNet101	SVM - Cubic SVM	91.4
InceptionResNetv2	SVM - Cubic SVM	91.2
ResNet18	SVM - Cubic SVM	90.9
Vgg16	SVM - Cubic SVM	90.9
Vgg19	SVM - Cubic SVM	90.8
GoogleNet	SVM - Cubic SVM	90.6

The feature vector classification analysis created using the MobileNetv2 model has achieved 92.0% successful classification. In the lowest GoogleNet model, a successful classification rate of 90.6% was achieved.

Discussion and Conclusion

According to the findings obtained from the study, there are constant changes in the students' following the lesson or watching the lesson during the lesson. In this context, it can be said that students disconnect from the course at different times during the course, do not watch the course or focus on the course. It was determined that the rate of watching the course was the highest, especially towards the beginning and end of the course. Similar results were seen in participants who connected to live sessions from home or outside. In some studies, it has been determined that student participation in live sessions is lower than in face-to-face education (Hart et al., 2018; D. Xu & Jaggars, 2011). This result clearly reveals that distance education processes should be designed better . In the study, the number of those who watched the course in almost all of the courses was higher than the number of those who did not The stimuli sent by the instructor to the learners in order to ensure interaction were found positive by the students. With these stimulants, the rate of watching the course of the students increased. While the course contents are being designed, applications that increase motivation or require mutual interaction should be developed when the rate of watching the course decreases. In addition, the program can attract the attention of students with automatic stimuli when the rate of watching the course decreases. It is known that especially student goals affect participation in distance education courses (Williams et al., 2018).

Most of the students attended both courses and followed the courses. However, it has been revealed that some students do not attend the first or second course or follow the courses they attend for a short time. It was observed that especially the students who did not watch the course looked the other way for a significant period of time, their heads were bowed, and they got up from the camera and went elsewhere. It is known that students' participation in live sessions is lower than in face-to-face education (Hart et al., 2018; D. Xu & Jaggars, 2011). It has been determined that the students who were labeled as not watching the course were distracted in some cases, even for a short time. It has been observed that these students leave the course with the effect of external voices or being called to them in their position. Failure to ensure student participation in the course is an important problem (Murphy & Stewart, 2017). For this reason, it is necessary to resolve the negativities that students experience due to noise or external factors in focusing on the course.

In this contect, as a result It can be said that participation in live sessions should be done in suitable environments for teaching.

It was concluded that the students who watched the course spoke and focused on the course through question-answer or discussion activities. Group work, discussion questions, evaluation, and feedback in live sessions are some of the factors that affect interaction (Khan et al., 2017; Richardson & Swan, 2003). Particularly during the discussion, the rate of being effective of the participants increased. With the discussion method, students' communication skills improve (Dallimore et al., 2008), and their learning levels increase (Cantabella et al., 2019; Huerta, 2007). For this reason, it may be effective for educators to receive training on how to use distance education more effectively (Ponzurick, France, & Logar, 2000). Therefore, if the instructor has experience with digital tools and takes initiatives to increase student interest, participation in the course increases. At the same time, learner-teacher interaction and good relations in distance education positively affect the learners' sense of institutional belonging (Harrington, 1979; Sweet, 1986). For this reason, it can be considered necessary for the instructors to consider this point in their learning processes in terms of the learners' relationship with the institution.

In the study the feature extraction process was applied using deep learning methods based on transfer learning models. The models were analyzed with all classification methods, and the highest successful classification was obtained with the Cubic SVM method. As a result of the analysis made with all transfer methods, 92.0% successful classification was obtained with MobileNetv2. With this result, it has been revealed that students can watch live sessions with a very high accuracy rate. Modeling and predicting student learning is an essential task in computer-based education (Käser et al., 2017). As students' participation in e-Learning activities increases, students are more likely to get higher grades and improve their overall performance (Saa et al., 2019). It can help educational institutions to concentrate on students' e-Learning activities and encourage students to use e-Learning systems to improve their performance and educational quality (Salloum, Al-Emran, Shaalan, & Tarhini, 2019). They were ensuring that students' success at school is increased and intervention in case of a decrease in the level of success can reduce the dropout rates of students. Because the biggest problem in students leaving school is related to academic success (Ketui, Wisomka, & Homjun, 2019). Early prediction of student failure can help school management provide timely counseling to ensure success and student retention (Mishra, Kumar, & Gupta, 2014). In terms of educational institutions, the success of their students is essential (Hamoud et al., 2018). Student performance, development, and potential are critical for measuring learning outcomes, selecting learning materials and learning activities (F. Yang & Li, 2018). At the same time, the potential loss of skills and knowledge caused by the low level of student course participation, progress, and graduation cause serious negative effects on society and the economy (Crosling, Heagney, & Thomas, 2009; Natek & Zwilling, 2014). In order to reduce these negative effects, some models have been developed with data mining. Therefore, ways to improve the education sector with data mining in the field of education are suggested (Adejo & Connolly, 2018; Conijn, Van den Beemt, & Cuijpers, 2018). With artificial intelligence-based software, the correct estimation of the students' watching the course can increase the efficiency of the courses.

According to another research result; the participation rate of students in live sessions was found to be lower than in face-to-face courses (Carr, 2000; Frydenberg, 2007). Considering this result, it can come to the fore that students' watching live sessions is a situation that should be followed especially. Because students who do not attend live classes are expected to face the consequences such as not being able to complete the curriculum and losing time and money (Tinto, 2006). Students who have previously withdrawn from any live sessions are more likely to drop out of current live sessions (Cochran et al., 2014). For this reason, priority should be given to solving the problems experienced by students who drop out of live sessions. In this way, the rate of following the next live sessions can be increased. Although the success rate of live and video recording courses is close to each other, students mostly prefer live sessions (Brockfeld et al., 2018; Lovell & Plantegenest, 2009). These results can highlight students' interests. It is in the form of a decrease in students' participation in live sessions over time (Wilson & Korn, 2007). However, it was determined that the watching rate of video-recorded courses increased over time (Bos et al., 2016). Therefore, it is understood that the students who do not attend the live sessions watch the video recordings of the courses over time. At this stage, different options can be offered, taking into account the previous habits of the students or their changing behavior in the process. Among these options, students may choose one of the face-to-face, live or course video methods (Zureick et al., 2018). In this way, the most efficient option for the student can be used effectively, taking into account the interest and desire of the student.

If learners do not follow the live sessions, they may not be able to take full advantage of these gains. For this reason, it can be seen as vital that the learners watch the course and achieve the target gains in live sessions. As it is known, students' interest in live sessions may decrease after the first 10-15 minutes of the course (Wilson & Korn, 2007). Seeing this change momentarily can enable the instructor to contribute positively to the course. In the study, the situation of the learners watching the live session could be predicted accurately at a very high level. In this way, instant notification can be provided to the instructor with a high estimation rate in case of possible dropping out of the course or not watching. As it is known, students who have withdrawn from any live session before tend to drop out of current or future live sessions (Cochran, Campbell, Baker & Leeds, 2014). Thus, the instructor can focus the students on the course by giving the necessary stimuli to the students at critical moments of the course and ensuring that the targeted outcomes are achieved. In conclusion, It can be said that such data-driven studies can make very important contributions to decision-making processes. It is, however, also necessary to support students, manage decision-making processes, and develop corrective strategies to ensure students’ attendance.

In conclusion, the findings from this study shed light on the dynamic nature of students' engagement during live sessions in distance education. It was evident that students' attention to the course varied over time, with higher viewership rates observed at the beginning and end of the sessions. Despite the positive stimuli provided by instructors to enhance interaction, some students exhibited disengagement behaviors, leading to challenges in maintaining their participation. To address this, educators should consider incorporating interactive activities, such as group work and discussions, to increase student involvement and communication skills.

The use of deep learning-based transfer learning models proved successful in accurately predicting student course-watching behaviors. Such predictive capabilities offer valuable insights to instructors, allowing them to intervene promptly when students are at risk of disengaging from the course. Additionally, it is essential for educational institutions to leverage data mining and artificial intelligence to improve student learning outcomes and identify potential dropouts.

Moreover, it is evident that live sessions hold a distinct appeal for students; however, the interest may diminish over time. In response, educators can consider providing flexible options, such as video-recorded courses, to accommodate students' preferences and optimize their learning experiences. Ultimately, proactive support and data-driven decision-making processes play a crucial role in fostering students' active participation and ensuring their success in distance education. By embracing these strategies, educational institutions can effectively address challenges related to course attendance and enhance the overall quality of distance learning.

Suggestions

The study offers several recommendations to enhance student participation and engagement in distance education courses. First and foremost, incorporating interactive materials and activities into the course content can significantly increase students' interest and involvement. Utilizing question-answer sessions, discussions, and interactive material presentations can make the course more appealing and encourage active participation.

To address the issue of declining course attendance, implementing a notification system that alerts students or instructors when participation drops below a certain threshold could be effective. This prompt notification can enable instructors to take timely initiatives to re-engage students and foster a more vibrant learning environment.

Administrators of distance education platforms should also play a crucial role in promoting active participation among students. By continuously improving the effectiveness of the platforms and ensuring user-friendly features, student engagement can be positively influenced.

Conducting interviews with students who did not attend live sessions or left the sessions early can provide valuable insights into the reasons behind their disengagement. These meetings can serve as opportunities to identify and resolve potential issues that hinder students' course involvement.

For future research, it is essential to address the challenge of accurately monitoring each student's engagement, especially in cases where students may be multitasking on other screens. Developing a program that tracks students' screen movements could offer a more effective means of alerting instructors when students are disengaged.

Moreover, considering students of different education levels and accounting for various individual differences that impact academic performance in future studies can provide a more comprehensive understanding of student participation in distance education courses. By implementing these recommendations, educational institutions can improve the overall effectiveness of distance education and foster greater student success and engagement.

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Examining Secondary School English Curriculum in Terms of Values According to Document Analysis and Teachers' Opinions

Research Article

Serdar ERDEM[1], Mehmet GUROL[2]

[1]Ministry of National Education, Educational Science, Bursa, Türkiye 0000-0001-9047-6819

[2]Yıldız Technical University, Faculty of Education, Department of Educational Science, Istanbul, Türkiye 0000-0001-7649-9619

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ABSTRACT

In this research, it was aimed to reveal the values that can be associated with the outcomes of the secondary school English curriculum published in 2017 and to obtain the opinions of English teachers about the place of values in English curriculum. In the research in which case study design was used, data were collected through document analysis and interview methods. At the first stage of the research, the secondary school English curriculum published in 2017 was examined and the values that may be associated to the outcomes of the curriculum were revealed. At the second stage, eight English teachers were interviewed. According to document analysis results, none of the ten core values in the secondary school English curriculum is explicitly included in the learning outcomes. The values with which the units and outcomes in secondary school English curriculum can be associated most are respect, responsibility, love, friendship, self-control, altruism and patriotism. According to the interview results, the majority of the teachers stated that they found the inclusion of values in the curriculum to be correct, but they stated that their implementation regarding values education were inadequate.

Keywords:

Values education, English curriculum, Secondary school, Teacher opinions

Introduction

Values are individuals' beliefs about their ideal behavior styles or life goals, they are multifaceted standards that guide behavior in different ways, and it is the belief that something is desirable or undesirable (Sağnak, 2004). Although different ideas have been put forward about values education within the scope of affective education in this historical process, teaching values has been considered important and necessary by

[1]Corresponding author's address: Milli Eğitim Bakanlığı
Telephone: +905443356202
e-mail: serdarerdem90@gmail.com
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many researchers (Aydın, 2010; Akbaş, 2008; Coşkun, 2017; Doğan et al., 2013; Doğanay et al., 2012; Dündar & Hareket, 2016; Ferreira & Schulze, 2014; Güçlü, 2015; Jacoby, 2006). The increasing number of discourses such as racism, gender discrimination, violence, grudge and hatred due to the fact that some values have not been established in today's social structures reveals this necessity of values education (Doğanay et al., 2012; Ferreira & Schulze, 2014; Yaşar & Çengelci, 2012). Hence, in our age, the importance of concepts such as honesty, respect, courtesy, moral values, caring for human relations, taking initiative, work discipline (Aydın, 2010) and all the values that make human beings human (Yazıcı, 2006) is emphasized. Additionally, it is stated that teaching values contributes to the moral development and positive character formation of individuals (Akbaş, 2008). Especially in countries that attach more importance to education than instruction, great efforts are made to raise individuals who are humble, tolerant, helpful, sensitive, hardworking, determined, combative, open to development and individuals who love people, nature, respect human rights and know their responsibilities (Dündar & Hareket, 2016).

Values education starts in the family, which is the first educational environment (Doğan et al., 2013; Sağlam, 2017). However, the fact that values education starts in the family does not eliminate the role of schools in values education (Sağlam, 2017). Especially today, it can be clearly seen that there are more difficulties in values education. Schools, as formal education institutions, cannot stand by on moral issues in such a period when societies are experiencing moral erosion. On the contrary, they must contribute to the character of the students and to the moral health of the society as much as they can (Meydan, 2014). The fact that the parents of the primary school students are more involved in the processes at school compared to the secondary school parents and that they create more opportunities to spend time for their children (Işık & Şahin, 2022) make the place of values education in the secondary school more necessary. Tulunay Ateş (2017) also stated that the effect of values education on students in secondary school was excellent and its effect in primary school was moderate and expressed that values education studies should be increased, especially on groups that are described as adolescents and young people. Similarly, Aydın (2003) pointed out that the relationship between youth and values is bidirectional and stated that values education given to young people will not only affect them but also our future in many ways.

Today, in many parts of the world, values are included among the objectives of education and which values students should acquire are explained in curricula (Aydın, 2010). In our country, values are included in the general aims of education stated in the Basic Law of National Education (Milli Eğitim Temel Kanunu, 1973). The Basic Law of National Education (1973) states that the aim is “to develop all individuals in a balanced and healthy manner in terms of body, mind, morals, spirit and emotions" and “to raise them as individuals who adopt, protect and develop the national, moral, human, spiritual and cultural values of the Turkish Nation". These general aims determined in parallel with the state's education policies are of course reflected in our curricula; as a result, values education is among the objectives of all schools in our country (Aydın, 2010). Values were identified as the main focus in the primary and secondary education curricula published in 2017 (Milli Eğitim Bakanlığı, 2018). In the new English curriculum, as in other curricula, the values of friendship, justice, honesty, self-control, patience, respect, love, responsibility, patriotism and altruism were determined as ten core values and it was aimed to make students acquire these values by including them in the themes and subjects of the courses (Milli Eğitim Bakanlığı, 2018). In the press release made by the Ministry of National Education after the publication of the curricula, it was stated that values were among the ultimate goals of education as stated in the relevant articles of the Basic Law of National Education No. 1739 (Milli Eğitim Bakanlığı, 2017). In the statement, it was stated that values were an integral part of curricula, that they should be associated with the educational objectives and the content dimension of the curricula in order for students to acquire them, that it would be beneficial to transfer them to students through practical studies, and that it is very important to transfer values in cooperation with school-family (Milli Eğitim Bakanlığı, 2017).

Aim of the Research

The importance of values in building a healthy society and future is clearly known (Meydan, 2014), and some of the studies (Işık & Şahin, 2022; Tulunay Ateş, 2017) in the literature draw attention to the importance of values education, especially at secondary school level. This is the main reason why values education in secondary school English curriculum was determined as the subject of this research. It is thought that it is very crucial for teachers to know the core values in the curricula and correctly understand how to transfer these values to students. Therefore, in this research, it is aimed to reveal the values that can be associated with the outcomes of the secondary school English curriculum in Turkey published in 2017 and to obtain the opinions of English teachers regarding to the place of values education in English curriculum. For this aim, answers were sought for the following research questions.

1. Which values can be associated with the outcomes of the secondary school English curriculum in Turkey?

2. What are the opinions of secondary school English teachers on the place of values education in the English curriculum?

Methodology

Research Design

In this research, case study design, one of the qualitative research designs, was used. Case study design is an empirical research design in which current events, phenomena or situations are evaluated in depth and within their own context (Yin, 2014). The prominent feature of the case study design is the in-depth examination of the identified events, phenomena and situations with a microscopic approach (Lapan & Armfield, 2009). In case studies, the effectiveness of a curriculum, the implementation of a theory or educational policy can be evaluated (Akar, 2016). In this research, since the secondary school English curriculum was examined in terms of values, case study design was determined as the research method. Firstly, the Secondary School English curriculum was examined in terms of core values through document analysis method and then semi-structured interviews were conducted with English teachers about the place of values education in the curriculum.

Research Group

Maximum variation sampling, one of the purposive sampling methods, was used to determine the research group of the interviews. The use of purposive sampling method is preferred in case studies because the deliberate selection of data sources, participants or situations that provide the most information increases the quality of the research (Moore et al., 2012). In maximum variation sampling, individuals, groups or situations that reflect different characteristics and features according to the purpose of the research are included in the research (Creswell, 2012). In this research, interviews were conducted with eight English teachers working in secondary schools and imam hatip secondary schools in a district of İstanbul in order to obtain opinions on the place of values education in the curriculum. While forming the research group, it was thought that it would be correct to take the opinions of teachers working in imam hatip secondary schools as well as secondary schools. As the elective courses in the field of ethics and values are more intense in imam hatip secondary schools, it was thought that the teachers working in these schools might reflect the differences in values education practices. In addition, due to the possible differences in values education practices at schools in different socio-economic environments, teachers working in these schools were included in the research group. Four of the teachers participating in the research work as English teachers in secondary schools (T2, T4, T6, T7) and the other four work as English teachers in imam hatip secondary schools (T1, T3, T5, T8). Two of the interviewed teachers are men (T4, T8) and six of them are women (T1, T2, T3, T5, T6, T7).

While two of the teachers in the research group have a seniority of 0-5 years (T2, T8), three of them have a seniority of 5-10 years (T1, T3, T4), and the other three have a seniority of 10-15 years (T5, T6, T7).

Data Collection Tools and Collecting Data

Although there are no set rules regarding which data type to use in case studies (Moore et al. , 2012), it is more accurate to utilize more than one data source to collect the qualitative data required for the research (Yin, 2014). For this reason, document analysis and interview method were used together in the research. In the research, firstly, the outcomes of the secondary school English curriculum, which was determined as the document of the research, was examined in terms of ten core values, and then interviews were conducted with English teachers about the place of values education in the curriculum. A semi-structured interview form developed by the researchers was used for the interviews. In order to ensure the validity and reliability of the semi-structured interview form, the opinions of three field experts were taken after the form was prepared and necessary revisions were made. After receiving the expert opinion, a pilot study was conducted with three English teachers and the data collection tool was finalized with the revisions made.

Data Analysis and Interpretation

In the research, descriptive analysis method was used to analyze the data obtained from the English curriculum through document analysis method. In the descriptive analysis method, firstly, an analysis framework is created based on the research questions or interview questions, then the data are processed according to the framework, the findings are defined in an understandable way based on the processed data, and finally the findings are interpreted (Yıldırım & Şimşek, 2013). In this research, firstly, based on the first research question, ten core values in the Secondary School English Curriculum were determined as the analysis framework. Then, according to the determined values, the values explicitly and implicitly included in the units were processed, defined and interpreted.

In the second stage of the research, content analysis method was used to analyze the data obtained from the interviews with English teachers about the place of values education in the curriculum. During the content analysis process, which is based on conceptualizing and associating the collected data, the data obtained from the research were coded, the themes were determined by bringing the data codes together, the data were organized according to the codes and themes and finally the findings were interpreted as cited by Yıldırım and Şimşek (2013). While presenting the qualitative findings, direct quotations were also included. The teachers interviewed in the research were coded as T1, T2, T3, T4, T5, T6, T7, T8.

Validity and Reliability

In qualitative research, it is very important for the validity and reliability of the research to present the data obtained through the research process in detail and clearly and to take some measures to reach the correct information (Yıldırım & Şimşek, 2013). In qualitative research, it seems more appropriate to use credibility instead of the concept of internal validity, transferability instead of the concept of external validity, dependability instead of the concept of internal reliability and confirmability instead of the the concept of the external reliability (Lincoln & Guba, 1985). The measures taken within the scope of validity and reliability in the research are as follows:

Credibility. One of the primary measures taken in this research for credibility is *triangulation*. While collecting data in the research, data collection methods were diversified by using document analysis and interview methods together. Therefore, the data obtained in line with different data collection tools were also diversified. Data source diversity was also ensured by including teachers working in different types of schools at different socio-economic levels in the research group determined for the interviews The second measure taken in the research in order to increase the credibility is the *peer debriefing*. In order to confirm the findings obtained by the researchers from the document review, two field experts were asked to examine the curriculum and reveal the associated values; thus, consistent findings were tried to be reached. Before the interviews were conducted, expert opinion was taken about the semi-structured interview form and pilot interviews were conducted with three teachers after the revisions made. Besides, the themes and codes obtained as a result of data analysis were examined and confirmed by two field experts. Another measure taken to increase the credibility of the research is *member checking*. Immediately after the interviews, the researcher summarized the answers given by the participants to the questions; thus, it was confirmed whether the opinions expressed were correctly understood by the researcher.

Transferability. The measures taken to ensure transferability are *thick description* and *purposive sampling*. Research processes, research design, selection of research group, data collection tools, data analysis methods, codes and themes obtained from the analyzed data are explained in detail and it is thought that the clarity of the research and the chance of adaptation to other environments are increased. The choice of purposive sampling in the research is thought to contribute to the collection of the most appropriate data for the qualitative research design and to present the most comprehensive information to the researchers. Besides, all the participants of the research group were informed about the aim and process of the research by considering the principle of voluntariness during the research group selection phase.

Dependability. The most important measure taken to ensure dependability is *stepwise replication*. As stated in "credibility" section, the codes and themes obtained as a result of the analysis of the interview data were examined by two different field experts; the codes and themes obtained by the two experts were compared step by step and the consistent codes and themes were presented in the findings section. Another measure taken in order to increase the dependability of the research was to write down all the interview records completely and present the participant opinions obtained as a result of the interviews in the findings section with *direct quotations*.

Confirmability. To ensure confirmability, the researchers reported the research process as a whole clearly and unequivocally, leaving no room for any questions. Thus, when the research process is evaluated or audited by an expert, it is considered that its accuracy, clarity and consistency can be accepted.

Findings

Values Associated with the Outcomes of The Secondary School English Curriculum

As a result of the document analysis, the values that can be associated with the outcomes of the Secondary School English Curriculum were revealed. The values associated with the outcomes of the 5th grade English curriculum are presented in Table 1.

Table 1. Values Associated with 5th Grade English Curriculum

Unit	Outcomes	Associated Values
Unit 1: Hello	Greeting and meeting people	Friendship
	Expressing likes and dislikes	Respect
	Making simple inquiries	Responsibility
Unit 2: My Town	Asking for and giving directions	Friendship
	Talking about locations of things and people	Respect
		Patriotism
		Altruism
Unit 3: Games and Hobbies	Describing what people do regularly	Honesty
	Expressing ability and inability	Respect
	Expressing likes and dislikes	
Unit 4: My Daily Routine	Describing what people do regularly	Self-control
	Telling the time	Responsibility

	Naming numbers	
Unit 5: Health	Expressing illnesses, needs and feelings Making simple suggestions	Friendship Love Altruism
Unit 6: Movies	Describing characters/people Expressing likes and dislikes Making simple inquiries Stating personal opinions Telling the time	Respect
Unit 7: Party Time	Asking for permission Expressing and responding to thanks Greeting and meeting people Expressing obligation Telling the days and dates	Friendship Self-control Respect Love Responsibility Altruism
Unit 8: Fitness	Making simple inquiries Asking for clarification Making/accepting/refusing simple suggestions	Friendship Self-control Respect Love Responsibility
Unit 9: The Animal Shelter	Asking for permission Describing what people/animals are doing now	Love Responsibility Altruism
Unit 10: Festivals	Describing general events and repeated actions Naming numbers	Friendship Respect Love Responsibility Patriotism

When the units in Table 1 are analyzed, it is seen that respect and friendship are the values that can be emphasized the most. After respect and friendship, the values that can be mentioned most frequently in the curriculum are responsibility, love, altruism, self-control and patriotism. It can be said that the value of honesty can only be associated with the outcomes of Unit 3 (Games and Hobbies) in the curriculum. On the other hand, it can be stated that the values of justice and patience cannot be directly associated with any of the units and outcomes in the units of the 5th grade English curriculum. When all the units are analyzed, it can be said that Unit 7 (Party Time), Unit 8 (Fitness) and Unit 9 (The Animal Shelter) can be associated with more values compared to other units.

The values associated with the units and outcomes of the 6th grade English curriculum are presented in Table 2.

Table 2. Values Associated with 6th Grade English Curriculum

Unit	**Outcomes**	**Associated Values**
Unit 1: Life	Describing what people do regularly Telling the time and dates	Self-control Responsibility
Unit 2: Yummy Breakfast	Accepting and refusing Describing what people do regularly Expressing likes and dislikes	Self-control Respect
Unit 3: Downtown	Describing places (Making comparisons) Describing what people are doing now	Respect
Unit 4: Weather and Emotions	Describing the weather	Respect

	Making simple inquiries Expressing emotions	
Unit 5: At the Fair	Describing places Expressing feelings Expressing likes and dislikes Stating personal opinions	Respect Love
Unit 6: Occupations	Talking about occupations Asking personal questions Telling the time, days and dates	Respect Responsibility
Unit 7: Holidays	Talking about past events	Friendship
Unit 8: Bookworms	Talking about locations of things and people Talking about past events	Friendship Responsibility Patriotism Altruism
Unit 9: Saving the Planet	Giving and responding to simple suggestions	Respect Love Responsibility Patriotism
Unit 10: Democracy	Talking about stages of a procedure Making simple inquiries Talking about past events	Justice Self-control Respect Responsibility Patriotism

When the units in Table 2 were analyzed, it was seen that the value of respect was the most prominent value. Responsibility, self-control, patriotism, friendship and love are the other values that can be associated with the units the most. It can be said that the value of benevolence can only be associated with the Unit 8 (Bookworms) and the value of justice can only be associated with the Unit 10 (Democracy). On the other hand, it can be stated that the values of honesty and patience cannot be directly associated with the given units and outcomes. When the ten units in the curriculum are examined, it can be said that Unit 8 (Bookworms), Unit 9 (Saving the Planet) and Unit 10 (Democracy) can be associated with more values compared to other units.

The values associated with the units and outcomes of the 7th grade English curriculum are presented in Table 3.

Table 3. Values Associated with 7th Grade English Curriculum

Unit	**Outcomes**	**Associated Values**
Unit 1: Appearance and Personality	Describing characters/people Making simple comparisons (Giving explanations/reasons)	Friendship Love
Unit 2: Sports	Talking about routines and Daily Activities Describing what people do regularly (Giving explanations and reasons)	Self-control Responsibility
Unit 3: Biographies	Talking about past events Telling the time, days and dates	Respect Love
Unit 4: Wild Animals	Describing the frequency of actions Making simple inquiries Making simple suggestions Talking about past events (Giving explanations/reasons)	Self-control Respect Love Responsibility Altruism
Unit 5: Television	Describing what people do regularly	Respect

	Expressing preferences Stating personal opinions Talking about past events	
Unit 6: Celebrations	Making simple suggestions (Accepting and refusing) Making arrangements and sequencing the actions Expressing needs and quantity	Friendship Respect Love Altruism
Unit 7: Dreams	Making predictions	Self-control Responsibility
Unit 8: Public Buildings	Giving explanations/reasons	Friendship Altruism
Unit 9: Environment	Describing simple processes Expressing obligation Giving explanations/reasons	Self-control Respect Love Patriotism Altruism
Unit 10: Planets	Making simple comparisons Talking about past events Making simple inquiries	

When the units in Table 3 were analyzed, it was seen that the value of love was the most prominent value. Love, self-control, altruism, friendship and responsibility are the other values that can be associated with the units the most. It can be said that respect and patriotism can only be associated with the Unit 9 (Environment). On the other hand, it can be stated that the values of justice and honesty cannot be directly associated with the given units and outcomes and that none of the given values can be associated with Unit 10 (Planets) and. When the ten units in the curriculum are examined, it can be said that Unit 4 (Wild Animals), Unit 6 (Celebrations) and Unit 9 (Environment) can be associated with more values compared to other units.

The values associated with the units and outcomes of the 8th grade English curriculum are presented in Table 4.

Table 4. Values Associated with 8th Grade English Curriculum

Unit	**Outcomes**	**Associated Values**
Unit 1: Friendship	Accepting and refusing / Apologizing / Giving explanations and reasons Making simple inquiries	Friendship Self-control Love
Unit 2: Teen Life	Expressing likes and dislikes Expressing preferences Stating personal opinions	Respect
Unit 3: In the Kitchen	Describing simple processes Expressing preferences Making simple inquiries	Respect Altruism
Unit 4: On the Phone	Following phone conversations Stating decisions taken at the time of Speaking	Friendship Patience Love
Unit 5: The Internet	Accepting and refusing / Making Excuses	Friendship Self-control Love Responsibility
Unit 6: Adventures	Expressing preferences / Giving explanations and reasons	Respect

	Making comparisons	
Unit 7: Tourism	Describing places Expressing preferences Giving explanations/reasons Making comparisons Talking about experiences	Respect Patriotism
Unit 8: Chores	Expressing likes and dislikes Expressing obligation Expressing responsibilities	Justice Friendship Self-control Patience Respect Love Responsibility Altruism
Unit 9: Science	Describing the actions happening Currently Talking about past events	Self-control Responsibility Patriotism
Unit 10: Natural Forces	Making predictions about the future (Giving reasons and results)	Self-control Respect Responsibility Patriotism

When the units in Table 4 were analyzed, it was seen that the value of respect was the value that could be emphasized the most. The values that can be mentioned most frequently after respect are self-control, friendship, love, responsibility, patriotism, altruism and patience. It can be said that the value of justice can only be associated with Unit 8 (Chores). On the other hand, it can be stated that the value of honesty cannot be directly associated with the units and outcomes given in the curriculum. When the units in the curriculum are examined, it can be said that Unit 5 (The Internet), Unit 8 (Chores) and Unit 10 (Natural Forces) can be associated with more values compared to other units.

Secondary School English Teachers' Opinions on the Place of Values Education in the English Curriculum

In the interviews conducted to reveal the opinions of secondary school English teachers on the place of values education in the English curriculum, teachers were first asked whether they had examined the English curriculum published in 2017. Five of the eight teachers interviewed stated that they had not examined the curriculum, while three of them stated that they had examined the curriculum. Before the interviews with the teachers who had not examined the curriculum, they were given a certain amount of time to examine the curriculum.

Teachers' opinions on the inclusion of values education in the English curriculum are presented in Table 5.

Table 5. Opinions on the Inclusion of Values Education in the English Curriculum

Theme	Codes	f
Necessity of Values Education in the Curriculum	I find it right to include values in the curricula (T1, T2, T3, T5, T6, T7, T8)	7
	The inclusion of values in the official curriculum allows generations to grow up with fundamental values. (T1, T2, T3, T5, T6)	5
	Values education is as important as academic success (T2, T8)	2
	Values education is more important than academic success (T1)	1
	Values education can contribute to the solution of increasing problems (T3)	1

	The values in the curriculum support students to develop positive attitudes (T2)	1
	I do not find it right to include values education in the English curriculum. (T4)	1

Teachers' opinions on the inclusion of values education in the English curriculum were discussed under the theme of "the necessity of values education in the curriculum". According to Table 6, seven teachers (T1, T2, T3, T5, T6, T7, T8) stated that they agreed with the inclusion of values education in the curriculum. Five of the teachers (T1, T2, T3, T5, T6) who found it right to include values education in the English curriculum stated that values education played a role in raising generations with basic values, two of them (T2, T8) stated that values education was as important as academic achievemen and one of them expresse that it can contribute to the solution of increasing problems (T3).

A teacher said that values were more important than academic success: "I think it is not possible to separate any lesson or discipline from values, and it cannot be. The good morals and values of our students are much more important than their academic achievements..." (T1)

Another teacher said that that values education could support students to develop positive attitudes: "I think values should be included in the curriculum. Teaching is not the only purpose of schools. Thanks to values education, we have the opportunity to develop positive attitudes in students and raise students who are beneficial to society..." (T2)

Only one teacher (T4) stated that he did not agree with the inclusion of values education in the English curriculum: "I do not find it right to include values education in our curriculum due to age and interest and even due to the different levels of students' readiness..." (T4)

Teachers' opinions on the necessity and adequacy of the 10 core values in the English curriculum are presented in Table 6.

Table 6. Opinions on the Necessity and Adequacy of the Values in the English Curriculum

Theme	***Codes***	***f***
The Necessity of the 10 Core Values	The core values in the curriculum are the values that should be transferred to students (T1, T2, T3, T5, T6, T7, T8)	7
	It is unnecessary to include basic values in the English curriculum (T4)	1
The Adequacy of the 10 Core Values	The 10 core values in the curriculum are not sufficient (T1, T2, T3, T5, T6, T7, T8)	7

According to Table 6, seven of the interviewed teachers (T1, T2, T3, T5, T6, T7, T8) stated that the ten core values in the curriculum were necessary for students' education,. All seven teachers who defended the necessity of the values in the curriculum also stated that the ten core values in the curriculum were inadequate for students' education and that some additions could be made to these core values.

A teacher said that ten core values are necessary in order to raise healthy individuals: "These values are necessary and indispensable for raising individuals who think, feel and behave in a healthy way.”(T3)

A teacher stated that values are indespensable in all the disciplines “In terms of both individual and universal basic values, I think that these values are indispensable both in English language teaching and in all other disciplines. ...I can say that some additions can be made." (T5)

Another teacher expressed necessity of the core values and said that these core values were inadequate: "Yes, these are necessary values. The 10 core values are necessary for all of us as individuals and as a society. But not adequate. " (T8)

Only one teacher (T4) stated that he found it unnecessary to include core values in the English curriculum: "I do not consider these values necessary. ...I find it more logical to learn the target language." (T4)

Teachers' opinions on the values education explanations in the English curriculum are presented in Table 7.

Tablo 7. Opinions on Values Education Explanations in the Curriculum

Theme	Codes	f
Values Education Explanations in the Curriculum	Explanations in the curriculum are inadequate for values education practices (T1, T2, T3, T4, T5, T6, T7, T8)	8
	Methods and techniques that can be used in values education are not specified (T1, T2, T3, T4, T7)	5
	The values that should be transferred to students in each unit are not specified (T1, T3, T5, T7)	4
	A work plan for values education was not presented (T1, T2, T7, T8)	4

When Table 7 is examined, it is seen that all teachers who participated in the research found the explanations in the English curriculum inadequate for values education practices. In addition, five teachers (T1, T2, T3, T4, T7) stated that the methods and techniques that could be used in values education were not specified, four teachers (T1, T3, T5, T7) stated that the values to be taught in the units were not determined and three teachers (T1, T2, T8) stated that there was no plan for values education. It is understood from these opinions of the teachers that they do not find the values education explanations in the curriculum adequate.

A teacher who thought that the explanation about the values in the curriculum was inadequate suggested that the teaching methods and techniques that could be used to gain the values to the students should be presented in the curriculum: "I think these explanations are not adequate. Common methods and techniques can be presented for teachers. After all, we can all perceive differently. Therefore, a plan on how the implementation will be carried out can be organized." (T2)

One of the teachers stated that it was difficult to understand the values in the outcomes of some units. "Explanations are unfortunately lacking. ...in some units, the values as goals are not clear enough for students to realize or be interested in." (T5)

One of the teachers stated that the explanations did not provide enough guidance and stated that she considered the lack of a work plan for values education as a deficiency. "I don't think that the explanations are very guiding. The values to be given are not within the framework of a plan. " (T7)

Before asking the teachers about the effectiveness of values education practices, six teachers teaching 5th grade classes were asked whether they consciously included values education practices in their lessons. Only one of the six fifth grade teachers (T1, T2, T3, T5, T7, T8) stated that s/he did not implement values education practices. The opinions of the teachers who included values education in their lessons are given in Table 8.

Table 8. Opinions on Values Education Implementation

Themes	Codes	f
Effectiveness of Implementation	My practices for values education are not effective enough (T1, T2, T3, T5, T7)	5
Problems in Implementation	Inadequacy of the explanations in the curriculum (T1, T2, T3, T5, T7)	5
	Values are implicit in the curriculum (T1, T2, T3, T5, T7)	5
	Not specifying which value will be emphasized in which unit (T1, T3, T5)	3
	Not specifying the methods, techniques and activities that can be used. (T1, T2)	2

Opinions on values education implementation are analyzed in Table 10 under the theme of "effectiveness of implementation" and "problems experienced in implementation". All 5th grade English teachers (T1, T2, T3, T5, T7) who participated in the research stated that the implementation they carried out for values education were inadequate. The reasons for this inadequacy were expressed under the theme of "problems in implementation". All of the teachers who found their values education implementation inadequate cited the limitation of the explanations about values education in the curriculum and the implicit presentation of values in the curriculum as the reasons for this inadequacy. On the other hand, three teachers (T1, T3, T5) stated that which value would be emphasized in which unit was not specified, and two teachers (T1, T2) stated that the methods, techniques and activities that could be used were not specified as other problems experienced in values education implementation.

One of the teachers stated that the explanations in the curriculum were inadequate and the values were presented implicitly: "I don't realize the presence of values in the units… Besides, I don't know how to reflect these values to English skills… How to achieve these is not clearly stated in the curriculum. Explanations are inadequate."(T7)

One teacher described the implicit presentation of root values and the lack of guidance on teaching-method techniques as a problem. "I think my activities are not effective for everyone. The main reason for this is that values education is implicit and there are few explanations. There is also no teaching method that guides us..." (T2)

Another teacher stated that she did not know which values to teach in which unit. "...what I do is inadequate. Since there are inadequate explanations in the curriculum about how to teach which value in which unit, I cannot say that my implementation is very professional." (T3)

Teachers' suggestions on values education are presented in Table 9.

Table 9. Suggestions for Values Education

Theme	Codes	f
Suggestions for Values Education	Values education explanations in the curriculum should be elaborated (T1, T2, T3, T4, T5, T6, T7, T8)	8
	Values education should not be implicit in the curriculum (T1, T2, T3, T4, T5, T6, T7, T8)	8
	Practical in-service training opportunities related to Values Education should be provided (T1, T3, T5, T7)	4
	A plan for values education should be prepared and put into practice (T1, T2, T7, T8)	4
	Explanations should indicate which value will be emphasized in which unit. (T1, T3, T7)	3
	Activities, methods and techniques that can be used in values education should be specified in the explanations. (T1, T3)	2
	Values Education should be continued in an interdisciplinary manner. (T5, T7)	2
	Courses on values education should be given at undergraduate level. (T1)	1
	Students should be encouraged to prepare projects related to values education (T5)	1
	Values education should be continued in accordance with the principles of learning by doing. (S7)	1

According to Table 9, the most prominent suggestion made by all teachers is to elaborate the values education explanations in the English curriculum and not to provide values education implicitly in the curriculum. In addition to these suggestions, it is also suggested that in-service training opportunities for values education should be provided (T1, T3, T5, T7), a work plan for values education should be prepared and put into practice (T1, T2, T7, T8), which value will be emphasized in which unit should be specified in the explanations (T1, T3, T7). Other suggestions expressed by the teachers include specifying the activities, methods and techniques that can be used in values education (T1, T3), continuing values education in an interdisciplinary way (T5, T7), giving courses on values education at undergraduate level (T1), having students prepare projects on values education (T5), and continuing values education in accordance with the principles of learning by living (T7).

Results, Discussion and Reccomendations

As a result of the document analysis of the Secondary School English Curriculum, it was seen that none of the ten core values were explicitly given in the outcomes of the Secondary School English Curriculum; these ten basic values are tried to be implicitly transferred by embedding them into the units. Similar to our results, Kart et al. (2019), who examined the values in primary school curriculum and Baydır (2018), who interviewed second and fifth grade English teachers, stated that none of the outcomes of the current English Language Teaching Curriculum included a value statement explicitly.

According to the results of the research, the value that can be associated with the units and outcomes in secondary school English curriculum the most is the value of respect. When analyzed in terms of frequency, the values of responsibility, love, friendship, self-control, benevolence and patriotism follow the value of respect, respectively. The values that can be least associated with the units and outcomes in the curriculum are honesty, justice and patience, respectively. In their research examining the values in high school English curricula, Çoban and Akyol (2020) stated that the values that could be most frequently associated with the curricula were love, friendship and respect. The results of these two studies reveal that the values that can be most frequently associated with secondary and high school English curricula are similar. Besides, in the study conducted by Çengelci et al. (2013), it was revealed that similar values such as love, respect, tolerance, solidarity and responsibility were at the forefront in secondary schools. It is clearly seen that the values emphasized have not changed much despite the time that has passed and the changing curriculum.

As a result of the interviews on values education in secondary school English curricula, it was seen that the majority of the interviewed teachers did not examine the current curriculum and did not have information about the ten core values emphasized in the curriculum. When the teachers' opinions on the inclusion of values education in the English curriculum were examined, it was stated that the inclusion of values in the curriculum was necessary except for one opposing opinion. The positive opinions expressed by the teachers are that values education plays a role in raising generations with basic values, values education is as important as academic success, values education is more important than academic achievement, values can contribute to the solution of increasing problems and support students to develop positive attitudes. Some studies in the literature overlap with the results of this research. In her study, Mızıkacı (2015) stated that curricula cannot be free from values. Coşkun (2017), Selçuk (2016), Doğan et al. (2013) stated that values education contributed to the moral development of students; Ateş (2013) and Selçuk (2016) stated that values education in schools can help solve some basic problems. It has already been emphasized in the literature that there is a close connection between English language teaching and the transfer of values to students (Chinh, 2013). Except for one teacher, the interviewed teachers stated that the ten core values were necessary for the education of students, while at the same time they stated that the ten core values in the curriculum were inadequate for the education of students. The fact that the ten core values in the curriculum are universal values may be the main reason why they are considered necessary by all teachers.

All the interviewed teachers stated that they found the explanations in the English curriculum inadequate for values education practices. According to the teachers, the reasons for this inadequacy are that the methods and techniques that can be used in values education are not specified, the values to be taught in the units are not determined and there is no plan for values education. These opinions of teachers are also supported by the report written by Eğitim Reformu Girişimi (2017). In the report, it was stated that more explanatory information on values education should be provided so that teachers can develop a common understanding and standard (Eğitim Reformu Girişimi, 2017).

In the interviews, it was revealed that all but one teacher included values education practices in their lessons. However, all of these teachers clearly stated that their values education practices were inadequate. Tokdemir (2007) also emphasized that teachers' values education practices were amateurish and random. Teachers cited the limited explanations about values education, the implicit values in the curriculum, the lack of specification of which value will be emphasized in which unit, and the lack of specification of the methods, techniques and activities that can be used as the reasons for this inadequacy in values education practices. Negative teacher opinions on the implicit presentation of values in the curriculum are supported by the findings of the study conducted by Çengelci (2010). According to his study, social studies teachers think that the effect of the hidden curriculum in values education is low. On the other hand, it was also seen that there are different research results in the literature regarding the inclusion of values education within the scope of the hidden curriculum. Kuş (2009), Sarı (2007) and Ryan (1993) stated in their studies that the hidden curriculum had a very important place in values education.

In order to eliminate the problems experienced in the implementation of values education, the teachers suggested that values education should not be implicit in the curriculum. However, it is clearly stated in the curriculum explanations that values should be embedded in units and subjects by teachers (Milli Eğitim Bakanlığı, 2018) and therefore it seems to be an improbable suggestion. Other suggestions made by the teachers in the research are that the values education explanations in the English curriculum should be elaborated, practical in-service training opportunities should be provided for values education, a plan for values education should be prepared and put into practice, the values to be emphasized and explanations, activities, methods, techniques to be used in values education should be specified in the explanations, values education should be continued in an interdisciplinary way, courses on values education should be given at undergraduate level, students should be encouraged to prepare projects related to values education, values education should be continued in accordance with the principles of learning by doing. It would be appropriate to consider these applicable suggestions expressed by the teachers in order to convey the ten core values to students in a desirable way. In addition, it can be said that the "Values Education: Core Values in Curriculum Themed Activity Book" prepared by the Ministry of National Education (Milli Eğitim Bakanlığı, 2022) will play an important role in eliminating the inadequacies expressed in this research. In this activity book, practical activity suggestions for each core value are presented and teachers are guided in values education practices.

This research is limited to the Secondary School English Curriculum examined in terms of values and the English teachers who participated in the research group. For further studies, different curricula can be examined in terms of values and the opinions and suggestions of different stakeholders regarding values can be obtained. In addition, applied research can be conducted to overcome the inadequacies revealed within this research and serve to maintain values education in accordance with its purpose.

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Examination of the Concepts of Recycling and Related to Recycling in Science Textbooks

Research Article

Suleyman AKCAY[1], Melike SESLI[2], Rabia Aslıcan ASLAN[3]

[1]Süleyman Demirel University, Faculty of Education, Department of Educational Science, Isparta, Türkiye 0000-0002-0651-6425

[2]Süleyman Demirel University, Faculty of Education, Department of Educational Science, Isparta, Türkiye 0000-0003-3378-3577

[3]Süleyman Demirel University, Faculty of Education, Department of Educational Science, Isparta, Türkiye 0000-0003-2498-8730

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ABSTRACT

It is obvious that developing countries like ours can only achieve sustainable development by giving more importance to recycling in their education. Textbooks have been indispensable for education in classrooms from past to present. Especially in developing countries like ours, they are the most easily accessible teaching documents. In this research, nine science textbooks used in 5th, 6th, 7th and 8th grades as of 2023 were examined within the framework of recycling and recycling concepts. These textbooks are nine science textbooks selected by the Ministry of Education Education and Discipline Board among twenty-six science textbooks determined to be used in 5th, 6th, 7th and 8th grades as of 2023, using convenient sampling method. In the textbooks examined, the frequency of use of the concepts and the way they were handled were examined. The results of each textbook are presented as a separate table. As a result, it was seen that the concepts related to recycling and recycling were handled more indirectly and relatively less in the 5th and 6th grade textbooks. It has been determined that 7th and 8th grade textbooks are included more and more directly. Based on the results of the research, it is suggested that science textbooks should be enriched in terms of recycling, which is an important component of environmental education. In addition, it can be said that these concepts should be included directly and more effectively at the lower grade levels.

Keywords:
Recycling, Science education, Textbooks, Middle school

Introduction

Uncontrolled increasing industrialization, unplanned urbanization, global problems, and environmental pollution cause many problems (Aksakal, 2013). One of these problems is the increase in the amount of solid waste (Yüksel, 2020). As a result of excess production and unconscious use, the release of solid

[1]Corresponding author's address: Süleyman Demirel Üniversitesi
Telephone: +905055086969
e-mail: suleyman.akcay@gmail.com
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waste to the nature is increasing day by day (Doğru, 2020). The uncontrolled discharge of solid wastes into the nature is very damaging to the environment. In this context, it is very important to make solid wastes reusable by recycling (Artvinli and Bayar, 2018).

According to Cerqueira, Soukazis and Proença (2021), according to the data obtained for 28 Organisation for Economic Co-operation and Development (OECD) countries during the 2000-2016 period, there are significant linear relationships between renewable energy consumption and recycling rates and the development of countries. In addition, linear connections were observed between economic development and green policies.

Materials such as glass, plastic, metal and paper constitute solid wastes (Erten and Köseoğlu, 2021). Recycling is a method of separating these solid wastes and making them usable (Öztürk, 2022). Although recycling is currently used, education and information should be provided to further expand its use and raise awareness of new generations (Cheang et al., 2019). At this point, environmental education has an important place. Its importance has been increasing in recent times. It is a training recommended for use at all levels. The aim of environmental education is to teach information about the environment we live in, to protect nature, to benefit from the environment in a healthy way and to live in interaction with the environment (Çelik, 2011). Another aim of environmental education is to improve people's attitudes towards the environment and to create more conscious individuals about the place where they live (Başer, 2019). Especially since it is seen that habits and attitudes acquired at a young age are more permanent than those acquired at later ages, the education of this age group is important (Alım, 2006). Due to the decrease in natural resources, countries have tended to benefit from recycling (Kocataş, 2012). Recycling is very important to reduce the amount of waste, reuse it and prevent environmental pollution (Akın, 2009). Recycling also has positive effects on the country's economy. (Spiegelman and Sheehan, 2004). In order for people to know their responsibilities towards the environment, they need to acquire a positive attitude towards the environment (Karatekin, 2013). Schools, textbooks and teachers are of great importance in the process of developing positive attitudes towards the environment in students and therefore in society. Textbooks are the most frequently used and indispensable materials in classrooms. In addition, textbooks are an important source of information that students use outside of the classroom (Demirel & Kıroğlu, 2006; Önal, Kaya & Çalışkan, 2019).

Recycling practice is of great importance in terms of reusing waste, which is one of the biggest problems of today, saving raw materials and preventing pollution of the environment with wastes. In this context, the role of the younger generation is more important in raising the awareness of recycling (Ural Keleş and Keleş, 2018). One of the most suitable environments for this to be done is schools (Gülay, 2011). Atasoy and Ertürk (2008) stated that children's awareness of the environment can be improved with the right education.

Textbooks have been an indispensable part of education in classrooms from past to present. They are the most easily accessible documents, especially in developing countries like ours (Kılıçoğlu, 2020; Yüksel and Taneri, 2020). Since teachers see the textbooks as inadequate in various aspects, they turn to additional resources (Özmantar et al., 2017). However, textbooks are still actively used during subject evaluation, program preparation and assignments (Nakiboğlu, 2009). In addition, since there are written sources prepared within the framework of the curriculum, the reflection of the curriculum in the classroom can be accepted (Kavcar & Erdem, 2017). In this sense, the most important component of teaching environments, even today, is textbooks (Aslan, Okumuş & Koçoğlu, 2015). In addition, the Ministry of National Education (MoNE) in Türkiye has been distributing textbooks free of charge since the 2003-2004 academic year (Bayrakcı, 2005). In addition, textbooks are used as a repetition tool and resource for students outside the classroom (Karasu-Avcı & Faiz, 2018).

The current international literature is rich in studies evaluating the content of school science textbooks (eg: Chen & Eilks, 2019; Papageorgiou et al., 2019; Andersson-Bakken, Jegstad & Bakken, 2020). It is hoped that this study will contribute to the field about the situation of textbooks in Turkey on recycling, which is an important topic in terms of environmental education and science education (Luan et al., 2020).

It is an important question how the concept of recycling is handled in secondary school textbooks in Turkey, which is one of the most basic components of education. Only by finding a detailed answer to this question can a meaningful and sustainable environmental education be organized. In this context, the main problem statement of the research is "How and how often are the concepts related to recycling and recycling included in the secondary school (5, 6, 7 and 8th grade) science textbooks?" has been determined.

Methodology

Model of the Research

In this study, the document analysis method was used. Document analysis is one of the qualitative research methods in which written documents are examined sensitively and regularly. Since there is no direct observation or interview in qualitative research methods, written sources about the problem are needed (Yıldırım & Şimşek, 2016). It includes examining the documents sequentially, obtaining information about the subject, making sense of them, and comprehensively interpreting the information obtained (Corbin & Strauss, 2008). The researcher saves time because it does not include one-on-one observation and interview.

Researched Textbooks

The universe of this research consists of twenty-six science books determined to be used in 5th, 6th, 7th and 8th grades by the Ministry of Education Education Board as of 2023 (MoNE, 2023). The sample of the research is nine science textbooks selected from among these books by using convenient sampling method. In the convenient sampling method, the goal is for the researcher to get the most efficiency by spending the least effort and time (Büyüköztürk et al., 2016). Information about the textbooks examined in the study is presented in Table 1.

Table 1. Imprint Information of Textbooks

Order	Grade Level	Year	Edition	Author/s
1th Book	5th grade	2019	SDR Dikey Publishing	Ömer SİNAV
2nd book	5th grade	2021	State Books	Seval AKTER Hatice Betül ARSLAN Meltem ŞİMŞEK
3th Book	6th grade	2019	Sevgi Publishing	Coşkun ÇİĞDEM Gizem MİNOĞLU BALÇIK Dr. Özgün KARACA
4th Book	6th grade	2021	State Books	Dr. Öğr. Üyesi Fatih Serdar YILDIRIM Ali AYDIN İhsan SARIKAVAK
5th Book	6th grade	2021	State Books	Dr. Semra DEMİRÇALI Birsen ALKAN
6th Book	7th grade	2019	Aydın Publishing	İsmail GEZER
7th Book	7th grade	2019	State Books	Erkan AKDEMİR Dilek ÇETİN ATASOY
8th Book	8th grade	2022	Adım Publishing	Erhan YİĞİT
9th Book	8th grade	2021	SDR Dikey Publishing	Murat Volkan YANCI

Reliability and Validity

First, nine science textbooks were read one by one by three researchers. The basic data obtained from the examined textbooks were determined as concepts related to recycling. In the first stage, the notes taken from the books read were recorded in a sketchy form. Three researchers held two separate meetings lasting 90 minutes within the framework of the notes they took on nine textbooks. Concepts that could not be agreed upon at these meetings were removed from the lists. As a result, the concepts with one hundred percent consensus were put into writing in tables.

Findings and Interpretation

In the study, the findings obtained as a result of the examination of the textbooks are presented in tables. A textbook was examined in each table. There are columns of the concept related to recycling, the unit in which the concept is used, the subject and the related pages. The parts that mention the concept of direct recycling are highlighted with a dark background.

Table 2. 5th grade SDR Dikey Publishing (Sinav, 2019)

Concept	Unit	Topic/s	Page/s
1. Bag	Unit 1	The structure and rotation of the sun	17
2. Carton box	Unit 1	Structure of the Moon	21
3. Waste	Unit 1	Movements of the Sun, Earth, and Moon relative to each other	29
4. Glass jar	Unit 3	Measuring the magnitude of force, unit of force	61
5. Glass plate	Unit 3	What do I do if the friction force increases?	65
6. Cardboard	Unit 3 Unit 5	What do I do if the friction force increases?	65 114
7. Paper	Unit 3 Unit 6	Interaction of light with different substances	65 147
8. Environmental pollution	Unit 3 Unit 6	What do I do if the friction force increases?	67, 143 147, 161
9. Glass pipe	Unit 4	Environmental pollution	91, 92, 93, 95
10. Metal	Unit 4 Unit 5 Unit 6	Frictional force	94, 96 116 147
11. Glass	Unit 4 Unit 5	Human and environment relationship	94, 114, 115 116, 127, 128
12. Environment	Unit 5 Unit 6	Environmental pollution	103 132, 133, 135, 138 143, 145, 146, 147, 150
13. Plastic	Unit 5	Expansion, Contraction	114, 115 147
14. Recycling	Unit 6	Expansion and contraction in daily life	133 147, 161
15. Water pollution	Unit 6	Transparent substances, translucent substances, opaque substances	135 144
16. Soil pollution	Unit 6	environmental pollution	135
17. Air pollution	Unit 6	Expansion and contraction in daily life	135, 144, 145, 147, 161
18. Domestic scraps	Unit 6	Interaction of light with different substances	141
19. Industrial waste	Unit 6	Transparent substances, translucent substances, opaque substances	141
20. Waste	Unit 6	Propagation of light	144, 147
21. Battery waste	Unit 6	Environmental problems	146

22. Solid waste	Unit 6	Human and environment relationship	147
23. Food waste	Unit 6	Interaction of light with different substances	147
24. Battery	Unit 7	Environmental pollution	168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 180, 181, 182, 183
25. Liquid waste	Unit 6	Biodiversity	147
		Total:	**73 pages**

Note: Unit 1: Sun, Earth and Moon, Unit 3: Measurement of force and friction, Unit 4: Matter and Change, Unit 5: Propagation of Light, Unit 6: Man and the Environment, Unit 7: Electric Circuit Elements

There are 7 units in the book. 25 concepts related to recycling were used. These 25 concepts are mentioned in 73 points. In addition, only one of these concepts is the concept of direct recycling. According to the examination, it is seen that the concepts related to recycling are mostly mentioned in the 6th unit. In the unit 1 home activity on the Sun, Earth and Moon, students were asked to make a model of the Sun, Earth and Moon using waste. The concept of waste related to recycling is used here only. The concepts of bag and cardboard boxes were used in the structure of the Moon and the structure of the Sun and its rotation activity. In the 3rd unit, I measure force with a dynamometer, the expression glass jar was used in the activity materials section. The concepts of glass plate, cardboard and paper pieces are used in the effectiveness of whatever I do, the friction force increases. In the section of science, engineering and entrepreneurship applications, it is stated that oils will cause environmental pollution. In the 4th unit, the concept of glass pipe is used in the expansion and contraction efficiency. In addition, the concepts of glass and metal are also used in this unit. In the 5th unit, products such as glass, plastic, metal, environment, cardboard are mentioned, but they are not associated with recycling. In the 6th unit human and environment unit, it is mentioned that wastes pollute our environment. We produce wastes that cause air pollution such as car exhaust fumes and factory chimneys. It has been mentioned that the produced wastes such as food wastes, solid wastes (metal, plastic, paper), liquid wastes (water with detergent, used oil) should be collected and destroyed in garbage facilities, and that they should be recycled and reused. It was stated that we should be more conscious about recycling in order to prevent environmental pollution. It has been stated that recycling will reduce environmental problems. Photo of recycling bins is included. The concept of recycling is included in the puzzle box of the human and environmental unit, let's learn with fun. In the 7th unit, only the battery concept related to recycling is mentioned.

Table 3. 5th grade State Books (Akter et al., 2021)

Concept	Unit	Topic/s	Page/s
1. Classification	Unit 2	Get to Know the Livings	56
2. Plastic Gloves	Unit 6	Biodiversity	209
3. Environmental Pollution	Unit 6	Biodiversity, Human and Environment Relationship	215, 216, 224
4. Glass Jar	Unit 6	Human and Environment Relationship	223
5. Industrial Waste	Unit 6	Human and Environment Relationship	225
6. Medical Waste	Unit 6	Human and Environment Relationship	228
7. Nuclear Waste	Unit 6	Human and Environment Relationship	225, 228
8. Domestic Waste	Unit 6	Human and Environment Relationship	224, 231

9. Paper	Unit 6	Human and Environment Relationship	187, 228
10. Glass	Unit 6	Human and Environment Relationship	228
11. Plastic	Unit 5 Unit 6	Reflection of Light Human and Environment Relationship	174 228
12. Battery	Unit 6	Human and Environment Relationship	225, 228
13. Recycle	Unit 6	Human and Environment Relationship	228, 245
14. Air pollution	Unit 6	Air pollution	226
15. Soil pollution	Unit 6	Soil pollution	225
16. Water Pollution	Unit 6	Water pollution	224
		Total:	**24 pages**

Note: Unit 2: World of Living Beings, Unit 5: Propagation of Light, Unit 6: Man and the Environment.

There are 7 units in the book. 16 concepts related to recycling were used. These 16 concepts are included in 24 separate pages. In unit 2, the concept of classification is defined in the framework of recycling. Apart from this, all of the concepts related to recycling are discussed in the 6th unit.

Table 4. 6th grade Sevgi Publishing (Çiğdem et al., 2019)

Concept	Unit	Topic/s	Page/s
1. Gloves	Unit 3 Unit 4	Particulate Structure of Matter	106
2. Plastic	Unit 2 Unit 4	Support and movement system Thermal insulation, Thermal conductivity	45 141, 145, 154
3. Domestic Waste	Unit 4	Fuels	155
4. Animal Waste	Unit 4	Fuels	153, 155
5. Glass	Unit 4 Unit 5	Science, engineering and enterprise applications	14 141, 142, 147, 172
6. Pet bottle	Unit 2 Unit 4	Support and movement system Respiratory system	45 71 146
7. Cardboard	Unit 2	Support and movement system	45
8. Metal cans	Unit 2	Support and movement system	45
9. Waste	Unit 2 Unit 4	Excretory system Fuels	79 151
10. Wood	Unit 4 Unit 5	mass and volume Which is more intense? Thermal conductivity Different objects different sounds	122 124 137, 148 165

11. Metal	Unit 4 Unit 5	Thermal conductivity Different objects different sounds	137, 139, 148 165, 172
12. Environmental pollution	Unit 4	Fuels	154
		Total:	**31 pages**

Note: Unit 1: Systems in our body, Unit 2: Systems in our body, Unit 3: Force and motion, Unit 4: Matter and Heat, Unit 5: Sound and its Properties.

There are 7 units in the book. 12 concepts related to recycling are included. These concepts are covered in 31 places in the book. The concepts related to recycling and recycling are not included in the 1st, 6th and 7th units. In the 4th unit, the material and heat unit, recyclable concepts are mentioned about fuels. In addition, biomass energy obtained from domestic and animal wastes is included. In units 1, 3, 4 and 5, concepts related to recycling are used, but their association with recycling is not made.

Table 5. 6th grade State Books (Yıldırım et al., 2021)

Concept	Unit	Topic/s	Page/s
1. Metals	Unit 4 Unit 5	Particulate Structure of Matter Interaction of Sound with Matter	116 177
2. Domestic Waste	Unit 4	Matter and Heat	132
3. Animal Waste	Unit 4	Matter and Heat	132, 137
4. Recycle	Unit 4	Matter and Heat	132
5. Air Pollution	Unit 4 Unit 6	Non-Renewable Energy Source Systems and Health	133 213
		Total:	**8 pages**

Note: Unit 4: Matter and Heat, Unit 5: Sound and Its Properties, Unit 6: The Health of the Systems in Our Body.

There are 7 units in the book. 5 concepts related to recycling were used. These 5 concepts are included in 8 pages. The concept of direct recycling is included only in the 4th unit, matter and heat. How to obtain renewable energy sources that do not harm nature is discussed. It is stated that biomass energy, which is one of the renewable energy sources, is obtained by leaving domestic waste and animal wastes to rot in waste tanks.

Table 6. 6th grade State Books (Demirçalı and Alkan, 2021)

Concept	Unit	Topic/s	Page/s
1. Nylon Bag	Unit 2	Digestive system	63
2. Pet Bottle	Unit 2 Unit 5	Respiratory System, Excretory System	75, 80 160
3. Metal	Unit 4	Thermal conductivity	132 147
4. Glass	Unit 4	Heat insulation	133, 134
5. Iron	Unit 4	Different substance different density	125, 126, 132
6. Waste	Unit 4	Environmental impact of fuels	142, 146
7. Environment	Unit 4	Environmental impact of fuels	139, 142, 147
8. Plastic	Unit 4	Fuels	145, 147, 153, 155 159
9. Domestic Waste	Unit 4	Fuels	144
10. Animal waste	Unit 4	Fuels	144

		Total:	**23 pages**

Note: Unit 2: Our Body, Unit 4: Matter and Heat, Unit 5: Sound and its properties.

In the book, 10 concepts related to recycling are included in different units. These 10 concepts are discussed in the book 23 times in total. Recycling concepts are mostly found in the material and heat unit. There is no chapter in the book where the concept of recycling is discussed.

Table 7. 7th grade Aydın Publishing (Gezer, 2019)

Concept	Unit	Topic/s	Page/s
1. Waste	Unit 4 Unit 5	Domestic Waste and Recycling Unit Evaluation	111, 112, 113, 114, 115, 119, 150, 152
2. Recycling	Unit 4	Domestic Waste and Recycling	77, 111, 112, 113, 114, 115, 116, 118
3. Domestic Solid Waste	Unit 4	Domestic Waste and Recycling	111, 114
4. Domestic Liquid Waste	Unit 4	Domestic Waste and Recycling	111, 114
5. Garbage	Unit 4 Unit 7	Domestic Waste and Recycling	111, 112, 114, 115, 208
6. Trash Can	Unit 4	Vehicle Design	111
7. Recovery	Unit 4	Domestic Waste and Recycling	111, 114
8. Medical Waste	Unit 4	Domestic Waste and Recycling	115, 116
9. International Biohazard	Unit 4	Domestic Waste and Recycling	115
10. Electronic Waste	Unit 4	Domestic Waste and Recycling	113
11. Gum	Unit 4	Domestic Waste and Recycling	112, 113
12. Metal	Unit 4	Domestic Waste and Recycling	112, 113
13. Plastic	Unit 4	Domestic Waste and Recycling	112, 113, 117
14. Glass	Unit 4, Unit 5	Domestic Waste and Recycling Refraction of Light and Lenses Unit Evaluation	112, 113, 117, 122, 146, 150, 152
15. Paper	Unit 4, Unit 5	Domestic Waste and Recycling Refraction of Light and Lenses	111, 112, 113, 114, 115, 117, 122, 146
16. Foam	Unit 4	Domestic Waste and Recycling	112, 113
17. Glass	Unit 4	Domestic Waste and Recycling	112, 113
18. Newspaper	Unit 4	Domestic Waste and Recycling	113

19. Tire	Unit 4	Domestic Waste and Recycling	113
20. Car	Unit 4	Domestic Waste and Recycling	113
21. Computer Screen	Unit 4	Domestic Waste and Recycling	113
22. Leftovers	Unit 4	Domestic Waste and Recycling	114, 118
23. Battery	Unit 4	Domestic Waste and Recycling	112, 113, 115
		Total:	**67 pages**

Note: Unit 4: Pure Substances and Mixtures, Unit 5: Interaction of Light with Matter, Unit 7: Electrical Circuits.

23 concepts related to recycling are included in the book. These 23 concepts are covered 67 times in the book. There are 7 units in the book. The concepts related to recycling and recycling are not included in the 1st, 2nd and 3rd units. The unit in which the first recycling concepts are passed is the 4th unit of pure substances and mixtures. The subject is Domestic waste and recycling. In this section, the symbol of recycling is shown. Materials that cannot be recycled from domestic solid and liquid wastes that can be recycled are mentioned. It has been shown that materials such as metals, plastics, glass materials, papers and foam cups ca*n be recycled and from which raw materials they are produced. It has been explained how the recycled materials such as cables, batteries, automobile tires will be used when they are ready for reuse. There is an event to list the recyclable and non-recyclable items. It has been said that making reusable materials such as consumed food scraps is explained as recycling. There is an event that will enable the recycling of domestic solid wastes and domestic liquid wastes. It has been mentioned that if recycling is done, we will support the regeneration of the environment we live on, that it can prevent the extinction of living things in nature, and how useful it will be to leave usable raw materials for future generations. Picture of 4 colored boxes used for recycling is shown. Institutions and organizations such as ÇEVKO (Environmental Protection and Packaging Waste Evaluation Foundation) and the municipality, which play a major role in recycling, are mentioned. In addition to domestic waste, it was mentioned that wastes generated in health institutions such as hospitals are called medical waste and that their collection should be different from domestic waste, with an orange package and an international biohazard emblem. It has been said that clothes and similar products that we no longer wear in our homes are considered to be reused rather than thrown away. An activity was held to share unused items and clothes with people in need. The concepts related to recycling and recycling are not included in the 6th and 7th units. In the book, a vehicle design project is suggested at the end of the units. In this project, it was requested to design a vehicle for the storage of non-recyclable items.

Table 8. 7th grade State Books (Akdemir and Çetin Atasoy, 2019)

Concept	Unit	Topic/s	Page/s
1. Waste	Unit 1 Unit 3 Unit 4 Unit 5	Space Exploration, Beyond the Solar System: Celestial Bodies Force Work Energy Relationship Domestic Waste and Recycling Refraction of Light and Lenses	27, 36, 91, 135, 136, 137, 138, 139, 140, 142, 145, 175
2. Recycling	Unit 4	Domestic Waste and Recycling	135, 136, 137, 138, 139, 140, 141, 142, 145, 147
3. Reuse	Unit 4	Domestic Waste and Recycling	136, 140

4. Domestic Waste	Unit 4	Domestic Waste and Recycling	135, 140
5. Medical Waste	Unit 4	Domestic Waste and Recycling	140
6. Zero Waste project	Unit 4	Domestic Waste and Recycling	137
7. Domestic Liquid Waste	Unit 4	Domestic Waste and Recycling	137
8. Packaging Waste	Unit 4	Domestic Waste and Recycling	138
9. Natural Resource	Unit 4	Domestic Waste and Recycling	135, 137, 138
10. Energy Saving	Unit 3 Unit 4	Energy Conversions	100, 138
11. Air Pollution	Unit 4	Domestic Waste and Recycling	136, 138
12. Textile Waste	Unit 4	Domestic Waste and Recycling	136
13. Electronic Waste	Unit 4	Domestic Waste and Recycling	136
14. Iron	Unit 4	Domestic Waste and Recycling	136
15. Rubber	Unit 4	Domestic Waste and Recycling	136
16. Plastic	Unit 4 Unit 5	Domestic Waste and Recycling Refraction of Light and Lenses	136, 138, 139, 145, 175
17. Battery	Unit 4	Domestic Waste and Recycling	136, 139, 144
18. Glass	Unit 4 Unit 5	Domestic Waste and Recycling Refraction of Light and Lenses	136, 138, 139, 175
19. Engine Oils	Unit 4	Domestic Waste and Recycling	137
20. Aluminum	Unit 4	Domestic Waste and Recycling	136
21. Fuel Waste	Unit 4	Domestic Waste and Recycling	136
22. Vehicle Tire	Unit 4	Domestic Waste and Recycling	136
23. Steel	Unit 4	Domestic Waste and Recycling	136
24. Water Pollution	Unit 4	Domestic Waste and Recycling	138
25. Garbage	Unit 4	Domestic Waste and Recycling	135, 136, 138, 141
26. Garbage Trucks	Unit 4	Domestic Waste and Recycling	141
		Total:	**64 pages**

Note: Unit 1: Solar System and Beyond, Unit 3: Force and Energy, Unit 4: Pure Matter and Mixtures, Unit 5: Interaction of Light with Matter.

The book includes 26 concepts related to recycling. These concepts are discussed in 64 different places in the book. The book consists of 7 units. The concepts related to recycling and recycling are not included in the 1st and 2nd units. The third unit is force and energy. In this unit, waste cardboards were used in an activity to observe the elastic potential energy. Unit 4 is pure substance and mixtures. In this unit, which consists of 5 sections, the 5th section is Domestic waste and recycling. Here, according to the estimations made within the framework of scientific data, it is mentioned that the availability of drinking water and food raw materials will become difficult in the coming years, and the importance of recycling in order to prevent this. It has been stated that recycling is the process of transforming materials that can no longer be used into raw materials by going through some processes. It is also mentioned that this reuse is raw material and energy saving. The symbol of recycling is shown. Sample pictures of recyclables are shown. It has been stated that the purpose of recycling is to prevent uncontrolled waste. At the same time, it has been mentioned that the increase in uncontrolled waste causes harm to people and nature, the accumulation of wastes and the release of methane gas, and the negative effects of methane gas on air pollution and human health. Plastic and rubber-like materials are examples of recyclable materials. Fuels used for heating in homes are shown as examples of non-recyclable materials. It has been explained that wastes are divided into liquid and solid wastes. Food, packaging materials and fuel waste are shown as examples of domestic solid wastes. A project related to the recycling of solid or liquid waste was included to be exhibited at the end of the year science festival. It has been stated that some liquid wastes such as motor oils are recycled as solid wastes. It has been stated that with the implementation of recycling, raw materials and energy are saved and the country's economy is also very beneficial. In addition, in the book, students are asked to make posters related to recycling, organize conferences or prepare posters according to their interests and skills. It has been mentioned that there are many non-governmental organizations such as AGED, TAP, ÇEVKO, which carry out activities to raise awareness of the public in the recycling of wastes. It has been explained that the wastes generated in health institutions should not be mixed with domestic wastes and that they should be collected separately. It is emphasized that the constantly increasing number of products and textile products, which are among the products that are suitable for recycling, should be encouraged to reuse. At the same time, an activity was given to both help and reuse by sharing unworn clothes with the needy. The concepts related to recycling and recycling are not included in the 6th and 7th units.

Table 9. 8th grade Adım Publishing (Yiğit, 2022)

Concept	Unit	Topic/s	Page/s
1. Recycling	Unit 6	Sustainable Development	182, 184, 185, 186, 187, 188, 189, 190, 191, 193, 194, 195
2. Solid Waste	Unit 6	Sustainable Development	184, 185, 186, 187, 188, 190, 194
3. Recycle Bins	Unit 6	Sustainable Development	182, 184, 185, 188, 194
4. Plastic	Unit 6	Sustainable Development	182, 184, 185, 190, 194
5. Glass	Unit 6	Sustainable Development	184, 185, 190, 194
6. Paper	Unit 6	Sustainable Development	182, 184, 185, 190, 194
7. Metal	Unit 6	Sustainable Development	182, 184, 185, 186, 189, 190, 194
8. Garbage	Unit 6	Sustainable Development	184, 185, 187, 194
9. Raw Material	Unit 6	Sustainable Development	184
10. Carbon Dioxide Gas	Unit 6	Sustainable Development	186
11. Employment	Unit 6	Sustainable Development	180, 185, 187, 191
12. Energy Saving	Unit 6	Sustainable Development	187
13. Battery Waste	Unit 6	Sustainable Development	184, 189
		Total:	**58 pages**

Note: Unit 6: Energy Conversions and Environmental Science.

In the book, 13 concepts related to recycling were found. These concepts are included in 58 pages. The book consists of 7 units in total. Recycling and recycling concepts are not included in units 1, 2, 3, 4, 5 and 7. These concepts are included only in the 6th unit, energy transformations and environmental science. It has been mentioned that solid wastes are formed as the used materials become unusable. It has been said that this process of wastes that can be recycled into raw materials is called recycling. The recycling stages of solid wastes are described in six stages: The first stage is the storage stage. Here, the wastes are prevented from mixing with the garbage and the materials to be recycled are separated. The second step is to categorize the wastes according to their types. In the third stage, wastes are thrown into recycling bins according to their characteristics. In the fourth stage, these recycling bins are collected. In the fifth stage, the wastes thrown into the recycling bins are separated and turned into raw materials. In the sixth and final stage, new products are created from these raw materials and recovery is achieved. In addition, it was mentioned that if solid wastes are thrown away without being separated, it is very difficult to separate recyclable materials from non-recyclable materials in the garbage. Recycling bins are in the form of metal, paper, glass and plastic, and it is stated that each item should be disposed of according to its characteristics. There is a newspaper article describing the contribution of recycling to the country's economy if it is applied correctly. It has been stated that the transformation of wastes into raw materials ensures the protection of natural resources. In this process, it is explained that natural resource and energy savings are achieved, since raw materials are not produced from scratch. An event on what can be done to popularize recycling and increase its contribution to the country's economy was also included.

Table 10. 8th grade SDR Dikey Publishing (Yancı, 2021)

Concept	Unit	Topic/s	Page/s
1. Recycling	Unit 6	Sustainable Development	216, 217, 218, 223, 224, 228
2. Plastic	Unit 6	Sustainable Development	216, 217, 218, 224
3. Glass	Unit 6	Sustainable Development	216, 217, 218, 219, 224, 228
4. Paper	Unit 6	Sustainable Development	216
5. Metal	Unit 6	Sustainable Development	216, 217, 218, 219, 228
6. Garbage	Unit 6	Sustainable Development	216, 217, 218
7. Wood	Unit 6	Sustainable Development	216, 217, 218, 219, 224, 226
8. Waste	Unit 6 Unit 7	Sustainable Development Conversion of Electrical Energy	211, 215, 216, 217, 223, 224, 228, 247, 271
9. Reuse	Unit 6	Sustainable Development	218
10. Food Waste	Unit 6	Sustainable Development	218
11. Packaging	Unit 6	Sustainable Development	216, 217, 219
12. Composite	Unit 6	Sustainable Development	219
		Total:	**46 pages**

Note: Unit 6: Energy Conversions and Environmental Science, Unit 7: Electric Charges and Electric Energy.

12 concepts related to recycling were found in the book. These concepts are covered 46 times in the book. The book consists of 7 units. When Table 10 is examined, it is seen that the concepts related to recycling and recycling are mostly used in the 6th unit, energy conversions and environmental science. In addition, electrical loads and wastes of materials used in nuclear power plants in the electrical energy unit are mentioned. The concept of recycling is not included in other units.

Conclusion, Discussion and Recommendations

In this section, firstly, the findings obtained from the textbooks will be summarized according to the class order. Accordingly, in the first of two different 5th grade science textbooks examined, 25 recycling-related concepts were discussed at 73 different points. In the second book, 16 concepts were determined. It has been seen that these 16 concepts are discussed in 24 different pages. In both books, the concept of direct recycling is included in a single unit. However, in both 5th grade textbooks, these concepts related to recycling were not explained in detail and their relations with recycling were not established.

In the first of three different 6th grade science textbooks examined, 12 recycling-related concepts were discussed at 31 different points. In the second book, 5 concepts appear on 8 different pages. In the third book, 10 concepts appear on 23 different pages. Only in the second book, the concept of recycling is directly mentioned. However, in all three books at the 6th grade level, these concepts were not explained in detail and their relations with recycling were not established.

In the first of two different 7th grade science textbooks examined, 13 recycling-related concepts were discussed at 58 different points. In the second book, 26 concepts were determined. It has been seen that these 26 concepts are discussed in 64 different pages. In both books, the concept of direct recycling is included in a single unit. However, in both 7th grade textbooks, these concepts related to recycling were tried to be correlated. In addition, how the recycling takes place is not included and the relevant organizations are included.

In the first of two different 8th grade science textbooks examined, 23 recycling-related concepts were discussed at 67 different points. In the second book, there are 12 concepts. It has been seen that these 12 concepts are discussed in 46 different pages. In both books, the concept of direct recycling is included in a single unit. In addition, the concept of "recycle bins", which is considered to be directly related to recycling, is included in 5 different pages in the first book. In both 8th grade textbooks, these concepts related to recycling were tried to be correlated. However, it was observed that as much as in the 7th grade textbooks, correlation was not emphasized. It is emphasized that it will contribute to the country's economy.

As a result, the textbooks in which the concepts related to recycling are relatively high numerically are at the 7th grade level. In addition, it is at the 7th grade level in the books where explanations and associations on recycling are made. However, it has been observed that the concepts of recycling and recycling are not sufficiently mentioned and emphasized, especially in the 5th and 6th grade books. As a result of the research in the textbooks, it was observed that the concepts related to recycling and recycling were mostly used in a single unit at each grade (Tables 3, 7, 8, 9 and 10).

It is known that a student needs to know a very high amount of words in the text in order to fully understand the text and learn meaningfully (eg Laufer, 2020; Schmitt, Jiang & Grabe, 2011). In this sense, it is important for students to be familiar with the concepts of recycling and recycling, starting from the lower grades. However, in this way, it makes new readings on recycling and provides meaningful learning on this subject. The place of textbooks is undeniable here. In this respect, it would be beneficial to enrich science textbooks in terms of concepts related to recycling.

Ural Keleş and Keleş (2018) reported that awareness about the impact of recycling on the future is very low in primary schools, especially at the lower grade levels. In addition, strong linear relationships have been determined between environmental and recycling knowledge and positive behaviors (Goldman et al., 2021; Liao, & Li, 2019; Liu et al., (2019). In this context, the concepts related to recycling and recycling in textbooks should be handled in a more qualified (explanatory and related) way. In this way, it will ensure the positive development of this awareness and knowledge level. In addition, focusing on sustainability, economic development and recycling relationships, especially in lower grade textbooks, will positively affect meaningful and lasting learning.

In addition, it is known that the active use of scientific comics in the classroom contributes significantly to the scientific reasoning processes of students (Dallacqua, & Peralta, 2019). In this context, the Ministry of National Education can be a pioneer in eliminating the deficiency in this subject by publishing comics with a focus on environment and recycling and referring to them in the textbooks.

It is argued that close environment and practical examples are necessary for a meaningful and effective environmental education (Ardoin et al., 2020). In this sense, it will be more useful to give examples on the environment and recycling in educational programs and textbooks from the practical and close environment.

According to Dimopoulos, Koulaidis & Sklaveniti, (2003), the effective and appropriate use of visual content is very successful in attracting students' attention to that subject. However, the limitation here is that the visuals to be used in the upper classes are meticulously selected within the framework of expert opinions. In this sense, examining the textbooks in Turkey in terms of recycling can be presented as a suggestion.

Yücel (2010), on the other hand, reported that our country's science programs are weaker in terms of environmental issues compared to Ireland, USA, Canada and New Zealand programs. He also stated that independent programs and courses related to the environment are included in the curriculum of these countries and that this is necessary. In this sense, it can be suggested to include independent environmental courses in the curriculum.

Artvinli and Bayar (2018) find the achievements in primary and secondary school curricula insufficient in terms of gaining recycling as a value. In order to eliminate this deficiency, first of all, it is necessary to reconsider the curricula within this framework. Because the prepared textbooks are based on the curriculum (MoNE, 2023). Again, the homogeneous handling of the concepts related to recycling and recycling in the books (in each unit) and emphasizing their relations with sustainable environment, development and economy will be effective in permanent and meaningful learning.

Examining more science textbooks with different methods in the future may provide more detailed information on this subject. Again, if the curricula are examined within this framework, they will offer different perspectives.

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Learning Mathematics in Schools Located in Temporary Accommodation Centers: Experiences of Syrian Refugee Students

Research Article

Zuhal GUN SAHIN[1]

[1]Kilis 7 Aralık University, Faculty of Education, Department of Mathhematic and Science Education, Kilis, Türkiye 0000-0003-3771-9740

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ABSTRACT

The study focuses on the mathematics learning experiences of the students in the Temporary Accommodation Center and aims to contribute to the understanding of the teaching processes. The research data were collected from the students studying at the schools in the Temporary Accommodation Centers in Türkiye. In the study, it was determined that students faced various difficulties in learning mathematics, and this situation was related to their environment and situation. In order to understand the experiences of migrant students studying at schools in the Temporary Accommodation Center and to highlight the difficulties or strengths they face, research on gender, race, ethnicity, and socioeconomic backgrounds can be conducted. This broad perspective can provide information on teaching practices, curriculum development, and support systems to better meet the mathematical education needs of immigrant students at the Temporary Accommodation Centre.

Keywords:

Mathematics learning, immigrant student, refugee education, Temporary Accommodation Centre

Introduction

The number of displaced people worldwide has increased considerably in recent years. The number of people displaced worldwide exceeded 82.4 million in 2020, 89 million in 2021, and 100 million by the end of 2022 (UNHCR, 2020; UNHCR, 2022a). People uprooted from their lands take refuge in a foreign country and are referred to as "refugees" in their later lives. The number of refugees in the countries has increased with the increasing number of refugees. The number of refugees in countries is directly related to that country's policies. The country that hosts the most refugees is Turkey (UNHCR, 2018). Turkey hosts the world's largest refugee

[1]Corresponding author's address: Kilis 7 Aralık Üniversitesi
Telephone: +905384640328
e-mail: z.gunsahin@kilis.edu.tr
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population, with 3.7 million Syrians under temporary protection and over 320,000 refugees and asylum seekers under international protection (UNHCR, 2022b).

As the displacement of refugees lengthens, host countries are forced to produce permanent education policies for the education life of millions of young refugees. Globally, there has been a significant focus on refugees' right to education (Dupuy et al., 2022). During the first years when children under temporary protection migrated to Turkey, T.R. The Ministry of National Education (MoNE) took urgent measures. In this context, training needs were met by establishing Temporary Education Centers (TEC) in Temporary Accommodation Centers and in provinces where Syrians live heavily. TECs are education centers covering primary, secondary, and secondary education, operating in and out of camps for school-age Syrian refugee children and youth, and providing education in Arabic by adhering to the Syrian curriculum (MoNE, 2014). These centers supported Syrian children academically with the program prepared in their language and to ensure their adaptation to the Turkish education system with intensive Turkish education. With the decision taken on August 19, 2016, it was decided to close the Temporary Education Centers (TEC) in Turkey in four-year stages and to integrate all students studying in these education centers into the Turkish education system under the Ministry of National Education. With this decision, the instructions and regulations that will regulate the integration of Syrian students were announced, special precautions were taken to prevent them from being exposed to discrimination, and the psychological support they needed was provided. Transferring Syrian students from TECs to official schools was completed by the end of the 2019-2020 academic year, and education services in TECs were terminated (MoNE, 2020). T.R. According to the January 2022 data of the Ministry of National Education (MoNE), there are 730,806 Syrian students in Turkish schools (MoNE, 2022). However, since not all Temporary Accommodation Centers were closed, the schools here were connected to the Ministry of National Education of Turkey. They continued their permanent, not temporary any more. According to the Directorate General of Migration Management data, in July 2023, 65,155 immigrants lived in Temporary Accommodation Centers (Presidency of Migration Management, 2023).

Most of the Syrians in Turkey live in cities, and only 1.95% of them live in camps (Temporary Accommodation Centre), according to the July 2023 data of the Directorate of Migration Management. For this reason, there are Temporary Accommodation Centers in only seven provinces in Turkey. One of these provinces is Kilis. According to the Directorate of Migration Management data dated June 15, 2023, the city with the highest density of Syrians compared to the local population in Turkey is Kilis, with 33.6% (Presidency of Migration Management, 2023). These statistics are essential in showing the density of refugees in Kilis, the region where this research was conducted in Turkey.

Mathematics Education of Refugees

One of the main goals of teaching mathematics is to increase the real power of its students, that is, to enable them to learn mathematics that prepares them not only for future lessons but also for personal and social life experiences. There are different ways to increase mathematical development. One of these ways is to apply procedural and conceptual knowledge in problem-solving contexts, typically assessed using verbal problems (Common Core State Standards Initiative, 2010). These include semantically challenging texts with a single or multi-step solution process (Fuchs et al., 2016; Galovich, 1989; Jordan & Hanich, 2003; Özsoy, 2005; Soylu & Soylu, 2006). Mathematical problems often involve verbal and textual input (Hickendorff, 2013; Intaros et al., 2014; Schoenfeld, 2014). Therefore, not having a sufficient command of the language in mathematics teaching will make it challenging to solve mathematical problems (Esser, 2006; İpek & Okumuş, 2012; Schoenfeld & Sloane, 2014). Language difficulties and the consequent negative impact on mathematics achievement in immigrant communities are consistently reported in many countries. Many correlation studies show that performance in mathematics depends on language proficiency (Pind et al., 2003; Singer & Strasser, 2017; Ünal et al., 2023).

With more than one method of learning and applying mathematics (Makas, 2017), mathematics should be accessible to all students (Esmonde, 2009). There are also refugee students with different languages and cultures among these students. Gutstein and Peterson (2006) stated that students' languages and cultures should not be seen as a deficiency that needs compensation but as strengths to build on their teaching. Başbay and Bektaş (2010) believe that every student should apply culturally sensitive teaching strategies that apply cultural knowledge and experiences to improve their mathematical knowledge.

Although there are no studies on the mathematics learning experiences of the students in the Temporary Accommodation Center, there are studies on the mathematics learning of immigrant students. It can be said that the common points of these studies are the problems arising from the student's inability to have full command of the language (Bartram et al., 2018; Bradley et al., 2017; Diedrich, 2017; Olsson et al., 2023; İmamoğlu & Çalışkan, 2017; Yenilmez & Çöplü, 2019; Yolcu & Dogan, 2022). The fact that mathematics has a universal language can be considered an advantage for refugee students compared to other courses. Despite this, many teachers think teaching mathematics to immigrant students can be challenging (Bahadır, 2021; Yolcu & Doğan, 2022).

Delprato et al. in 2020, a study conducted in different school types (camp schools, second shift schools, host schools, regular schools) in an environment where refugees and their hosts speak the same national language in Jordan revealed that students in camp schools where immigrants live face multi-faceted difficulties in learning compared to other school types reveals.

Method

Research Design

This study will describe the mathematics learning processes of the students studying at the schools in the temporary accommodation centers in the context of refugees based on their experiences in mathematics lessons with a universal language. In this sense, data will be collected from 7 immigrant students studying at the Temporary Accommodation Center in Kilis. The study was designed according to the qualitative research approach. The study is phenomenological research, focusing on students' mathematics learning experiences regarding the refugee student phenomenon. In the phenomenology design, it is essential to interpret and define the phenomenon based on the people's experiences (Jasper, 1994). In such a study, first of all, the phenomenon is defined, data is collected from experienced people, and finally, a holistic description is presented (Creswell, 2013). The research aims to reveal the paths that immigrant students follow in learning mathematics, their self-perceptions in this process, their efforts, and the parts they have difficulty with.

Participants

The study group of this research consisted of 7 immigrant students studying at schools in the Temporary Accommodation Center in Kilis, where Syrian immigrants live the most in Turkey. Only students studying at the Temporary Accommodation Center were selected for the study. All of the students are high school students. While selecting the students, students who can speak and understand Turkish well were selected. Support was received from the translators at the Temporary Accommodation Center at incomprehensible points. The study group has a heterogeneous structure in terms of mathematics achievement. Students with low mathematics achievement, moderate mathematics achievement, and good mathematics achievement participated in the study. The mathematics success of the students was found by taking the averages of the student's two most recent mathematics exams. The low-level mathematics achievement test average is between 0-45, the intermediate-level mathematics test average is 45-70, and the good-level mathematics test average is 70-100. In the study, there are two students with low mathematics achievement, three with moderate mathematics achievement, and two with good mathematics achievement. In this way, it was tried to provide data diversity. The information on the students participating in the research is given in Table 1.

Table 1. Information on the students participating in the research

Student code	Gender	Grade level	Mathematics success	Length of life in Turkey
S1	Famale	11	good	10
S2	Famale	10	good	10
S3	Male	12	intermediate	7
S4	Famale	10	intermediate	10
S5	Male	11	intermediate	10
S6	Male	11	low	8
S7	Famale	12	low	10

Data Collection Tools

Qualitative data were used in the research, and students' experiences in mathematics were collected through semi-structured interviews. The researcher created interview questions as a result of field scanning. Expert opinions were used for the content validity of the interview questions, and an interpreter was assisted to ensure linguistic control. One of the experts has studied immigrants and works in mathematics education. The other specialist has taught immigrant students and works in mathematics education. Interview questions were initially determined as 21 but were reduced to 12 questions in line with expert opinions and language control. Some questions were merged, some were deleted because they asked similar things, and some were revised for clarity. The questions were prepared for the study. Before starting the interviews, the "Informed Consent Form for Participants" was distributed to the students, and they and their parents were asked to sign it. Since the study was conducted with immigrant students, it took much work to understand when some expressions they used during the interview were mixed. The sample student answers given in the findings section were made comprehensible in a way that would not distort their meaning in line with the confirmations received from the students and were shared in the study. Sample interview questions are given below.

1) What would you say about learning mathematics with your friends, all Syrians in a different country?

2) Does being an immigrant student affect your school life and math learning? If it does, how does it affect it?

Data Analysis

A semi-structured interview form was used in the research, and before the interview, students and their families were informed about the research. After the participant consent was obtained, the questions asked by the researcher were recorded. The interviews lasted between 25-30 minutes on average. The records were transcribed and written. During the analysis, the common points expressed by the students in the interviews were determined. Codes and categories were created based on common points. The generated code and categories are explained conceptually. In this study, content analysis was used as data analysis. The content analysis aims to reach concepts and relationships that can make sense of the data obtained (Tekin-Karagöz, 2014, p.68). The interview data were reviewed during the analysis, and preliminary preparation was made.

In the study, the researcher and an expert made the analysis. The expert helping with the analysis is a mathematics educator who has taught qualitative data analysis and has studies on content analysis. While the analyzes were being made, the subject of similar experiences during the theme development phase led to the formation of 8 draft themes. However, since it is known that this excess in the number of themes limits abstraction (Merriam, 2009/2018, p. 179), the draft themes were reviewed separately by the researcher and an expert; after this review process, eight draft themes were revised under categories and code names. Thus, the mathematics learning experiences of immigrant students in the Temporary Accommodation Center were grouped under three main categories: "teaching mathematics, perception of mathematics, and being an immigrant." An example of this step is given in Table 2.

Table 2. Example analysis framework

Theme	Code	Explanation	Sample student answer	Repetition frequency
Mathematics perception	Necessary	Mathematical requirements to overcome some obstacles	"I want to have a good job. For this, I need to do very good mathematics in YÖS (Foreign Student Exam)"(S3) "For a good university, we need to get a high score from YÖS. For this, mathematics is very important"(S2)	4

From the student answers in Table 2, the idea that mathematics is necessary to overcome some obstacles is supported and that it creates a whole. For this reason, student answers with similar expressions were brought together under the code "Required" and grouped under "Mathematics Perception." Other central themes were created similarly, considering the relationship between "experience and its subject."

A consensus was reached on the codes during the analysis. The reliability formula (Reliability=Number of Concordance / [Number of Concordance + Number of Conflicts] x100) suggested by Miles and Huberman (1994, p. 64) was used to determine the concordance between coders. The percentage of concordance among the coders was approximately 86% determined. In addition, all the stages of the study were explained in detail, and the expressions used by the students were given in the study by quoting so that the reliability of the research was tried to be increased. Evaluation of the data by the participants, which is a strategy to increase the validity of the research, was not found appropriate because the study group was young and included Syrian students (inability to master the language).

An application was made to the Ethics Committee on 31.10.2022 for the suitability of the research, and its suitability was accepted with decision number 2023/02 dated 18.01.2023.

Finding

When the data of immigrant students studying at the Temporary Accommodation Center were analyzed, it was seen that three categories emerged. These; include teaching mathematics, perception of mathematics, and being an immigrant. It was observed that various codes were formed under these categories. Detailed explanations of the categories and codes are given below.

Teaching Mathematics: In the interviews, it was observed that all of the students made various emphases on the mathematics course. These data, collected under the name of teaching mathematics, were created in the context of students' requests and recommendations for the mathematics lesson. It was observed that three codes were formed under this theme—the generated codes; lecture and assignment, grade level, and class structure. The codes, explanations, sample student views, and the frequency of repetition of the code under the theme of mathematics teaching are given in Table 2 below.

Table 2. Information on the theme of teaching mathematics

Theme	Code	Explanation	Sample student opinion	Repetition frequency
Teaching Mathematics	lecture and assignment	characteristics of an effective lesson	"Lessons should be taught very slowly and gradually" (S3) "The teacher should repeat a lot and explain simply" (S7) "Sometimes the teacher brings some tools. It is very nice to learn by touching." (S1)	7

			"Computer class was created at school; I wish we were allowed to go there and listen to places we do not understand from computers." (S6) "I wish homework were given to everyone's level of understanding. Homework is challenging for me." (S2)	
	classroom layout	what should be in the learning environment	"It has to be level classes. Because some of them do not understand anything in the class, some of them affect this lesson very well and badly. Those who understand Turkish well should go to a class, those who understand moderately should go to another class, and those who understand little should go to another class" (S2) "Some of our friends have to be told the basics, but for people like me, it gets boring. I wish those friends were taught in another class." (S1)	4
	class structure	culture and language structure in the classroom	"If we were in the same class with the Turks, we would learn better; they would help." (S2) "We speak Arabic with our friends if only they were Turks, we would learn something Turkish from them. Maybe we could understand the lessons better." (S7)	3

As seen in Table 2, immigrant students made various requests and recommendations for mathematics teaching. It was observed that many students expressed their opinions under the lecture and assignment code. These; can be expressed as a superficial level of narration, the teacher's repeated repetitions, their desire to receive technology support, their desire to be given homework according to the level, and the desire to increase the use of materials. It was observed that most of the students used similar expressions, and the most repetitive codes were lecture and assignment. In Table 2, under the "classroom layout" code, four students stated that homework should be given according to the level. Some students stated that level classes should be created, so they mentioned that mathematics teaching should be according to their grade levels. The students stated that the levels should be determined according to their Turkish language proficiency rather than their mathematics achievement. Three students stated that their language did not improve because no students could speak Turkish in their classes, and thus their course success decreased.

Perception of mathematics: When the data collected from the students were analyzed, it was observed that the students used expressions reflecting their perceptions of mathematics. For this purpose, this theme was created. It was observed that four codes were formed under the mathematics perception theme—the generated codes; effective, eternal, necessary, and life itself. The codes, explanations, sample student views, and the frequency of repetition of the code under the theme of mathematics perception are given in Table 3 below.

Table 3. Information on the theme of perception of mathematics

Theme	Code	Explanation	Sample Student Answer	Repetition frequency
Perception of mathematics	Effective	The effect of mathematics on other situations	"Knowing mathematics contributes to rapid learning" (S3) "The perspective of someone who knows mathematics changes" (S1) "I think knowing mathematics helps us to stand against the difficulties of our life." (S7)	5

	Eternal	Scope of mathematics	"Mathematics is a broad and deep course" (S2) "There are endless issues in mathematics; there are many solutions." (S4)	4
	Necessary	Mathematical requirement to overcome some obstacles	"I want to have a good job. For this, I need to do very good mathematics in YÖS (Foreign Student Exam)" (S3) "For a good university, we need to get a high score from the YÖS exam. For this, mathematics is very important." (S2)	4
	Life itself	It works in all areas of life	"It gives meaning to one's life. Sometimes it keeps people alive in the face of difficulties. When a person is good at mathematics, he can work in different jobs." (S1) "Mathematics helps us even when we are going to make important decisions." (S6)	3

As seen in Table 3, it is seen that immigrant students have different perceptions of mathematics. Most students agree that mathematics is a practical subject. While expressing this, "contribution to fast learning," "contribution to perspective," "contribution to confronting the difficulties of life," etc. appear to have stated reasons. More than half of the students stated that mathematics has an infinite structure. This situation can be described as "broad and deep," "endless topics," and so on—stated reasons. Four of the students stated that mathematics is necessary for them. They put forward the Foreign Student Examination (YÖS) as a justification. Some students state that the doors of going to a good university will be opened with YÖS. Three students stated that mathematics would be helpful in many areas of life. Therefore, the code of life itself was created. As a justification, "mathematics gives meaning to life," "it works even in important decisions," and so on. have made such statements.

Being a immigrant: It was observed that students made some statements about being a migrant while expressing their experiences. For this reason, the "being an immigrant" theme was created under the theme of being an immigrant, language anxiety, physical and economic conditions, emotional dimension, and shared history. Information on these codes is given in Table 4.

Table 4. Information on the theme of being an immigrant

Theme	Code	Explanation	Sample Student Answer	Repetition frequency
Being an immigrant	Language anxiety	Inability to learn Turkish enough	"We only speak Turkish with teachers here. I will have a hard time studying with the Turks when I win the university." (S3) "I love the literature class very much; it helps me to understand Turkish." (S2)	5
	Physical and economic conditions	The challenges of the environment and conditions	"Because our house is tiny and there is not always internet at home, I cannot watch videos and improve myself. (S2) "We stay in the accommodation center to avoid paying rent and bills (electricity, water, etc.). Our houses are tiny, and our classrooms are crowded." (S1)	4
	Emotional dimension	Experiences of the feeling of being a migrant	"Being a migrant is very difficult; communication was challenging before, but now it is better. Sometimes I miss Syria and my relatives there." (S6)	4

		"It is challenging to study in a country where you do not speak the language." (S3)	
Shared history	Link to your own culture	"It is nice to be with the Syrians; I feel like I am in Syria." (S1) "I feel good when we all speak the same language in the camp." (S7)	2

As can be seen in Table 4, it was seen that four codes were formed under the theme of being an immigrant, and the most repetitive code was "language anxiety." Students stated that they do not know the language adequately due to speaking Arabic among their family and friends for language anxiety. immigrant students mentioned their physical and economic conditions. Some students stated that they have difficulty studying because the houses they stay in the Temporary Accommodation Center are tiny. Some immigrant students talked about the difficulties of being an immigrant emotionally. They stated that being a migrant is tricky and that it becomes even more complicated when they do not know the language. 2 immigrant students stated that they feel like they are in Syria because the people around them are Syrian, which is good for them.

Discussion and Conclusions

Analyzes of the experiences of migrant students studying at the Temporary Housing Center provide valuable insights into their perspectives. It is seen that the students want the teacher to make simple, plain, understandable, repetitive, etc. narrations during mathematics teaching. It is seen that the language inadequacy of immigrant students causes this situation. The fact that teachers want to use materials in mathematics teaching, to repeat what they learned in the computer class, and to want homework done according to the level when homework is done shows that the language factor has an effect. The students who wanted to divide the classes according to their language proficiency again showed the importance of the language barrier in immigrant education. While examining the students' experiences in the mathematics learning process, living in the Temporary Accommodation Center at every opportunity shows that they have limitations in not knowing the language. It is known that the biggest obstacle in immigrant education is language (Ereş, 2015; Entorf & Minoiu, 2005; İşigüzel & Baldık, 2019; Rubinstein-Avila, 2016; Ruhose & Schwerdt, 2016; Suarez-Orozco et al., 2009). However, it would not be wrong to say that immigrant students in the Temporary Accommodation Center have more language problems. Because of the absence of a Turkish-speaking environment other than teachers, it can be said that everyone living in the environment they live in is immigrants like themselves and speaking Arabic among themselves minimizes their language learning situation. An essential aspect of educational prospects is the language immigrant students speak with their families at home (Levin & Shohamy, 2008).

Regarding educational performance, the difference between immigrant and native students is significantly less if the host country's language is spoken at home. However, language proficiency appears to have a more substantial influence, for example, on reading assessments than on mathematics (Schnepf, 2007; Cordero & Mateos-Romero, 2021). The fact that students speak Arabic with their families and in their life in the Temporary Accommodation Center may cause them to feel behind in learning the language and in Turkish education. The fact that some students stated that they want to study in the same class as Turks to learn Turkish and ask their Turkish friends about the places they do not understand supports this idea. This also highlights the importance of differentiated instruction, which includes adapting teaching methods and materials to meet students' diverse learning needs (Tomlinson, 2001). This approach is geared towards meeting the specific needs of immigrant students with varying mathematical proficiency and language skills. Visual materials, technology, and different representations, such as figures and tables, can effectively teach mathematics to a class in a different language and culture. Studies show combining technology and interactive materials can increase student participation and learning outcomes in mathematics education (Hew & Brush, 2007; Presmeg, 2006).

When the students' wishes and suggestions for the mathematics learning process are examined, the truth about the language barriers of immigrant students emerges. Although mathematics is the universal language, it is seen that language is the biggest obstacle in front of immigrant students in this study, as in other studies. In order to overcome the language barrier in multicultural classrooms, research in the context of mathematics teaching shows that culturally sensitive pedagogy plays a crucial role in supporting the learning of immigrant students (Aguirre & del Rosario Zavala, 2013; Ladson-Billings, 1995; Nolan & Keazer, 2021). Culturally sensitive teaching accepts students' cultural backgrounds, experiences, and values and incorporates them into the learning process (Bahadır, 2021). It promotes a sense of belonging, increases student engagement, and improves academic outcomes. In this way, the students' inadequacies due to not knowing the language can be minimized.

When students' perceptions of mathematics were examined, it was revealed that they saw mathematics as effective, eternal, necessary, and life itself. When students' opinions are examined, the fact that mathematics is essential for them emerges. It is known that the questions in the Foreign Student Selection Examination (YÖS) held during the transition of immigrant students to university in Turkey consist of mathematical questions. For this reason, even if the students could not do mathematics, they expressed that it is in many parts of life that it develops the human mind, is a deep and comprehensive course, and is very necessary for them. It can be said that even students with difficulties in mathematics do not have any negative perceptions of mathematics. It can be said that students' seeing mathematics as a key in order to be successful in YÖS has a significant impact on their perceptions of mathematics. In addition, it can be thought that the fact that the mathematics course has a universal language, unlike other courses, is compelling. Even if it is not independent of language, it can be thought that the mathematics course is less dependent on knowing a language than other courses (Bahadır, 2021). It is thought that this situation may be one of the reasons for the students' positive perceptions. The literature on students' attitudes toward mathematics highlights the effect of positive attitudes on motivation, participation, and achievement (Boaler, 2002; Dweck, 2006). Students' positive perceptions are thought to affect their performance in mathematics lessons. In addition, immigrant students' cultural backgrounds and experiences can affect their conceptualization of mathematics and its relation to their lives. Therefore, creating a culturally inclusive mathematics curriculum that integrates students' cultural contexts and knowledge can increase their motivation and sense of ownership in learning mathematics (Nasir & Hand, 2008; Moschkovich, 2002).

When the views of immigrant students on their experiences of being immigrants are examined, they talk about the difficulties of being an immigrant in general. Immigrant experiences intersect with various aspects of student's lives, including language development, academic achievement, and social integration. Language acquisition and language support are critical considerations for immigrant students. When the study findings are examined, it can be said that the students generally have language anxiety and attribute this to their environment. Since the students stay in the Temporary Accommodation Center, they only communicate with people who speak Arabic like themselves, apart from their teachers. This situation causes them to worry about being unable to learn a language. Because they think that in the future, they will enter the environment where the Turks are also, and then they will have a tough time. Although students do not have a good command of the language, they are likely to learn a language. Students who like literature lessons that contribute to their mastery of Turkish or want Turkish students to be in their classes support this situation. It was observed that some students mentioned that their houses and economic conditions were minimal. It is known that the reasons for staying in the Temporary Accommodation Center are not paying rent and bills. This may be an indication that their economic conditions could be better. In addition, the fact that their houses are small shows that they need to find a sufficient working environment for other lessons, such as mathematics lessons. The economic and physical conditions of the students play an essential role in their academic success. Studies on the psychosocial aspects of being an immigrant emphasize the importance of social support, acculturation, and cultural identity in enhancing well-being and academic achievement (Berry, 2005; Kao & Tienda, 1998). Some students mentioned the difficulties of studying in an environment where they do not speak a language, as it is challenging to be an immigrant. This is thought to be because they suddenly find themselves in an environment where they are unfamiliar with their culture and language. A refugee student's experience of displacement has many possible dimensions. In refugees from their home countries, a seemingly permanent experience of rootlessness, never fully belonging, may follow. Tran (2018) stated that those who consider themselves a refugee would never see themselves as a whole, especially if they came to this status as a child. The fact that they had to leave their country unintentionally and that some students miss the country and relatives they left behind can be evidence of this situation.

Despite everything, two students stated that being in the Temporary Accommodation Center was good for them. Being in the same environment with people with the same language and culture alleviates their sense of being an immigrant. Research on the educational experiences of immigrant students highlights several factors that can affect their academic achievement and social integration. Language anxiety is a common challenge immigrant students face, as language proficiency plays a crucial role in their educational journey (Cummins, 2001; Schecter & Bayley, 2002). Providing language support and opportunities for language development is crucial to helping immigrant students overcome these barriers (Echevarria & Short, 2004; Thomas & Collier, 2002). In addition, understanding and addressing immigrant students' socioeconomic conditions and emotional well-being can contribute to their overall academic and social adjustment (Berry, 2005; Suarez-Orozco et al., 2010). Exploring the role of family and community support in the educational experiences of immigrant students can also provide valuable insights (Moll, 1992; Suarez-Orozco, 2001).

Recommendations for future research and policy

In order to understand the experiences of immigrant students studying at schools in the Temporary Accommodation Center and to highlight the difficulties or strengths they face, studies addressing their gender, race, ethnicity, and socioeconomic backgrounds can be conducted. This broad perspective can provide information on teaching practices, curriculum development, and support systems to better meet the needs of immigrant students in mathematics education at the Temporary Housing Centre. It is thought that the language barrier is too prominent because the students do not know the language, as well as the fact that the teacher is unfamiliar with the culture of the class he teaches. In-service training can be given to teachers in the Temporary Accommodation Center, which will contribute to recognizing the culture in which they teach and preparing teaching environments for this. In addition, projects for this can be developed.

Limitations of the research

Current research has some limitations. This study discussed the experiences of 7 immigrant students studying at the high school level in the Temporary Accommodation Center schools. choice is compulsory since the number of students who can speak Turkish at the level to be interviewed in the Temporary Accommodation Center is limited, and although parents are informed about the research through interpreters, parental approvals for the study are limited. Most of the interviewed students include high school students speaking and understanding Turkish above the grade level. Therefore, there needs to be more generalizability of the experiences. In addition, data sources are limited to student opinions. Data diversification will enable better interpretation. Despite these limitations, the mathematics learning experiences of the students studying at the Temporary Accommodation Center were discussed. The study will inspire and provide resources for other researchers focusing on the mathematics learning processes of immigrants in the Temporary Accommodation Center.

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An Investigation of Teachers' Attitudes Towards Female School Administrators*

Research Article

Zeynep YILMAZ OZTURK[1], Kubra AKGOL[2]

[1]Gaziantep University, Faculty of Education, Department of Educational Science, Gaziantep, Türkiye 0000-0002-6967-6637

[2]Ministry of National Education, Teacher, Afyonkarahisar, Türkiye 0009-0002-1578-3223

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ABSTRACT

As in the rest of the World, finding a place in business life for women in Turkey also requires harder processes compared to men. Both her gender-specific characteristics and the responsibilities imposed on women by the society can be counted at the top of the factors preventing women from entering the business life and showing a steady promotion. It is seen that the visibility of women who have started to make their presence felt in business life in managerial positions is much lower than that of men. The existence of stereotypes against women is a problem. The aim of the study is to reveal the level of teachers' attitudes towards female school administrators in terms of some variables. The research is quantitative research designed with survey model. The sample of the research consists of 511 teachers working in 30 primary schools in the districts of Akçakale, Eyyübiye, Haliliye and Karaköprü in the province of Şanlıurfa that were determined by simple random sampling method in the 2018-2019 academic year. The quantitative data aimed to determine teachers' attitudes have been collected scale "Attitude Scale Towards Female School administrators". The data collected have been analyzed through parametric tests. The results of the research have revealed that the teachers' attitudes towards female school administrators are positive. It has been found out that teachers have more positive attitudes towards female school administrators in the sub-dimension of interpersonal relations compared to other sub-dimensions gender, age and the working time spent with female school administrators have been determined as variables making a significant difference in teachers' attitudes towards female school administrators. It has been found that that the branch and the employment type of female school administrators are not variables making a significant difference on the attitudes towards female school administrators. Suggestions, based on the results of the research, have been presented to practitioners and researchers.

Keywords:

Attitude, femaleadministrators, attitudestowardsfemaleadministrators, female

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[1]Corresponding author's address: Gaziantep Üniversitesi
Telephone: +905531307264
e-mail: zozturk@gantep.edu.tr

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Introduction

When considered simultaneously with history, the emergence of the concept of management has begun to show its effect with the transition of people to collective life. The fact that people live in groups makes things easier, but it also brought the need for individuals to manage the society.

Considered simultaneously with history, the emergence of the concept of management began to reveal its influence with the transition of people to collective living. While collective living made things easier, it also brought about the necessity of individuals to manage society.

The qualifications of leaders have been the focus of leadership studies launched in the 1930's and conducted till 1940's. Those studies argues that leaders possess some characteristics that are not found in their followers. Leaders are described to be tall, intelligent, and decisive, to have a high socio-economic status and a strong sense of judgement, and to be strong in communication and impressing others. These characteristics are the ones defining men and it is thought that masculine characteristics are needed for a strong leadership. Women are perceived to be shorter and less intelligent than men. Women can be stronger in terms of their communication skills, but men are regarded to be more impressive. (Wilson, 1995; Heler, 1997).

As in the rest of the World, finding a place in business life for women in Turkey also requires harder processes compared to men. Both her gender-specific characteristics and the responsibilities imposed on women by the society can be counted at the top of the factors preventing women from entering the business life and showing a steady promotion. It is seen that the visibility of women who have started to make their presence felt in business life in managerial positions is much lower than that of men.

The studies dedicated to investigating the attitudes towards female school administrators began in the early 1970's and these studies have gained acceleration in the subsequent years. The studies dedicated to investigating the attitudes towards female school administrators started with the studies conducted in western countries. For instance, women showed a more positive attitude towards female school administrators compared to men at an international delivery company with 280 employees. (Terborg, Peters, Ilgen and Smith, 1977). Later on, studies related with the attitudes towards female school administrators started to attract attention in the international field (Cordano, Scherer and Owen 2002). Attitudes towards women in administrative roles have widely found place in literature (Güney, Gohar, Akıncı and Akıncı, 2006).

Boel Berner argues that women are governed by men in all employment fields. Berner, taking reference the data from 1988, indicates that even at a developed country such as Sweden with higher female employees compared to other countries, women constitute 44.4% within the total of 70% workforce. It has been concluded that the ratio of women working as school administrators is not reflected in these high working ratios (Akt. Katkat, 2000).

Throughout history, women and men have worked together in all stages of life and in all strata of society, however, the benefits they have provided have not been evaluated equally, and women have been relegated to the background. Lower-status jobs are seen as relatively more suitable for women, while professions providing high power, respect, and status, such as management, have been very difficult professions for women to achieve (Bayrak and Mohan; 2001).

Even if women have started to stand out in several areas of life, they are not adequately represented in administrative positions especially, and significant differences within the existing population employment between female-male roles are noticeable. These differences are particularly evident in administrative positions (Acuner and Sallan, 1993).

Women in Turkey mostly prefer the public sector for their working life. Regular working hours and trust for the government can be shown as the reasons for this tendency (Yavuz, 2011; Çelikten, 2005; Unalanvd.

2008). Teaching profession can be regarded as one of the profession branches with high employment rates in the public sector. Compared to other profession groups, it is seen that the number of women employed in teaching is higher (TUİK, 2023). It can be said that the reason why women have a share almost equal to men in the teaching profession is that the teaching profession is associated with motherhood even in the most closed societies (MEB, 2005; Çelikten, 2006). According to the data of 2016-2017 Academic year (KSGM,2017), 94,7 % (72,352) of 76,384 teachers working in pre-school education, 60.9 % (181.887) of the 298.520 teachers working in primary education, 56.3% (183.590) of 325.992 teachers working in Middle school level and 49% (168.604) of 343.534 teachers working in secondary school are female teachers. In terms of teaching profession, it is seen that as the level of teaching lowers, the number of female teachers increases in proportion to male teachers.

From past to present day, child education and teaching have been regarded as a profession attributed to female. While the number of female and male teachers is close, promotion to administrative positions is more likely for male teachers. In terms of administrative staff, this ratio is reversed in favor of female and male can reach positions with higher status (Blackmore 1998). The basis of this problem is the perception of top-level administration as "men's work" (Streitmatter, 1999). School administrators working in the provincial organizations of the Ministry of National Education (MEB) are distributed as follows in terms of their gender according to the data of 2016-2017 Academic year (KSGM, 2017): 1 (1.27 %) of the 81 Provincial Director of National Education, 5 (0.7 %) of the 714 Distict Director of National Education are women. 2.238 (7.91 %) of 28.299 school principals, 115 (5.94%) of 1.936 assistant principals and 7.431 (20,04%) of 37.042 deputy principals are women. The difference between the number of women in teaching positions and the number of women in administrative positions is remarkable.

Gender stereotypes and social resistance are considered to be the two key factors contributing to the low number of female school administrators in schools (Çelikten, 2004; Heilman, 1995; Terborg, 1977; Timpano and Knight, 1976). Additionally, it is also believed that attitudes towards female school administrators play an important role in the low number of female school administrators (Berkman, 2005; Beydoğan, 2001; Cortis and Cassar, 2005; Garland and Price, 1977; Loo and Thorpe, 2005; Özkan, 2006; Sakallı-Uğurlu and Beydoğan, 2002).

The presence of stereotypes against female poses a problem and this is regarded as a problem that needs to be investigated. The question "What is the level of teachers' attitudes towards female school administrators?" constitutes the main problem of this research within the scope of this information. Answers to the following sub-problems have been sought based on this main problem.

1. Do teachers' attitudes towards female school administrators differ significantly in terms gender?

2. Do teachers' attitudes towards female school administrators differ significantly in terms age?

3. Do teachers' attitudes towards female school administrators differ significantly in terms their branches?

4. Do teachers' attitudes towards female school administrators differ significantly in terms thedurations of workingwithfemaleadministrators?

5. Do teachers' attitudes towards female school administrators differ significantly in terms the employment type of the female administrator they work with?

Methodology

This research was designed with survey model in which quantitative methods are used in order to investigate teachers attitudes towards female school administrators working in educational institutions. Features such as beliefs, attitudes, tendencies, views and needs of participants regarding a specific topic can be examined in survey research. At the same time, how these features change in terms of some variables can be tested (İlhan and Gezer, 2021).

This study was conducted upon the ethical approval granted by Gaziantep University Social and Human Sciences Ethics Board on April 30, 2019 at the meeting numbered 5 with the decision numbered 3.

Population and SampleGroup

The population of this study consists of schools with female school administrators working in the districts of Şanlıurfa Province in 2018-2019. Random sampling method has been used in the selection of the sample for this research. In random sampling, also known as simple random sampling, each possible combination of elements in the population has equal change of being in the sample. (Kerlinger & Lee, 1999). 30 primary schools with female school administrators from primary schools in the districts of Akçakale, Eyyübiye, Haliliye and Karaköprü were included in the study. 511 teachers who work with female school administrators are the sample of the study. Features of the sampling group are given in Table 1.

Table 1. Features of the Sampling Group

Features	Groups	n	%
Gender	Female	223	43.6
	Male	288	56.4
Age	22-27ages	119	23.3
	28-33ages	67	13.1
	34-39ages	64	12.5
	40 andabove	261	51.1
Branch	Primary school teachers	336	65.8
	Branches	175	34.2
Working time with the female manager	1-3 years	280	54.8
	4-6 years	134	26.2
	7 years and above	97	19.0
Employment of female managers	Permanent staff	370	72.4
	Temporarily assigned	141	27.6
	Total	511	100.0

According to Table 1, when the distribution of teachers in this study is examined by *gender*, it is seen that 43.6% are female while 56.4% are male. 23.3 % of the teacher are in the 22-27 age group, 13.1% are in the 28-33 age group, 12.5% are in the 34-39 age group and 51.1% are in the 40 and above age group. When the distribution of teachers is examined by *branch* variable, it is seen that 65.8% are primary school teachers and 34.2 % are other branch teachers. When the distribution of teachers is examined by *the working duration with female school administrators*, it is seen that 54.8% of the teachers have been working for 1-3 years, 26.6% the teachers have been working for 4-6 years and 19% the teachers have been working for 7 and above years. When the distribution of female school administrators that teachers are working is examined by *the employment type*, it is seen that 72.4% are permanent and 27.6% are on temporarily assigned.

Data Collection Tools

The quantitative data collection tool used in the study consists of two parts and, the first part includes the personal characteristics of the teachers who participated in the study (gender, age, branches, year of work with female school administrators and positions of female school administrators).

The second section has the "Attitude Scale Towards Female School administrators" constituted of 27 items. The "Attitude Scale Towards Female School administrators" was developed by Berkman (2005). The latest version of the scale contains a total of 27 items, 14 of which are negative and 13 of which are positive, and the scale consists of 3 sub-dimensions. The first sub-dimension has been named as "Professional Business Behavior of Female School administrators" which contains items related with female school administrators' emotional or irrational work behavior. This factor explained 23.3% of the variance and consists of 14 items. The items are related with female school administrators' emotional behavior, such as "Women usually behave emotional when making work-related decisions". The internal consistency between items is α =. 91. The second sub-dimension has been named as "The Interpersonal Relations of Female School administrators". This factor explained 20.3 % of the variance and consists of 9 items. The items are related with the empathetic behaviors of female school administrators and their communication with employees. The internal consistency between items is α = .90. The third sub-dimension has been named as "Business Ethics of Female School administrators". This factor explained 8.5% of the variance and consists of 4 items. The items are related with work behavior of female school administrators. The internal consistency between items is α = .70

In this study, the internal consistency coefficient of the "Attitude Scale towards Female School administrators" was found to be Cronbach's Alpha: .87. In the analysis of the sub-scales, Cronbach's Alpha was determined to be as follows: .70 in the "Professional Business Behavior Dimension"; .67 in the "Interpersonal Relations Dimension"; and .63 in the "Business Ethics Dimension".

The Analysis of Data

In the study, data in the scale form were initially transferred the computer. Analysis have been conducted in the SPSS 22.0 program. 14 items containing negative expressions in the measurement form have been scored through reverse coding. Consequently, high scores reflect a positive attitude towards female school administrators for the whole scale and sub-scales.

Skewnessandkurtosisvalues were calculated to determine whether the collected data have normal distribution or not. These values have been presented in Table 2.

Table 2. Theskewnessandkurtosisvalues of thescale

	Skewness	**Kurtosis**
Professional Business Behaviour	-0.084	-0.599
InterpersonalRelations	-0.787	0.376
Business Ethics	-0.700	0.777

When the kurtosis and skewness values of the scores from the scales are examined, it has been observed that the values are in the range of ±1, meaning that there is no special accumulation in the distributions in any direction. According to this, it can be noted that the data have normal distribution (Tabachnick & Fidell, 2007; George & Mallery, 2010). As it was determined that the scale scores have normal distribution in the normality test (Table 2), the scale scores were analyzed with the help of parametric tests.

In the study, arithmetic means were used to determine the levels of attitude towards female school administrators. In the analysis of the data, t-test was used to determine the difference of teacher opinions according to gender, branch and employment status; ANOVA test was used to determine the difference according to age and work year. In case there is a statistically significant difference between the variables according to the ANOVA test result, Scheffe test, LSD, from multiple comparison tests, is used.

Findings

In this section, there are findings reached upon the analysis of the teachers' reviews regarding the research problems.

Findings Regarding the Main Problem

The levels of teachers' attitudes towards female school administrators have been presented in Table 3 along with a descriptive statistics analysis result according to the three sub-dimensions.

Table 3. Descriptive Statistics Results of Attitude Levels towards Female School administrators

Sub-Dimensions	Min	Max	$\bar{X}$	SS
Professional Business behaviour	1.50	7.00	4.45	1.06
InterpersonalRelations	1.11	12.67	4.96	1.17
Business Ethics	1.75	20.75	5.31	1.30
Total	1.60	14.37	4.80	1.20

According to Table 3, when the attitudes towards female school administrators of teachers working in primary schools are examined in terms of 3 sub-dimensions, it is seen that the mean score of the interpersonal relationship dimension ($\bar{X}$=5.04) is higher than the mean scores of the business ethics ($\bar{X}$=4.75) and professional business behavior (4.50) dimensions. This suggests that teachers have more positive attitudes towards female school administrators on the interpersonal relationship dimension.

Findings Regarding the First Sub-Problem

t-test results have been presented in Table 4 regarding the question "Do teachers' attitudes towards female school administrators differ significantly in terms gender?"

Table 4. t-test Results of Attitudes towards Female School administrators by Gender

Dimensions	Gender	n	$\bar{X}$	SS	sd	t	p
Professional business behavior	Male	223	4.01	1.05	509	-8.68	0.76
	Female	288	4.79	0.96			
Interpersonal relations	Male	223	4.85	1.19	509	-2.37	0.01*
	Female	288	5.18	1.16			
Business ethics	Male	223	5.11	1.58	509	-2.98	0.20
	Female	288	5.46	1.02			
Total	Male	223	4.45	2.53	509	-6.90	0.31
	Female	288	4.98	2.31			

* p<0 05

When Table 4 is examined, it is seen that the mean score of teachers' attitudes towards female school administrators in terms of the gender variable is $\bar{X}$=4.98 for female teachers while the total mean score for male teachers is $\bar{X}$=4.45. There is no significant difference in total scores in terms of the gender variable of teachers. When the sub-dimension is examined, no significant difference has been observed in Professional Business Behavior [t(509)= -8.68, p>0.05] and Business Ethics [t(509)= -2.98, p>0.05]. A significant difference has been seen between groups in terms of gender variable in the dimension of teachers' Interpersonal Relations [t(509)= -2.37, p<0.05]. The mean score of female teachers' attitudes towards female school administrators has been found to be higher compared to male teachers' attitudes mean scores.

Findings Regardingto Second Sub-Problem

The ANOVA test results have been presented in Table 5 regarding the question "Do teachers' attitudes towards female school administrators differ significantly in terms age?"

Table 5. ANOVA Results of Attitude Scores Towards Female Administrators by Teachers' Age

Dimensions	Age	Sum of Squares	sd	Square of the Means	F	p	Significant Difference
Prof. Business behavior	Between Groups	17.497	3	5.832	5.23	0.00*	A-D
	Within Groups	564.437	507	1.113			B-D
	Total	581.934	510				C-D
Interpersonal Relations	Between Groups	9.477	3	3.159	2.31	0.07	
	Within Groups	693.173	507	1.367			
	Total	702.650	510				
	Between Groups	3.036	3	1.012	0.59	0.62	
Business ethics	Within Groups	867.740	507	1.712			
	Total	870.776	510				
	Between Groups	210.98	3	70.326	3.21	0.02*	
	Within Groups	1105.14	505	2.188			
Total	Total	1126.74	508				

* p<0.05

According to Table 5, it is seen that there is a significant difference statistically between groups in terms of teachers' age in the Professional Business Behavior dimension [F(3,507)=5.23, p<0.05)] of teachers' attitudes towards female school administrators and total mean scores [F(3,507)=3.21, p<0.05)]. In terms of Interpersonal Relations dimension [F(3,507)=2.31, p>0.05)] and Business Ethics dimension [F(3,507)=0.59, p>0.05)], no significant difference has been noted statistically between group by teachers' age variable.

The results of Scheffe test, which was conducted to determine the groups in Professional Business Behavior dimension for attitudes towards female school administrators in terms of teachers' age variable, have been presented in Table 6.

Table 6. Scheffe Results According to the Dimension of Professional Business Behavior in terms of the Age Variable of Teachers

Sub-Dimension	Age	Groups	AverageDifference	S.H	p	$\bar{X}$
	(A)22-27 years	(B)28-33 years	-0.05	0.16	0.72	4.61
		(C)34-39 years	-0.06	0.16	0.70	
		(D)40 years	0.33	0.11	0.00*	
Professional business behavior	(B)28-33 years	(A)22-27 years	0.05	0.16	0.72	4.66
		(C)34-39 years	-0.00	0.18	0.98	
		(D)40 years and above	0.39	0.14	0.00*	
	(C)34-39 years	(A)22-27 years	0.06	0.16	0.70	4.67
		(B)28-33 years	0.00	0.18	0.98	
		(D)40 yearsabove	0.39	0.14	0.00*	

	(D)40 years and above	(A)22-27 years	-0.33	0.11	0.00*	4.27
		(B)28-33 years	-0.39	0.14	0.00*	
		(C)34-39 years	-0.39	0.14	0.00*	

* $p<0,05$

According to Table 6, it is seen that the source of the difference in terms of teachers' age variable is between the teachers aged 22-27 ($\bar{X}$=4.61) and the teachers aged 40 and above ($\bar{X}$=4.27), between the teachers aged 28-33 ($\bar{X}$=4.66) and the teachers aged 40 and above, and between the teachers aged 34-39 ($\bar{X}$=4.67) and the teachers aged 40 and above. It is seen that teachers aged 34-39 significantly differs.

Findings Regarding the Third Sub-Problem

t-test results have been presented in Table 7 regarding the question "Do teachers' attitudes towards female school administrators differ significantly in terms branch?"

Table 7. t-test Results of scores regarding Attitudes towards Female School administrators by Branch

Dimensions	Branch	n	$\bar{X}$	SS	sd	t	p
Professional business behavior	Primary school tchr.	336	4.44	1.04	509	-0.40	0.36
	Branches	175	4.48	1.10			
Interpersonal Relations	Primary school tchr.	336	4.88	1.13	509	-2.30	0.97
	Branches	175	5.13	1.23			
Business ethics	Primaryschooltchr.	336	5.24	1.36	509	-1.48	0.39
	Branches	175	5.43	1.19			
Total							
	Primaryschooltchr.	336	4.70	2.03	509	-1.51	0.47
	Branches	175	4.83	2.18			

According to Table 7, the total mean score of class teachers in terms of teachers' attitude towards female by the branch variable is $\bar{X}$=4.70 while the total mean score of other branch teachers is $\bar{X}$=4.83. There is no significant difference between the total scores of the teachers in terms of the branch variable. When the sub-dimensions are examined, no significant difference was observed in Professional Business Behavior [$t(509)= -0.40$, $p>0.05$], Interpersonal Relations [$t(509)= -2.30$, $p>0.05$] and Business Ethics [$t(509)= -1.48$, $p>0.05$] dimensions.

Findings Regarding theFourth Sub-Problem

The results of ANOVA tests conducted regarding the question "Do teachers' attitudes towards female school administrators differ significantly in terms working duration with female school administrators?" has been presented in Table 8.

Table 8. ANOVA Results of the scores regarding Attitudes towards Female School administrators in terms of working duration with female school administrators.

Dimensions	Year of Work	Sum of Squares	sd	Square of the Means	F	p	Significant Difference
Professional	Between Groups	7.09	2	3.546	3.13	0.04*	A-C,
business	Within Groups	574.84	508	1.132			B-C
behavior	Total	581.93	510				
		2.588	2	1.294	0.93	0.39	
Interpersonal	BetweenGroups	700.062	508	1.378			
Relations	Within Groups	702.650	510				
	Total						
Business	Between Groups	2.361	2	1.181	0.69	0.50	
ethics	Within groups	868.415	508	1.709			
	Total	870.776	510				
	Between Groups	92.657	2	46.328	2.09	0.12	
Total	Within groups	11170.112	506	22.075			
	Total	11262.740	508				

* $p<0.05$

According to Table 8, it has been observed that there is no significant difference statistically between groups in terms of the working duration variable in Interpersonal Relations dimension [$F(2,508)=0.93$, $p>0.05$)]; Work Ethics dimension[$F(2,508)=0.69$, $p>0.05$)] and total mean scores [$F(2,508)=2.09$, $p>0.05$)] of teachers' attitudes towards female school administrators. It is also seen that there is a significant difference between groups statistically in the professional work behavior dimension in terms of the working duration with female school administrators. LSD test analysis performed to determine which groups this difference is between. It is given in Table 8.

Table 9. LSD Test Results according to Professional Work Behavior Dimension in terms of the Working Duration of Teachers with Female School administrators

Sub-Dimension	Year of Work	Groups	Average Difference	S.H	p	$\bar{X}$
	(A) 1-3 years	(B) 4-6 years	-0.051	0,11	p>0.05	4,49
Professional Business Behavior		(C) 7 years and above	0.278*	0,12	p<0.05	
	(B) 4-6 years	(A) 1-3 years	0.05	0,11	p>0.05	4,54
		(C) 7 years and above	0.33*	0,14	p<0.05	
	(C) 7 and above years	(A) 1-3 years	-0.27*	0,12	p<0.05	4,21
		(B) 4-6 years	-0.33*	0,14	p<0.05	

According to Table 9, the source of the difference of teachers' attitudes in terms of the working duration with female school administrators consists of the following groups: those working with female school administrators for 1-3 years ($\bar{X}$=4.49) and those working with female school administrators for 7 years and above ($\bar{X}$=4.21). Smilarly those working with female school administrators for 4-6 years ($\bar{X}$=4.54) and those working with female school administrators for 7 years and above ($\bar{X}$=4.21). It has been noticed that average of teachers' attitudes towards female school administrators in terms of Professional Business Behavior dimension for the ones in over 7 years group is lower compared to other groups average.

Findings Regarding the Fifth Sub-Problem

t-test results have been presented in Table 10 regarding the question "Do teachers' attitudes towards female school administrators differ significantly in terms the employment type of the female administrator they work with?"

Table 10.t-test Results of Attitude Scores Towards Female School Administrators by Employment Type

Dimensions	Position	n	$\bar{X}$	SS	sd	t	p
Professional business behavior	Permanent staff	370	4.47	1.06	509	0.69	0.51
	Temporarily assigned	141	4.40	1.07			
Interpersonal Relations	Permanent staff	370	5.00	1.16	509	1.26	0.27
	Temporarily assigned	141	4.86	1.20			
	Permanent staff	370	5.31	1.31	509	0.23	0.53
Business ethics	Temporarily assigned	141	5.28	1.28			
Total	Permanent staff	370	4.77	2.00	509	1.01	0.16
	Temporarily assigned	141	4.68	2.62			

According to Table 10, the total mean score regarding the teachers' attitudes towards female school administrators' employment type they work with is as follows: for permanent school administrators $\bar{X}$=4.77, for school administrators working on temporarily assigned $\bar{X}$=4.68. There is no significant difference in terms of the variable about the teachers' attitudes towards female school administrators' employment type they work with. When the sub-dimensions are examined, there is no significant difference in Professional Business Behavior [t(509)=0.69, p<0.05], Interpersonal Relations [t(509)= 1.26, p<0.05] and Business Ethics [t(509)=0.23, p<0.05].

Discussion, Conclusion and Recommendations

The teachers' attitudes towards female school administrators were examined in three subdimensions as professional Business behavior, interpersonal relations, and Business ethics. The average of teachers' attitudes towards female school administrators was above average in all three subdimensions. This result indicates that teachers have a positive attitude towards female school administrators. In the context of subdimensions, the interpersonal relations sub-dimension had a higher score compared to other subdimensions. Unlike our study, Sayın &Balcı (2019) and Baştuğ&Çelik (2011) indicated that participants gave higher scores to the "Business ethics" dimension of female school administrators than to the other dimensions. The "Business ethics" dimension indicates that female school administrators have qualities such as hard-working, selfless, and organized.

When the teachers' attitudes towards female school administrators were examined by *gender*, a significant difference was found in the interpersonal relations subdimension, while gender did not make a significant difference in other dimensions. It has been concluded that in the interpersonal relations dimension, the attitudes of female teachers towards female school administrators were found to be more positive than the attitudes of male teachers. The low scores of male teachers in the interpersonal relations subdimension of female school administrators suggest that male teachers may not be able to build good relationships with female school administrators. The findings of the study support the work of Berkman (2005), Uçan (2012), and Shum & Cheng (1997), while they differ from the findings of Cortis & Cassar (2005) and Çelikten (2005b).

Güney et. al., (2006) stated that both women and men in Turkey have negative attitudes towards female school administrators. The differences in the research results can be attributed to the differences in the study groups.

Upon the examination of the teachers' attitudes towards female school administrators by age variable, no significant difference was found in the professional business behavior subdimension. In the professional business behavior subdimension, the average attitude score of teachers aged 40 and over towards female school administrators was significantly lower than the average attitude score of teachers in other age groups. It has been observed that the group with the lowest average attitude score towards female school administrators in the professional business behavior subdimension was composed of teachers aged 40 and over. The studies conducted by Sayın and Balcı (2019) and Taş (2017) support our research. Çalık et. al., (2012) and Baştuğ & Çelik (2011), on the other hand, concluded that age is not a significant variable.

No significant difference was found in the attitudes of teachers towards female school administrators according to their branch. This result of the study supports the findings of Yakut (2006), who found no significant difference between the scores of teachers on the behaviors of female and male school administrators, according to their branch. This result contradicts the research of Kazancı (2010), who found significant differences in terms of branch variable between teachers' perception in the leadership scores for female and male school administrators.

When the teachers' attitudes towards female administrations were examined in terms of the *working duration with female school administrators*, a significant difference was found in the professional work behavior sub-dimension while no significant difference was found in other sub-dimensions. The study result showed that the average score of teachers' attitudes towards female school administrators with whom they have worked with for 7 years or more is less than the average attitude scores of female school administrators with whom they worked for 1-3 years and 4-6 years.

When the teachers' attitudes towards female school administrators were examined according to the employment type of the female school administrators they worked with, no significant difference was found. This result shows that teachers have positive attitudes towards female school administrators, regardless of whether they are on permanent contact or temporarily assigned.

The following recommendations have been presented according to the results of the study.

The positive attitude of teachers towards female school administrators being above the average can encourage a positive motivation leap for female teachers who candidate for administration.

Female teachers have more positive attitudes towards female school administrators in interpersonal communication dimension than men. Based on this result, it can be ensured that female school administrators who can communicate easily with female teachers are employed in schools. From the perspective of male teachers, it can be ensured that their attitudes towards female school administrators are positively increased through seminars on societal gender equality.

The reasons for the low attitudes of male teachers towards female school administrators in terms of interpersonal relations can be investigated.

The development of female school administrators' professional work behavior can be supported by creating suitable environments where they can make use of the experience of elderly teachers.

The reasons for relatively lower attitudes of elderly teachers towards female school administrators can be examined.

The attitudes of senior students in faculty of education towards administration can be investigated.

This study aiming to examine the attitudes towards female school administrators has been conducted with teachers. In order to obtain generalizable results, a study with other shareholders of education at a larger sampling can be conducted.

Ethics Committee Approval

This study was conducted upon the ethical approval granted by Gaziantep University Social and Human Sciences Ethics Board on April 30, 2019 at the meeting numbered 5 with the decision numbered 3.

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Representations of Scientists in Turkish Secondary School Science Textbooks: A Document Analysis

Research Article

Sumeyra Zeynep ET[1]

[1]Fırat University, Faculty of Education, Measurerement and Evaluation in Education, Elazığ, Türkiye 0000-0002-0176-4788

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ABSTRACT

This article reports on an analysis of eight Turkish grade (5-8) science textbooks for the presentation of scientists. A qualitative method was used in the research. A total of 8 textbooks were analyzed, two at each grade level. The analysis was framed by an analytical tool developed and validated by Yacoubian, Al-Khatib & Mardirossian (2017). When the data was analyzed, the following results emerged; scientist's presentations in textbooks middle-aged or elderly, male, white, westerner, lonely, aims for discovering the truth that is out there, engage in an enterprise that is objective, does work which involves dealing with direct evidence and produces end -results that are durable and fixed over time have been determined to have stereotype characters and jobs. It is possible to say in the context of analysis that scientists do not have stereotypes such as being bald, wearing eyeglasses, disheveled, wearing a white lab coat, working only in the lab, engaging in dull, non-creative, non-imaginative work, and working within eurocentric paradigms. Finally, it is possible to say that they are neutral in terms of features such as having an innate interest in science, crazy, objective, unemotional, competitive, external factors do not influence their work, following the scientific method, conducting mostly experiments in the lab and work only in the lab.

Keywords:

Scientist, science textbooks, stereotype, textbooks

Introduction

The century we are in has led to discussion among individuals living in society about their understanding of science and technology, as the impact of science and technology is felt more in people's lives (Emvalotis & Koutsianou 2018). The perception of scientists regarding science and technology issues has been discussed and therefore an important context to be investigated (Besley, 2015). Thus, research on scientist perception goes back to the 1950s and 1960s (Beardslee & O'Dowd, 1961; Mead & Metraux 1957). In this and later years, stereotypes emerged, in which individuals saw the scientist as an old or middle-aged man (Mead & Metraux 1957) and Western civilization (Chambers 1983) who performed dangerous experiments, working

[1]Corresponding author's address: Fırat Üniversitesi
Telephone: +905398263701
e-mail: sumeyra.et@gmail.com
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only in the laboratory, wearing a white coat and glasses (She, 1995). Stereotypes refer to general expectations about a particular social group. Although there is an awareness of individual differences, there is a general perception of the group in the idea of stereotypes (Ellemers, 2018). Stereotypes about scientists are that all scientists have similar characteristics. Ruiz-Mallén & Escalas (2012) state that these stereotypes can affect individuals' perceptions, judgments, and behaviors towards science, even affecting their thoughts in adulthood, resulting in behaviors such as a lack of interest in science and avoidance of science careers (Emvalotis & Koutsianou 2018; Spitzer, 2022). According to Besley (2015), the probability that individuals' stereotypical perceptions of scientists, positively or negatively, may limit their desire to pursue a science education or career, and be influenced by scientists' scientific ideas on important science-related issues (for example, nuclear energy and climate change), is considered by researchers. This causes them to care more about the studies on the perceptions of scientists. It is a well-known and common technique drawing for investigating individuals' perceptions of scientists (Emvalotis & Koutsianou 2018). "The Draw-a-Scientist Test" developed by Chambers (1983) has been studied in many studies on different ages (Et & Kabataş Memiş, 2017; Miller, Nolla, Eagly & Uttal 2018; Taasoobshirazi, Wagner, Brown & Copeland, 2022; Toma, Orozco-Gómez, Molano Niño, Obando-Correal & Suárez Román, 2022) and culture (Bayri, Koksal & Ertekin, 2016; Bozzato, Fabris & Longobardi 2021; Dickson & McMinn, 2022; Emvalotis & Koutsianou 2018; Lamminpää, Vesterinen & Puutio 2023; Meyer, Guenther & Joubert 2019) were used to reveal individuals perceptions of scientists. Researches show that individuals about scientists have many different stereotypes. Brumovska, Carroll, Javornicky, & Grenon reached five different scientist profiles as a result of the research they conducted with primary school students in 2022. Of these profiles,1) brainy scientist, 2) crazy scientist, 3) supernatural scientist, 4) clumsy scientist, profiles included stereotypes of scientists, while the normal scientist profile was the only context that did not contain stereotypes.

Studies investigating the causes of these stereotypes for scientists can be said to emerge from sources such as the culture of individuals, movies, newspapers, magazines (Koren, & Bar, 2009), television, school, and textbooks (Fung, 2002). Textbooks are an important platform for conveying basic information about disciplines (Simpson, Beatty & Ballen 2021) and science educators think that books play an important role in science education (Ramnarain & Chanetsa, 2016). One of the assumptions about the benefits of textbooks is that students have enriched academic experiences and increased classroom performance (Hilton, 2016). For this reason, as in many different subjects, it provides an important opportunity to shape students' current stereotypes about who scientists are, have been, and could be in the past (Wood et al., 2020). Vicedo (2012) states in his study 2012 that situations such as monitoring the development of ideas and illuminating the social context of science will be clarified based on textbooks. Thus, textbooks become an important aspect of student's school life and are an important tool for the representation of scientists as well as in different subjects (Murray, Anderson, Simms & Seery, 2022). The fact that scientists are a resource in the representation of textbooks raises the question of how scientists are represented in textbooks, and this issue has been investigated. For this reason, studies have been carried out on the representations of scientists in textbooks in the context of different studies. Simpson, Beatty & Ballen (2021) found that scientists in undergraduate science books are generally white and male. It is also included in the research results of Laçin-Şimşek (2011) and Murray, Anderson, Simms & Seery 2022 that mostly male scientists are included in drawings or pictures in the textbooks. Another prominent feature of scientists in textbooks is that scientists work alone (van Eijck & Roth, 2008). Inferences such as scientists being white and male and working alone actually express stereotyped ideas about scientists' characters and work (Yacoubian, Al-Khatib & Mardirossian (2017).

In this context, the research to be carried out aims to reveal how scientists are represented in the 5th, 6th, 7th, and 8th-grade resources used as science textbooks in Turkey. It is thought that such research is important in terms of revealing the role of science textbooks in supporting students' stereotypical images of scientists and their research.

Methodology

In this study, the qualitative research method was used, and the document analysis method was used as the information collection method. Science textbooks, which constitute the data sources of the research, were analyzed in the context of document analysis. Document analysis is a method used to analyze the content of written documents meticulously and systematically (Wach & Ward, 2013). The following steps were followed to carry out the document analysis correctly:

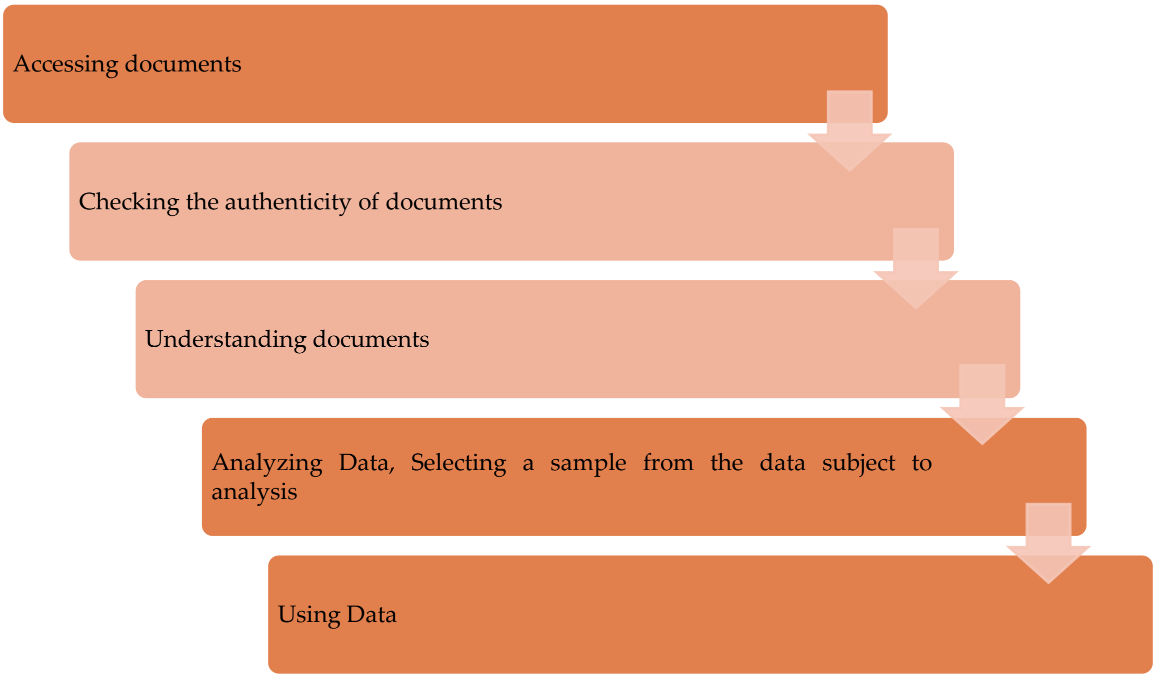


Figure 1. Document analysis process (Yıldırım & Şimşek, 2016).

Data Collection and Analysis

During the document analysis process, the steps specified by Yıldırım and Şimşek (2016) were followed. Which books will be used in Turkey is under the control of the Ministry of National Education (Bütüner, 2020). In this context, firstly, the books belonging to the secondary school level were accessed from the official address of www.eba.gov.tr. With the 4+4+4 application that started with the change that started to be implemented in the 2012-2013 academic year, a secondary school in Turkey consists of 5th, 6th, 7th, and 8th-grade levels. In this context, as there are two textbooks for each of the 5th, 6th, 7th, and 8th-grade levels, a total of 8 textbooks were examined. Information about the examined textbooks is given in Table 1.

Table 1. Publication information on textbooks

Grade Level	**Publisher**	**Publish year**
5. grade	Ministry of Education	2021
5. grade	SDR Dikey	2018
6. grade	Sevgi	2018
6. grade	Ministry of Education	2021
7.grade	Ministry of Education	2021
7. grade	Aydın	2018
8. grade	Adım	2018
8. grade	SDR Dikey	2019

Each of the textbooks, whose features are shown in Table 1, consists of different sections within itself. For example, at the 5th-grade level, the book consists of the following sections; Let's do it together, show yourself, heroes of science, it's your turn, I'm an engineer, questions from exams, and unit evaluation questions. The 6th-grade level book, which is another book examined in the context of research, consists of what we learned, it's your turn, find it, let's research it. Since there are separate sections for each book and it is not known in which sections the scientists are mentioned, all sections of the books were included in the analysis. Thus, 8 books were examined with all their chapters, and data on the research were obtained.

Analysis Framework

In the research, the analysis framework developed by Yacoubian, Al-Khatib & Mardirossian (2017) was used in the analysis process of the scientists included in the science textbook. After it was decided to use this analysis framework, permission was obtained from the researchers via e-mail. In the next stage, this framework created by the researchers was translated and the meaning of each analysis category was analyzed. Yacoubian, Al-Khatib & Mardirossian (2017) stated that within the framework of the analysis they developed, the individual characteristics of scientists and their studies should include the process and results. The analysis framework created in this context is given in Table 2.

Table 2. Scientists analysis framework

Stereotipler	
Individual Characteristics	**Work-related characteristics**
Bald	Aims for discovering the truth that is out there
Wears eyeglasses	Engages in an enterprise which is objective
Middle-aged or elderly	Work alone and is a hero
Disheveled	Work only in the lab
Wears white lab coat	External factors do not influence his work
Has innate interest in science	Conducts mostly experiments in the lab
Male	Follows the scientific method
White	Engages in dull, non-creative, non-imaginative work
Westerner	Works within eurocentric paradigms
Crazy	Does work which involves dealing with direct evidence
Rational	Produces end-results that are durable and fixed over time
Objective	
Unemotional	
Competitive	
Individualistic and nerd	
Lonely	

While analyzing the scientists in the textbooks, the entire context of the scientists was examined. Thus, if any, the picture and the text of the scientist were examined holistically and examined one by one in the context of the features in Table 2. In terms of the features included in the analysis framework, the scientists in the textbook were coded in three different ways. If the existing context (image and text) about scientists contains a feature, yes, if it does not, it is coded as neutral, and if it does not provide information about both the existence or non-existence of that feature right, it is coded as neutral. As an example, let's take the following excerpt from one of the textbooks as the main text:

In the second half of the 17th century, German Scientist Jan Baptist van Helmont put about 90 kg of dried soil in a pot, after wetting the soil with rain water, he planted a willow sprout with a mass of about 10 g in the pot. The pot is surrounded by a perforated plate that allows water and air to reach the soil but prevents other substances from reaching the pot. Five years later, Van Helmont dug the sprout, which he watered constantly with rainwater, as an adult plant. When he weighed the tree, he measured its mass at about 75 kg. He then weighed the soil he had put in the pot and noticed that there was only a 57 kg reduction in the mass of the soil. As a result of this experiment, he concluded that the mass increase in willow sprouts was caused by water, not soil. However, van Helmont did not consider that carbon dioxide gas in the air played a role in this mass increase. *Grade 8, p. 160*	

The text given above belongs to the 8th grade level. Text and a picture about the scientist named Jan Baptist van Helmont are given. When the text and the picture are considered together, middle-aged or elderly, male, white, westerner, rational, individualistic and nerd individual characteristics are coded as yes. Aims for discovering the truth that is out there, follows the scientific method, does work which involves dealing with direct evidence and produces end-results that are durable and fixed over time is coded yes in the context of business-related features. Relationship to the scientists in the 8 books is included in the title of findings by creating a frequency table by analyzing the net and, if any, pictures. In the frequency table, interpretations were made according to the category with higher frequency in yes, no or neutral categories.

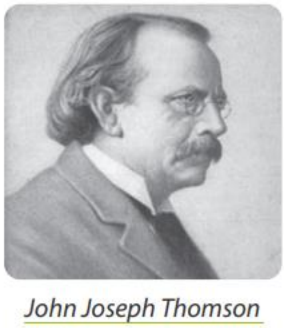
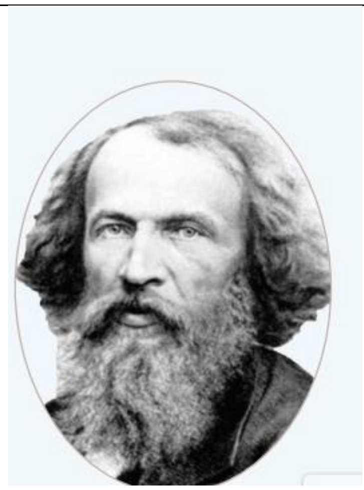
Validity and Reliability of the Study

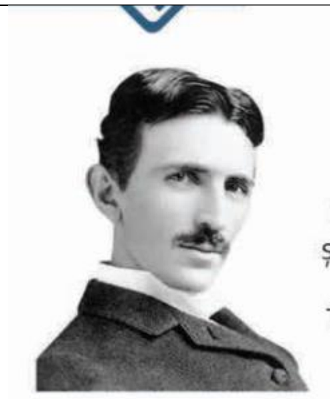
The textbooks, which constitute the data sources of the research, were accessed from the official website of the Ministry of National Education, www.eba.gov.tr. Books are recommended resources to be used in science courses in the 2022-2023 academic year. In the analysis of the books, examinations were made on what the codings contain by using the analysis framework developed by Yacoubian, Al-Khatib & Mardirossian (2017). A final decision was made by reaching a consensus with a different science educator on these codes. In addition, the findings were supported by presenting direct quotations from the textbooks.

Findings

When all textbooks were examined, it was seen that a total of 73 scientists were cited. It was seen that two of these 73 references were made to a collective group, one being astronomers and the other scientists involved in drug production. It was observed that the other 71 citations were made to scientists individually. Since two textbooks were examined at each grade level, the scientists repeated them in different books at the same grade levels. For example, Ali Kuşçu has been examined because both the 1st and 2nd books of the 6th grade are included in different content. According to the grade level, it was seen that there were 11 scientists in the 5th grade, 8 scientists in the 6th grade, 28 scientists in the 7th grade, and 26 scientists in the 8th grade. In the table, the stereotypes determined by Yacoubian, Al-Khatib & Mardirossian (2017) in the textbooks and the expressions supporting these situations in the textbook are included.

Table 3. Frequency of stereotypes of scientists in science textbooks

Stereotype	Frequency of references showing the stereotypes	Frequency of references not showing the stereotypes	Frequency of references neither promoting nor counter-balancing stereotypes	Examples from the textbooks supporting the stereotypes
Individual characteristics				
Bald		36	37	
Wears eyeglasses	8	39	26	 Grade 7, page 112
Middle-aged or elderly	40	6	27	 Grade 7, page 10
Disheveled	12	32	29	 Grade 8, page 88
Wears white lab coat	2	4	27	

Has innate interest in science	-	7	66	
Male	68	2	3	 Garde 5, page 220
White	58	-	15	 Grade 8, page 87
Westerner	35	21	17	"French chemist Louis Pasteur (Luis Pasteur) made many discoveries regarding organisms called bacteria. Pasteur proved that bacteria are the cause of food spoilage and that bacteria die as a result of the heating process." Grade 8, page 70
Crazy	-	10	63	
Rational	31	1	41	
Objective	-	-	73	
Unemotional	-	1	72	
Competitive	-	-	73	
Individualist ic and nerd	-	-	73	

Lonely	51	9	13	 Grade 8, Page 101
Work-related characteristics				
Aims for discovering the truth that is out there	59	1	13	"… At that time, everyone was aware that newborns resemble parents. However, no one could scientifically explain why. For this reason, the transmission of characters from generation to generation in living things was one of Mendel's areas of interest. Mendel wanted to explain the passing of characters from one generation to the next. Therefore, he decided to conduct a series of scientific studies. The plants Mendel chose to experiment with are pisum peas. Mendel determined the characteristics of peas such as seed shape (smooth-wrinkled), color of the seed coat (yellow-green), and flower length (long-short) of peas. He did crossover studies on peas. He constantly took notes on his findings and explained the crossover results with mathematical data." Grade 8, page 35
Engages in an enterprise which is objective	58	-	15	
Work alone and is a hero	30	5	38	
Work only in the lab	3	25	45	 Grade 8, page 146
Conducts mostly experiments in the lab	5	27	41	
External factors do not	-	13	60	

influence his work				
Follows the scientific method	23	1	59	"Ibn al-Haytham was born in Basra in 965. He completed his education in Baghdad and Cairo. Ibn al-Haytham is known in the West as Alhazen, with many of his works translated into Latin and Hebrew. He wrote works in the fields of mathematics, astronomy and optics. However, the area where it is efficient and successful is optics. With his work in this field, he radically changed the science of optics. With his approach based on mathematical investigation, he carried out a modern mathematical physics study with very careful and detailed experiments. This is very new to the traditional scientific study model. optics as a result of his approach; It has become a science whose subject, scope, principles and rules have been determined…" Grade 7, page 171
Engages in dull, non-creative, non-imaginative work	-	50	23	
Works within eurocentric paradigms	5	50	18	
Does work which involves dealing with direct evidence	50	7	16	"…One of the scientists working on the microscope is Robert Hooke. He became interested in biology at an early age. He was the first to observe the cell and to define the term "cell" for the first time. In 1665, he examined the pieces he took from the cork under the microscope he made. Hook discovered the cell as empty chambers in dead cork tissue. The empty chambers Hooke sees are not cavities, but chambers formed by the inanimate cell walls surrounding plant cells. That is, they are the cell walls of the dead fungal cell." Grade 7, page 56
Produces end-results that are durable and fixed over time	45	6	22	

When the scientists in the science textbooks are examined in terms of individual characteristics, it is possible to say as a result of the analysis that they have some stereotypes and some do not. In this context, when the context and pictures of 73 scientists are examined, it is possible to say that these scientists do not have stereotypes such as bald, wearing eyeglasses, disheveled, wears white lab coats. However, it has been determined that they have stereotypes such as middle-aged or elderly, male, white, westerner, and lonely. It has been concluded that scientists have ambiguous features in terms of features such as innate interest in science, crazy, objective, unemotional, and competitive. When the work-related characteristics of scientists are examined, it is possible to say that they show some stereotypes, some do not, and some are neutral in terms of some, individual characteristics. Aims for discovering the truth that is out there, engages in an enterprise that is objective, does work that involves dealing with direct evidence, and produces end results that are durable and fixed over time It has been determined that they do not have the said stereotype in the context of engages in dull, non-creative, non-imaginative work and works within eurocentric paradigms. It is possible to say that external factors do not influence her/her work, follows the scientific method, conducts mostly experiments in the lab and work only in the lab

Conclusion, Discussion, Recommendations

The purpose of this research is to analyze the images of scientists in secondary school 5th, 6th, 7th and 8th grade science textbooks. In this context, 73 scientist presentations were analyzed in the collection in 8 textbooks. While making these analyzes, images and text contexts related to scientists were examined in the context of the analysis framework developed by Yacoubian, Al-Khatib & Mardirossian (2017). This analysis framework consists of 27 stereotypes related to the character traits and work/work-related characteristics of scientists. When the findings are examined, it is seen that the scientist presentations in the textbooks have expressions or images that support some of the stereotypes put forward by Yacoubian, Al-Khatib & Mardirossian (2017), some do not have stereotypes, or there is no information about being included in that stereotype. Scientists presentation in textbooks middle-aged or elderly, male, white, westerner, lonely, aims for discovering the truth that is out there, engage in an enterprise that is objective, do work which involves dealing with direct evidence, and produces end -results that are durable and fixed over time, such as stereotype character and work-related. It is possible to say in the context of analyzes that scientists do not have stereotypes such as bald, wears eyeglasses, disheveled, wears white lab coat, work only in the lab, engages in dull, non-creative, non-imaginative work and works within eurocentric paradigms. Finally, it has been determined that they are neutral in terms of features such as has innate interest in science, crayz, objective, unemotional, competitive, external factors do not influence his work, follows the scientific method, conducts mostly experiments in the lab and work only in the lab.

One of the stereotypes emerging in the category of individual characteristics of scientists is that scientists are male. The fact that 2 of the 73 scientist representations are women shows that the stereotype of scientists being men continues. It is a common result to include predominantly male scientists in textbooks (Bachore & Semela, 2022; Becker & Nilsson, 2021; Incikabi & Ulusoy, 2019; Gumilar, Hadianto, Amalia & Ismail, 2022; Karaçam, Aydın & Digilli, 2014; Laçin Şimşek, 2011; Rawson & McCool, 2014). This representation is so strong in textbooks and the media that researchers have stated that girls lose interest in science by the age of 9, and this is due to misrepresentations about female scientists in the media (Previs, 2016). Previs (2016) revealed in his research that, as a result of the review of a popular children's magazine Highlights for Children, the depiction of male scientists is more than that of females. The results of this research actually draw us to the debates about why women do not exist in the world of science as they should or why women scientists are not included in media-related elements (Laçin-Şimşek, 2011). Bowling and Martin (1985) state that male dominance in science is actually based on social structures based on male control and the exclusion of women through mechanisms such as gender division of labor. Children learn about such social norms through the media, including television, movies, books, magazines, and online platforms (Previs, 2016). At the point of internalizing the norms presented in the media and incorporating them into their lives, Bandura's (1977) social learning theory, in which people tend to mirror the images they see in the media, comes into play. When all these elements come together, scientists create the male stereotype.

Another stereotype identified in textbooks is that scientists are white. Images or contexts about the 58 scientists indicate that these scientists are white. The fact that scientists are western is a situation that emerges in other book analyzes (Bıçak & Bilir, 2023; Özdemir, 2022; Yacoubian, Al-Khatib & Mardirossian, 2017). This result may actually be related to the fact that the image of the scientist is culturally dependent (Koren, & Bar, 2009). In other words, the representation of the same race in the representations of scientists in science textbooks can be explained by the effect of cultural background on the image of "scientist". Another possible reason for the emergence of the white stereotype regarding scientists in the textbooks is the desire to be used in the history of science in the textbooks. Referring to Isaac Newton for the law of gravity, Archimedes for the Archimedean principle, Mendel for the laws of Menedel, and Torricelli for the atmospheric pressure is an element that affects the western and white representations of scientists.

One of the stereotypes that exist in the literature regarding scientists is mad. In students' studies to determine their images of scientists, "googly" eyes, and iconic shorthand (Miele, 2014) in student drawings reveal that there are elements that will associate scientists with being mad (Stella, 2020). One of the situations that led to the emergence of this stereotype is the association of the loner square with the scientist over time, working wildly on a burning candle (Heron, 2001). Coinciding with the rise of the concept of scientific genius and the metaphor of the mad scientist (Stiles, 2009), this stereotype continued for a while. In the analysis made in the context of the research, it was determined that there was no support for scientists to be mad at all their representations in the textbooks. The sociological reasons for the extinction of this crazy, evil stereotype of scientists are as complex as the reasons for the longevity of the figure of the alchemist. However, along with the decreasing ignorance and fear of science, the increasing acceptance that scientists are professional members of society is considered one of the factors that contributed to the disappearance of this stereotype (Haynes, 2016). Supporting the cooperation between scientists and students is thought to be another factor in changing the stereotypes about the work of scientists (Avraamidou, 2013).

When the representation of scientists in the textbooks is examined, including the visuals of some scientists with their names provided the opportunity to make inferences about the individual characteristics of scientists such as wearing eyeglasses, wearing white lab coats, and being disheveled. It is possible to say that the images of 73 scientists examined in the context of the research do not contain the clichés of wearing eyeglasses, wearing a white laboratory coat, and being disheveled. Considering scientists wearing glasses (Miele, 2014; Meyer, Guenther & Joubert, 2019; Reinisch & Krell, 2023) and working with a lab coat (Leblebicioglu et al. 2020; Bayri, Koksal & Ertekin, 2016; Subramaniam, 2023) is a situation that emerges in the drawings of scientists made by students. Possible reasons for these results may be that scientists wear lab coats while conducting experiments and that the mass media and textbooks promote scientists in this way. In addition, many students have perceptions that scientists are wearing glasses and are tired because they think that scientists should read and study a lot (Kaya, Doğan & Öcal, 2008). In the context of this study, it was determined that the visuals and texts in the textbooks do not emphasize that the scientists do not wear glasses, do not wear lab coats, or work in the laboratory in the context the text examined. It is also seen in student drawings that there is a change from an image of scientists with glasses, beard, and/or crazy hair and wearing a lab coat to a smiling scientist image (Türkmen, 2008). As a matter of fact, it can be ensured that students have less stereotypes with applications that conceptualize scientists correctly (Hite & White, 2022; Karacam, Bilir & Danisman, 2021).

The results in the context of the research show that some stereotypes are still supported by texts and visuals in science textbooks. In fact, textbooks have the potential to be used as a tool in reducing the number of these stereotypes. For this reason, a good planning on the contexts in which scientists will be included in the textbooks and considering the stereotypes in the literature are the first suggestions to be made in the context of research. It is another suggestion that is considered very important that these contexts reject stereotypes and present them in a wide area to cover the differences of scientists. More detailed contexts about the lives of scientists, such as stories of how they solved problems when they failed, or how they took action when results didn't go their way, can pull scientists out of their minds when presented.

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Impact of Growth Mindset Strategies on Academic Achievement of 8th Grade Students*

Research Article

Ozgul MUTLUER[1], Sertel ALTUN[2]

[1]*Yildiz Technical University, Social Science Institute, Department of Curriculum and Instruction, Istanbul, Türkiye* 0000-0002-1990-7900

[2]*Yildiz Technical University, Faculty of Education, Department of Curriculum and Instruction, Istanbul, Türkiye* 0000-0002-1951-5181

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Academic researches about growth-mindset interventions show that growth-mindset strategies can be effective on academic achievement. However, it is not clear yet how this effect occurs and what is the background of this. The aim of this research is to examine the effect of the growth-mindset intervention including growth-mindset strategies on the academic achievement and mindset scores of 8th grade students who are continuing secondary education in Turkey by using mixed method. The sample of the research, which was designed in accordance with the embedded mixed design, consists of 42 8th grade students (Experimental group: 21, control group: 21). Within the scope of the research, an extracurricular 8-week training was applied. Mindset scale and academic achievement scale were applied before and after the intervention. At the same time, qualitative data were collected through semi-structured interviews and observations before, during and after the intervention. The findings obtained at the end of the research show that growth-mindset strategies make a significant change on students' academic success and mindset scores.

Keywords:

Academic, achievement, growth, mindset, strategy.

Introduction

Do mindset interventions really affect academic achievement?

The term mindset was discussed by Dweck in 2006 in her book "Mindset" and was defined as a belief about whether intelligence, ability or other characteristics are fixed or developable. Looking at the historical process behind the term mindset coined by Dweck (2006), it is understood that the implicit theory is at the

*This study was derived from the doctoral thesis written by Özgül MUTLUER, under the supervision of Assoc. Prof. Sertel ALTUN.

[1]Corresponding author's address: Yildiz Technical University, Social Science Institute, Department of Curriculum and Instructio, Istanbul/Turkey
Telephone: +905057216894
e-mail: ozgulyakiin@gmail.com

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heart of the theory of mindset theory. It is seen that the first studies on implicit theory were carried out by Carol Dweck and Ellen Leggett in the 1980s (Dweck & Leggett, 1988).They stated that the implicit theories are based on the social cognitive motivation approach. In studies on the social cognitive motivation model, maladaptive “helpless” response and congruent “mastery-oriented” response models were defined (Diener & Dweck, 1978; Dweck & Reppucci, 1973). While the helpless response model is characterized by avoidance of difficulties and decreased performance in the face of obstacles, the mastery-oriented model involves seeking challenging tasks and maintaining effective effort in case of failure (Dweck & Leggett, 1988). As a result of the ongoing research on this motivation model, Dweck (1999) has put forward two different theories of intelligence which are discussed. These two theories are the incremental theory and the entity theory, which have two opposing viewpoints on intelligence (Dweck, 1999). While incremental theory defends the belief that human qualities or intelligence can change and can be improved with effort, entity theory argues that individuals' intelligence is fixed, that is, it cannot be developed (Dweck, 1999). Individuals who defend the theory of entity argue that what determines their success is an innate talent (Gregory & Kaufeldt, 2015). At the same time, those who adopt this theory think that the more effort they have to make, the less intelligent they are (Dweck, 2000). On the other hand, individuals advocating incremental theory believe that intelligence and talent can be developed through effort, quality education and determination (Gregory & Kaufeldt, 2015). Dweck and Leggett (1988) examined two different studies of Bandura on the intelligence theories of middle school students and found a significant relationship between students' intelligence theories and their choice of goals. If students adopt the presence theory more, they are more likely to choose a performance goal, while students who adopt the incremental theory more are more likely to choose the learning goal (Dweck, 2000). She put forward a theory of "mindset" that encompasses both fixed and evolving mindsets. The concept of mindset refers to the implicit theories that individuals have regarding the nature of their intelligence (Bradfield, 2022). According to mindset theory, there are two different mind structures. The first of these is the growth-mindset, and the other is the fixed mindset (Dweck, 2006).

Carol Dweck (2006), states that when people are given a perspective that supports the growth-mindset, struggle and effort will follow this perspective. On the contrary, she states that when people engage in a fixed mindset that focuses on permanent traits, people will fear challenge and devalue effort. Growth-mindset, which is defined as a mindset based on incremental theory, means that the individual has positive judgments that he or she can develop and succeed (Dweck, 2006). It is possible for an individual who believes in his/her development to be happier, more successful and more motivated. Studies provide important evidence that mindset is an important factor that affects an individual's belief in learning, self-control and development (Dweck, 2007; 2008; Paunesku, Walton, Romero, Smith, Yeager & Dweck, 2015; Rattan, Savani, Chugh & Dweck, 2015; Yeager & Dweck, 2012). So much so that the mindset structure can have an effect that affects the academic success of the individual and shapes his effort towards success. Besides, secondary school represents a major transition. Blackwell, Trzesniewski, and Dweck (2007) argue that secondary school “emphasizes competition, social comparison, and ability self-assessment at a time of increased self-focus” (p. 246). The definitions of intelligence of secondary school students, who are in an age that includes the transition from childhood to adulthood, can evolve into an understanding that it is fixed and unchangeable by getting rid of the unlimited and free perspective of childhood. In Turkey, which adopts a system based on placement based on central examination and where academic success is a determining factor in the transition to high school, the intelligence perceptions of secondary school students can be effective in taking steps that will determine their future lives. In addition, the 12-14 age range, which includes the secondary school period, constitutes the appropriate sample for reaching the right conclusions. Since developmental evidence shows that children cannot reason reliably about effort and ability as they are inversely proportional to each other until the age of 10 or 11 (Nicholls, 1978).

It is possible to examine growth-mindset interventions in two different periods in terms of time: the early period and the online period (Yeager & Dweck, 2019). In the first phase, practices were basically built on the malleability of the brain. At the times, face-to-face activities were common and these activities created a template for subsequent studies. In the second phase of the growth-mindset interventions, trainings on the development of intelligence began to be given to many students in different places through online tools. When these Growth-mindset interventions are examined, it is seen that different methods and tools are used. These; writing a letter in a mentor position (Good, Aronson & Inzlicht, 2003), reading an article on brain plasticity (Paunesku, Walton, Romero, Smith, Yeager & Dweck, 2015), summarizing articles and defending basic ideas (Yeager et al. 2018) , workshop (Blackwell, Trzesniewski & Dweck, 2007), watching online video on the growth-mindset (Yeager et al. 2019).

At the same time, there are a number of strategies that support growth-mindset development. In her article "The Evolving Mindset in the Classroom" (2017), Cheska Robinson outlined several ways to teach students the evolving mindset:

- Teach about brain development and neuroplasticity.
- Normalize errors and failure.
- Reframe language when communicating expectations and feedback.
- Be a model for positive self-talk
- Involve students in goal setting and provide appropriate tools to monitor their own progress.

Brock and Hundley (2016) present a 12-month growth-mindset practice plan to a teacher in their book "The Growth Mindset Coach: A Teacher's Month-by-Month Handbook for Empowering Students to Achieve". The messages that the applications, which are shaped on a basic message every month, want to convey can be summarized as follows:

- Everyone can learn
- Our brain is like a developing muscle
- We are all valuable members of the learning community we are in
- We must love the struggle
- Feedback is a gift
- A goal is just a wish without a plan
- Mistakes are an opportunity to learn
- There is a difference between what we don't know and what we don't know yet.

According to Dweck, the power of "not yet", an important element underpinning the growth-mindset, offers students a path to their future and makes them feel like they are on a learning curve rather than a dead end. Beside this, Dweck (2008), emphasizing the language used by educators, summarizes the ways educators support students' mental development in his study "Mindset and Math/Science Achievement":

- Teach students new brain plasticity and that intelligence and ability are dynamic qualities that can be developed
- Demonstrate that challenges, mistakes and effort are of great value
- Offer praise and feedback on performance/effort rather than personality in the process

Especially, socioeconomically disadvantaged students' interest in mathematics tends to decrease as they progress through secondary school (Li & Lerner, 2011; Wang & Degol, 2014; Wigfield, Eccles, Schiefele, Roeser

& Davis-Kean, 2006). Although academic achievement is systematically associated with socio-economic disadvantage, there are studies showing that growth mindset interventions are effective on the academic achievement of these students (Aronson, Fried, Good, 2002; Claro, Paunesku & Dweck, 2016). Adolescents mostly think that their math performance is based on innate abilities rather than hard work and effort (Ahn et al. 2016). This negative thought reduces mathematics achievement and reduces the rate of participation in the course (Fredrick et al. 2016). At the same time, research findings reveal that growth-mindset intervention in secondary school positively affects students' future mathematics course choices (Romero et al. 2014). A number of groups, such as socioeconomically disadvantaged students, immigrants, and female students, may have a fixed mindset about math ability (Becker, 1981; Boaler, 2002). Groups that are underrepresented in mathematics achievement may accept the stereotypical judgments they attribute to their groups (Sun, 2015). Living in an environment where such stereotypes are accepted can lead to the realization of this stereotype, resulting in anxiety and decrease in academic achievement (Steele & Aronson, 1995; Davies et al. 2002). At the same time, there are studies showing that the strongest messages with a fixed mindset are related to the mathematics lesson (Boaler, 2002). However, researches show that growth-mindset interventions contribute to encouraging low-performing students to struggle and strive with academic difficulties (Burnetto et al., 2013; Claro et al., 2016; McCutchen, Jones, Carbonneau, & Mueller, 2016; Paunesku et al., 2015; Sarrasin et al. 2018; Yeager et al., 2014). Contrary to studies stating that academic achievement is positively correlated with growth-mindset interventions, a meta-analysis study conducted by Macnamara and Burgoyne (2022) put forward a different view, stating that the impact of interventions on achievement can be misleading, resulting in inadequate study design, misinterpretation of results may cause biased results. This result suggests that the development of growth-mindset interventions research in the process should be examined in detail. In addition, the findings that growth-mindset interventions are effective on socio-economically disadvantaged students with low academic achievement make a secondary school in Turkey with a below-average High-school Transition Exam achievement as a suitable sample for this intervention. Because mathematics achievement is seen as an important indicator in Turkey, especially in High-school Transition Exam (Catalbas & Susam, 2022). In this line, according to the statistics stated in the report of the Ministry of National Education (MoNE) in 2022, "Performance of Students Placing in High School Transition System Central Examination", a school with an average of correct answers below the average was preferred. Beside this, the reason for choosing the academic success of the mathematics course as the dependent variable in the current study is that failure in the mathematicsis perceived as an unchangeable situation by the students (Becker, 1981; Boaler, 2002). Because students' attitudes towards mathematics and the way they define mathematics are the determinants of academic success (Dogan-Dunlap, 2004). Students' self-confidence in mathematics can change their negative mathematics perceptions (Boyer & Mailloux, 2015). Karadeniz and Karadag (2014), who examined the relationship between students' math anxiety and math attitudes in a secondary school in a rural area in Turkey, found that students' anxiety negatively affected their attitudes towards math lessons. In this context, the starting point of the current research is to reveal the effect of supporting ideas of 8th grade students that intelligence and ability can be developed. In line with this justification, the aim of the current research is to examine the effect of the growth-mindset intervention including growth-mindset strategies on the mathematics academic achievement and mindset scores of 8th grade students who are continuing secondary education in Turkey. For this purpose, the research questions are:

What is the effect of growth-mindset intervention on 8th grade students' mindset scores?

What is the effect of growth-mindset intervention on 8th grade students' academic achievement in mathematics?

What are the opinions of 8th grade students on the growth-mindset intervention?

How do 8th grade students perform during the growth-mindset intervention process?

Methodology

Research Design

This research was designed in accordance with the embedded mixed design which is symbolized as QUAN(qual) (Morse, 2003). The embedded mixed method is suitable when the researcher has different questions that require different data types in order to increase qualitative or quantitative design applications in line with the main purpose of the research (Creswell and Plano Clark, 2011). In this design, the dominant research method (experimental design) is used to answer the main research question and the embedded method is used to answer the secondary research question created from the main research question (Plano Clark et al., 2008). According to this information, in the current research, in order to support the experimental study examining the effect of the growth mindset intervention on both academic achievement and mindset development of students with qualitative data in terms of providing in-depth data, an embedded mixed pattern was preferred. The flowchart summarizing the model of the research is given in Figure-1.

Study Group

The sample of the study is 42 eighth grade students (experimental group: 21; control group: 21) in a socio-economically disadvantaged secondary school in a province located in the Marmara Region of Turkey in the 2022-2023 academic year and whose academic success is below the average in the general screening exams. In a comprehensive meta-analysis study by Sisk, Burgoyne, Sun, Butler and Macnamara (2018), it was seen that growth-mindset intervention studies specifically target students who are in school transition or situations that pose significant academic risk. In Turkey, 8th grade students cover an academically risky period due to the fact that it is the last academic year for transitioning from secondary school to high school and the importance of the high-school entrance exam.

In the qualitative dimension of the research, semi-structured interviews were conducted with total 9 students in three different time periods as before-during and after the application. In determining the participants, the academic success was the criterion. 3 students having low achievement, 3 students at medium level and 3 students with high achievement were selected. All of the students who participated in the interview were included in the control group in the quantitative dimension of the research.

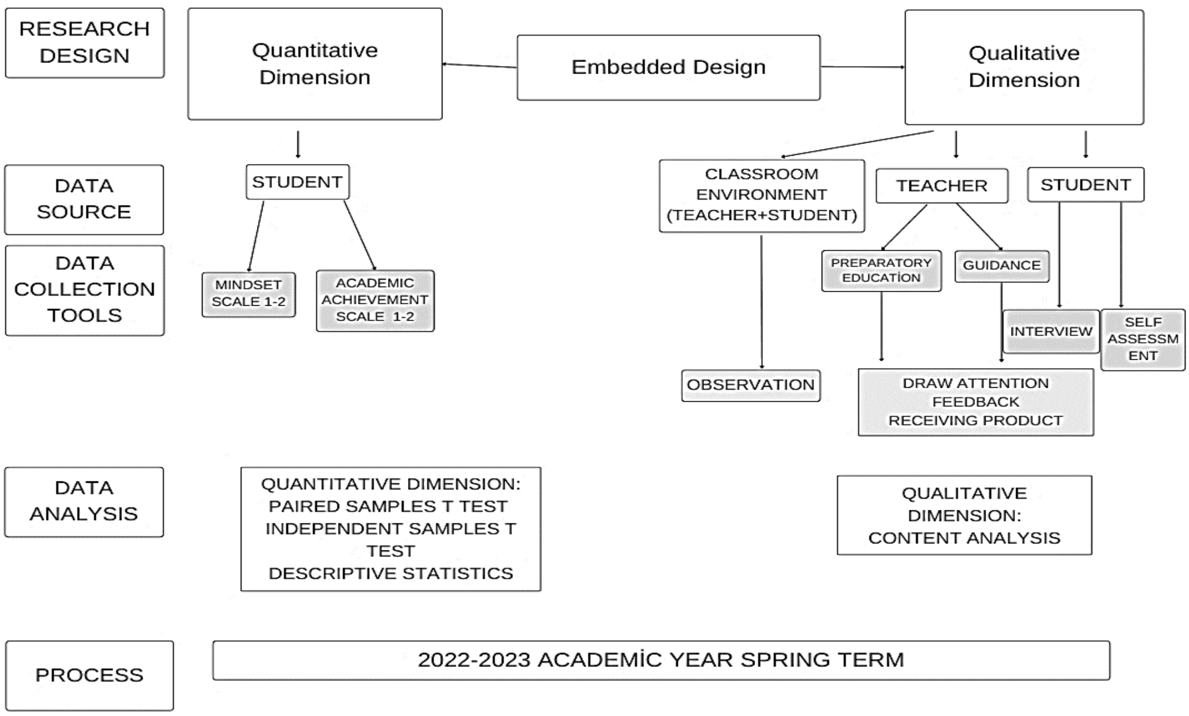

Figure 1. Research Model

Data Collection Tools

Data collection tools to be used in the this research; Implicit Theories of Intelligence Scale, academic achievement scale, student interview form and observation form.

ITIS: ITIS was developed by Dweck (1999) and adapted to Turkish by the researcher. The scale consisting of 6 items is in 6-point Likert type. In the scale consisting of expressions for intelligence and ability, students are asked to indicate the relevance of the expressions for them. The scale is rated on a six-point Likert type (1= Strongly agree, 2=Agree 3=Mostly agree, 4=Mostly disagree, 5=Disagree, 6=Strongly disagree). ITIS aims to measure the growth mindset and the degree to which a child believes their intelligence can be developed. The internal consistency coefficient was calculated as Cronbach's alpha = 0.78. In addition, the test-retest correlation was calculated as 0.77 (Blackwell, Trzesniewski, & Dweck, 2007). An average score of 4 or more obtained as a result of the analysis of the scale data indicates having growth-mindset. A score of 3.3 or 3.7 indicates borderline mindset (Rand, 2023).It has been revealed that the ITIS score is an important predictor of mathematics achievement and a significant increase in mathematics achievement is observed in secondary school students who believe that intelligence and ability can be improved (Blackwell, Trzesniewski, & Dweck, 2007).

Academic Achievement Scale: The scale consisting of 20 math questions was prepared as multiple choice. This scale, which was developed by the researcher, aims to measure the academic success of the mathematics. The questions were prepared on the basis of 2022-2023 academic year spring semester 8th grade mathematics topics (Multipliers and Multiples, Exponents, Square Root Expressions, Data Analysis, Probability, Algebraic Expressions and Identities) (MoNE, 2018). While developing the achievement test, the following method was followed: A table of specifications was prepared in order to determine the achievements and subjects that are intended to be measured. At the specification table, questions at the level of knowledge, comprehension and application were included in line with the achievements. Expert opinions were used to determine the content and face validity of the test. In line with expert opinions, the pilot form was prepared by removing the items that were not clear or did not have the capacity to test the expected proficiency. The pilot form was applied to 43 8th grade students studying in a secondary school in a province in the Marmara Region. The item and test analysis of the data obtained as a result of the pilot application were made, and the item discrimination index, item difficulty index and average difficulty values of the test were examined (Baykul, 2000). Result of the analysis, the item discrimination index was found to be between 0.35 and 0.45. The difficulty index of the items in the test was found to be between 0.42 and 0.65. The average difficulty level of the test was determined as 0.57. In line with these data, 7 items with difficulty index between 0.42-0.49, 8 items between 0.50-0.60 and 5 items between 0.60 and 0.65 were included in the measurement tool. In order to check reliability of test, KR-20 were used in this research. KR-20 coefficients are used in dual graded tests (Fraenkel, Wallen & Hyun, 2012). Calculation was made by giving 1 point for each correct answer given by the students to the test questions and 0 for each incorrect answer. For this test, the KR-20 coefficient was calculated as α=0.76. Considering this value, it can be said that the scores obtained by the students from the test are reliable (Linn, 2008).

Interview Form: The semi-structured interview form consisting of 5 questions aims to determine the students' views on the mathematics and the development of growth-mindset. Examples of interview questions can be given as follows: "What do you think are the factors that enable you to be successful in math class?", "What do you think increasing success depends on?". The reliability of qualitative data collection tools is ensured by clearly describing the research process, supporting it with documents, and seeking expert opinions (Yıldırım & Simsek, 2018). While preparing the interview form, first of all, interview questions were prepared in line with the purpose of the research and the opinions of 3 different educational science experts were sought. In addition, in order to test the intelligibility of the interview questions, two students were interviewed and arrangements were made on the incomprehensible items. At the same time, it is aimed to ensure reliability by clearly defining the research process and supporting the data with different data collection tools.

Observation Form: The observation form, consisting of 8 items, aims to observe the teacher's feedback and communication language in the classroom environment. Field notes were also taken by the researcher during the observation process. The observation form includes a checklist of statements about the situations that are expected to be observed. While preparing the observation form, first of all, statements were prepared in line with the purpose of the research and were examined by 3 different educational science experts in terms of the appropriateness and clarity of the statements. Examples of statements in the observation form can be given as follows: "She/He acted in accordance with the feedback tool while communicating about learning objectives.", "She/He used the statements of correct communication with students regarding high expectations." The field notes taken during the observation were turned into a table containing the systematically planned and observed situations.

Application Process

The training process of the research was planned as 8 weeks, 2 hours per week, during extracurricular times. In order to associate training with mathematics lesson, students were given weekly tasks related to mathematics lesson. During the preparation process of the research, the practicing mathematics teacher was trained about the growth-mindset intervention and the teacher was guided throughout the process. Student interviews and classroom observations were carried out before the pre-test, during the application process and after the post-test of the research. The flowchart summarizing the implementation process of the research is presented in Figure 2.

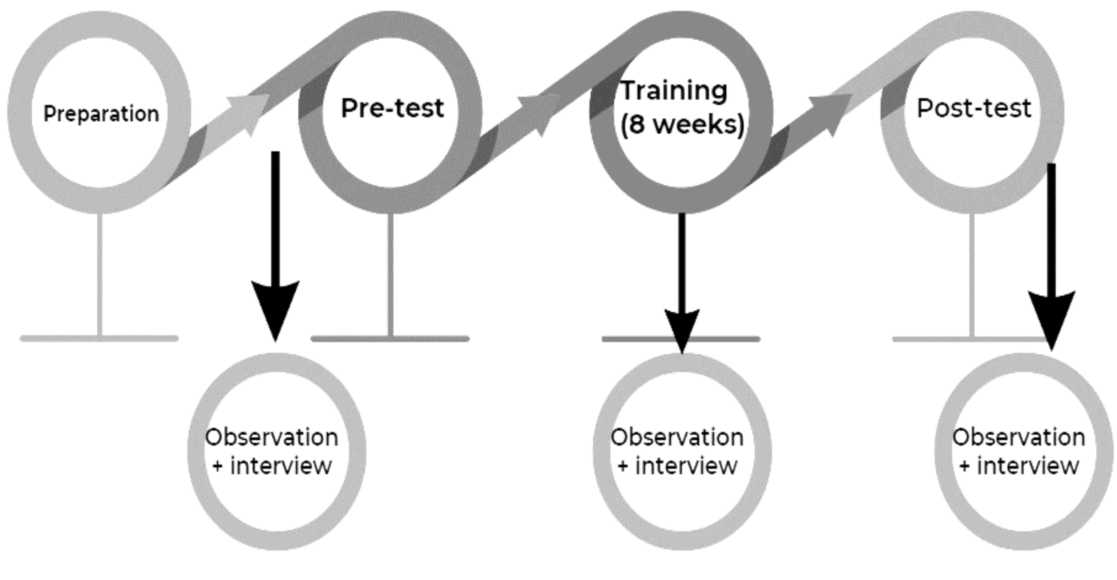

Figure 2. Application Process

The methods and tools that are frequently used in growth-mindset interventions in the training process are included. The methods and tools used are followed; writing a letter in a mentor position (Good et al. 2003), reading an article on brain plasticity (Paunesku et al. 2015), summarizing articles and defending basic ideas (Yeager et al. 2018), doing workshop about brain activity (Blackwell, et al. 2007), watching video and films relevance with growth-mindset (Yeager et al. 2019). At the same time, the strategies developed by Robinson (2017), Brock and Hundley (2016) and Dweck (2018) were applied both during extracurricular hours and training and guidance were provided to the practicing teacher to benefit from these strategies.

Data Collection

Quantitative data collection tools, ISIS and academic achievement scale were applied to the experimental and control groups before and after the application. Semi-structured interviews were conducted with 3 students before the application and with 3 students during the application, with 3 students after the application. Field notes were taken by the researcher during the interviews. The interviews lasted approximately 20-35 minutes. Audio recording was taken during the interview. The audio recordings taken were transcribed and written. As a result of data collection, a 30-day interview transcript was obtained. Observations were carried out in mathematics lessons, 2 hours per week. During the observation, it was observed whether the teacher acted in accordance with the growth-mindset feedback guide, whether the students fulfilled the math tasks assigned to them, and the classroom environment.

Data Analysis

SPSS 26.0 was used in the statistical analysis of the research data and the MASQDA program was used in the qualitative data analysis. In the study, firstly, before the analysis of quantitative data, it was tested whether the data were normally distributed in each scale. The kurtosis and skewness values of the data were examined and it was determined that the values were between +1.5 and -1.5, thus conforming to the normal distribution (Tabachnick & Fidell, 2013). Homogeneity of variance was tested by Levene Test. In the analysis of the data, t-test for paired samples and t-test for independent samples were used. Qualitative data were coded through MASQDA in line with the research questions and the coded data were categorized in accordance with the quantitative data collection process. In the analysis of qualitative data, firstly, interview and observation data were transcribed. The data was then encoded via MASQDA. The coding process was carried out by two different researchers and the compatibility between the encodings was examined. The resulting codes are collected under related themes and turned into regular data sets.

Ethics Committee Approval

There are some ethical principles that should not be violated in all human-related research (Yıldırım & Şimşek, 2018). These ethical principles are counted as informed consent, non-deception, accuracy, confidentiality and privacy by Christians (2005). In line with these principles, the data set containing information about the purpose and scope of the research, the informed consent form and the parent consent form were shared with the participants and their parents before the study was conducted. Only volunteers were included in the study and it was reported that they could leave the study at any time. The personal information of the participants was not included in the research report, instead only demographic information was included. Prior to the study, research permission was obtained from the Ministry of National Education. Academic ethics committee approval was obtained from Yıldız Technical University Ethics Committee, stating that the study did not contain any elements contrary to ethical principles.

Findings

Research findings are presented under two sub-headings in line with the research questions. Firstly, under the heading of "The effect of growth-mindset intervention on the mindset scores", the findings related to the first question of the research (What is the effect of growth-mindset intervention on 8th grade students' mindset scores?) are presented. Under this heading, qualitative findings about the mindset scores obtained as a result of the other questions of the research (What are the opinions of 8th grade students on the growth-mindset intervention, How do 8th grade students perform during the growth-mindset intervention process?) are also presented. Secondly, under the heading of "The effect of growth-mindset intervention on academic achievement", the findings related to the second question of the research (What is the effect of growth-mindset intervention on 8th grade students' academic achievement in mathematics?) are presented. Under this second heading, qualitative findings about the academic achievement obtained as a result of the other questions of the research (What are the opinions of 8th grade students on the growth-mindset intervention; How do 8th grade students perform during the growth-mindset intervention process?) are also presented.

The Effect of Growth-Mindset Intervention on The Mindset Scores

Under this heading, the quantitative findings about the mindset and the interview and observation data about the process are presented. Before starting the data analysis, it was first tested whether the data are normally distributed.

Examining the Normal Distribution

Based on the assumption of the normal distribution of the population in making statistics on parametric tests (Gravetter & Wallnau, 2013), it was first tested whether the data obtained within the scope of the research fit the normal distribution (Table 1). The Shapiro-Wilk test was used as the basis for the study because the number of study groups was less than fifty (Büyüköztürk, 2012).

Table 1. Normality Tests

			Kolmogorov-Smirnov			Shapiro-Wilk		
			Z	**n**	**p**	**Z**	**n**	**p**
Mindset	Pre-test	Experimental	,138	22	,200*	,934	22	,146
		Control	,109	21	,200*	,950	21	,343
	Post-test	Experimental	,221	22	,006	,846	22	,003
		Control	,198	21	,032	,937	21	,193
Academic success	Pre-test	Experimental	,150	22	,200*	,888	22	,017
		Control	,179	21	,079	,887	21	,019
	Post-test	Experimental	,186	22	,046	,874	22	,009
		Control	,148	21	,200*	,916	21	,073

When Table 1 is examined, it was determined that the data obtained as a result of the analysis made according to the Shapiro-Wilk test results showed a normal distribution except for the experimental group's mindset average scores, and the academic achievement pre-test and experimental group post-test scores of the experimental and control groups ($p > 0.05$). After the evaluation according to the Shapiro-Wilk test of normality, the skewness and kurtosis coefficients of the measurements of the variables were examined (Table 2).

Table 2. Skewness and Kurtosis Coefficients for Variables

Variable	Group	n	Tests	$\bar{x}$	ss	Skewness	Kurtosis
Mindset	Experimental	22	Pre-test	3,72	,31	-,12	-,92
	Control	21	Post-test	4,78	,26	-,80	-,83
	Experimental	22	Pre-test	3,65	,29	,01	-,86
	Control	21	Post-test	3,56	,31	-,18	-,48
Academic success	Experimental	22	Pre-test	43,18	6,23	,52	-1,16
	Control	21	Post-test	65,22	6,64	-,23	-1,48
	Experimental	22	Pre-test	38,80	3,61	,74	-,38
	Control	21	Post-test	40,23	3,86	,68	-,29

When the literature is examined, Tabachnick and Fidell (2013) emphasize that skewness and kurtosis values should be between +1.5 -1.5 and George and Mallery (2010) should be between +2.0 -2.0 in order for the data to be accepted as having a normal distribution. Accordingly, when Table 2 is examined, it is possible to say that the kurtosis and skewness values of the data are within acceptable normal distribution values according to Tabachnick and Fidell (2013) and George and Mallery (2010).

Test Results on Mindset Score

For the purposes of the study, the analysis of whether there is a statistically significant difference between the mental development pretest and posttest total scores of the pilot study group is given in Table 3.

Table 3. Examination of Growth-mindset Pretest and Posttest Means According to Experimental and Control Groups

Test	Group	n	$\bar{x}$	SS	t	p
Pre-test	Experimental	22	3,63	1,56	-,05	,96
	Control	21	3,65	1,36		
Post-test	Experimental	22	4,78	1,22	2,99	,005
	Control	21	3,56	1,42		

When Table 3 is examined, no significant difference was observed at the 0.05 significance level between the mental development pre-test total mean scores of the experimental and control groups; There was a significant difference between the posttest scores performed after the growth-mindset training. Accordingly, after the application, there was a difference between the average scores of total mental development between the experimental group and the control group.

Paired Samples T test was applied to determine whether there was a statistically significant difference between the mental development scale scores of the students in the experimental and control groups before and after the application (Table 4).

Table 4. Paired Samples T-test Results Regarding the Mental Development Scores of Experimental and Control Group

Group	Test	n	$\bar{x}$	SS	t	p
Experimental	Pre-test	22	3,63	1,56	-2,39	,02
	Post-test	21	4,78	1,36		
Control	Pre-test	22	3,65	1,22	,20	,84
	Post-test	21	3,56	1,42		

When Table 4 is examined, it is observed that there is a significant difference at the 0.05 significance level between the mental development scores of the experimental and control group students measured before and after the training on mental development strategies. As a result of the findings, no increase was observed between the mental development pretest and posttest mean scores of the control group; It is possible to say that the mental development scores of the experimental group increased compared to the pre-application.

The Opinions of Students on the Growth-mindset Intervention Effect Their Mindset Development

The data obtained from the interviews with the students were subjected to content analysis. Summary information about the codes and categories that emerged as a result of the analysis is given in Figure 1.

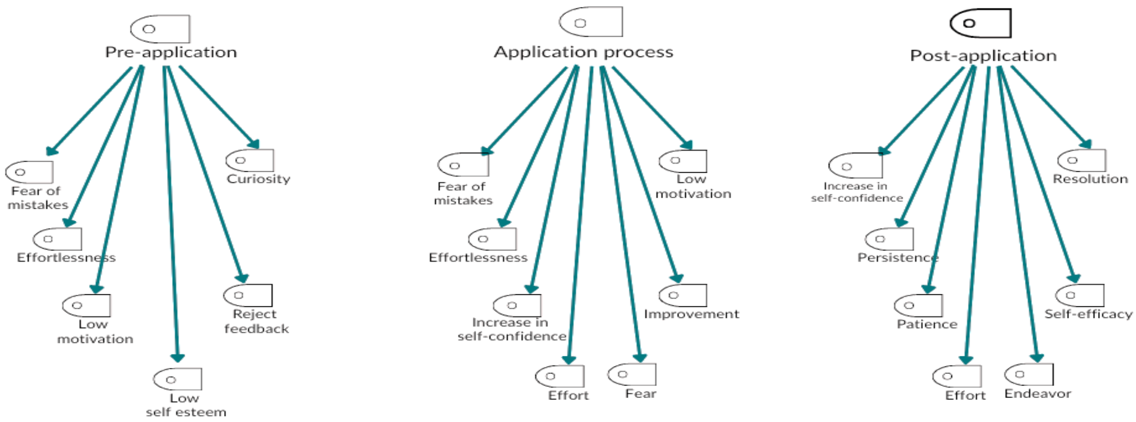

Figure 3. Codes and categories obtained from students' opinions on effect of growth-mindset intervention on mindset

As seen in Figure 1, as a result of the student interviews conducted before the application, codes that evoke negative situations such as fear of making mistakes, effortlessness, reject feedback, low motivation and low self esteem were reached. At the same time, a code related to curiosity was obtained during the interviews with the students before the application. Regarding this, the expressions used by S-3 are as follows: "*When I am curious, my desire to learn also increases*. *Our teacher said that we will attend a different training. This also made me curious. I am excited."* As a result of the interviews held during the implementation process, effort and increase in self-confidence codes are remarkable. Regarding this, the expressions used by S-4 are as follows: "*Their success depends on their work. It depends on their efforts. They work tirelessly to achieve their goals. It is also important to ask. A person works with all his might to reach it whenever he wants*." As a result of the interviews made after the application, the opinions of the students that were the source of the codes such as persistence, endeavor, resolution, self-efficacy were reached. For example, the following statements of S-8 can be given: "*I think the secret of successful people is that they are not afraid of making mistakes. Because if they are not afraid of making mistakes, they will be more courageous and will not hesitate to try. This way they will see that they can do it*."

The Observation on the Growth-mindset Intervention Effect Mindset Score of Students

The data obtained from the observations before-on-after the application process were subjected to content analysis. Summary information about the codes and categories that emerged as a result of the analysis is given in Figure 2.

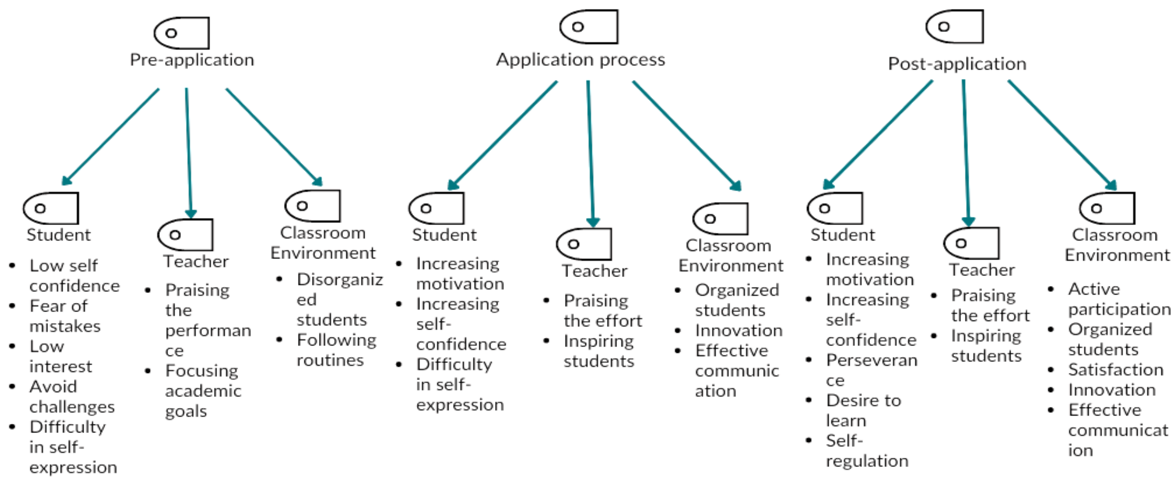

Figure 4. Codes and categories associated with mindset obtained from observations

As seen in Figure 2, in the observations made before the application, low self-confidence, fear of mistakes, low interest, avoid challenges were found in the student category. Codes that emphasize the inadequacy of students' self-regulation skills such as difficulty in self-expression have been reached. In the teacher category, the codes praising the performance and focusing academic goals were reached. Under the class environment category, the codes of disorganized students and the following routines were reached. The codes obtained suggest that there is a trainer who focuses on academic goals in the classroom environment and that the approaches followed have not been renewed.

Under the application process theme, while the codes reached in the student, teacher and classroom environment categories emphasize the increase in student motivation and self-confidence; it also shows that the teacher praises the effort. Codes showing that there are some changes in the dimensions of innovation and organization in the classroom environment have been reached.

The codes obtained under the post-application theme in the categories of student, teacher and classroom environment reveal data on students' willingness to learn and self-regulation skills, as well as increased self-confidence and motivation. While it is seen that the teacher praises the effort and inspires student, the codes expressing that active participation, effective communication and satisfaction are observed in the classroom environment have been reached.

The Effect of Growth-mindset Intervention on Academic Achievement

For the purposes of the study, Table 5 shows the analysis of whether there is a statistically significant difference between the pretest and posttest total scores of the pilot study group's academic skills in mathematics.

Table 5. Analysis of Academic Skills Pretest and Posttest Averages According to Experimental and Control Groups

Test	Group	n	$\bar{x}$	SS	t	p
Pre-test	Experimental	22	43,18	29,25	,59	,552
	Control	21	38,80	16,57		
Post-test	Experimental	22	65,22	31,14	3,21	,003
	Control	21	40,23	17,71		

When Table 5 is examined, no significant difference is observed at the 0.05 significance level between the mental mathematics course pretest total average scores of the experimental and control groups. In other words, there is no significant difference between the experimental and control groups' mean scores showing academic success in mathematics before the application. However, no significant difference was observed between the posttest scores performed after the growth-mindset training.

Paired Samples T test was applied to determine whether there was a statistically significant difference between the mathematics course academic skills scale scores of the students in the experimental and control groups before and after the application (Table 6).

Table 6. Paired Samples T-Test Results Related to Mathematics Lesson Scores of Experimental and Control Group Students

Group	Test	n	$\bar{x}$	SS	t	p
Experimental	Pre-test	22	43,18	29,25	-6,78	,00
	Post-test	22	65,22	31,14		
Control	Pre-test	21	38,80	16,57	-,61	,54
	Post-test	21	40,23	17,71		

When Table 6 is examined, a significant difference at the 0.05 significance level was observed between the mathematics course academic achievement test scores of the experimental and control group students before and after the mental development training they attended. It is observed that there is an increase in the academic success of mathematics course.

The Opinions of Students on the Growth-mindset Intervention Effect Their Academic Achievement

The data obtained from the interviews with the students were subjected to content analysis. Summary information about the codes and categories that emerged as a result of the analysis is given in Figure 3.

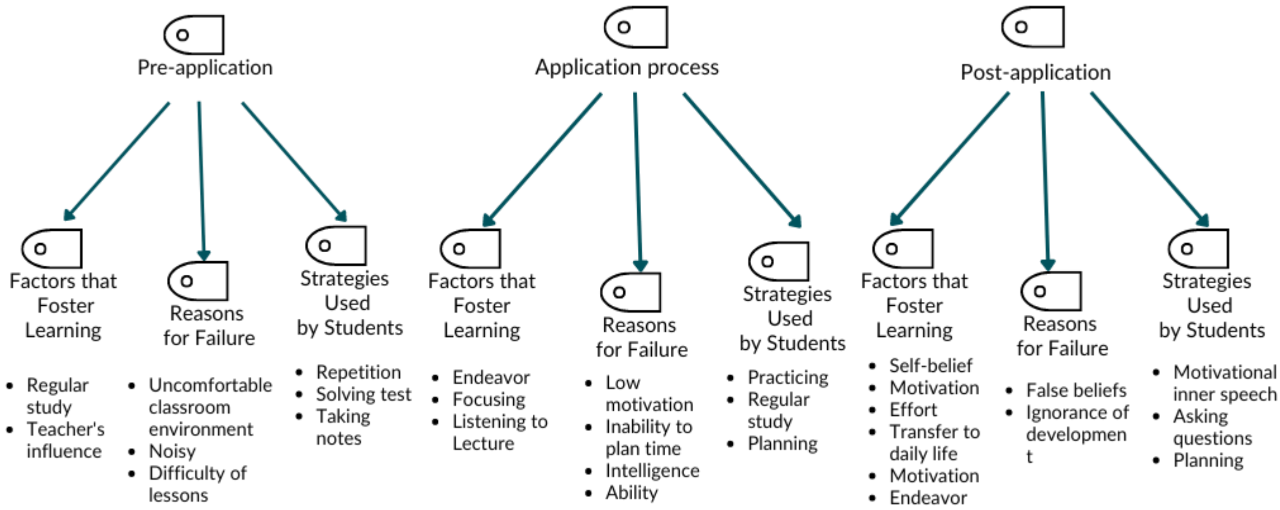

Figure 5. Codes and categories obtained from students' opinions on effect of growth-mindset intervention on academic achievement

As can be seen in Figure 3, it is seen that different codes have been reached within the categories of factors that foster learning, reseans for failure, strategies used by students under the pre-application, application process and post-application themes. The codes obtained as a result of student interviews show that during the pre-application process, students associate the factors that strengthen learning and the reason for failure with situations other than themselves. The codes reached in the application process and post-application themes show that students associate success and failure with effort, perseverance and work. At the same time, the motivational inner speech code, which was reached within the category of strategies used by students under the post-application theme, is remarkable. This code, which was reached as a result of student interviews, reveals that they use internal discourses to motivate themselves. S-6's statement regarding this is as follows: "*This is what I say to myself when I fail: Fix it next time. This saying motivates me. Then I work harder, thinking like that*."

The Observation on the Growth-mindset Intervention Effect Academic Achievement of Students

The data obtained from the observations before-on-after the application process were subjected to content analysis. Summary information about the codes and categories about academic achievement that emerged as a result of the analysis is given in Figure 4.

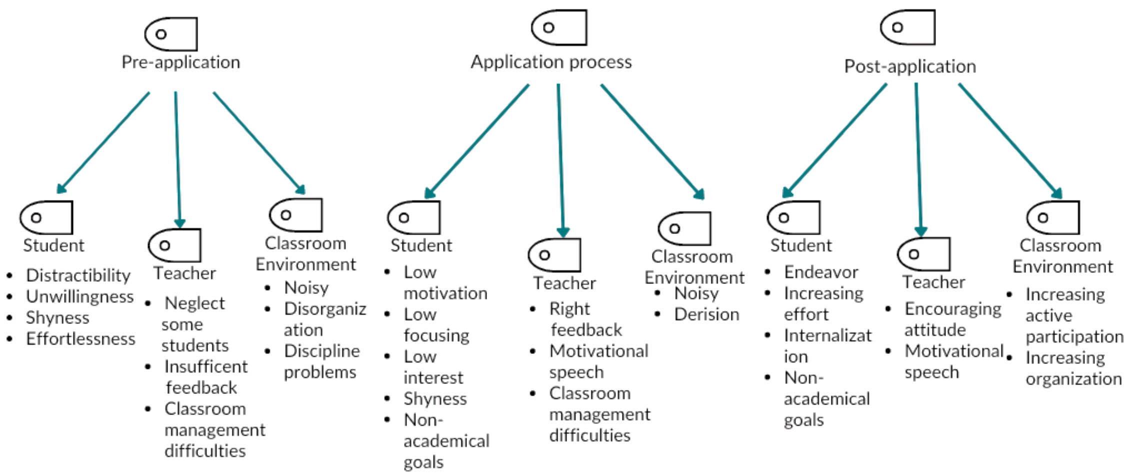

Figure 6. Codes and categories associated with academic achievement obtained from observations

As seen in Figure 4, the data obtained as a result of the observations are structured under the themes of pre-application, application process and post-application. The codes reached under the pre-application themes show that students are observed to be effortless, shy, reluctant and distracted. On the other hand, the codes related to the teacher's difficulty in classroom management, neglect of some students and using insufficient feedback were found. Regarding the classroom environment, codes for noise, disorganization and discipline problems have been reached.

Under the Application process theme, the codes of low motivation, low focusing and non-academical goals reached in the student category are remarkable. While the right feedback and motivational speech codes obtained under the category of teacher show that the teacher focuses on motivating the students in classroom management, it is observed that derision and noisy are observed in the classroom environment.

The codes reached under the post-application theme show that factors that positively affect academic success such as effort and perseverance and internalization are observed in students. In addition to the encouraging and motivating behaviors of the teacher, it was observed that the organization of the classroom environment improved and active participation increased.

Discussion and Conclusions

This study examined the effects of the growth-mindset intervention on the academic achievement and mindset scores of 8th grade students in a socio-economically disadvantaged school. The conducted application reveals that students with low academic performance achieve a positive result in dealing with academic difficulties. Similarly, research on growth-mindset intervention concluded that supporting students with low academic achievement in coping with difficulties and making effort will increase success (Burnette et al., 2013; Claro et al., 2016; Paunesku et al., 2015; Sarrasin et al., 2018; Yeager et al., 2014; Yeager et al., 2019). The findings showed that after the growth-mindset intervention, the experimental group students had an increase in their academic achievement in mathematics and their mindset scores increased. In comparison, no change was observed in the academic achievement and mindset scores of the control group students. The interview and observation data carried out during the process support the positive change tendency of the experimental group.

The findings obtained in terms of mindset scores showed that there was a significant difference between the pretest and posttest scores of the experimental group students in favor of the posttest. The mindset scores of the students increased from the range that can be defined as fixed mindset to the range that can be defined as growth-mindset. At the same time, it is seen that while the references used by the students in their statements before the application are for factors other than themselves, it is seen that there are references to patience, persistence, and resolution after the application. Students exhibit fear of mistakes, low motivation and effortlessness before the application. After the application, there were expressions found in the expressions of endeavor and effort students. In addition, clues for students' self-regulation skills were observed. Similarly, Karlen, Hirt, Liska, and Stebner (2021) revealed that students' beliefs about their abilities guide their tendencies to learn self-regulation. Likewise, Wang, Degol and Henry (2019) argue that students' mindset beliefs can activate and improve their self-regulation skills.

The research findings revealed that the students used motivational inner speech after the application. This factor, which can be considered as a growth-mindset indicator, can also reveal that the sense of academic self-efficacy is strengthened. Similarly, Mcwilliams (2014) revealed that students with growth-mindset tend to make internal attribution and have a strong sense of academic self-efficacy. At the same time, the finding of shyness and difficulty in expressing oneself before the application is associated with fixed-mindset. Laurian-Fitzgerald and Roman (2016) concluded that social skills decreased by 30% in individuals with a fixed mindset.

The findings obtained in terms of academic achievement showed that there was a significant difference between the pretest and posttest scores of the experimental group students in favor of the posttest. Studies dealing with academic achievement and the growth-mindset intervention also support this finding (Andersen & Nielson, 2016; Aronson et al., 2002; Claro et al., 2016; McCutchen et al., 2016). In addition, compared to pre-intervention, students showed a higher tendency to associate academic achievement with effort and perseverance. Similarly, in a previous study, after the growth-mindset intervention, a change was observed in students' willingness to undertake challenging tasks and their tendencies towards perseverance and effort to achieve success (Mrazek, Ihm, Molden, Mrazek, Zedelius & Schooler, 2018). In this study, especially mathematics achievement was examined. As a result, an increase was observed in both mindset scores and mathematics achievement scores. It can be argued that growth-mindset strategies support the skills of making effort and coping with difficulties in mathematics lessons. Similarly, O'Brien, Fielding-Wells, Makar and Hillman (2015) concluded that mathematical skills developed as a result of a pedagogical practice using growth-mindset strategies.

The current research examined academic achievement and mindset change as a result of growth-mindset intervention for 8th grade students in a socio-economically disadvantaged secondary school. However, simultaneous implementation of the same intervention in a school with high achievement and without socio-economic disadvantages may allow comparison of research findings. In this study, it was concluded that educators should support the active use of growth-mindset strategies in educational processes in order to strengthen learning. Especially low math performance and socio-economically disadvantaged students are likely to see themselves as having fix-mindsets. For this reason, the strategies that educators will use for such students are important. It is thought that the guidance to be carried out on which strategies the educators will use and how they will use it will be beneficial.

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The Historical Transformation of the Ideal Citizen Profile in Turkey (1789-1938)

Research Article

Ahmet TOKMAK[1]

[1]*Ministery of National Education, İzmir Ölçme Değerlendirme Merkezi, İzmir, Turkey* 0000-0002-3902-5825

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ABSTRACT

In the wake of the French Revolution of 1789, a seismic event that reverberated globally, the Ottoman Empire found itself grappling with transformative changes. This upheaval recalibrated the empire's understanding of citizenship and the corresponding expectations from citizenship education. This revolutionary shift set in motion significant eras such as the Tanzimat, Reform, First and Second Constitutional Monarchy periods. Subsequent to World War I, the Republic of Turkey emerged from the ashes of the Ottoman Empire. This new state embarked on a series of radical reforms that would shape the socio-political landscape across myriad domains. It was within this crucible of change that the Turkish society's conceptualization of citizenship, anticipations from citizenship education, and the archetype of the ideal citizen were molded. This study undertakes ana analysis into the metamorphosis of the ideal citizen profile in Turkey from 1789 to 1938. It navigates the nuanced interplay between citizenship education and the evolution of this profile against the backdrop of the pivotal socio-political events of the era. Central to this exploration is an understanding of how the transformations spanning 1789 to 1938 echoed in citizenship education, the envisaged model of citizenship in the nascent Republic, and the attendant shifts in the perception of citizenship. To distill these insights, a qualitative research methodology was employed, with the document analysis method forming the backbone of the study. The trove of data amassed was dissected using the descriptive analysis method. Gleanings from this research underscore that watershed moments such as the French Revolution, the Tanzimat, Reform, and Constitutional Monarchy periods, World War I, and the birth of the Republic of Turkey profoundly influenced the traits desired in the citizen profile. The study sheds light on the dynamic evolution of the perception of the ideal citizen and the attributes they ought to embody, all shaped by the ebb and flow of these historical epochs.

Keywords:

Citizenship education, ideal citizen, Ottoman Empire, Republic of Turkey

Introduction

From the transition of the Ottoman Empire to the establishment of the Republic of Turkey, the notions of "citizenship" and "citizenship education" underwent pivotal changes, influenced by both domestic and international events. Notably, the French Revolution of 1789, with its profound global implications,

1 Corresponding author's address: Milli Eğitim Bakanlığı İzmir
Telephone: 05327325598
e-mail: tokmak87@hotmail.com
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significantly swayed the Ottoman Empire's perspectives on citizenship and its education (Ramsour, 2009, p. 22; Kaya & Biçer, 2021, p. 8027).

This influence is vividly apparent in the ideologies and approaches championed by the progressive intellectuals of the Ottoman Empire, many of whom expressed admiration for French culture and the revolution. Their sentiments were evident in monumental decrees such as the proclamation of the Constitutional Monarchy, the Edict of Reform, and the Tanzimat Edict. Further evidence lies in the slogans of the March 31st Incident, which mirrored "liberty, equality, and justice"—cornerstones of the French Revolution. The Islahat and Tanzimat edicts were strategic responses, aiming to actualize these principles. Furthermore, during the Constitutional Monarchy Period, the French Revolution prominently featured in the Ottoman press (Armaoğlu, 1984, p. 7).

During its classical period, the Ottoman Empire exerted significant military, social, and political influence on the nations with which it interacted. However, as the empire entered periods of stagnation and decline, there was a pronounced recognition of the advancements taking place in the West. Milestones such as the Age of Discovery, the Renaissance, the Reformation, the Industrial Revolution, and the French Revolution not only shaped and directed the course of Europe but also signaled the need for change within the Ottoman realm. The shifts in Europe during the 18th and 19th centuries disrupted the established political, social, cultural, military, and economic paradigms, prompting state restructuring (Lewis, 1993, p. 61). Specifically, the ripple effects of the French Revolution hinted at impending, significant transformations within the Ottoman Empire.

Upon analyzing Turkish history, it becomes evident that there have been key phases that greatly influenced the formation of the current social, political, and cultural perspectives of the Turks. The acceptance of Islam by the Turks was a foundational shift. Following this, the reform movements in the Ottoman Empire, especially in the political, social, legal, and cultural spheres, played a pivotal role. These movements were notably triggered by the French Revolution. Then came the epoch-making period under Mustafa Kemal Atatürk with the proclamation of the Republic (Karal, 1998, p. 109). In particular, the French Revolution played an instrumental role in redefining and reorganizing the concept of "citizenship" within the Ottoman Empire, and subsequently influenced citizenship education. As a result of the ripple effects of the French Revolution, the Ottoman Empire's approach to education began aligning with international developments from the 19th century onwards. This transition further molded the notion of citizenship, encompassing patriotism, national identity, and civic awareness (Gürses, 2010, p. 13).

The concept of Ottomanism, which revolved around the idea of forging a unified "Ottoman citizen," emerged during the waning stages of the Ottoman Empire. Its primary objective was to preserve the empire's unity and prevent its disintegration. However, the growing tide of nationalism largely thwarted this vision. The mounting territorial losses and the subsequent unraveling of the empire quickened the pace towards nation-building and modernization, a journey that began with the Tanzimat Edict. By the time the Constitutional Monarchy was established, the 'reaya' (rayah) in the Ottoman realm transitioned into citizens (Kadıoğlu, 2008, p. 9). This transformation meant that instead of a populace previously viewed as mere subjects, the empire now comprised individuals with distinct personal and societal rights, safeguarded by constitutions and laws. Subsequent events, including the aftermath of World War I, the War of Independence, and the proclamation of the Republic, further elevated the Turkish societal structure and its conception of citizenship. Atatürk's principles and reforms played a pivotal role in this evolution. Consequently, the Republican era stands as a defining juncture in Turkish history, following the War of Talas and the impact of the French Revolution. This period, ushered in by Atatürk's principles, reforms, and the birth of the Republic, catalyzed the emergence of a rejuvenated Turkish society (Coşkun, 2008, p. 11).

Education stands as the most potent instrument for shaping society, preserving the prevailing ideology, and imparting the core values of a nation to successive generations. It ensures societal continuity, fortifies unity, and fosters the emergence of enlightened citizens who exhibit unwavering loyalty to their homeland, possess a deep love for their country and its people, and are acutely aware of their rights and obligations (Sağdıç & İlhan, 2018). Thus, enhancing the quality of citizenship education and ensuring that the objectives of such education are clearly grasped is paramount. For the nation to act cohesively, it's crucial to comprehend the archetype of an ideal citizen. Yet, to fully grasp the desired citizen profile envisaged by the Turkish nation, one must delve into the historical span from 1789 to 1938, a transformative era for the Turks, with a specific focus on citizenship education. This involves understanding the ramifications of the 1789 French Revolution on the Ottoman Empire, the evolving political landscape, and the series of events from the 18th century to the modern day. A critical assessment of these events and their bearing on the conceptualization of citizenship and its education is essential. Such an in-depth exploration promises to illuminate contemporary perspectives on citizenship and the nuances of citizenship education.

Upon reviewing the available literature, numerous studies addressing citizenship education in both the Ottoman Empire and the Republic of Turkey from varied angles are evident. For instance, Civan (2007) delved into the portrayal of the citizen model in primary school civics textbooks during the Single Party Period. Tuna (2008) scrutinized the Ottoman citizenship textbook titled *Rehber-i Ittihad*, while Çelik (2008) shed light on pivotal strides in citizenship education during the Republican Era. Duman and Tuna (2012) probed into *Rehber-i Ittihad*, one of the inaugural citizenship textbooks from the Second Constitutional Monarchy Period. Altındağ (2013) assessed citizenship education in primary schools during the Single Party Period (1924-1946), while Üstel (2016) charted the trajectory of citizenship education from the Second Constitutional Monarchy to the present. The study by Kuş, Arık, Altunok, and İridağ (2018) offered a comparative analysis of the Civil Knowledge course and modern-day citizenship education textbooks. Additionally, other researchers, including Tunç Yaşar (2018), Civelek (2019), İğneci (2020), and Kaya (2020), focused on various facets of citizenship education through textbooks and curriculum changes, particularly during transitional periods. However, a notable gap emerges when assessing these studies. There appears to be an absence of a comprehensive investigation that holistically addresses and evaluates the nexus between citizenship education, the conceptualization of the ideal citizen, and the pertinent political events spanning from 1789 to 1938. This specific timeframe, bridging the years 1789-1938, is of paramount significance, given its profound influence on the multifaceted fabric of the Republic of Turkey, encompassing the social, political, legal, cultural, economic, and military domains.

This present study aims to explore the historical evolution of the ideal citizen profile in Turkey during the period 1789-1938. Within this context, the study delves into the intersections of citizenship education and the metamorphosis of the ideal citizen profile, aligning these with the prevailing social and political events of the era.

A central question addressed is: How were the multifaceted developments and shifts that transpired between 1789 and 1938 mirrored in citizenship education? The research endeavors to discern the blueprint of the desired citizen archetype that Turkey, in its nascent statehood, aspired to cultivate. In essence, the objective is to elucidate the transformations in the conceptualization of citizenship during this pivotal historical window.

Methodology

This section of the study details the research paradigm, describe the methodologies for data acquisition, identifies the instruments and techniques used, outlines the process of data collection, and explains the subsequent analytical framework.

Research Model

This current study, which seeks to explore the historical evolution of the ideal citizen profile in Turkey from 1789 to 1938, employed the document analysis method. Researchers often favor the document analysis method to enhance the validity of their research, especially when interviews and observations are not viable (Yıldırım & Şimşek, 2018, p. 188). Just as in other qualitative research methods, document analysis necessitates a meticulous examination and interpretation of the data to foster understanding, derive meaning, and generate empirical knowledge about the subject in question (Corbin & Strauss, 2008, p. 35). In this method, the researcher does not interfere with the documents under analysis (Yıldırım & Şimşek, 2018, p. 188).

Data Collection Tools

Given that this research seeks to explore the historical evolution of the ideal citizen profile in Turkey from 1789 to 1938, the data sources encompass scientific studies on citizenship education during this period in both the Ottoman Empire and the Republic of Turkey. This also includes curricula and textbooks related to citizenship education. The data extracted from these varied sources underwent analysis and interpretation, with the goal of discerning how the ideal citizen profile in Turkey experienced a historical transformation between 1789 and 1938.

Data Analysis

The data amassed for this study underwent analysis via the descriptive analysis method. Descriptive analysis systematically presents, scrutinizes, and interprets the gathered information, ensuring that resultant conclusions are articulated lucidly. The primary objective of descriptive analysis is to offer a succinct and interpreted presentation of the findings. This method of analysis unfolds in four phases: establishing a framework for descriptive analysis, categorizing data in line with the thematic framework, delineating the findings, and then interpreting those findings (Yıldırım & Şimşek, 2018, p. 224). Furthermore, this research strictly adhered to the stipulations outlined in the "Higher Education Institutions Scientific Research and Publication Ethics Directive." The study conscientiously avoided any actions listed under the directive's second section, titled "Actions Contrary to Scientific Research and Publication Ethics."

Findings

Education, without question, played a pivotal role in allowing the Ottoman Empire to span across three continents, disseminating Turkish Islamic culture within its dominions. Central to the Ottoman Empire's educational framework were the madrasas, spearheaded by the Bursa Madrasah, and the esteemed Fatih and Süleymaniye madrasas in Istanbul. Additionally, the empire also housed institutions offering primary education, known as infants’ schools. Pervading nearly every locality and village, these establishments were primarily centered on religious and moral teachings, governed through endowments. Though politically autonomous, they were under the state's aegis and garnered its patronage. The empire's decline, evident in its socio-economic fabric, inadvertently permeated these educational foundations. This downturn grievously impacted madrasas, causing them to deviate from their academic and philosophical roots, leaning instead towards materialistic pursuits (Yıldırım & Kılıç, 2018, p. 603). An influx of individuals, irrespective of their merits – be it familial ties or friendships – further undermined the Ottoman educational infrastructure. Another vital pillar of the Ottoman educational construct, apart from the infants’ schools and madrasas, was the Enderun Schools. Serving as the empire's formal institutions, Enderun Schools cultivated the brightest from the devshirme children, grooming them for eminent civil and military roles. Yet, like their counterparts, these schools were not immune to the empire's waning influence. The Tanzimat Era ushered in a transformative epoch, replete with sweeping reforms across legal, political, social, economic, and cultural spheres (Kaya, 2020, pp. 22-24).

Meaning "reorganization," the Tanzimat Period marked the empire's initial foray into modernization, spurred by territorial losses, socio-economic stagnation, internal fracturing, and external stimuli, notably the 1789 French Revolution. This zeitgeist was mirrored in educational reforms. Post-Tanzimat, the conceptualization of citizenship and its educational expectations underwent a shift. This era envisioned molding a renewed Ottoman identity rooted in the ethos of "Ottomanism" (Demir, 2011, p. 331). However, this vision was ensnared in an intricate web of educational institutions: state-affiliated entities such as madrasas, infants' schools, Enderun, military schools, and those catering to the empire's non-Muslim populace. This convoluted landscape engendered discord and fragmented the educational system, with non-Muslim schools often serving as a crucible for dissent against the empire (Aşkın, 2017, p. 977). Ottoman intellectuals, recognizing these challenges, championed the advent of a fresh educational paradigm. They envisioned an ecosystem echoing secular and liberal European tenets, striving for unity and integration. The objective was to preserve the empire's diverse fabric and foster an overarching Ottoman ideal. In line with this vision, the Tanzimat Era saw the genesis of novel methodologies, institutional establishments, and schools. This renaissance, initiated during the Tanzimat, continued thereafter, particularly under Abdülhamid II. His era witnessed extensive infrastructural development in education. However, the core tenet remained consistent: promulgating the doctrine of Ottomanism and ensuring its societal ingraining. Thus, the state's oversight in education was rigorous and unwavering (Berker 1945, pp. 35-37).

While the seeds of Western-style revitalization and reform in the Ottoman Empire were sown during Selim III's reign, it was the Tanzimat Period that heralded genuine Westernization and modernization efforts. The initiatives of the Tanzimat era were markedly distinct from their antecedents, as they grappled not only with political and military challenges but also with intrinsic societal complexities. Tanzimat marked a pivotal transition: from an ummah-centric worldview to a nationalistic perspective and from a communal ethos to individualism (Demir, 2011, pp. 331-335). The ideals ushered in by the 1789 French Revolution found formality in the Ottoman realm with the promulgation of the Tanzimat Edict (1838), introducing the "citizenship" concept to the Empire. Consequently, the Tanzimat era emerged as a significant phase in the Europeanization of Turkish society. The edict aimed to homogenize the populace within the empire's confines and to foster a sense of Ottoman citizenship. For the first time in its illustrious history, the Tanzimat Edict enshrined equality in property rights, liberty for all denizens, and established the precept of legal equality. This sought to mold a cohesive "Ottoman" identity, transcending religious or ethnic delineations (Kaya, 2020, pp. 26-27).

The nationalist fervor ignited by the 1789 French Revolution deeply impacted the multinational Ottoman Empire. Rapidly, Balkan territories felt the pull of nationalism. Already besieged with multifaceted challenges, the empire confronted nationalist uprisings, accelerating its splintering trajectory. Historically, the Empire's social architecture was predicated on the "nation" system, wherein the term referred more to religious affiliations rather than ethnic roots (Akça, 2007, p. 57). Non-Muslims within the empire were identified by their faith, each being deemed a distinct nation. This nation system was the bedrock upon which political and societal constructs were built. But, the galvanizing force of the French Revolution's nationalism and external geopolitical machinations promoting independence for non-Muslims rendered the established nation system untenable. In response, the Empire embraced and operationalized the "Ottomanism" concept, attempting to harmonize the religious and ethnic tapestry of its society, meeting both non-Muslim aspirations and modern global expectations (Demir, 2011, p. 334). Influenced by the seismic shifts instigated by the 1789 French Revolution, the Ottoman Empire's vision for its ideal citizen evolved substantially during the Tanzimat Period. Seeking to forestall the fragmentation of the state, the Ottomans began to identify every individual as an Ottoman, irrespective of their religious or ethnic backgrounds, fostering a sense of inclusive citizenship (Gemici, 2019, p. 47). This vision catalyzed the establishment of new educational edifices delivering impartial education, irrespective of religious or ethnic distinctions. This was a pioneering stride towards an egalitarian education resonating with the ideals of Ottomanism. Post the French Revolution, the Empire prioritized cultivating an educated populace, believing that a more enlightened citizenry would bolster non-Muslims' allegiance to the state. Education was perceived as the panacea to the empire's existential challenges. Consequently, citizenship education assumed paramount importance. Given the political and societal metamorphosis of the Tanzimat era, education was harnessed to sculpt an "Ottoman" persona, capable of unifying a diverse populace of varied religions, languages, and cultures. Thus, it is evident that during the Tanzimat Period, akin to other epochs, the educational system was tailored to produce citizens congruent with the nation's governing philosophy (Demir, 2010, pp. 284-286).

The Reform Edict stands as a seminal epoch in shaping Turkish society's perception of citizenship and the ensuing expectations from citizenship education. The period spanning 1856 to 1876, initiated with the proclamation of the Edict of Reform in 1856 and culminating in the adoption of the Ottoman Basic Law in 1876, thereby inaugurating the 1st Constitutional Monarchy, is recognized as the Reform Edict Period. This era warrants emphasis due to its profound implications on the status of non-Muslims and other ethnic nationalities, the overarching state architecture, and its resonances in the present day. During this period, a shift was witnessed, from regarding individuals as subjects to recognizing them as citizens, thereby leveling non-Muslims with Muslims. Numerous statutes were implemented to this end, leading to the abandonment of the law of dhimmitude. The Reform Edict bestowed upon non-Muslims religious protection, and by renouncing all pejorative religious and ethnic epithets, it ameliorated their socio-political standing (Erdem, 2010, pp. 336-340; Kaya, 2020, pp. 26-27).

The Ottoman Nationality Law, ratified on January 28, 1869, holds a pivotal place, given its profound ramifications on citizenship and its pedagogy within the Ottoman Empire. Drawing inspiration from the 1851 French citizenship statute, this law was the empire's inaugural citizenship legislation. Evidently, the bedrock of Turkish citizenship jurisprudence bears a French imprint. The legislation was promulgated in response to a significant conundrum, wherein certain non-Muslim Ottoman subjects procured foreign passports, thereby asserting foreign nationality (Gümüş, 2013, p. 169). To preclude ambiguities mirroring European experiences, it became imperative to have a nationality law, culminating in the enactment of the Ottoman Nationality Law. This statute was universal in its embrace, encompassing both Muslims and non-Muslims. Criteria for acquiring Ottoman citizenship were stipulated as legal adulthood and a minimum five-year residency within the empire. This legislation, demarcating citizenship and enshrining rights, signified the empire's pivot from religiously-grounded citizenship notions to a more Western construct (Serbestoğlu, 2011, pp. 205-206).

Efforts within the Ottoman Empire to segue into a more inclusive notion of citizenship germinated with the Tanzimat Edict's endorsement of religious and sectarian parity. The Tanzimat era marked a distinctive phase, as it applied non-religious legal criteria to confer Ottoman subject status. This ethos persisted post the Reform Edict, embodying the principle of egalitarian access to public services, unshackled by religious or sectarian affiliations. Consequently, non-Muslims were endowed with expanded rights, including eligibility for civil service roles without necessitating religious conversion (Alkan, 2001, p. 385). However, the monumental leap in the empire's naturalization trajectory was the 1869 Ottoman Nationality Law, representing an unprecedented nationality mandate in Islamic geographies, independent of religious tenets. The legislation rendered religious affiliations redundant in the context of nationality, marking a watershed moment in nationality jurisprudence (Aybay, 1982, p. 25; Aybay, 1998, p. 38). Further, enactments like the Provincial Administration Regulation, the General Rights of the Subjects of the Ottoman State and the Abode of Felicity and the Municipality Law initiated in 1871 played pivotal roles in sculpting a cohesive citizenry (Üstel, 2004, p. 25). Echoing the Tanzimat era, the Islahat Period perceived education as the panacea for the empire's challenges, fostering a vision of inclusive Ottoman citizenship. Yet, the most profound decree shaping the contours of citizenship materialized with the 1876 Ottoman Basic Law (Aslan, 2019, pp. 1986, 1987).

Abdülhamid II inaugurated the Kanun-i Esasi (Ottoman Basic Law) on December 23, 1876. However, with the advent of the 93 War (1877-1878 Ottoman-Russian War), he suspended the constitution and dissolved the parliament on February 14, 1878. This short-lived 1.5-year era is recognized as the First Constitutional Monarchy. This juncture holds considerable significance in Turkish historical annals, as it marked the first instance of the Turks experiencing a constitutional governance framework. Subsequently, alongside the traditional Ottoman sultanate, the constitution and parliament began to play an instrumental role in the nation's governance. The governance transitioned from an absolute monarchy to constitutionalism, with the parliament composed of the assembly of landed proprietors, appointed by the sultan, and the chamber of deputies, elected by the populace (Uzun, 2005, p. 152). Articles 8 and 26 of the 1876 Ottoman Basic Law, which introduced extensive provisions for the diverse communities under Ottoman dominion, elucidated the concept of citizenship and delineated the rights and liberties accorded to citizens. Article 17 of the Ottoman Basic Law entrenched the principle of equality, proclaiming that all citizens, irrespective of their backgrounds, were equal in terms of rights and obligations before the law. Significantly, Article 8 underscored the ethos of non-discrimination based on religion or sect, declaring, "Everyone residing within the borders of the Ottoman Empire is termed Ottoman." Thus, the Ottoman Basic Law did not tether citizenship to religious, ethnic, or sectarian identities. Irrespective of one's religious, ethnic, or sectarian affiliations, anyone bound to the Ottoman Empire through the ties of citizenship was recognized as an Ottoman citizen. Consequently, the desired citizen archetype of that era was fashioned with this vision in mind (Düzenli, 2021, p. 448).

Following the suspension of the Constitutional Law on February 14, 1878, the Ottoman Empire experienced thirty years of sultanic rule. In this interim, the Young Turks established the Committee of Union and Progress, spearheading various initiatives. A culmination of their efforts led Abdülhamid II to reinstate the constitution, ushering in the Second Constitutional Monarchy on July 23, 1908, which spanned until 1923. This period epitomized the continuation of the modernization and reformative initiatives previously undertaken by the Ottoman Empire. The overarching objective during the Second Constitutional Monarchy was to stave off potential disintegration of the state by sculpting a unified and all-encompassing identity encapsulated as the Ottoman nationality (Gemici, 2019, p. 51). Even though the Second Constitutional Monarchy was influenced by external forces, its essence was rooted in internal dynamics. During this period, legislative enactments were introduced on myriad subjects, such as safeguarding rights and freedoms of all, ensuring equality, non-arbitrary questioning and arrests, press freedom, and more, thereby providing a legal framework for these rights (Düzenli, 2021, p. 448). Nevertheless, post-proclamation of the Second Constitutional Monarchy, discontent simmered among a section of the populace. One significant catalyst of this discontent was the actions of the Committee of Union and Progress. The Committee, despite its clarion calls of freedom, liberty, and justice, failed to meet societal expectations, plunging the nation into political turbulence. The ensuing political, economic, and social challenges, compounded by the Committee's actions, culminated in the March 31 Rebellion (April 13, 1909) in Istanbul. In its aftermath, Abdülhamid II was dethroned, with Mehmet Reşat V ascending the throne. Subsequent to this upheaval, the Committee of Union and Progress, which had been at the epicenter of the discontent, assumed unchallenged control of the nation's governance (Aysal, 2006, p. 15).

In 1909, constitutional amendments curtailed the sultan's unbridled veto authority, signifying a step towards democratization. The changes mandated legal justifications for punishments and arrests, while simultaneously eliminating the sultan's power to impose exile. Although the parliament made commendable strides until 1910, the Committee of Union and Progress's (CUP) unilateralism bred dissent (Ors, 213, p. 579). This discord spurred incidents like the assassination of journalists, the March 31 Incident, the Bab-ı Ali Raid, political upheavals, and increased military intervention in politics. Consequently, the Unionists effectively curbed the multi-party system, ushering in a period of monist parliamentarianism. This persisted until October 1918. Post the Armistice of Mudros, with the CUP's downfall, a brief phase of anarchic pluralism ensued. By March 1920, political plurality was virtually extinct. Following their coup in 1913, the CUP solidified their power, stifled opposition, and effectively established de facto one-party rule. Anticipating imminent war, the CUP sought alliances to avoid isolation (Kaya, 2020, pp. 33, 34).

Throughout the Constitutional Monarchy era, the Ottoman Empire pursued dual objectives: preserving the state against internal and external pressures and instigating societal transformation. Thus, children, seen as future custodians, became focal points of state-driven initiatives. Consequently, educational structures, including curricula and textbooks, were tailored to this vision (Türkoğlu, 1980, p177). For instance, during this period, amidst geographical, political, and economic tumults, ideologies like Ottomanism, Islamism, and Turkism successively gained prominence. The curriculum of the Civil Knowledge course reflects these ideological shifts. Moreover, the Civil Knowledge textbooks display a nationalism reminiscent of the French model — rooted in historical pride, collective joy, and a shared vision for the future. Throughout the Second Constitutional Monarchy, the educational ethos sought to imbue youth with the conviction that regardless of religious, linguistic, or ethnic differences, everyone within the Ottoman realm was fundamentally an Ottoman. The traumatic territorial losses following the Balkan Wars, however, introduced feelings of betrayal into educational materials. Yet, it's noteworthy that the ideological bent towards Ottomanism persisted. Textbooks post the Balkan Wars echoed the mobilized state ethos, emphasizing Turkish and Muslim identities. Such emphasis was not distinct from Ottomanism; it presented the Turks as the foundational pillar of the Ottoman regime and its mainstay. The textbooks extolled the Turks' exemplary traits through historical narratives. Yet, escalating territorial losses and evolving political landscapes amplified the influence of the Turkism movement, as seen in the evolving educational content (Civelek, 2019, pp. 221-227).

During the Second Constitutional Monarchy, the curricula exhibited a strong emphasis on morality, imbibing varied values. The emphasis on being responsible, honest, hardworking, not greedy, thrifty, and humble were recurrent. While values like health, cleanliness, thrift, and diligence received individual emphasis, expressions associated with choice and individual rights were subtly introduced. By 1913, the curriculum for the Conversations on Morality and Civics (religion, history and civilization) course underscored principles like morality, familial bonds, community engagement, responsibility, respect, benevolence, sacrifice, nationalism, dedication to homeland, constitutional monarchy, law, electoral processes, national sovereignty, governance, and broader societal values. The official ideology of the period delineated the link between individual and state within the context of citizenship. Children were envisaged as future custodians of the state, molded to align with the prevailing official ideology. To bolster shared sentiments, symbols, heroes, and values were strategically employed to forge a cohesive societal memory. Although Ottomanism underpinned the citizenship education, post the Balkan Wars, Turkism began to subtly overshadow it. The education aimed to nurture a unique identity and a profound sense of belonging, frequently using both symbols and heroes (Ozan & Kuş, 2021, pp. 241-246). However, the inception of the Republic of Turkey marked a pivotal transition, heralding a sea change in the understanding of citizenship and the envisioned ideal citizen archetype. Significant societal transformations transpired, precipitated by landmark events like World War I, the War of Independence, the establishment of the Grand National Assembly of Turkey, abolition of the sultanate and caliphate, and Atatürk's ground-breaking principles and reforms.

The nascent Republic of Turkey underscored the urgency to nurture a new generation congruent with its aspirations. Education, especially under the aegis of Mustafa Kemal Atatürk, was accorded paramount importance. The objective was to foster a deep-rooted assimilation of socio-political reforms within the Turkish populace. A course pivotal in molding the citizenry in alignment with the Republic's vision was Civics. This course, instrumental in engendering a generation resonating with the values and principles of the Republic, was deemed vital. With the Republic's foundation, the envisioned citizen model was carved, mirroring the socio-political landscape. In this transformative epoch, education, particularly the Civics course, was entrusted with the onerous responsibility of ingraining these values in the youth. This transition heralded the creation of a modern citizenry, underpinned by Republic's core tenets. Civics courses fervently championed nationalism, urging students to internalize it. Post the triumph in the War of Independence and the Republic's establishment, the educational blueprint aimed to cultivate citizens who were republican, democratic, secular, and had imbibed the Republic's ethos, fostering a profound sense of national unity and patriotism. The envisioned citizen of the early Republic was a nationalist, secular individual, who cherished national and spiritual values, was educated, prioritized national interests, was mentally, physically, and intellectually mature, and was committed to the nation's progress. Such citizens were anticipated to be industrious, productive, and ardently dedicated to their homeland (Altındağ, 2013, p. VIII; Keskin, 2020, p. IV).

Discussion and Result

This study delves into the historical metamorphosis of the archetype of an ideal citizen in Turkey spanning from 1789 to 1938. By intertwining citizenship education with the evolution of this archetype over the aforementioned years, this investigation underscores the implications of the socio-political events of that era and their resonance today. The exploration seeks to discern how citizenship education echoed the myriad changes and developments from 1789 to 1938, the envisaged model of citizenship in the nascent state of Turkey, and, in essence, the shifts in citizenship perception.

The temporal framework from 1789 to 1938 is chosen for its pivotal significance in Turkish societal transformation. The 1789 French Revolution, with its global ramifications, profoundly influenced the trajectory of Turkish society. The reverberations of this revolution are palpably evident in the works of avant-garde intellectuals and writers within the Ottoman Empire. Testimonials from Ottoman scholars lauding the French Revolution buttress this assertion. The transformative impacts of this revolution manifest in milestones such as the Tanzimat Edict, the Reform Edict, and the proclamation of the Constitutional Monarchy. Echoes of the revolution's principles can be gleaned from the slogans vocalized during the March 31st Incident. The core tenets of freedom, equality, and justice served as foundational pillars for both revolutionary movements. Consequently, the French Revolution stands as a paramount catalyst for the defining events in the Ottoman Empire's twilight. Moreover, these influences carved the path leading to the inception of the Republic of Turkey (Karaman, 2018, p. 72). Thus, 1789 is a seminal starting point for this research.

European developments, particularly the 1789 French Revolution, impelled the Ottoman Empire towards pivotal reforms. Within this milieu, the Tanzimat Era represents a paradigmatic shift, witnessing the substitution of the Sultan's decree with the rule of law, heralding the empire's strides towards modernity. This epoch, catalyzed by territorial losses, socio-economic tribulations, and the fragmentation of the state, was also marked by monumental strides in education. Post Tanzimat, there was a conspicuous transformation in citizenship's conceptualization and the anticipated outcomes from citizenship education. The educational vision of this era was sculpted around forging a novel Ottoman identity centered on the ethos of "Ottomanism". Research by Demir (2011) elucidates that the Tanzimat era was seminal for citizenship education, aiming to sculpt a novel Ottoman identity aligned with "Ottomanism". Berker (1945) posits that during this period, Ottoman intellectuals yearned for an education system infused with the secular and liberal ideologies of Europe, fostering unity and cohesiveness. Their aspiration was to amalgamate the diverse constituents of Ottoman society, crafting a unified Ottoman vision. The findings by Demir (2011) and Berker (1945) resonate with this study's outcomes. Given the political and societal shifts in the Tanzimat era, education was leveraged to mold an Ottoman persona imbibed with "Ottomanism", aiming to unify individuals across varied religious, linguistic, and cultural spectra. Hence, it is evident that the Tanzimat era, akin to other epochs, utilized the education system to sculpt individuals congruent with the prevailing regime's ethos. Research by Demir (2010) underscores that education during the Tanzimat era was perceived as the panacea to halt the Ottoman Empire's fragmentation and decline, emphasizing the objective of harmoniously unifying diverse religious and sectarian groups under the Ottoman umbrella. Demir (2010) further elaborates that this era aimed to nurture citizens exhibiting unwavering loyalty to the Ottoman Empire, transcending religious, sectarian, or ethnic affiliations. Parallel sentiments are echoed in Kaya's (2020) research, which posits that the Tanzimat era sought to foster a distinct "Ottoman" identity, irrespective of the varied religious and ethnic identities of the empire's denizens. The congruencies between the findings of Demir (2010), Kaya (2020), and this study are strikingly evident.

The Reform Edict Period stands out as another pivotal juncture that significantly shaped the Turkish society's conception of citizenship and its anticipations from citizenship education. This epoch spanned from 1856 to 1876, commencing with the proclamation of the Edict of Reform and culminating with the adoption of the Ottoman Basic Law and the declaration of the 1st Constitutional Monarchy. This two-decade span has come to be recognized as the Reform Edict Period. Notably, one of the paramount tenets of Western rationalism and the French Revolution - the principle of "equality" - was encapsulated in this era's legal codes, illustrated by the axiom, "a shepherd in the mountain and a vizier will be equal." Such legal articulations underscored the principle that all individuals, irrespective of their station or authority, were to stand equal before the law. The Reform Edict Period, mirroring the Tanzimat Era's objectives, aspired to cultivate citizens steadfastly loyal to the Ottoman Empire, transcending religious, sectarian, or ethnic divisions. Their envisioned archetype of the ideal citizen mirrored these goals. The Ottoman Nationality Law, promulgated on January 28, 1869, was all-encompassing, encompassing both Muslims and non-Muslims alike. By setting forth criteria like legal age and a residency requirement of at least five years within Ottoman territories, this law not only delineated citizenship but also fortified existing rights. It marked a paradigmatic shift from a religious to a more Westernized interpretation of citizenship.

On December 23, 1876, Abdülhamid II enacted the Ottoman Basic Law, only to suspend it and dissolve the parliament by February 14, 1878, amidst the upheavals of the 93 War (1877-1878 Ottoman-Russian War). This brief span, lasting a mere one and a half years, has been christened the First Constitutional Monarchy. During this period, anyone linked to the Ottoman Empire by citizenship ties, irrespective of religion, ethnic lineage, or sect, was acknowledged as an Ottoman citizen. The period's ideal citizenry profile was molded around this premise. Korkut's (2014) assertions affirm this study's conclusions, emphasizing the endeavors to bolster individuals' allegiance to the Ottoman Empire using the rights and freedoms granted by the legal codes.

The subsequent period from 1908 to 1923 is demarcated as the Second Constitutional Monarchy Period. The preeminent objective during this era was the preservation of the state by forging a cohesive and encompassing identity epitomized by the Ottoman nationality. The era recognized children not merely as familial assets but as state's future guarantors. The emphasis shifted towards schools, which emerged as paramount institutions for grooming future generations and forging a cohesive citizenry. This focus on education was a reflection of the Ottoman Empire's modernization endeavors. The introduction of the Civil Knowledge course into the curriculum served as a precursor for subjects like civics and human rights education, which became mainstays throughout the Republican period. Notably, the Civil Knowledge course textbooks bore the influences of the West, predominantly France, and aimed to inculcate sentiments of obedience, allegiance, and a sense of belonging in the newer generations. During this epoch, there was a fervent endeavor to impress upon the youth that anyone residing within the Ottoman Empire's precincts was, foremost, an Ottoman, irrespective of religious, linguistic, or ethnic distinctions. The Ottomanism movement was significantly harnessed to further this cause. However, escalating territorial losses pivoted the emphasis towards the Turkism movement. Civelek's (2019) insights corroborate this study's findings, emphasizing the predominant influence of the Ottomanism movement in the educational and citizenry grooming policies during the Second Constitutional Monarchy Period, with a gradual tilt towards Turkism, especially post the Balkan Wars.

During the Second Constitutional Monarchy Period, the curricula underscored the moral compass, imbuing values such as responsibility, honesty, industriousness, moderation, thriftiness, and humility. While individual attributes like health, cleanliness, and diligence were accentuated, there was a nuanced focus on individual rights and choices. The 1329 (1913) Conversations on Morality and Civics (religion, history and civilization) course curriculum highlighted moral virtues encompassing familial, societal, and national realms, ranging from concepts of respect and benevolence to more complex tenets of constitutionalism and national sovereignty. There was a concerted effort to mold the youth in alignment with the prevailing official ideology, viewing them as both the guardians and future citizens of the state. Efforts to fortify a shared sentiment and collective memory were apparent through the integration of various symbols, heroes, and values. Ozan and Kuş (2021) reaffirmed this approach, highlighting the frequent use of symbols and heroes in citizenship education to forge a renewed identity and a sense of belonging, observations that resonate with the conclusions of this study.

The inception of the Republic of Turkey heralded a fresh chapter. In this nascent era, the imperative to cultivate a new generation, capable of embracing and internalizing the myriad reforms in the socio-political, economic, and legal domains, became palpable. Education was perceived as the quintessential medium for this transformation. Consequently, in the Republic's early years, the Civics course emerged as the cornerstone of citizenship education. The envisioned citizen profile was delineated, reflecting the political architecture in the curricula and textbooks. Amidst this transition, there was an emphasis on the embracement of the new, while concurrently establishing a demarcation from the old. A revitalized political edifice was crafted, with a focus on rallying the new generations around the Republic's core values. The Civics course material evangelized nationalism and steered students in that direction. The post-Republican era aimed at nurturing citizens who were republican, democratic, and secular, having deeply assimilated the ethos of the Republic. Central to this was fostering a national consciousness and profound love for the homeland. The archetypal citizen in the Republic's formative years was envisioned as a secular nationalist, endowed with both national and spiritual values, and educated. The objective was to cultivate individuals who prioritized national interests, dedicated themselves to the country's advancement, and epitomized mental, physical, and intellectual maturity. A citizen who was industrious, contributing towards the nation's progress, was the ideal. Following the demise of Mustafa Kemal Atatürk in 1938, the İsmet İnönü era, also known as the National Chief Period, commenced. During this phase, citizenship education predominantly centered on obligations, emphasizing duties over rights. The education aimed at cultivating individuals with a nationalist and patriotic fervor, willing to subordinate individual interests for societal good when required. Local cultural and religious elements were portrayed as impediments to progress, prompting a shift towards a citizenship model that extolled rationality and universal thinking. Civan (2007) elucidated that İsmet İnönü's period of citizenship education pivoted more towards duty than rights, a sentiment that aligns with the findings of this study.

In summation, pivotal historical moments, including the French Revolution, the Tanzimat, Reform, and Constitutional Monarchy periods, the First World War, and the founding of the Republic of Turkey, have precipitated profound shifts in the envisaged citizen profile. The perception of the ideal citizen and the attributes they should embody has evolved considerably in tandem with the vicissitudes of these distinct periods.

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Examination of Healthy Lifestyle Behaviors in Adult Individuals Over 60 Years of Age

Research Article

Baha Engin CELIKEL[1], Sureyya Yonca SEZER[2], Sadan TOGACAR[3]

[1]Fırat University, Faculty of Education, Department of Sport Science, Elazığ, Türkiye 0000-0002-8429-969X
[2]Fırat University, Faculty of Education, Department of Sport Science, Elazığ, Türkiye 0000-0003-3072-8302
[3]Fırat University, Faculty of Education, Department of Sport Science, Elazığ, Türkiye 0000-0002-8729-9943

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ABSTRACT

The purpose of this study was to examine the healthy living practices of senior people in relation to specific demographic characteristics. The research group was made up of volunteers aged 60 and higher (37 Male, 33 Female) who applied to the family health facility in Elazig's city center in 2022 owing to health issues. The "Personal Information Form" was used as a data collecting instrument in the study, and the "Healthy Lifestyle Behaviors Scale II" was used to measure the participants' healthy living skills. The SPSS statistical package tool was used to examine the data. Significance level was accepted as $p<0.05$. It was observed that there was no statistically significant difference between the gender, age, marital status and educational status of the research group and healthy lifestyle behaviors ($p>0.05$). It was determined that the female participants in the research group had higher mean healthy lifestyle behaviors than the male participants, and the married participants compared to the single participants. Based on the research group's education level, the healthy living behavior score averages of university graduate participants were greater than those of the other groups. In conclusion, the research group's healthy lifestyle behavior averages were moderate, and the female participants' healthy lifestyle behavior averages were higher than the male participants'. In light of this knowledge, we believe that developing a regular fitness program for senior people is critical to living a healthy life.

Keywords:
Agedı, Healthy Life Style Behaviors, Gender

Introduction

Individuals' life expectancy has improved as death rates have decreased due to advances in technology, health systems, and health services. Furthermore, since birth rates have declined, the share of the world's

[1]Corresponding author's address: Fırat Üniversitesi
Telephone: +905387698644
e-mail: becelikel@firat.edu.tr
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senior population has grown. The elderly population is defined by the World Health Organization as those aged 65 and up (Medetalibeyoglu and Ezirmik, 2020).

Scientific research is a prerequisite for developments in educational sciences, as in all disciplines. It also contains quantitative and qualitative information about research conducted in any branch of science and descriptive information about the location of the field. As in all fields, ensuring development in the field of adult education, having a strong research policy, encouraging research, and transferring research results into practice (Tekin, 1991). The history of not only adult education research, but all educational research in Turkey begins with the process of perceiving education as a field of science as well as a field of application. At the beginning of the Republican period, developments such as the invitation of foreigners from the West to the country, the translation of many works related to education into our language, and the offers of educators to go abroad were the factors that accelerated the tendency towards educational science in Turkey. The institutionalization process of educational sciences began in 1922 with the start of "education" courses with knowledge in the Philosophy Department of Istanbul University, and this process was completed in 1965 at Ankara University. It reached an important stage with the establishment of the Faculty of Education (Sciences) (Ünal and Özsoy, 1999). It is seen that research in the field of adult education was carried out only after the 1960s, in parallel with the understanding that education should be considered as a science. With the establishment of Ankara University Faculty of Education (Sciences) in 1965, the field of adult education developed as an academic discipline (Yıldız 2004).

Aging is a physiologic process that results in the permanent loss of physical and mental skills in humans. Aside from personal characteristics and inherited variables, living style, employment, food, chronic diseases, environmental conditions, and psychological structure all have a substantial impact on this process (Tambag, 2013). Sedentary lifestyle, metabolic disorders that develop as a result of aging in the organism, and poor nutrition are vitally essential for this time, particularly good lifestyle habits to occur in the lives of humans. While in the past, health workers and hospitals were associated with maintaining and establishing a healthy lifestyle, the importance of healthy lifestyle habits is growing with the advancement of health technology and the health sector in the coming years. Individuals must be able to regulate their health-related habits, engage in regular physical exercise, and pick movements that are beneficial to their health while going about their everyday lives in order to live a healthy lifestyle. The ability of individuals to turn these behaviors into habits can ensure that both their health and physical fitness status are at a good level and healthy lifestyle behaviors become habits (Bozhüyük et al., 2012).

Among the healthy lifestyle behaviors; nutrition, stress control, physical activity, self-actualization, getting support from people and health responsibility (Tambağ, 2013).

Nutrition; Thanks to adequate and balanced nutrition, it is possible to be physically and mentally healthy in every period of life and to maintain it. However, an adequate and balanced diet can be considered a healthy diet. Daily calorie needs should be met, protein should be included in the nutrition content, fat, sodium and refined sugar should be included in small amounts. In addition, the foods consumed; It should be rich in complex carbohydrates, minerals and vitamins and contain plenty of fiber (Tambağ, 2013). Since water constitutes 70% of the human body and is of vital importance in maintaining cellular homeostasis, adequate water consumption is also extremely important in the elderly (Muz et al., 2017).

Stress control; Stress is a situation in which the individual perceives the changes in the internal and external environment as danger or threat, maintains his balance by adapting when he can cope, and disrupts his harmony and balance when he cannot cope. A little stress is required to sustain life. Because stress is a factor that activates individuals in order to maintain life, solve our problems and improve the quality of life. (Tambag, 2013).

physical activity and exercise; Although the terms physical activity and exercise are sometimes used interchangeably, they have different meanings. physical activity; While the daily work includes muscle activities such as sitting-standing, walking around, taking a bath, exercise generally includes special, continuous and regular muscle movements that can be found in a sports activity (Tambağ, 2013).

Exercise; It creates positive effects in maintaining mental health and providing psychological vigor, reducing anxiety, stress and depression levels, on the other hand, it provides an increase in weight loss and a decrease in smoking (Rejeski and Mihalko, 2001).

Self-Realization; According to Maslow (1943), self-actualization is considered an important element in the hierarchy of needs. It is explained as an individual's ability to express himself, to reveal his potential in every aspect and to use his potential in the best way. In other words, it is the capacity that an individual has because they want to know themselves (Tekke & Coşkun, 2019).

Getting support from people;It is said that the risk of death increases in the elderly when social support is lacking, and that improvement in healthy lifestyle behaviors is observed in those who receive adequate social support (Dhar, 2001). Studies have shown that elderly individuals who do not have good social relations are in a worse condition in terms of their health status and quality of life compared to elderly individuals who have good social relations (Arslantaş, 2011; Aksüllü and Doğan 2004; Lee et al. 2006).

Health Responsibility; Taking responsibility for health; It is the individual's attitude and behavior differences regarding behaviors that protect his/her health, prevent disease and improve health. (Tambag, 2013).

As individuals age; physical, physiological and psychological changes occur. Living alone, losing a life partner, being away from family, work and friends, isolating oneself from society, addiction and psychological problems are negative changes that will occur in the healthy lifestyle of the elderly (Aksoy, 2012).

In order to cope with these ailments (stressful life, unhealthy diet, insufficient physical activity, etc.) and problems seen in the organism in old age, and to maintain a healthy life, regular physical activity, adequate and balanced nutrition, socialization, all these factors are especially important for a healthy life. they report that it becomes important as the age progresses (Muz et al.,2017; Tambağ,2013; Rejeski and Mihalko,2001; Tekke and Coşkun,2019; Arslantaş,2011; Aksüllü and Doğan 2004; Lee et al. 2006). In accordance with this research, physical exercise and good living choices are also vital in old age for maintaining a high quality of life. The purpose of this study was to examine the healthy living practices of senior people in relation to specific demographic characteristics.

Methodology

In this section, information about the purpose of the research, the type of research and the place where it was conducted, the universe and the sample constituting the research, the data collection materials used in the research, and the analysis of the data as a result of gathering the obtained information are given.

Purpose of the research

The aim of this research is to examine healthy lifestyle behaviors in individuals over 60 years old and to determine the precautions to be taken according to the result.

Population and Sample of the Research

The universe of the study consisted of male and female individuals aged 60 and over who applied to the Family Health Center due to health problems. Any of the sample selection methods were not selected, and male and female volunteer individuals over the age of 60 who applied to the health institution at the time of the research and who met the sample selection criteria were included in the study. In this period of time (1 month period), a total of 85 elderly people applied to the Family Health Center, but 70 elderly people who did not have vision-hearing-perception problems and agreed to be included in the study were included in the study. The elderly who have vision, hearing and perception problems, and those who are unable to answer the questions for any reason, were not included in the study.

Data Collection Materials

In order to collect data about the research, 70 individuals over the age of 60 who were interviewed were read the "Voluntary Participation Form in the Research" and their signatures were obtained and they participated in the study with their consent. The 'Demographic Information Form' and the 'Healthy Lifestyle Behaviors Scale II' were applied to 70 individuals over the age of 60 who voluntarily participated in the study. A consent form was signed by the participants stating that they voluntarily participated in the study. The questions were read aloud to the individuals face-to-face and the answers were recorded in the form.

Data Collection Tools

To gather data for the study, information about the study was provided, and participants were included by getting their agreement by passing the "Voluntary Participation Form to the Research." The questionnaire approach was utilized in the study. Bahar et al., (2008) used the "Personal Information Form" to determine the demographic information of the participants and the scale developed by Walker et al., (1987) and revised by Walker and Hill-Polerecky (1996) to determine the healthy living skills of the participants in the first part of the data collection tool. The participants were given the "Healthy Lifestyle Behaviors Scale II," which consisted of 52 items translated into Turkish.

Healthy Life Style Behaviors Scale II (HLSB II)

The Healthy Lifestyle Behaviors Scale consists of 52 items and 6 factors and is a four-point Likert type scale. the lowest score is 52, the highest score is 208 (Bahar et al., 2008). The Cronbach-α value of the scale is .92. In our study, the reliability coefficient of the scale was .88.

Sub Dimensipon Score Limitations:

Helath Responsibility: lowest soce: 9 highest score: 36

Physical Activity: lowest score: 8 highest score: 32

Nutirition: lowest score: 9 highest score: 36

Spiritual development: lowest score: 9 highest score: 36

Interpersonal relationships: lowest score: 9 highest score: 36

Stress management: lowest score: 8 highest score: 32

Evaluation of Data

The data was examined using the SPSS statistical package application during the analytical process. Descriptive statistics were used to describe the research group's demographic information and healthy living activities. Non-parametric tests were utilized in the analysis of data that were judged not to have a normal distribution when the normality of the data was examined. Whitney Mann The U test was used to compare and assess the significance of the means of two independent groups, while the Kruskal Wallis test was used to examine the significance of the difference between the means of three or more groups. The level for significance was determined at p 0.05.

Findings

Table 1. Demographical Information of Research Group

Demogrphic Information (n=70)		**N**	**%**
Gender	Female	33	47,14
	Male	37	52,86
Age	60-70 years old	17	24,28
	71-80 years old	37	52,86
	81-90 years old	14	20
	90-100 years old	2	2,86
Education Status	Illiterate	28	40
	Literate	19	27,14
	Primary-Secondary	8	11,42
	High School	13	18,57
	University	2	2,86
Marital Status	Married	14	20
	Single	56	80

When the demographic characteristics of the participants in the research group are examined, it is monitored that 47.14% are female and 52.86% are male. It was determined that; 24.28% of the participants were between the ages of 60-70, 52.86% between the ages of 71-80, 20% between the ages of 81-90 and 2.86% between the ages of 91-100. 40% of the participants were illiterate, 27.14% were literate, 11.42% were primary school-secondary school graduates, 18.57% were high school graduates and 2.86% were university graduates. Besides, 20% of the elderly were married and 80% were single (Table 1).

Table 2. Distribution of the Research Group's Healthy Lifestyle Behaviors Scale-II Sub-Dimension Mean Scores

Scale and Sub Dimensions	**Min.**	**Max.**	**Mean**	**sd**
Health Responsibility	14	44	19,0	4,2
Physical Activity	8	22	10,8	3
Nutrition	16	54	21,9	4,6
Spiritual Development	11	26	18,5	3,4
Interporsonal Relations	12	27	19,9	3,8
Stress Management	10	21	14,1	2,8
Health Life Style Behaviours Total	72	166	104,3	17,5

When Table 2 is assessed, the mean total score of healthy lifestyle behaviors is 104.3±17.5, the mean score of health responsibility sub-dimension is 19.0±4.2, the mean score of physical activity sub-dimension is 10.8±3.0. sub-dimension mean score is 21.9±4.6, spiritual development sub-dimension mean score is 18.5±3.4, interpersonal relations sub-dimension mean score is 19.9±3, and stress management sub-dimension mean score is 14.1±2. It was determined as 8.

Table 3. Analysis of the Research Group by Demographic Characteristics

Variances	**Healthy Lifestyle Behaviors Scale Sub-Dimensions**						**Healthy Lifestyle Behaviours Scale Total Score averages**
	Health REsponsibility	**Physical Activity**	**Nutrition**	**Spiritual Develeopment**	**Interpersonal REIations**	**Stress Management**	
Gender							
Female	19.8±5.4	10.6±3.4	22.3±6.3	18.2±4.1	19.9±4.3	14.2±3.3	105.2±21.2
Male	18.2±2.7	11.0±2.7	21.5±2.3	18.7±2.7	20.0±3.4	14.0±2.3	103.6±13.6
U	511.0	463.5	604.5	536.5	583.5	590.0	596.5
P	.237	.078	.943	.381	.749	.808	.869
Age							
60-70 years old	18.3±2.8	11.7±3.9	23.1±**8.3**	19.5±3.7	21.0±3.9	15.5±3.0	108.8±21.8
71-80 years old	19.5±5.3	10.5±2.4	21.5±2.7	18.0±3.4	19.4±3.9	13.9±2.9	103.1±16.3
81-90 years old	18.0±2.2	10.3±3.5	21.2±2.3	17.8±3.3	19.3±3.6	13.5±2.7	100.4±15.4
91-100 years old	21.0±2.8	11.5±3.5	-	21.5±0.7	24.0±2.8	-	117.0±2.8
X^2	2.220	2.441	3.032	**5.501**	4.487	3.640	4.720
P	.528	.486	.387	.139	.213	.303	.193
Marital Status							
Married	19.2±3.6	10.6±4.1	20.9±3.3	19.0±4.4	20.5±4.5	14.5±3.5	104.9±21.5
Single	18.9±4.4	10.8±2.7	22.1±4.9	18.3±3.2	19.8±3.7	14.0±2.7	104.2±16.6
U	377.0	**281.5**	331.0	365.0	351.0	367.5	381.0
P	.824	.098	.365	.690	.545	.717	.872
Education Status							
Illiterate	19.1±5.6	**9.8±2.0**	20.7±2.6	17.2±3.1	18.5±3.5	**13.3±2.5**	**98.8±14.4**
Literate	18.2±2.9	11.4±3.6	22.6±8.0	18.8±3.8	20.4±4.5	14.6±3.2	106.2±22.1
Primary-Secondary	18.8±3.0	12.0±4.5	23.3±1.7	19.3±3.5	21.1±3.0	15.2±2.9	110.0±16.8
High School	19.6±3.4	11.4± 2.9	22.4±2.1	19.6±3.2	21.1±3.5	14.6±2.9	109.0±16.1
University	21.0±2.8	9.5±0.7	23.0±1.4	20.5±2.1	22.5±4.9	14.0±1.4	110.5±12.0
X^2	3.685	6.393	**10.470**	7.944	7.692	4.610	6.537
P	.450	.172	**.033**	.094	.104	.330	.162

Results are presented as Mean±Standard Deviation. *U=Mann Whitney-U Test; ** $\chi 2$=Kruskal-Wallis

Discussion

The study found no statistically significant difference in the participants' gender, age, marital status, education status, and healthy lifestyle activities (p>0.05). It was discovered that female research participants had higher mean healthy lifestyle activities than male participants, and married individuals had higher mean healthy lifestyle behaviors than single people. According to the research group's education level, the university graduate participants' healthy lifestyle behavior score averages were greater than the participants in the other groups. Furthermore, the research group's mean score for healthy living practices was found to be moderate at 104.3±17.5 When the studies are examined; In their study, Kulakçı et al. (2012) found the total mean of HLBS II (123.74±22.42) above the moderate level. Motaghi & Dolatabadi's (2016) studies and Movahedi et al.'s (2016) studies also reported that healthy lifestyle behaviors in elderly individuals are moderate. In their research of old persons living in nursing homes, Çelik et al. (2017) discovered that the overall mean score of HLBS II was above the middle level (143.8±20.8). When the study's findings are compared to the literature, it is clear that it is consistent. Age, gender, and educational status have all been linked to healthy living practices in several research (Li & Zhang, 2013). Erdogan et al., (2023) discovered that the participants' exercise level was insufficient and that their healthy lifestyle practices were moderate. Yanik and Nogay statistical age ranges in accordance with the research animals carried out by While determining the assumption variable (8), it was not structured by Zoroğlu, on the contrary, age SYBDÖ II recorded the total record (58). Made by Profis and Tuval operation, on the other hand, is the difference between age and HLBS II total scale scores. no internal difference was detected (7). Studies compatible with our study in the literature There is also a demonstration with different results, albeit together. As age progresses Values such as the end of the performance of the data, the acquisition of muscles and the values of the data obtained Living with increasing age, although the efficacy of data is expected to end We look forward to your health care. Relationship between age and science scores according to the results should be examined in more detail In their study, Çelik et al. (2017) discovered that marital status influences physical activity. In the study conducted by Yıldırım (2005) on university students, the exercise scores of male students compared to females; Zaybak et al. (2004) found that women's health responsibility scores were higher than men's in a study conducted with university students. Also, in Esin's (1997) study with workers and Ergün et al. (2004) found that men's healthy lifestyle behaviors scores were higher than women's in their study with high school students. Contrary to this result, Ardıç's (2008) study on adolescents found that women's health responsibility, positive outlook on life, stress management and interpersonal relations scores were higher than men's. Aside from these research, Kulakçı et al. (2012) found that marital status had no effect on healthy living behaviors and sub-dimensions in the elderly. In their study, Yılmaz et al. (2019) discovered that only education level was associated to HLBS II and concluded that positive healthy behaviors were higher in those with higher education levels. The physical activity levels of the participants in the study conducted by Bozkurt et al., (2021) were not at the desired level, and the health perception levels of the participants who received nutrition education were higher than those who did not receive nutrition education. Softa et al. (2016) specified in their study that education level is an important parameter that affects healthy aging and social support systems. Healthy lifestyle behaviors significantly affect healthy aging. Education is at the top of the factors affecting a healthy lifestyle. Being in realization of the individual's health status, exhibiting positive health behaviors, applying what he knows correctly to his life and avoiding wrong behaviors will bring a healthy aging along with a healthy life. As the level of education increases, elderly individuals who become conscious are able to protect themselves from these diseases because they know better the factors that cause disease formation (Khorsid et al. 2004). Erdogan et al., (2021) discovered that the participants' healthy eating behaviors were not at the intended level, and their physical activity levels were insufficient. In the study of Pasinlioğlu and Gözüm (1998), the result of HLBD scores according to gender was found to be moderate and no statistically significant difference was found between men and women. Kaya et al. (2008) did not find a significant relationship between HLBD and gender in their study on faculty members. Likewise, in the studies conducted by AlKandari (2007) and Choi Hui (2002) on nursing students, no significant difference was found between the general total score and gender. Pasinoğlu and Gözüm (1998) reported that women's HLBD nutrition subgroup mean scores were significantly higher than men's. Ozbasaran et al. In a study conducted on college students in 2004, the mean HLBS scores of female students were found to be higher than that of males. Curcani et al. (2010) found that single nurses had higher stress management score averages in their study on nurses. Bahar et al. (2013) found a statistically significant difference between marital status and physical activity in Turkish women. In the study conducted by Güner and Demir (2006) on operating room nurses, it was determined that the mean physical activity scores of singles were higher than those of married ones. Al Ma'aitah et al. (1998) conducted a study on Jordanian women and found that single individuals had higher physical activity and stress management mean scores. In addition, in the study conducted by Karakoç (2006), the physical activity and stress management subgroups mean scores of those who are single were determined to be higher. Yılmaz (2020) discovered in his research that the ability to adjust to old age rises with education level. In Koçoğlu's (2006) study, when the relationship between marital status and quality of life was examined, those with single marital status received the highest score in quality of life; Marital status widows were found to have the lowest scores. Tizar et al., (2022) discovered that participants' nutritional knowledge and attitudes toward healthy eating were modest in their study. Similarly, işman and Kutlu (2016) found that illiterate persons have a worse level of adaption to old age in their study. According to the findings of a study done by Polat and Kahraman (2013), older people with higher education levels have a greater ability to adapt to old age.

As a consequence, it was determined that the research group's healthy lifestyle behavior averages were moderate, that female participants were higher than male participants, and that married participants' healthy lifestyle behavior averages were higher than single participants'. According to this information, we believe that developing a regular fitness program and educating the elderly on good living practices is critical for individuals to live a healthy life.

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The Effectiveness of Augmented Reality Applications in Social Studies Course*

Research Article

Suleyman ASLAN[1], Zafer CAKMAK[2]

[1]Fırat University, Faculty of Education, Department of Educational Science, Elazığ, Türkiye 0000-0002-7487-1920
[2]Fırat University, Faculty of Education, Department of Educational Science, Elazığ, Türkiye 0000-0002-0612-814X

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ABSTRACT

The aim of this study is to examine the effect of Augmented Reality applications on students' academic achievement and retention of learning in the learning area of "People,Places and Environments" in the "Life on Earth Unit" of the 6th Grade Social Studies Course in the 2019-2020 Fall Semester.The quasi-experimental research was conducted on a total of 62 students studying in the 6th grade of Tevfik Fikret Secondary School in Diyarbakır Sur district in the 2019-2020 Fall Semester.Of these students, 31 were assigned to the experimental group and 31 to the control group. The data were collected with an achievement test developed by the researcher. The test consisting of a total of 30 multiple-choice items was applied to both groups as pretest, posttest and retention test. The data obtained from these applications were analyzed with parametric tests such as independent groups "t" test, dependent groups "t" test and eta square after normality tests. In the study, it was concluded that teaching supported by Augmented Reality (AR) applications in middle school social studies course was more effective than the current teaching in increasing academic achievement. It was also determined that AR-supported instruction provided more permanent learning compared to the current instruction. In the study, it was evaluated that this situation may be due to the higher level of learning obtained with the cognitive and affective support provided by AR, which increases the retention of what is learned. At the end of the research, it was evaluated that the fact that AR provides both academic success and permanent learning may be due to the fact that this technology makes the messages (stimuli) more effective in the lessons and the students react to them more strongly. From this point of view, it was inferred that AR is suitable for the mental functioning of current middle school students with high virtual and digital competence.

Keywords:
Augmented Reality, Academic Success, Enduring Learning, Social Studies Teaching

*This article is derived from PhD dissertation titled 'The Effectiveness of Using Augmented Reality Applications in Social Studies Course on Students' Course Success and Retention of Learning.

[1]Corresponding author's address: Fırat University
Telephone: +90
e-mail: suleymanaslan1071@gmail.com
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Introduction

It is an unavoidable fact that technology and especially virtual and digital technologies are reflected in every stage of life in today's so-called Information Age. The effects of this reflection are felt intensely in education as in all other fields and sectors. Today, with the impact of virtual and digital technologies, serious changes and transformations are taking place in the school system where education is carried out depending on time and space. The recent Covid-19 epidemic has made this change and transition more visible.

The Covid-19 Pandemic period (Anderson 2020, Zimerman, 2020; cited in Bozkurt, 2020, p. 118), the largest social experiment in history, which was tested on approximately 1.6 billion students worldwide, especially in 2020 and 2021, provided valuable information about the combination of education and virtual and digital technologies. Also during this period, the virtual and digital-based distance education implemented by the Ministry of National Education (MoNE) in Turkey through the Education Information Network (EBA) and official television channels was an important experience. These experiences in particular are crucial for providing insight into the future.

All these experiences are essential not only for compensating the negative impacts caused by the Covid-19 Pandemic in education and training, but also to ensure that everyone is adequately prepared for extreme conditions comparable to the pandemic in issue in the future. Because it is widely accepted that in both media and educational literature that even if the pandemic passes, there will not be return to education and training based entirely on traditional time and space-based, face-to-face interaction. According to scientific predictions and forecasts in this direction, the necessity of virtual and digital-based education and training is not only for extraordinary situations such as pandemics, but also because it is a reality of the Information Age and the 21st century. Because learning environments that develop and change with technology have brought up many new learning approaches such as virtual learning, e-learning, online learning, mobile learning, multimedia learning, self-directed learning, self-regulated learning, anywhere learning, game-based learning, synchronous-asynchronous learning, most of which are supported by the internet (Fırat, 2016, p. 145).

In today's world where information technologies are reflected in almost every stage of social life, virtual and digital technologies are of great importance for the Social Studies Lesson Teaching Plan (SSLTP) to raise individuals who are compatible with this life. In the related studies conducted in our country, results such as the determination that teachers have positive attitudes towards the use of information-based virtual and digital technologies in the Social Studies Course (SSC) (Ünal, Özmen, & Er, 2013; Özel, 2014) and the positive effect of MoNE's EBA on academic achievement in social studies teaching (Yerli, 2018) are very important opportunities in terms of Turkey's adaptation to the Information Age.

In order to turn these opportunities into advantages, it is critical to use the technologies appropriate for the era in the teaching of SSC in the right way.

Virtual and digital technologies used in SSC can be listed as internet, hypermedia, software tools (Daşdemir, 2019, p.42). Due to its subject matter, this study focuses on Augmented Reality (AR) among these technologies. The transfer of online environments and three-dimensional digital assets (pictures, sound, text, animation, etc.) onto the current life image is referred to as augmented reality. The first ideas about AR can be traced back to the famous novelist L. Frank Baum's "The Master Key" published in 1901 (Kamacıoğlu, 2018, p. 22). Although the history of AR as a technological tool goes back to the late 1950s, it was essentially formed in the 1960s with the advancement of the research initiated by Ivan Sutherland and his students on computer graphics application platforms at Harvard and Utah higher education institutions in the 1970s. The first use of augmented reality applications in the literature coincides with the 1990s at NASA (Kılıç, 2017, p. 91; Erbaş & Demirer, 2014, p. 9). Subsequently, AR, which developed intertwined with virtual reality, started to be used in the 1990s (Göçmen, 2018, p. 176).

Today, AR applications, which have made a breakthrough especially as a result of the rapid development in mobile technologies, are widely applied in business lines such as strategic, engineering, medical, sports, entertainment and advertising sector, museology, etc. (Kamacıoğlu, 2018, p. 2). In this respect, the use of AR in education is still new, and it is not too late to utilize the support of this technology in the process of total education and SSC teaching in Turkey.

As mentioned above, the definition of AR, which has a wide range of usage areas, is generally shaped around a derivative of virtual validity or a more intensively used form of virtual reality. According to Milgram and Kishino (1994), AR is "a reality environment and applications in which virtual environment products are used instead of real world objects" (cited in Erbaş & Demirer, 2014, p.8). According to Özarslan (2013), AR is an environment where the real world meets the digital world simultaneously and meets the user on the same emotional platforms (cited in Ersoy, Duman, Öncü, 2016, p. 39). AR, which is also described as the expansion and advancement of virtual reality, allows program implementers to make online compatible with the real world and apply them. Offering an artificial environment independent from the real environment, AR is created by overlaying computer data-based data produced in virtual environments, enriched with multimedia objects such as pictures, sounds, images, etc. on a simultaneous and compatible environment (Göçmen, 2018, p. 177).

AR is a technology data-based application that combines virtual world data with the real world to create a clear and distinct reality (Avcılar, Demirgüneş, & Açar, 2018). AR allows computer programmers to add virtual world images and real world images simultaneously and display both on the same screen (Uluyol & Eryılmaz, 2012). Zhu, Owen Li, & Lee (2004) defined AR as a virtuality enhancement and reality application in which users interact with online entities in the real world where they interact with the real world without an application that will cause a great deal of technological developments in the world.

The applications and contents in this study enrich the teaching and learning environment with ICT audio, visual and graphical data, thus supporting a much wider environment and a much more active learning environment than books and screens. For now, the enrichment of the teaching and learning environment is done on the visual and auditory grounds, but in the not too distant future, developments that will enable the participation of other senses to these two senses will not be surprising.

In fact, with the development of mobile technologies, the educational environment tends to expand wherever the individual goes. Thus, personal computers, tablets, cell phones, and even smart watches or wristbands are likely to become rich learning environments.

The aim of this study consists of experimental methods and their analysis to prove that the use of augmented reality applications in the social studies course enriches the course content and thus increases the retention periods of students' learning along with course success. AR has the potential to provide alternative openings such as delivering learning phenomena and objects that cannot be carried to the education and training environment due to reasons such as time, cost and security, etc. to anyone who wants them in a virtual environment. Additionally, AR makes significant contributions to the comprehension of abstract subjects and phenomena that are difficult to comprehend in education and training. Due to these opportunities and its potential, AR has become a subject that attracts the attention of educators and academics working on the subject more and more every day. The general purpose of this study is to examine the effects of AR applications on students' academic achievement and retention of learning in the learning area of 'People, Places and Environments' in the "Life on Earth Unit" of the 6th Grade SSC "Life on Earth Unit" in the 2019-2020 Fall Semester. It has been determined that the researches conducted in the country in the field of education related to AR technology are related to disciplines such as physics, mathematics, science and English lessons. It is thought that the presence of academic research on AR technology in the Social Sciences department will contribute to the social sciences literature.

This study has an important place in terms of showing the usability of augmented reality applications in both social studies and other courses.

Methodolody

The research was carried out with the Experimental Research Model, which is one of the quantitative research design types. In quantitative research, the experimental design approach can be used to decide whether an independent variable has an effect on a dependent outcome variable (Creswell & Plano-Clark, 2015 cited in: Vahit, 2019, p. 55). Experimental research is the research that produces data that is desired to be researched under the direct supervision of the researcher in order to determine the cause and effect relationship. When used appropriately, it is the most reliable and valid way to test the cause-effect relationship (Mcmillian & Schumacher, 2006, cited in Uslu, 2016, p. 41). This design, called the experimental model by Karasar (2005), is also called the unequal (pretest-posttest) control group method, which involves studying more than one sample in a long time period (Ekiz, 2003; Karakuş & Başıbüyük, 2009). In some sources (Can, 2016), it is emphasized that such research should be called quasi-experimental because the experimental processes carried out in disciplines such as humanities and social sciences cannot be fully controlled. Regarding the subject, according to Karasar (2005), quasi-trial models are used when the controls required by real experimental models are not provided or even they are not sufficient, and this model is a suitable option especially for studies in the field of social sciences. In this respect, the research; It is more appropriate to call it a quasi-experimental designs (Büyüköztürk, 2014, p. 10) since it is done in social sciences and internal and external validity cannot be fully ensured in the experimental process. As a matter of fact, in cases where experimental control is not possible, quasi-experimental studies are used to make sense of causality between variables (Vahit, 2019). The basic condition for a scientific study to be experimental or quasi-experimental is that the subjects are assigned to the experimental procedure conditions impartially (randomly). In order for the variance in the dependent variable to be associated with the applied experimental procedure (independent variable) in the experimental design studied, the following two conditions must be met:

a) impartial assignment to groups;

b) it can be evaluated as controlling the effects of other independent variables (external variables, control-disrupting variables) that affect the dependent variable, but whose effects could not be investigated in this study (Büyüköztürk, 2014, p.3). In experimental/quasi-experimental models, it can be explained as research models in which the data to be researched is produced in a process where the researcher is directly active in order to try to determine the cause-effect relationships. The aim is to establish a cause and effect relationship between dependent and independent variables. The difference of this model from scanning models; While the existing situation is observed with scanning models, it is a question that the researcher produces what is wanted to be researched in the trial model. In this model; Objectives can often be stated in the form of a hypothesis. In addition, there is a comparison in the nature of the trial model (Karasar, 2005, p.87). A hypothesis is a proposition, statement or analysis that stands out in relation to the subject studied, has not been proven to be true or false, but whose accuracy is previously believed (Seyidoğlu, 1997, p.13). The comparison made through the hypotheses in the experimental model was made as follows in this research: In the study, which aims to determine the effects of current teaching and AR supported teaching on the academic success of students and the permanence of what has been learned in social studies teaching, this comparison; in the form of a comparison of the distinctions between current teaching (control group) and AR supported teaching (experimental group). The second comparison in the research refers to the comparison of the changes in the existing teaching and AR supported teaching (between the pre-test and the post-test). In the research; trial used to compare the distinctions between current teaching (control group) and AR assisted teaching (experimental group); The independent variable (AR supported teaching) affected the dependent variable (academic success and permanence in learning) and the results were monitored. In the research, which is considered as the prerequisite of experimental research (Karasar, 2005, p.88); The conditions were provided for the researcher to be able to change the variables, for these changes to be controlled, and for the researcher to observe the effect of changing the variables. Experimental research, the general framework of which was drawn as explained above, was designed and carried out with the Pretest-Posttest Control Group Model (Karasar, 2005, p. 97), in which these groups were formed by unbiased assignment and multi-group, which is considered the highest scientific value.

Population and Sample of the Research

The study group, also called the participant group in the literature, consists of a total of 62 students studying in the 6th grade of Tevfik Fikret Secondary School in Sur district of Diyarbakır province in the fall semester of the 2019-2020 academic year. In the Fall Semester of the 2019-2020 Academic Year, there were a total of five 6th graders at Tevfik Fikret Secondary School. Among these, two classes that were close to each other in terms of academic characteristics and having a smart cell phone/tablet were determined by drawing lots. As a result of the drawing of lots, 6-C (Experimental) and 6-D (Control) classes were selected to form the study group of the research. These students were randomly assigned to 31 experimental and 31 control groups according to the criterion of impartiality. In determining these students, gender, having a smart cell phone or tablet and pre-test score average were taken into consideration.

Data Collection Tools

The data in the study were obtained with the People, Places and Environments Achievement Test (PPEALEU) in the Life on Earth Unit. The necessary official permissions were first obtained for the implementation of the PPEALEU, which was developed by the researcher as mentioned above. In this context, the necessary official permissions were obtained from the Ethics Committee of Fırat University and the Provincial Directorate of National Education of Diyarbakır Governorate. Subsequently, the necessary explanations and information were given to the administrator of Tevfik Fikret Secondary School in Sur district of Diyarbakır province, 6th grade teachers and the parents of the experimental and control group students. After that, before the start of the experimental process, PPEALEU was administered as a pretest (ANNEX-00) to a total of 62 students (31 experimental and 31 control group students) studying in the 6th grade of Tevfik Fikret Secondary School in Sur district of Diyarbakır province in the Fall Semester of the 2019-2020 Academic Year. The application was carried out by the researcher by making necessary explanations to the students. The data obtained from the application were analyzed for two purposes. First, to confirm the equivalence of the experimental and control group students; second, to determine the readiness level of both groups at the beginning of the experimental procedure, the same test was administered as a post-test to both the experimental and control groups after a total of five weeks of experimental procedure, and as a retention test to both the experimental and control groups four weeks after the post-test. In all three applications, the test was administered to the experimental and control group students on the same day at different times and in separate classes without any time limitation by taking the necessary convenience and reliability measures (students were seated individually and at a distance from each other, questions or questions about the exam or questions were answered by answering student questions and problems).

Analysis of Data

The PPEALEU, which was used as a data collection tool in the study, was administered to the experimental and control groups three times at certain time intervals as pretest, posttest and retention test. This test, consisting of 30 items with four options, was scored as correct answer (1) and incorrect answer (0). Scoring was calculated based on the total correct answers, since there were no blank items and wrong answers did not take away the correct answer. Accordingly, the lowest score that can be obtained from the test is "0" and the highest score is "30". Before analyzing the data obtained from these applications, the KR-20 reliability coefficient was used to calculate the internal reliability of the PPEALEU (Büyüköztürk, 2014, p. 183). The item difficulty index and item discrimination index of the same test were calculated using Microsoft Excell Program. After these calculations, the data (academic achievement scores of the experimental and control group students) obtained with the PPEALEU, whose validity and reliability were ensured, were analyzed using the SPSS package program.

Findings

In this part of the study, the data collected in the research, as a result of the existing teaching to the control group and the experimental process in which AR-supported teaching was applied to the experimental group, and through the posttest and retention-test applied after the experimental process, were analyzed within the framework of the research hypotheses and presented and described in the accompanying tables. Below, the findings and descriptions obtained within the framework of the systematic of research hypotheses are given in order.

Findings and Interpretations Regarding the First Hypothesis of the Study

Under this title, in order to test the first hypothesis (H1) of the research, it was analyzed whether there was a significant difference between the posttest achievement mean scores of the experimental and control groups. Therefore, before the unrelated groups "t" test, the normality of the distribution of the said scores was checked. The results of Kolmogorov-Smirnov and Shapiro-Wilk normality tests, which show the distribution of posttest mean scores of the experimental and control groups, are given in Table 1.

Table 1. Normality Test Results of the Experimental and Control Groups Posttest Achievement Scores

		Kolmogorov-Smirnov			**Shapiro-Wilk**		
Tests/	**Groups**	Statistic	Sd	P	Statistic	Sd	P
Posttest	Experiment	.230	31	.200	.873	31	.711
	Control	.096	31	.004	.977	31	.221

According to the results in Table 1 showing the posttest score distribution of the experimental and control groups; The significance value ($p>.05$) of the K-S and S-W test values shows that the distribution is normal. After that, skewness and kurtosis tests were performed to test the normality of the groups. The data on this is given in Table 2.

Table 2. Skewness and Kurtosis Values of Experimental and Control Group Posttest Scores

Groups	**Skewness**	**Kurtosis**
Experiment	.129	.061
Control	-.943	-.162

The results in Table 2 show that the posttest achievement scores of the experimental and control groups are in the range of the relevant values (between -2 and +2), and therefore the skewness and kurtosis values are normal (George & Mallerry, 2003). After that, the Levene test, which was used to test whether there was a statistically significant difference between the variances of the posttest scores of the experimental and control groups, showed that there was no significant difference between the variances of the groups. Thus, it was decided to use the unrelated groups "t" test, one of the paired groups parametric tests for the posttest achievement scores of the experimental and control groups. The "t" test results for the unrelated groups showing the posttest achievement mean scores of the experimental and control groups are given in Table 3.

Table 3. Experimental and Control Group Posttest Achievement Scores Mean "t" Test Results

Groups	N	$\bar{X}$	sd	Df	T	P	η^2
Experiment	31	22.65	4.55	60	6.305*	.000	.39
Control	31	15.77	4.01				

Table 3 shows the results of the unrelated groups "t" test, which was conducted to test whether there is a significant difference between the posttest achievement mean scores of the experimental and control groups. Accordingly, there is a significant difference between the posttest mean score of the experimental group ($\bar{X}$D=22.65) and the posttest mean score of the control group ($\bar{X}$F=15.77) in favor of the experimental group (t60=6.305, p<.05). The effect size of this significant difference between the posttest achievement mean scores of the experimental and control groups was calculated as η2=.39.

The findings in Table 3 can be interpreted as AR supported teaching is more effective than the current teaching in the 6th grade SSC, LLU "People, Places and Environments" learning area. In this context, the H1 hypothesis, "There is a significant difference between the academic achievement post-test scores of the students in the experimental group, to whom the teaching supported by AR applications in the Middle School 6th Grade SSC, LLU People, Places and Environments learning field, and the control group students to whom the current teaching was applied," was confirmed within the scope of the research. AR supported instruction is more effective than current instruction in terms of academic achievement of students in the 6th grade SSC, LLU "People, Places and Environments" learning area.

Findings and Commentary on the Second Hypothesis of the Study

As stated above, in order to test the second hypothesis of the research (H2), it was analyzed whether there was a significant difference between the pretest and posttest achievement mean scores of the experimental group. This analysis was carried out to determine the academic success that the experimental group students achieved (or could not) achieve in the experimental process. For this, the normality of the mentioned score distribution was tested before the related groups "t" test, which should be done first. The results of Kolmogorov-Smirnov and Shapiro-Wilk normality tests, which show the distribution of the pretest and posttest mean scores of the experimental group, are given in Table 4.

Table 4. Kolmogorov-Smirnov and Shapiro-Wilk Normality Test Results Regarding Experimental Group Pretest and Posttest Achievement Scores Differences

Tests	Group	Kolmogorov-Smirnov			Shapiro-Wilk		
		Statistic	Sd	P	Statistic	Sd	P
Pretest and Posttest difference	Experiment	.127	31	.200	.961	31	.314

According to the results in Table 4 showing the pretest and posttest score distribution of the experimental group; The significance value of the K-S and S-W test values is p>.05. Accordingly, it can be stated that the relevant score distribution is normal. After that, skewness (Skewness) and kurtosis (Kurtosis) tests were conducted to test the normality of the pretest and posttest scores of the experimental group.

Table 5. "t" Test Results of Experimental Group Achievement Test Pretest and Posttest Mean Score

Tests	N	$\bar{X}$	sd	Df	T	P	η^2
Pretest	31	10.13	3.78	30	-15.162	**.00***	**.12**
Posttest	31	22.65	4.55				

In the experimental process, in order to test whether there is a significant difference between the pretest and posttest achievement mean scores of the experimental group, in the "t" test of the related groups, the pretest mean score of the experimental group ($\bar{X}$DS=10.33) and the posttest mean score ($\bar{X}$DS=22.65) were calculated. As seen in Table 4, this difference is significant in favor of the posttest (t60=-15.162, p<.05). The effect size of this significant difference between the pretest and posttest achievement mean scores of the experimental group was calculated as η2=.12. This difference is significant since this effect value is stated to be at a large level in the relevant literature (Pallant, 2016; cited in Kökçü, 2019, p.120; Green & Salkind, 2005). In this framework, the H2 hypothesis, "There is a significant difference between the academic achievement pre-test and post-test scores of the experimental group students in the secondary school 6th grade SSC, LLU People, Places and Environments learning field supported by AR applications," created within the scope of the research, was confirmed.

Findings and Interpretation on the Effect of Current Teaching in Social Studies Course

In the research, H3 was determined in order to determine the effects of the current teaching in the 6th grade SSC, LLU “People, Places and Environments” learning area on the academic success of the students. H3, “There is a significant difference between the academic achievement pre-test and post-test scores of the control group students in the 6th grade SSC, LLU People, Places and Environments learning field.” is in the form.

Findings and Interpretation for the Third Hypothesis of the Study

In order to test the third hypothesis of the study (H3), it was analyzed whether there was a significant difference between the pretest and posttest achievement mean scores of the control group. However, before the related groups “t” test, which should be done for this, the normality of the said score distribution was tested. The results of Kolmogorov-Smirnov and Shapiro-Wilk normality tests, which show the distribution of the pretest and posttest mean scores of the control group, are given in Table 5.

Table 5. Kolmogorov-Smirnov and Shapiro-Wilk Normality Test Results Regarding the Control Group Pretest and Posttest Achievement Scores Differences

Tests	Group	Kolmogorov-Smirnov			Shapiro-Wilk		
		Statistic	Sd	P	Statistic	Sd	P
Pretest and Posttest difference		.135	31	.158	.941	31	.085

According to the results in Table 5 showing the pretest and posttest score distribution of the control group; The significance value of the K-S and S-W test values is p>.05. Accordingly, the relevant score distribution is normal. After that, skewness (Skewness) and kurtosis (Kurtosis) tests were conducted to test the normality of the pretest and posttest scores of the control group. The data on this is given in Table 6.

Table 6. Skewness and Kurtosis Values of the Control Group Achievement Test Pre- and Post-Test Difference Score Series

Tests	Skewness	Kurtosis
Pretest and Posttest difference	.568	-.433

These results in Table 6 show that the pretest and posttest achievement scores of the control group are within the relevant values (between -2 and +2) and therefore the skewness and kurtosis values are normal (George & Mallerry, 2003). Thus, it was decided to use the related groups “t” test from the pairwise parametric tests for the pretest and posttest success scores of the control group. The "t" test results for the related groups showing the pretest and posttest achievement mean scores of the control group are given in Table 7.

Table 7. “t” Test Results of the Control Group Achievement Test Pretest and Posttest Scores Mean

Tests	N	$\bar{X}$	sd	df	T	P	η^2
Pretest	31	10.52	3.96	30	-10.023	**.00***	**.15**
Posttest	31	15.77	4.01				

These results in Table 7 show that the pretest and posttest achievement scores of the control group are within the relevant values (between -2 and +2) and therefore the skewness and kurtosis values are normal (George & Mallerry, 2003). Thus, it was decided to use the related groups “t” test from the pairwise parametric tests for the pretest and posttest success scores of the control group. These findings can be interpreted as the current teaching in the 6th grade SSC, LLU "People, Places and Environments" learning area has an impact on students' academic success. In this framework, there is a significant difference between the academic achievement pre-test and post-test scores of the Control Group students, to whom the current teaching in the Middle School 6th Grade SSC, LLU People, Places and Environments learning field, which was created within the scope of the research, was applied. H3 hypothesis was confirmed.

Findings and Commentary on the Fourth Hypothesis of the Study

In order to determine whether there is a significant difference between the retention test mean scores of the experimental and control groups, which is the fourth hypothesis of the study, the unrelated groups "t" test was conducted. However, before that, the normality of the score distribution of both groups was checked. The results of Kolmogorov-Smirnov and Shapiro-Wilk normality tests, which show the distribution of the permanence test mean scores of the experimental and control groups, are given in Table 8.

Table 8. Normality Test Results of the Experimental and Control Groups Retention Test Scores

Tests/	Kolmogorov-Smirnov			Shapiro-Wilk			
Groups	Statistic	Sd	P	Statistic	Sd	P	
Permanence	Experiment	.135	31	.160	.931	31	.057
Test	Control	.117	31	.200	.952	31	.179

According to the results in Table 8 showing the permanence test score distribution of the experimental and control groups; The significance value ($p>.05$) of the K-S and S-W test values shows that the distribution is normal.

Table 9. Experimental and Control Group Retention Test Mean Scores "t" Test Results

Groups	**N**	$\bar{X}$	**sd**	**df**	**T**	**P**	η^2
Experiment	31	19.23	5.65	60	5.288*	.000	.09
Control	31	13.55	4.17				

In Table 9, unrelated groups "t" test results are given to test whether there is a significant difference between the retention test mean scores of the experimental and control groups applied four weeks after the experimental procedure. Accordingly, the permanence test mean score of the experimental group was ($\bar{X}_{DK}$=19.23) and the permanence test mean score of the control group ($\bar{X}_{KK}$=13.17), and there was a significant difference between them in favor of the experimental group (t_{60}=5.288, $p<.05$). The effect size of this significant difference between the retention test mean scores of the experimental and control groups was calculated as η^2=.09. Since this effect value is stated as moderate (Pallant, 2016, Akt: Kökçü, 2019, p.120; Green & Salkind, 2005) in the relevant literature, it can be said that this significant difference is effective.

The findings obtained in the permanence test applied four weeks after the experimental procedure in the study can be described as follows: The posttest mean score of the control group students, in which the courses were continued with the current teaching, which was 15.77, decreased to 13.55 in the permanence test. The posttest point average of the students in the experimental group, in which the lessons were continued with AR-supported instruction, which was 22.65, decreased to 19.23 in the permanence test. This situation can be expressed as a decrease in the mean achievement score of both groups after the experimental procedure, that is, forgetting occurs.

Findings and Interpretation on the Effect of Augmented Reality Supported Instruction on Permanence of Learned in Social Studies Course

In the research, the hypothesis (H5) that was designed to determine the effects of AR supported teaching on the permanence of what was learned in the 6th grade SSC, LLU "People, Places and Environments" learning area is as follows. "H5: There is a significant difference between the academic achievement posttest and permanence test scores of the Experimental Group students, to whom the teaching supported by AR applications in the Middle School 6th Grade SSC, LLU People, Places and Environments learning field was applied." In order to test this hypothesis, the retention-test was applied to the Experimental Group four weeks after the experimental procedure, which lasted for a total of five weeks. Findings and comments regarding this are given below:

Findings and Interpretation on the Fifth Hypothesis of the Study

As stated above, in order to test the fifth hypothesis (H5) of the research, it was analyzed whether there was a significant difference between the posttest and retention-test achievement mean scores of the experimental group. However, before the related groups "t" test, which should be done for this, the normality of the said score distribution was tested. The results of Kolmogorov-Smirnov and Shapiro-Wilk normality test showing the distribution of the posttest and retention-test mean scores of the experimental group are given in Table 10.

Table 10. Kolmogorov-Smirnov and Shapiro-Wilk Normality Test Results Regarding the Experimental Group Posttest and Retention-Test Success Scores Differences

Tests	Group	Kolmogorov-Smirnov			Shapiro-Wilk		
		Statistic	**Sd**	**P**	**Statistic**	**Sd**	**P**
Pretest and Posttest difference	**Experiment**	.259	31	.000	.787	31	.000

According to the results in Table 10 showing the post-test and retention-test score distribution of the experimental group; The significance value of the K-S and S-W test values is p<.05. Accordingly, the relevant score distribution is normal. The "t" test results for the related groups showing the posttest and retention-test achievement mean scores of the experimental group are given in Table 11.

Table 11. "t" Test Results of the Experimental Group Achievement Test Posttest and Retention-Test Mean Scores

Tests	N	$\bar{X}$	Sd	Df	T	P	η^2
Post-test	**31**	**22.65**	**4.55**	**30**	**3.946**	**.00***	**.12**
Retention test	**31**	**19.23**	**5.66**				

According to the results in Table 11; In the related groups "t" test, which was conducted to test whether there was a significant difference between the posttest and permanence-test achievement mean scores of the experimental group, the posttest mean score of the experimental group ($\bar{X}$DS=22.65) and the permanence-test mean score (X DK=19.23) was calculated as. As seen in Table 26, this difference is significant in favor of the posttest (t60=3.946, p<.05). The effect size of this significant difference between the posttest and retention-test achievement mean scores of the experimental group was calculated as η2=.70. It is significant since this effect value is stated at a large level in the relevant literature (Pallant, 2016, cited in Kökçü, 2019, p.120; Green & Salkind, 2005). These findings can be interpreted as AR supported teaching + current teaching is effective on the permanence of what has been learned in the Middle School 6th grade SSC, LLU "People, Places and Environments" learning area. In this framework, the H5 hypothesis, "There is a significant difference between the academic achievement post-test and permanence test scores of the experimental group students in the secondary school 6th grade SSC, LLU People, Places and Environments learning field supported by AR applications," created within the scope of the research, was confirmed.

Findings and Interpretation on the Effect of Current Teaching on Permanence of Learned in Social Studies Course

In the research, H6 was determined in order to determine the effects of the current education on the permanence of the students in the 6th grade SSC, LLU "People, Places and Environments" learning area.

Findings and Commentary on the Sixth Hypothesis of the Study

As mentioned above, in order to test the sixth hypothesis of the study (H6), it was analyzed whether there was a significant difference between the posttest and retention-test achievement mean scores of the control group. However, before the related groups "t" test, which should be done for this, the normality of the said score distribution was tested. The results of Kolmogorov-Smirnov and Shapiro-Wilk normality test showing the distribution of the posttest and retention-test mean scores of the control group are given in Table 12.

Table 12. Kolmogorov-Smirnov and Shapiro-Wilk Normality Test Results Regarding the Control Group Posttest and Retention Test Achievement Scores Differences

Tests	Group	Kolmogorov-Smirnov			Shapiro-Wilk		
		Statistic	Sd	P	Statistic	sd	P
Post-test and Persistence test difference	Control	.174	31	.068	.905	31	.051

According to the results in Table 12 showing the posttest and retention-test score distribution of the control group; The significance value of the K-S and S-W test values is p>.05. Accordingly, the relevant score distribution is normal. After that, skewness (Skewness) and kurtosis (Kurtosis) tests were conducted to test the normality of the posttest and retention test scores of the control group. According to the results; In the related groups "t" test, which was conducted to test whether there was a significant difference between the posttest and retention test achievement mean scores of the control group, the posttest mean score of the experimental group ($\bar{X}$KS=15.77) and the permanence-test mean score ($\bar{X}$KK=13.55) were used) was calculated. As seen in Table 10, this difference is significant in favor of the posttest (t60=8.267, p<.05). The effect size of this significant difference between the post-test and retention test success mean scores of the control group was calculated as η2=.08. Since this effect value is stated as moderate in the related literature (Cited by Pallant, 2016: Kökçü, 2019, p.120; Green & Salkind, 2005), the relevant difference is significant and effective.

Table 13. "t"Test Results of the Control Group Achievement Test Posttest and Retention-Test Mean Scores

Tests	N	$\bar{X}$	Sd	df	T	P	η^2
Posttest	31	15.77	4.01	30	8.267	**.00***	.08
Retentiontest	31	13.55	4.18				

According to the results in Table 13; In the related groups "t" test, which was conducted to test whether there was a significant difference between the posttest and permanence test achievement mean scores of the control group, the posttest mean score of the experimental group ($\bar{X}$KS=15.77) and the permanence-test mean score ($\bar{X}$KK=13.55) were used.) was calculated. As seen in Table 29, this difference is significant in favor of the posttest (t60=8.267, p<.05). The effect size of this significant difference between the posttest and retention test achievement mean scores of the control group was calculated as η2=.08.

Discussion and Conclusion

Another dimension of this research, which analyzes the effect of AR on academic achievement in social studies teaching, is the retention of what is learned or permanent learning. Because retention in learning is a key concept as one of the most prominent indicators of the phenomenon of learning itself. In this respect, a hypothesis was defined in the research as "There is a significant difference between the academic achievement retention test scores of the experimental group students in which the instruction supported with AR applications was applied in the 6th grade 6th grade SSC, Unit of Life on Earth People Places and Environments learning area and the control group students in which the current instruction was applied.

In order to test this fourth hypothesis (H4), a retention test was administered to both groups four weeks after the experimental process. When the results of the retention test of both groups were examined, it was determined that there was a minor decrease in both the experimental and control groups compared to the post-test scores. This showed that both groups have forgotten certain things within the past four weeks. At the end of the retention test, a significant difference was found between the mean retention test score of the experimental group and the mean retention test score of the control group in favor of the experimental group. Accordingly, it can be said that in the experimental group where the lessons were conducted with AR support (compared to the control group where the lessons were conducted with current teaching), forgetting occurred less; in other words, learning was more permanent. As a matter of fact, an important finding that supports this result is that the fifth (H5) hypothesis of the study, which is "There is a significant difference between the academic achievement posttest and retention test scores of the students in the experimental group in which the instruction supported with AR applications in the 6th grade 6th grade SSC, unit of Life on Earth People, Places and Environments learning area", was confirmed.

In the study, the retention test was applied four weeks after the posttest to test the retention of the learning obtained in the experimental group in which the lessons were conducted with AR support. Accordingly, it was determined that there was a slight decrease in the average posttest score of the experimental group students during the four-week period. In order to analyze this decrease in comparison with the control group, similarly, a retention test was administered to the control group, in which the lessons were conducted with the current instruction, four weeks after the posttest.

In the control group, it was determined that there was a slight decrease in the posttest scores of the students in the last four weeks. Thus, the sixth hypothesis (H6) of the study, which states "There is a significant difference between the academic achievement posttest and retention test scores of the control group students in which the current instruction was applied in the learning domain of People, Places and Environments in 6th grade SSC, unit of Life on Earth" was confirmed. Accordingly, it can be said that some forgetting actually occurred in both groups during the four-week period. This means that the academic achievement of the students in the experimental group, in which the lessons were conducted with AR support, and the students in the control group, in which the lessons were conducted with the current instruction, decreased slightly after four weeks. This decrease shows that the retention of what was learned in both groups decreased slightly four weeks after the experimental process. However, this decrease was greater in the control group. This means that there was less forgetting in the experimental group (compared to the control group where the lessons were conducted with the current instruction); that is, learning was more permanent. In fact, this is an expected situation. Because retention in learning is directly related to the level of learning (Seven & Engin, 2008). In this respect, the higher level of academic achievement in the experimental group, in which the lessons were conducted with AR support, compared to the control group, in which the lessons were conducted with the current instruction, seems to have made the learning in this group more permanent.

In the study, it was concluded that the more permanent learning in the experimental group depended on the application of AR technology. The findings of similar studies (Günindi, 2005 cited in Başbuğ, 2007; Holmes, 2001, Akpınar, 1999; cited in: Karadüz & Baytak, 2010, p. 13) support this conclusion. Therefore, it is indisputable that technology in the teaching process, especially remarkable technological applications such as AR, which are suitable for the mental functioning and reactions of the middle school student generation, provide more permanent learning. What needs to be discussed for more effective and efficient instructional designs is how AR applications do this. Accordingly, it can be stated that AR applications made the lessons more interesting and enjoyable in the experimental group, which supported students' attention and motivation processes and enabled them to perform more qualified cognitive coding. As a matter of fact, it is known that motivation supports permanent learning (Özerbaş, 2007, p. 616). Thus, AR increased the effect of the stimulus by making the message more visible and audible in the lesson process; it increased the effect of the learning message (stimulus) by motivating students, attracting attention and making it enjoyable. It can be stated that the high-stimulus message also increased the intensity of the students' response to it and increased the level of learning, and high-level learning increased retention. This is because learning is basically related to the relationship between stimulus and response and the students' making sense of these stimuli by using their mental processes. Apparently, AR provided learning and permanent learning (Hoy & Miskel, 2010, cited in Orkun & Bayırlı, 2019, p. 65) with the rich experiences it provided to students. AR achieved this by going beyond the known methods and breaking the routine. Thus, AR seems to have activated attention, curiosity and motivation, which are the internal processes that enable learning, by providing a lively and dynamic environment for students. As a result, more qualified cognitive coding was realized and the stimuli in working memory were transferred to long-term memory. As a result, both the learning levels of the students increased and became more permanent.

Suggestions

The findings of the study and the recommendations developed based on the results of these findings are given below.

- In the study, it was determined that AR applications positively supported the academic achievement of the experimental group students and the retention of what was learned. Based on this result, it would be beneficial for the Ministry of National Education to include more technology-related acquisitions in the Secondary School Social Studies Curriculum in order to adapt it to the Technology Age and to include activities that include contemporary technological applications for these acquisitions.

- In the study, the teacher in the experimental group received a short-term training on the purpose, scope and use of the AR application used in the lessons. Only then was it possible to use the AR application effectively in the lessons. Therefore, the Ministry of National Education, provincial National Education administrators and school administrators should make plans and implementations to meet the training needs of teachers on the correct, effective and efficient use of information technology-based applications such as AR in lessons.

- In this study, the effects of AR on academic achievement and retention of what was learned were investigated with limited time and limited data collection tools. Researchers may be recommended to investigate the role and effects of contemporary virtual and digital technologies such as AR in the teaching process from different dimensions such as cognitive, affective and psycho-motor, and from different dimensions such as cognitive, affective and psycho-motor, taking into account the functioning of the mind, with a wide range, multiple data collection tools and long-term detailed research.

- In the study, the effects of AR on students' academic achievement and retention of what was learned were investigated through the scores obtained from various tests. Researchers may be recommended to investigate the role and effects of contemporary virtual and digital technologies such as AR in the teaching process on different axes such as observations, interviews and questionnaires/scales in addition to test scores.

Ethics Committee Approval:

The ethics committee decision of this research was taken for Süleyman Aslan's research on 'The Effect of Augmented Reality Applications on Students' Course Success and Retention of Learning in Social Studies Course' with the number 30769799-44-E.18344702 and date 27/09/2019 at Fırat University Institute of Educational Sciences, Department of Turkish and Social Sciences.

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Teacher Perspectives on Implementing Speaking Acquisitions in the Secondary School Turkish Curriculum

Research Article

Tugrul Gokmen SAHIN[1]

[1]Inonu University, Faculty of Education, Department of Turkısh Education, Malatya, Türkiye 0000-0003-2107-9670

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ABSTRACT

Speech is the ability of a person to convey their thoughts, desires and feelings to those around them in a certain way, provided that they learn this skill through experience during their development process from the moment they are born. Speaking skill, which is one of the four basic language skills in the Turkish curriculum, is a skill that individuals acquire both in social life and in educational environments and also try to develop in various educational situations. In this context, the aim of the study was determined to reveal the experiences of Turkish teachers regarding the implementation of speaking skills, one of the four basic language skills in Turkish teaching, in the secondary school Turkish teaching curriculum. The study was carried out with the phenomenology pattern, a qualitative research method. Seven Turkish teachers working in five different secondary schools in Yeşilyurt district of Malatya province participated in the study. Three of the participants in the study are female and five are male teachers. The data obtained in the study were collected through a semi-structured interview in the light of the instructions determined for five days. The interviews were held at the teachers' convenience and in a safe environment. In the analysis of this collected data, codes, categories and themes were determined using content analysis. In the interviews, teachers stated that the gains in speaking skills in the Turkish curriculum were less compared to other language skills. Again, in light of the findings obtained in the study, teachers also stated that they had problems regarding the implementation of the achievements. In the context of the results obtained in the study, both effectiveness and practical studies should be carried out regarding the acquisition of speaking skills, and as a result of these studies, it was determined that teachers should be given various trainings. In addition, suggestions were made that it is necessary to communicate with teachers after the training and to support them in any problems they may encounter regarding the implementation of the gains.

Keywords:
Turkish Curriculum, Speaking Skills, Achievements, Teacher Experience.

[1]Corresponding author's address: İnönü Üniversitesi
Telephone: +905074889236
e-mail: tugrul.sahin@inonu.edu.tr
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Introduction

The main purpose of Turkish education is to improve the understanding and expression skills of the target audience by using Turkish correctly and understandably. The difficulties experienced while expressing oneself, pronunciation errors, dialect use, using foreign words when there are Turkish equivalents, inability to verbalize one's feelings and thoughts, and anxiety accompanied by a feeling of inadequacy show that the training of speaking skills should be emphasized and how important each acquisition is. Like all skill areas, speaking skills can be improved through training. The Turkish Language Teaching Program and the textbooks thought to be prepared in this direction will show the qualitative and quantitative dimensions of this education.

The task of creating a learning experience mechanism for the student with planned activities at school or outside of school (Demirel, 2000) is possible with an inclusive, planned, rich and disciplined Turkish teaching program. In the program, which took its final form in 2019 and is used today, a constructive approach was adopted in speaking skills, as in all skill areas. Especially considering that the student who grows up in an environment where children are raised with a traditional approach is not allowed to talk much within the family, is not given the right to say much about any issue, and is generally silenced (Sallabaş, 2011, p. 10), the constructivist approach becomes much more important. This approach, which emphasizes practice and focuses on the student, is very important for the development of speaking skills. Failure to achieve gains in speaking skills, equipment design starting from the selection of the book used in the course, the approach, strategies, methods and techniques that teachers will use while teaching the course, the duration and format of the course are in line with the limits determined by the Turkish Course Curriculum (MEB, 2019). For this reason, the determined speaking achievements have been narrowed in terms of acquisition according to the new program 2006 Turkish Curriculum, and they need to be reviewed and enriched by clearly stating all the steps that will ensure the development of the skill.

Textbooks, which are the most important teaching tools used in the educational environment, are the materials primarily responsible for gaining speaking skills. The activities in the textbooks play a major role in providing students with the desired knowledge and skills. However, it seems that activities to develop this skill are not sufficient (Sülükçü and Seyhan, 2018). It should have features that will enable the student to transform knowledge into skills, not only in quantity but also in quality. Although most of daily life is spent speaking, the most important factor preventing the acquisition of this skill is that teachers ignore the speaking skill by spending all their lessons on reading and writing practices (Bahrani and Soltani (2012) p. 26). In an environment where everyone can speak, underestimating and superficial processing of speech due to its improvisational development (Argawati 2014 p.75) can be prevented with a complete training program and course materials prepared accordingly. Because speaking skills are not designed to teach speaking to students who already come with a certain speaking equipment. The aim of speaking skill education in schools is for the child to consciously develop this skill by using different methods, techniques, tools and equipment and making evaluations specific to speaking skills in order to achieve the goals determined by the curriculum (Altuntaş, 2012, p. 24). Although speaking is an innate ability, it is often neglected because it is not considered part of formal education. People use speech as the basic tool of communication in their daily lives, but this skill is often overlooked. Although children's speaking skills develop naturally, especially in the period up to school age, the lack of education and research in this field has not fully revealed the potential of this skill. The importance of speaking skills and educational efforts in this field are generally overlooked, which is one of the obstacles to improving communication skills (Özbay, 2013). However, speaking skills affect both social and academic life. People need to interact in order to understand people who grow up in different conditions and with different characters (Arung, 2016, p. 70). Just expressing the request correctly during the interaction does not indicate that this skill has been acquired sufficiently. The speech must be understandable, fluent and clear

(Taşkaya, 2018, p.50) and must provide sufficient information about the message it wants to convey. At the same time, it is important to speak standard Turkish and pronounce the sounds and words correctly. In today's world where the world is rapidly shrinking with communication technology, speech, which directly regulates interpersonal relations (Yalçın, 2012), should receive the share it needs from education and a rich language environment should be created in classrooms. The importance of speech in social life is obvious. However, it is seen that even people who have reached important points in their educational life due to many negligence or incomplete transfers have difficulty in expressing themselves and make many mistakes. It should not be ignored that people will achieve success in school, business and private life with the impressive power of speech (Kurudayıoğlu (2003) pp. 289-292).

When we look at the Turkish Course Curriculum (TCC), speaking achievements at the 5th-8th grade level are as follows, "They make prepared and unprepared speeches, apply speaking strategies, use body language effectively in their speech, use words in accordance with their meanings, use appropriate transition and connection expressions in their speeches, use Turkish versions of words taken from foreign languages that have not yet settled into our language." Whether the acquisitions in question provide speaking proficiency can be accurately evaluated based on textbooks and teachers' classroom practices. In this context, the study was conducted to reveal the experiences of Turkish teachers regarding the application of speaking skills in the secondary school Turkish teaching curriculum in order to contribute to possible evaluations.

Method

Aim of the Study

The aim of this study is to deeply question teachers' experiences in implementing speaking outcomes in the secondary school Turkish teaching curriculum.

Design of the Study

Phenomenology is a qualitative study design that deeply examines phenomena that are frequently encountered in daily life but cannot be fully detailed (Yıldırım and Şimşek, 2013). The experiences, thoughts and attitudes of the participants about a certain subject are examined within the framework of the phenomenology pattern. The aim of this study is to examine teachers' experiences in implementing speaking outcomes in the secondary school Turkish teaching curriculum. The teachers participating in the study actively teach in schools affiliated with the Ministry of Education. In line with the purpose of the study and the experiences of the teachers participating in the study, phenomenology, one of the qualitative research designs, was preferred in this study.

Study Group

In terms of suitability for the purpose and design of the study, the study group consists of 7 teachers actively working in secondary schools affiliated with the Ministry of Education. 4 of these teachers are men and 3 are women. Although teachers work in different secondary schools, their professional experience varies between 5 and 13 years.

Collecting Data

Written and verbal communication used to understand what people think about a subject and why they think is called interview. The purpose of the interview is to reveal the knowledge, feelings, thoughts and beliefs of the individuals contacted about a subject. For this reason, a semi-structured interview form was used as a data collection tool in this study. Before preparing the semi-structured interview form, a literature review was first conducted on the subject and a semi-structured interview form was prepared based on the results obtained from the literature. The prepared semi-structured interview form was shown to an academician working in the field of Turkish education. In line with the feedback from the academician, it was concluded that the clarity, validity and adequacy of the questions in the form were suitable for the study. The questions in the semi-structured interview form are presented in the appendix of the study. In addition, questions such as name, surname, years in the profession, the institution they work in and contact information were also added to the form section in order to get to know the general characteristics of the trainers to be worked with. According to the KVK Law(the law on the protection of personal data), the private information in the form has not been leaked to the external environment. Then, the information obtained was transferred verbatim to Microsoft Word and analyzed. In this way, teachers' opinions were tried to be brought to light in detail.

Analysis of the Data

The technique of regularly categorizing words and phrases that reveal the content of material related to a situation or subject and creating codes within the framework of rules previously determined by the researcher is called content analysis (Büyüköztürk et al., 2008). Content analysis develops within a certain process and on its axis. In this process, first, similar qualitative data are organized around a certain theme and categories and examined in depth in the form of cause-effect relationships. These analyzes are interpreted objectively and some conclusions are reached (Yıldırım and Şimşek, 2013). The current research generally aims to have teachers sincerely answer the questions in the semi-structured interview form and to analyze these answers in depth.

For this purpose, the data were analyzed with content analysis in line with the teachers' answers to seven questions in the semi-structured interview form. The codes and categories obtained as a result of this analysis are shown in tables according to themes in the findings section. The questions in the semi-structured interview form are divided into four themes. While dividing the themes into categories, keywords that summarize the purposes based on the questions in the semi-structured interview form were taken into account. Codes were created by identifying common concepts among the words that summarize the teachers' thoughts. The themes and categories included in the interviews are shown in Table 2.

Validity and Reliability

Table 1. Validity and Reliability Measures Taken in the Study

Validity	**Internal Validity**	Obtaining expert opinion
		Participant confirmation
		Direct quote
	External Validity	Explaining the rationale for the choice of pattern used
		Specifying the characteristics of the working group
		Explanation of the reasons for the selection of the working group
		Description of the data collection tool
		Specifying the type of analysis to be used in data analysis and explaining the rationale
		Explaining the data analysis process
		Demonstration of validity and reliability measures
Reliability	**Internal Reliability**	Preventing data loss by using a semi-structured interview form as a data collection tool
		Transfer of findings without comment
	External Reliability	Checking consistency across data
		Appropriate discussion of data in the results section

In order to ensure the validity and reliability of this study, the precautions shown in Table 1 were taken and the factors that threatened validity and reliability were minimized.

Findings

Codes were created according to the teachers' answers to the semi-structured interview form under categories depending on the themes and are shown in the relevant tables. In some questions, more than one code emerged based on the teachers' thoughts. The findings were examined in detail according to the category order based on the themes shown in Table 2.

Table 2. Teacher Opinions on the Question: "What are your thoughts about including speaking skills as the least among all language skills in the Turkish Curriculum?"

Codes	**Participants**						
	T1	T2	T3	T4	T5	T6	T7
There is a perception that the skill is natural and spontaneous	X						
Could be more intense	X						
A big loss for students			X		X		
I find it inadequate				X			
It causes learning deficit in students					X		
We teach the lesson on speaking						X	
Gains are a little more limited in terms of measurement and evaluation							X

When Table 2 is examined, teachers T3 and T5 saw the low gains in speaking skills among the language skills in the Turkish Curriculum as a great loss for the students. Teachers T3 and T5 expressed their thoughts as follows, respectively.

> *It's a big loss for students who have difficulty expressing themselves in class. Afterwards, they experience major problems in communication. Let alone public speaking, they become individuals who hesitate to speak even in one-on-one communication.*
>
> *The fact that speaking skills, which are included in narration skills, are not included in the achievements causes all kinds of learning deficiencies in students. The student who cannot express himself/herself experiences incomplete learning in parallel with other achievements. In this respect, it is a great loss for students.*

However, one of the teachers, T1, regarding the fact that speaking skills are included at least among all language skills in the Turkish Curriculum expressed his thoughts as follows, *"I think that the perception that speaking skill is a natural and spontaneous skill has also been reflected in the program, and speaking gains are not included in the required intensity."*

Table 3. Teacher Opinions on the Question: "What are your opinions on whether activities and practices related to speaking skills reflect speaking skill gains?"

Codes	**Participants**						
	T1	T2	T3	T4	T5	T6	T7
Cannot reflect	X	X	X		X		X
It is enough				X			
There are not many activities on speaking skills						X	

According to Table 3, most of the teachers are of the opinion that activities and practices related to speaking skills do not reflect the achievements of speaking skills. Teacher T6 expressed a different situation by expressing his/her thoughts as follows, *"There are not many activities on speaking skills, they are not of good quality, most of them are prepared in a way that students can give short answers."* Unlike other teachers, T4 considered the activities and practices related to speaking skills sufficient in terms of speaking skill acquisitions and his/her opinion is as follows:

> *"The student desire point affects the result. It's enough, assuming everything is under normal conditions."*

Table 4. Teacher Opinions on the Question "How can we further contribute to the development of speaking skills through different activities and practices?"

Codes	**Participants**						
	T1	T2	T3	T4	T5	T6	T7
With public speaking events	X						
With feedback to students	X						
By involving the student in the process		X					
By eliminating the student's shyness			X				
By participating in games, theatre, drama etc.			X				
I don't think it can be contributed				X			
With fairy tale telling					X		
With more activities on creative speaking						X	
With different visual-oriented activities							X

Looking at table 4, which includes teachers' opinions on the question "How can we contribute more to the development of speaking skills through different activities and practices?", teachers expressed their thoughts on the development of the skill. According to the teachers, feedback to the students, involvement of the student in the process, and elimination of the student's shyness will contribute to the development of speaking skills. In addition, they stated that contribution will be made by participating in activities such as games, theatre, drama etc. and by telling fairy tales. Teachers T2, T3 and T6 expressed their thoughts on this issue as follows, respectively.

"I think that by involving the student in the process, there will be more adaptation and success will be achieved with integrity."

"The student's shyness can be eliminated through group activities before speaking individually in front of the class. It would be more appropriate to participate in activities such as games, theatre, drama and debate, where he can express himself while having fun."

"There may be more activities on creative speech."

Unlike other teachers, T6 expressed his/her opinion on this issue as *"I do not think that more contributions can be made since there are achievements measured by the exam."*

Table 5. Teacher Opinions on the Question "How do speaking practices and activities supported with digital elements contribute to students?"

Codes	**Participants**						
	T1	T2	T3	T4	T5	T6	T7
Increases their interest in the lesson	X						
Improves speaking skills	X	X	X			X	
Affects positively		X		X			X
It may cause anxiety and excitement in the student					X		

Looking at Table 5, teachers' opinions regarding the question "How do speaking practices and activities supported by digital elements contribute to students?" are included. Most teachers stated that speaking practices and activities supported by digital elements improved students' speaking skills. The thoughts of T1, T2, T3 and T6, who have this opinion, are as follows, respectively.

"Since digital elements are the elements that today's students are most in demand and interact with the most, digital-based activities will increase students' interest in the lesson and contribute more to the development of speaking skills."

"It affects positively, improves speech because technology is part of our lives."

"Digital platforms are applications that new generation students are familiar with and use frequently. Utilizing these will both include a technology that the student frequently uses in the learning process and will increase the quality of the student's speaking skills during the time he/she spends in the computer environment."

"Students love using digital elements, their speaking skills can be strengthened with both visual and auditory stimuli."

Unlike other teachers, T5 expressed his opinion on this subject as follows: *"A social person should aim for expressions that he can establish face to face with eye contact. But today, while digital elements are thought to make this job easier, I think it has made it more difficult. On the one hand, mastering digital and on the other hand, mastering the presentation of the subject may cause anxiety and excitement for the person or the student but the student who can achieve these means has perfected themselves."* and stated that it would cause anxiety and excitement in the student.

Table 6. Teacher Opinions on the Question "What is the level of students' awareness of speaking strategies in speaking practices?"

Codes	Participants						
	T1	T2	T3	T4	T5	T6	T7
They do not know the types of speech	X					X	
It is minimal		X					X
They do not have enough information			X	X	X		

Based on Table 6, which includes teachers' opinions regarding the question "What is the awareness of students about types of speech in their speaking practices?", it is obvious from teachers' opinions that students do not have awareness of types of speech. Teachers had similar thoughts on the subject, and teachers T1, T2, T5 and T7 expressed their thoughts as follows, respectively:

> *"Students do not know the types of speech other than impromptu speech types. Even if they know some of them by name, it seems that they have not encountered examples of these types and have not practiced the types of speech they can make within them before."*
>
> *"I think it's minimal."*
>
> *"They do not have sufficient knowledge about speech types."*
>
> *"At the bare minimum. Students generally tend to improve their skills in line with the examination system."*

Table 7. Teacher Opinions on the Question "What is the level of students' awareness of speaking strategies in speaking practices?"

Codes	Participants						
	T1	T2	T3	T4	T5	T6	T7
They have no awareness	X				X	X	
It is at the lower level		X					
They do not know speaking strategies			X				
It is not enough				X			X
It is at medium level.							X

Based on Table 7, teachers stated that students were not aware of speaking strategies, that they were at a low level and that they do not know. Although the opinions of the teachers based on their experiences are similar, teachers T1, T3, T5 and T7 expressed their thoughts as follows, respectively.

> *"Students do not have any awareness of speaking strategies. Speaking is not seen as a skill that can be developed for students and is not given importance."*
>
> *"I think both the teacher and the students do not know speaking strategies."*

"Students have no awareness of these strategies. I think the reason lies in the lack of qualified teachers who can teach these things to students."

"Medium-level. "It is not sufficient, depending on both the course teacher and the teacher."

Table 8. Teacher Opinions on the Question: "What are your opinions and suggestions in the context of practices and activities for the development of speaking skills?"

Codes	**Participants**						
	T1	T2	T3	T4	T5	T6	T7
More activities and practices should be included	X						
Students' self-confidence should be increased	X					X	
Activities should be detailed		X	X				
Textbooks should be meticulous		X					
Gradual progress should be made.			X				
Feedback should be given			X				
Should be supported by additional studies			X				
Exams should not be a priority				X			
Diction, voice training, drama lessons, etc. should be at the forefront					X		
The achievements of speaking skills should be included in the exams.							X

Looking at Table 8, teachers made suggestions for improving speaking skills. According to teachers, more activities and practices should be included to develop this skill, students' self-confidence should be increased, activities should be detailed, textbooks should be meticulous, progress should be gradual, feedback should be given, it should be supported with additional studies, exams should not be at the forefront, diction, voice training, drama lessons etc. should be at the forefront and the achievements of speaking skills should be included in the exams. While teacher T2 expressed his/her opinion as *"Activities can be detailed and textbooks can be meticulous."*, T4 expressed his/her opinion as *"I think that speaking skills cannot be improved as long as the system of selecting students by examination continues. For this reason, exams should not be at the forefront in order to develop this skill."*

Conclusion, Discussion And Recommendations

Based on the findings of this study, which was conducted to reveal teacher experiences in implementing speaking acquisitions in the secondary school Turkish teaching curriculum, the following results were reached.

According to teachers, the fact that speaking skills are the least important among all language skills in the Turkish language teaching program was seen as a great loss for students. According to teachers, low speaking gains do not help students eliminate their communication problems, but also pave the way for greater communication problems in students after a while. In addition, teachers stated that the reason for the low speaking gains in the program was due to the perception that speaking skill is a natural and spontaneous skill. In studies on speaking gains in Turkish textbooks (Cömert, 2017; Deniz and Tarakçı, 2019; Aktaş and Bayram, 2021), it is stated that the gains in the textbooks are not sufficient.

Regarding the reflectivity of the activities for speaking skills, one of the four basic language skills in Turkish textbooks, on the speaking gains in the program, most of the teachers stated that these activities do not reflect the speaking gains, that there are not many activities related to speaking gains, that the activities that are available lack quality and that the participation time of the students is limited. There are many similar studies (Aksu, 2021; Arhan, 2007;) in this direction. Sülükçü and Seyhan's study also reveals that there are not enough activity examples to improve speaking skills. (2018, p. 462).

Regarding how to further contribute to the development of students' speaking skills through different activities and practices, teachers emphasized that feedback should be given to students, students should be involved in the process, and students' shyness should be eliminated. Additionally, teachers think that this situation can be eliminated through activities such as games, theatre, drama, etc. However, teachers also claimed that storytelling had a great share in the development of speaking skills. Similar to the opinions of the teachers in the study group, Çetinkaya and Sönmez (2019) found in their study that fairy tale telling had positive contributions to students' speaking skills.

Most of the teachers in the study group are of the opinion that speaking practices and activities supported by digital elements can increase students' interest in the lesson and help students develop their speaking skills. They stated that the reason for this is that students are aware of current digital platforms and that students are intertwined with digital technology in the developing world. Yürektürk and Coşkun (2020) also concluded in their study that using technology in the educational environment significantly contributes to the development of four basic language skills.

Regarding students' awareness of speech types, most of the teachers stated that students were not aware of speech types and most of them did not know these types of speech. However, teachers reported that students did not have any knowledge or experience regarding speaking strategies. Cömert (2017) also stated in his study that speaking strategies and types are an important element in the speaking process and pointed out the importance of providing these to students by teachers for a successful speaking process.

According to teachers, the number of activities and practices included in Turkish textbooks to improve students' speaking skills should be increased, but the quality of these activities and practices should also be taken into consideration. In addition, teachers stated that there should be gradual progress in education, exams should not be at the forefront, and speaking skills should be supported with additional studies. According to teachers, these additional studies may include diction and drama lessons. In addition to all these, teachers emphasized that speaking achievements should also be taken into consideration in measurement and evaluation. Similar to these results, Güneş (2020) also concluded in his study that the speaking process should proceed gradually.

Based on the findings of this study, the following suggestions can be made:

- Speaking achievements in the Turkish Curriculum can be increased by regulation by the Ministry of Education,
- Other language skills included in the Turkish Curriculum can also be examined in line with the purpose of the current study,
- The number of speaking-based activities in Turkish textbooks can be increased and these activities can be improved in terms of quality,
- Digital platforms can be used to improve language skills in education,
- More emphasis can be given to drama lessons in secondary schools in order to improve students' speaking skills.
- Students' speaking skills can be improved by participating in activities that will allow students to socialize, such as theater.

Appendix: Semi-Structured Interview Questions

1. What are your thoughts about including speaking skills as the least among all language skills in the Turkish Curriculum?
2. What are your opinions on whether activities and practices related to speaking skills reflect speaking skill gains?
3. How can we further contribute to the development of speaking skills through different activities and practices?
4. How do speaking practices and activities supported with digital elements contribute to students?
5. What is the level of students' awareness of speech types in speaking practices?
6. What is the level of students' awareness of speaking strategies in speaking practices?
7. What are your opinions and suggestions in the context of practices and activities for the development of speaking skills?

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A Review of Education Programmes Supporting the Social Development of Preschool Children: A Meta-Analysis Study

Research Article

Ibrahim Yasar KAZU[1] Aslan KAPLAN[2]

[1]Fırat University, Faculty of Education, Department of Educational Science, Elazığ, Türkiye 0000-0002-1039-0482

[2]Fırat University, Faculty of Education, Department of Educational Science, Elazığ, Türkiye 0000-0002-8583-0745

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ABSTRACT

Educational programs implemented during the preschool period, which is a crucial developmental stage, are considered indispensable for fostering social development, enhancing academic achievement, and laying the groundwork for subsequent phases of life. This research aims to conduct a meta-analysis of postgraduate theses conducted in Turkey to ascertain the impact of educational programs that support the social development of preschool children. Additionally, the study seeks to explore how certain characteristics of these research studies, namely publication type, institute, experimental duration, and sample size, may influence the outcomes. The investigation involved a review of postgraduate thesis studies conducted in Turkey, focusing on programs supporting the social development of preschool children. The statistical software "Comprehensive Meta Analysis" was employed to analyze the data, utilizing Hedges'g coefficient. After conducting a literature review, 30 theses that met the inclusion criteria were selected for the meta-analysis study. Combining these studies using the random effects model yielded an overall effect size of 1.08, within a confidence interval ranging from 0.87 to 1.28. The results revealed a positive and strong effect (g=1.08) of educational programs supporting the social development of preschool children. This indicates that such programs have a positive impact on the social development of preschool children. Out of the 62 effect sizes analyzed, seven were found to have negative values. Among the 55 positive studies, five were considered weak, two were small, 14 were medium, and 34 were strong. Furthermore, no significant differences were observed in the effect sizes of the studies when examining the influence of moderator variables related to educational programs supporting the social development of preschool children. Based on the study's findings, alternative education programmes focusing on developing social skills in the preschool period should be emphasised.

[1] Corresponding author's address: Fırat Üniversitesi
Telephone: +904242370000/4333
e-mail: iykazu@firat.edu.tr
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Keywords:
Educational programmes, meta-analysis, preschool period, social development.

Introduction

In the 14th National Education Council, preschool education is defined as an integral part of basic education that caters to children aged 0-72 months, considering their developmental levels and individual characteristics. It aims to provide a stimulating environment, supporting their physical, mental, social, and emotional growth. Moreover, it guides children in accordance with cultural values and prepares them for further education (Ministry Of Education [MOE], 1993). Koçyiğit (2016) defines preschool education as a process encompassing the pre-primary school years, conducted both in institutions and families. This education supports all developmental aspects, including social development, in line with contemporary norms and aims to prepare children for the next level of formal education. Additionally, it emphasizes cooperation between parents and educational stakeholders.

The objectives and responsibilities of preschool education in our country, aligned with the fundamental aims of national education, include: (1) facilitating children's physical, mental, and emotional development and instilling positive habits, (2) preparing children for primary school, (3) creating a nurturing environment for children from disadvantaged backgrounds, and (4) ensuring that children speak Turkish fluently and correctly. Furthermore, among the key principles of preschool education, emphasis is placed on supporting social and emotional development, fostering self-care skills, promoting values like love, respect, cooperation, responsibility, tolerance, sharing, and solidarity, and facilitating communication and self-control through education (MOE, 2013). Preschool education plays a critical role in managing, encouraging, and fostering the continuous development of curious children who are eager to learn and explore their surroundings (Senemoğlu, 1994). At the same time, pre-school education is an essential educational process in terms of adopting the mental and social competences and cultural values necessary for the preparation of children for the next level of education and providing them with a stimulating environment (Güven & Azkeskin, 2020).

Development refers to the ongoing, continuous changes in physical, mental, emotional, language, and social aspects, starting from conception and continuing throughout life under certain conditions (Senemoğlu, 2021). Human development progresses through various stages from the prenatal period to the end of life and is influenced by multiple factors, displaying similar stages in every individual, while also being subject to changes. Among these stages, the preschool period from birth to six years of age is considered the most crucial for development (Karabulut, 2019; Oktay, 1999). The ages 0-6, covering the preschool education period, are recognized as a phase of rapid mental, physical, and social development (Poyraz & Dere, 2006). The significance of early childhood education is increasingly recognized, necessitating guidance, encouragement, and reinforcement of children's capabilities to promote proper behavior and development during this critical phase.

A child's growth and development are influenced by various factors. In addition to genetics, nutrition, and healthcare play a crucial role in shaping the growth and development of children. Furthermore, the social environment, or educational environment, is another important factor affecting subsequent developmental periods after birth. The preschool period represents the phase where various aspects of development are most intensely interconnected. Notably, emotional and social development are closely intertwined. Language development is closely related to the child's social environment and the experiences they encounter in that setting. Since development encompasses physical, mental, social, and emotional dimensions, any neglect in any of these aspects can adversely impact a child's development. While this holds true for all stages of life, it assumes particular importance during the preschool period. Consequently, preschool teachers should effectively guide children through this critical phase (Oktay, 1999).

Supporting and enhancing children's social development is among the most significant responsibilities of preschool teachers. Positive social development enables children to learn better and succeed in various aspects of education and life (Morrison, 2021). Social development refers to the process of learning socially acceptable behavior within the child's society. It entails the child's ability to interact positively with themselves and others. As children grow, they transition from a self-centered perspective to becoming individuals who adapt to society. The child's level of social development influences their interactions with the social environment and underlies dynamic changes. This process of socialization commences with the infant's response to their social environment and continues throughout their life. Furthermore, the quality of a child's interactions with others is shaped by experiences during the early years of life, which are determined by the opportunities available to them and their reactions to these opportunities. As all aspects of development are interconnected and mutually influence each other, social development is both a cause and a result of mental and moral development. Social development involves various factors such as self-awareness, social maturity, sociocultural characteristics, social adaptation, socialization, empathy, friendship, competition, and leadership, and these factors are interconnected with one another (Aydın, 2016; Deniz-Yöndem & Taylı, 2019; Fazlıoğlu, 2018). For instance, a study by Denham et al. (2003) on preschool children demonstrated the connection between emotional competence and social development. Therefore, the importance of social development during the preschool education period and the effectiveness of preschool education programs in supporting it (MOE, 2013; Senemoğlu, 1994) cannot be underestimated.

Meta-analysis is a method used to combine the results of multiple independent studies on a particular subject and analyze the findings statistically. Conducting meta-analysis provides insight into the general trends in the literature, aids in shaping future research directions, and serves as a guiding reference in the relevant field (Akgöz, Ercan, & Kan, 2004; Field & Gillett, 2010; Glass, 1976; Özkaya, 2021). When analyzing scientific research, one often encounters numerous studies addressing the same research problem. To validate a hypothesis, it is crucial to have multiple studies testing the same hypothesis and yielding similar results. The expectation is that different researchers conducting studies under similar conditions will obtain consistent outcomes. Hence, a wealth of studies addressing the same research question is considered valuable in reaching robust generalizations. Meta-analysis allows for reaching consistent results through the effect size unit (Assen, et al., 2023; Bayraktar, 2021).

Preschool education significantly influences subsequent developmental stages and plays a vital role in shaping a child's academic and life achievements. Research has shown that children who receive preschool education outperform their peers who do not, with an achievement gap of approximately two school years (Akduman, 2013). Similarly, studies based on PISA results from various OECD countries revealed that 15-year-old students who attended preschool education performed better than those who did not. These findings highlight the importance of preschool education in improving academic performance. In Turkey, the emphasis on preschool education is growing, mainly reflected in the school enrollment rate. However, efforts should also focus on improving the quality of educational programs. Given the lifelong nature of social development and its connection to various developmental domains, including academic achievement, the importance of supporting social development during the critical preschool period is increasingly recognized. The existing literature (Akay, 2017; Aksan, 2019; Asar, 2019; Atabey, 2014; Bağcı-Çetin, 2021; Bayrak, 2020; Canol, 2021; Değirmenci, 2020; Işıktekiner, 2022; Kızıltaş, 2016; Özaydın, 2006; Öztürk, 2020; Şenol, 2017; Ünsal, 2016; Vural, 2006; Yılmaz, 2019) comprises individual studies examining the impact of educational programs on the social development of preschool children. Although meta-analysis studies on preschool children are relatively limited, there are studies conducted by Basit & Deniz (2020, 2021) on educational programs supporting psychomotor development and overall development in cognitive, psychomotor, social, and emotional areas. Nonetheless, there is currently no direct meta-analysis study focused on social development. Consequently, this research seeks to employ the meta-analysis method to comprehensively analyze studies exploring the effect of educational programs supporting the social development of preschool children and derive reliable and holistic results. The study aims to guide practitioners, researchers, experts, and theoreticians in the preschool field, increase awareness of the preschool period's significance, and draw attention to social development within this phase. By calculating the effect sizes of the studies and examining the overall impact of educational programs on social development, the research aims to shed light on this crucial aspect of preschool education (MOE, 2013; Senemoğlu, 1994). The following sections present the research questions discussing the implications and conclusions drawn from the meta-analysis results.

Research Questions

1. What is the impact of implemented educational programmes on the social development of preschool children?

2. Is there a significant difference in the effect of implemented educational programmes on the social development of preschool children based on types of publications (e.g., master's and doctoral theses)?

3. Are there variations in the effects of applied educational programmes on the social development of preschool children according to the institutes where the researches were conducted?

4. Does the effect of applied educational programmes on the social development of preschool children vary depending on the duration of the experimental process in the studies?

5. Are there discrepancies in the effects of applied educational programmes on the social development of preschool children based on the sample sizes of the studies?

Method

Research Model

In this research, the meta-analysis approach was employed to assess the impact of educational programs aimed at fostering the social development of preschool children. Meta-analysis is a statistical technique that involves the synthesis and interpretation of effect sizes by aggregating data from individual studies (Card, 2012). As defined by Bayraktar (2021), meta-analysis is a statistical method that facilitates a comprehensive evaluation by statistically integrating the results of independent quantitative studies focused on a similar research issue.

Data Collection

The research aimed to investigate the impact of educational programs supporting the social development of preschool children by analyzing postgraduate theses conducted in Turkey. To achieve this objective, the researchers conducted a comprehensive search in the National Thesis Centre database of the Council of Higher Education, using relevant keywords such as "preschool," "preschool period," "social," "social development," and "impact." Among the 2869 theses initially identified, 2708 were found to have authorized full-text availability. Through a series of screening steps using binary combinations, 257 thesis studies were selected for further examination. Subsequently, by applying both descriptive statistics and a screening strategy, a final set of 72 thesis studies were obtained. Further refinement based on specific inclusion criteria led to the selection of 30 thesis studies that were considered suitable for inclusion in the meta-analysis process. From these 30 studies, a total of 62 effect size values were obtained and analyzed. The collective experimental process involved 2131 subjects who were participants in the included thesis studies. The flow diagram, as presented by Moher et al. (2009), visually illustrates the sequential steps taken during the study selection process and is depicted in Figure 1.

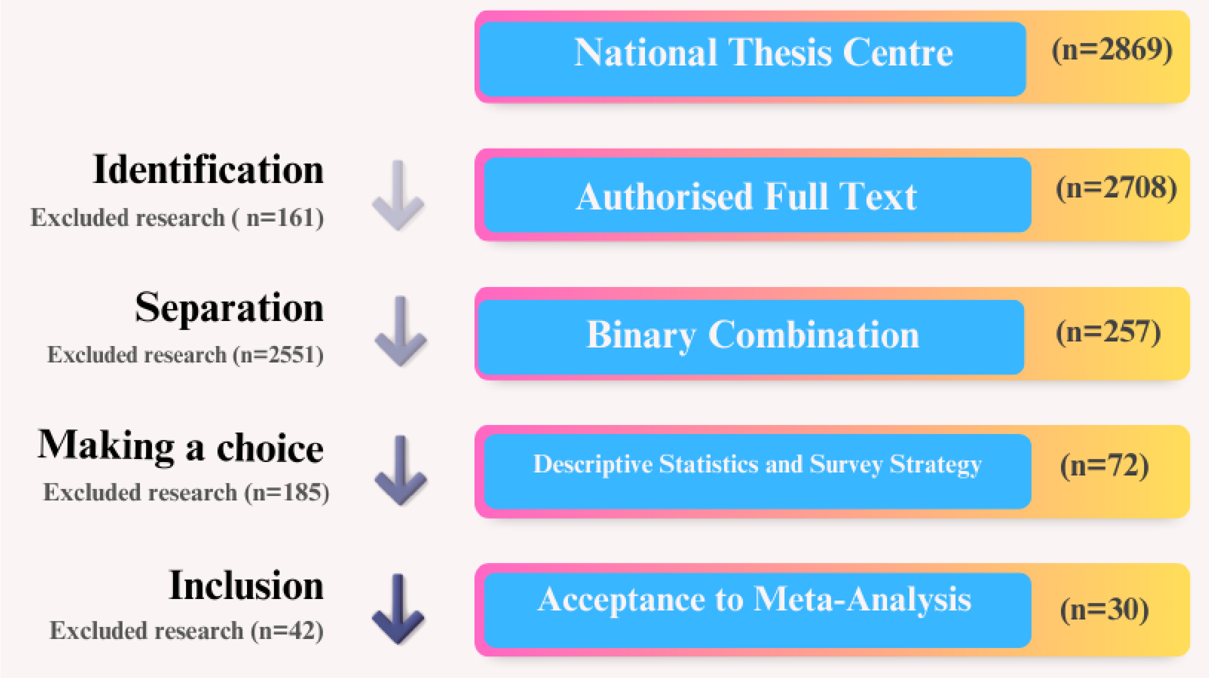

Figure 1. Flow diagram

Inclusion Criteria

The meta-analysis study titled "Investigation of Educational Programmes Supporting the Social Development of Preschool Children" has set specific inclusion criteria to ensure the relevance and reliability of the selected studies. The inclusion criteria are as follows:

1. Time Frame: The studies included in the meta-analysis should have been conducted between the years 2007 and 2022. This period ensures that the research encompasses recent developments and trends in educational programs supporting the social development of preschool children.

2. Source of Studies: The research should consist of postgraduate studies available in the National Thesis Centre database. This criterion ensures that the selected studies have undergone academic scrutiny and represent a reliable source of information.

3. Full-Text Accessibility: Only studies for which the full text is accessible are considered for inclusion. Having access to the complete research allows for a thorough evaluation of the study's methodology, results, and conclusions.

4. Study Design: The research must be either experimental or quasi-experimental in nature. Experimental studies involve the deliberate manipulation of variables to observe their effects, while quasi-experimental studies include non-randomized designs that still allow for causal inferences.

5. Target Population: The studies should focus on the preschool education level. This criterion ensures that the research specifically pertains to the age group and context of interest, which is preschool children.

6. Availability of Statistical Information: The selected studies should provide statistical information, including sample size, standard deviation, and arithmetic mean for both the experimental and control groups. These data are essential for calculating the effect size, which measures the magnitude of the intervention's impact.

7. Language and Format: The research must be written in either Turkish or English and be in a computerized format. This requirement enables the researchers to access and analyze the relevant content effectively.

By adhering to these inclusion criteria, the meta-analysis study aims to ensure the quality and relevance of the selected studies and provide valuable insights into the effect of educational programs on the social development of preschool children.

Operating Characteristics

In the context of the meta-analysis study titled "Investigation of Educational Programmes Supporting the Social Development of Preschool Children," several study characteristics have been identified for consideration. These characteristics encompass the publication type, institute affiliation of the researchers, duration of the experimental procedures, and the sample size employed in the individual studies. In the pursuit of comprehensively analyzing the impact of educational programmes on the social development of preschool children, these key attributes assume significance in facilitating a systematic assessment and synthesis of the research findings.

Coding of Data

The pertinent descriptive data, encompassing sample size, standard deviation, and arithmetic mean, extracted from the experimental or quasi-experimental studies incorporated in the study's scope, were meticulously coded within a systematic framework using a specially devised coding form in Microsoft Excel software. The process involved a careful examination of the data to ensure accuracy and consistency in the compilation of information for subsequent analysis.

Validity and Reliability of Coding

To ensure the credibility and dependability of the research findings, expert validation was sought, and their input was diligently incorporated into finalizing the thematic aspects. The selected thesis studies within the research scope were subjected to periodic scrutiny by the researcher. For data analysis, Miles and Huberman's (1994) reliability formula, denoted as [Reliability = (Agreement / (Agreement + Disagreement)) x 100], was employed. The inter-coding reliability agreement was calculated at an impressive rate of 97%. This result attests that the coding values exhibit a satisfactory level of reliability, as per the criteria established by Neuendorf (2002) and Yıldırım & Şimşek (2021).

Analysing the Data

During the research, the Comprehensive Meta Analysis statistical package software was employed to compute the effect sizes of the studies incorporated in the meta-analysis. A significance level of 95% was selected for the study. Hedge's g coefficient was utilized as the effect size measure, considering the characteristics of the sample under investigation, as outlined by Şen (2019). For effect size interpretation, the classification proposed by Cohen, Manion, and Morrison (2021) was adopted, and Table 1 presents the relevant effect size classification.

Table 1. Effect size classification

Range	Value
0-0.20	Weak impact
0.21-0.50	Small impact
0.51-1.00	Medium impact
>1.00	Powerful impact

The publication years and sample sizes of the studies included in the research are shown in Table 2.

Table 2. Studies included in the meta-analysis

No	Studies	Year	Experimental Group	Control Group	Total
1	Kurt	2007	23	23	46
2	Yaşa-Giren	2008	17	17	34
3	Ceylan	2009	45	45	90
4	Durualp	2009	48	48	96
5	Eti	2010	21	22	43
6	Arda	2011	51	44	95
7	Sezici	2013	39	40	79
8	İnce	2014	25	25	50
9	Aksoy	2014	40	40	80
10	Kacır	2015	119	84	203
11	Özgündüz	2015	17	25	42
12	Uzun	2016	40	40	80
13	Sevgen	2016	32	32	64
14	Kılıç	2016	26	29	55
15	Kurt	2016	22	23	45
16	Karaman	2016	22	22	44
17	Dedeoğlu	2018	20	20	40
18	Aslan	2018	18	19	37
19	Kerigan	2018	9	9	18
20	Türe	2018	12	12	24
21	Güneş	2018	20	20	40
22	Çiftçi	2019	13	20	33
23	Şirin	2019	64	66	130
24	Ezmeci	2019	26	26	52
25	Şahbaz	2019	20	20	40
26	Şirin-Kaya	2020	19	20	39
27	Akyel	2020	25	24	49
28	Erten-Sarıkaya	2021	221	198	419
29	Erten	2022	13	17	30
30	Dinç	2022	17	17	34
	Total		**1084**	**1047**	**2131**

As depicted in Table 2, the meta-analysis encompassed 30 thesis studies investigating educational programmes supporting the social development of preschool children. An examination of these studies based on their respective publication years reveals that the highest number of studies were conducted in 2016 (n=5) and 2018 (n=5), while the least number of studies were carried out in 2007 (n=1), 2008 (n=1), 2010 (n=1), 2011 (n=1), 2013 (n=1), and 2021 (n=1). Furthermore, with respect to the composition of the sample groups, the experimental group comprised 1084 subjects (25.4%), the control group consisted of 1047 subjects (24.6%), and the total sample size encompassed 2131 subjects.

Research Ethics

This academic study has been prepared in accordance with publication and research ethics. The sources used during the study are duly indicated in the bibliography. It was deemed ethically appropriate with the letter of Fırat University Social and Human Sciences Ethics Committee dated 30.05.2023 and numbered 2023-11.

Findings

This section provides a comprehensive presentation of the frequency and percentage distributions for the data pertaining to the 30 thesis studies included in the meta-analysis, as well as the study characteristics of the research. The frequency and percentage tables exhibit the distribution of publication types among the selected studies, which are displayed in detail in Table 3.

Table 3. Frequency and percentage values of the publication types of the studies

Types of Publication	f	%
Master's degree	43	69.4
PhD	19	30.6
Total	62	**100**

As observed from the data in Table 3, the number of master's thesis studies (n=43) exceeds more than twice the count of doctoral thesis studies (n=19). The subsequent section, Table 4, depicts the frequency and percentage distributions concerning the institutes where the respective studies were conducted.

Table 4. Frequency and percentage values of the institutes where the studies were conducted

Institutes	f	%
Education Sciences	32	51.6
Social Sciences	9	14.5
Health sciences	6	9.7
Science	6	9.7
Postgraduate Education	9	14.5
Total	**62**	**100**

As evident from the findings presented in Table 4, among the studies encompassed in the research, the institute of educational sciences (n=41) stands out prominently, exhibiting a substantial lead over other institutes. Conversely, the institutes of social sciences (n=9) and postgraduate education (n=9) both share an equal frequency, ranking second in occurrence. Similarly, the institutes of health sciences (n=6) and science (n=6) also demonstrate identical frequencies and rank at the bottom of the list. The subsequent section, Table 5, provides the frequency and percentage distributions pertaining to the experimental process durations of the respective studies.

Table 5. Frequency and percentage values of the experimental process durations of the studies

Experimental Procedure Periods	f	%
4-7 Weeks	9	14.5
8-11 Weeks	32	51.6
12 Weeks and over	21	33.9
Total	**62**	**100**

As indicated in Table 5, the studies incorporated in the research exhibit the lowest frequency in the range of 4-7 weeks (n=9) for the experimental process durations, while the highest frequency is observed in the range of 8-31 weeks (n=32). The subsequent section, Table 6, illustrates the frequency and percentage distributions concerning the sample sizes of the respective studies.

Table 6. Frequency and percentage values of sample sizes of the studies

Sample Sizes	f	%
1-40 Sample	18	29
41-70 Sample	28	45.2
70 Sample and above	16	25.8
Total	**62**	**100**

Upon examination of Table 6, it becomes evident that among the studies encompassed in the research, the range of 41-70 participants (n=28) holds the highest frequency, ranking first in terms of sample sizes. Subsequently, the sample size range of 1-40 participants (n=18) secures the second position in frequency. Lastly, the sample size range of 70 and above participants (n=16) exhibits the lowest frequency and ranks last among the included studies.

Findings Related to the First Sub-Aim

The primary objective of this research is to investigate the effect of educational programmes on the social development of preschool children. To address this inquiry, the fixed effects model was employed as the analytical framework for computing the effect size and assessing the homogeneity of the studies included in the meta-analysis. The results derived from the fixed effects model, encompassing the overall effect size and the degree of homogeneity among the studies, are comprehensively presented in Table 7.

Table 7. Findings on overall effect size and homogeneity of studies according to fixed effects model

Model Type	Es	Df	Q	X^2	p	I^2	%95 Confidence Interval	
							Lower	Upper
Fixed Effects Model	1.003	61	559.982	79.082	0.00	89.08	0.93	1.06

As presented in Table 7, the homogeneity assessment of the studies included in the meta-analysis, conducted through the fixed effects model, yielded a Q-value of 559.982. Upon examining the Chi-Square (X^2) table with 61 degrees of freedom and a 95% significance level, the closest value was found to be 79.082. It was observed that the Q-value exceeded the X^2 distribution value, resulting in an I^2 value of 89%. According to Higgins et al. (2003), an I^2 value exceeding 75% indicates a high level of heterogeneity among the studies. Moreover, the heterogeneity test was found to be significant ($p=0.00$; $p<0.01$), leading to the preference of the random effects model over the fixed effects model for calculating the effect size values of the studies (Dinçer, 2022). The subsequent section, Table 8, presents the outcomes concerning the overall effect size of the studies based on the random effects model.

Table 8. Findings on the overall effect size of the studies according to the random effects model

Model Type	N	Z	p	SE	ES	%95 Confidence Interval	
						Lower	Upper
Random Effects Model	62	10.254	0.00	0.10	1.082	0.87	1.28

As depicted in Table 8, the effect size value obtained using the random effects model was calculated as 1.082, with a standard error of 0.10. Concurrently, at a 95% confidence interval level, the lower limit of the effect size was found to be 0.87, and the upper limit was determined to be 1.28. Additionally, the model demonstrated statistical significance with p-values of 0.00 and p<0.01. The positive average effect size value (+1.082) indicates that the treatment effect favors the experimental group. This implies that the applied educational programmes have a positive effect on the social development of preschool children, and according to Cohen et al.'s (2021) classification, a moderate effect size has been achieved. Figure 2 presents the forest plot, illustrating the effect size of the studies determined by the random effects model, alongside the effect size values not combined.

Model	Study name	Statistics for each study						
		Hedges's g	Standard error	Variance	Lower limit	Upper limit	Z-Value	p-Value
	Kurt, 2007a	0,199	0,291	0,084	-0,371	0,768	0,684	0,494
	Kurt, 2007b	1,432	0,326	0,106	0,793	2,071	4,391	0,000
	Yaşa-Giren, 2008	0,098	0,335	0,112	-0,559	0,755	0,292	0,770
	Ceylan, 2009	2,958	0,304	0,092	2,362	3,553	9,736	0,000
	Durualp, 2009a	1,344	0,225	0,050	0,904	1,784	5,987	0,000
	Durualp, 2009b	0,158	0,203	0,041	-0,240	0,555	0,778	0,436
	Durualp, 2009c	2,883	0,290	0,084	2,314	3,452	9,930	0,000
	Durualp, 2009d	1,205	0,220	0,049	0,773	1,637	5,467	0,000
	Eti, 2010	0,673	0,308	0,095	0,069	1,277	2,185	0,029
	Arda, 2011	-1,283	0,224	0,050	-1,722	-0,843	-5,719	0,000
	Sezici, 2013a	0,599	0,228	0,052	0,152	1,045	2,628	0,009
	Sezici, 2013b	1,046	0,238	0,057	0,579	1,512	4,396	0,000
	İnce, 2014	0,861	0,291	0,085	0,290	1,432	2,954	0,003
	Aksoy, 2014	1,076	0,237	0,056	0,611	1,541	4,537	0,000
	Kacır, 2015a	1,210	0,154	0,024	0,908	1,512	7,848	0,000
	Kacır, 2015b	1,231	0,155	0,024	0,928	1,533	7,962	0,000
	Kacır, 2015c	1,167	0,153	0,024	0,867	1,468	7,613	0,000
	Kacır, 2015d	1,303	0,156	0,024	0,997	1,608	8,351	0,000
	Özgündüz, 2015a	0,095	0,309	0,095	-0,510	0,700	0,307	0,759
	Özgündüz, 2015b	0,367	0,311	0,097	-0,242	0,977	1,181	0,238
	Özgündüz, 2015c	0,032	0,308	0,095	-0,572	0,637	0,105	0,916
	Uzun, 2016	1,571	0,254	0,064	1,073	2,068	6,187	0,000
	Sevgen, 2016	2,121	0,310	0,096	1,514	2,729	6,841	0,000
	Kılıç, 2016a	0,388	0,269	0,072	-0,139	0,915	1,443	0,149
	Kılıç, 2016b	0,994	0,283	0,080	0,440	1,548	3,517	0,000
	Kılıç, 2016c	0,816	0,277	0,077	0,273	1,360	2,943	0,003
	Kılıç, 2016d	0,730	0,275	0,076	0,191	1,270	2,654	0,008
	Kurt, 2016a	3,660	0,484	0,235	2,711	4,610	7,555	0,000
	Kurt, 2016b	1,596	0,338	0,114	0,934	2,258	4,724	0,000
	Kurt, 2016c	2,095	0,367	0,135	1,376	2,815	5,711	0,000
	Kurt, 2016d	3,310	0,456	0,208	2,417	4,203	7,265	0,000
	Karaman, 2016a	0,661	0,304	0,093	0,064	1,257	2,170	0,030
	Karaman, 2016b	0,643	0,304	0,092	0,047	1,239	2,116	0,034
	Karaman, 2016c	1,060	0,317	0,100	0,439	1,682	3,346	0,001
	Karaman, 2016d	0,790	0,308	0,095	0,186	1,393	2,565	0,010
	Dedeoğlu, 2018	-0,036	0,310	0,096	-0,644	0,571	-0,117	0,907
	Aslan, 2018	0,653	0,331	0,109	0,005	1,301	1,975	0,048
	Kerigan, 2018a	3,556	0,743	0,553	2,098	5,013	4,782	0,000
	Kerigan, 2018b	2,739	0,640	0,410	1,484	3,994	4,278	0,000
	Türe, 2018a	-0,662	0,406	0,165	-1,457	0,133	-1,633	0,103
	Türe, 2018b	-0,509	0,401	0,161	-1,295	0,277	-1,269	0,204
	Türe, 2018c	-0,370	0,398	0,158	-1,149	0,410	-0,929	0,353
	Türe, 2018d	-0,535	0,402	0,161	-1,323	0,252	-1,333	0,183
	Güneş, 2018	0,740	0,321	0,103	0,111	1,368	2,306	0,021
	Çiftçi, 2019	1,191	0,377	0,142	0,452	1,931	3,158	0,002
	Şirin, 2019	0,778	0,181	0,033	0,423	1,133	4,299	0,000
	Ezmeci, 2019a	1,712	0,321	0,103	1,084	2,341	5,340	0,000
	Ezmeci, 2019b	1,126	0,295	0,087	0,549	1,704	3,822	0,000
	Ezmeci, 2019c	1,518	0,311	0,097	0,908	2,127	4,879	0,000
	Ezmeci, 2019d	1,226	0,298	0,089	0,641	1,811	4,108	0,000
	Şahbaz, 2019	1,934	0,378	0,143	1,194	2,675	5,118	0,000
	Şirin-Kaya, 2020a	1,612	0,363	0,132	0,900	2,324	4,440	0,000
	Şirin-Kaya, 2020b	1,327	0,348	0,121	0,645	2,009	3,814	0,000
	Şirin-Kaya, 2020c	1,258	0,345	0,119	0,583	1,934	3,651	0,000
	Akyel, 2020a	1,854	0,338	0,114	1,191	2,516	5,487	0,000
	Akyel, 2020b	1,521	0,320	0,103	0,893	2,148	4,746	0,000
	Akyel, 2020c	2,972	0,411	0,169	2,166	3,778	7,225	0,000
	Akyel, 2020d	2,416	0,372	0,139	1,686	3,146	6,489	0,000
	Erten-Sarıkaya, 2021	0,864	0,102	0,010	0,664	1,064	8,457	0,000
	Erten, 2022	-1,572	0,412	0,170	-2,380	-0,765	-3,817	0,000
	Dinç, 2022a	1,952	0,410	0,168	1,148	2,756	4,759	0,000
	Dinç, 2022b	0,966	0,355	0,126	0,270	1,661	2,722	0,006
Random		1,082	0,106	0,011	0,875	1,289	10,254	0,000

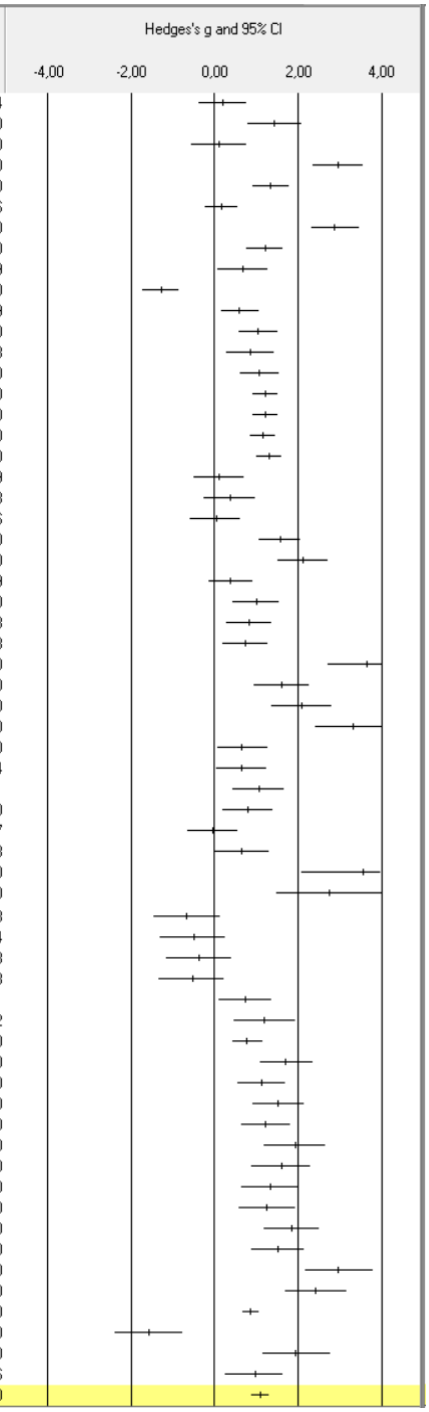

Figure 2. Forest plot of the effect size of the studies determined according to the random effects model and the effect size values not combined

Figure 2 illustrates Hedges's g values and their distributions determined using the random effects model. The black vertical lines displayed opposite each study in the forest plot represent the corresponding effect size of that study. The horizontal lines around these points signify that the effect size of each study falls within the 95% confidence interval. Upon analyzing Figure 2, it is evident that out of the 62 effect size values included in the meta-analysis, 55 of them exhibit a positive direction, while the remaining seven indicate a negative direction. In light of these findings, the study by Erten (2022) presents the smallest effect size value (g=-1.572), whereas the study by Kurt (2016a) demonstrates the largest effect size value (g=3.660). Moreover, when considering the effect size classification proposed by Cohen et al. (2021), it becomes apparent that among the 55 studies with a positive direction, five studies have a weak effect (0-0.20), two studies have a small effect (0.21-0.50), 14 studies have a medium effect (0.51-1.00), and 34 studies have a strong effect (>1.00).

Publication Bias

Funnel Plot for testing publication bias in the meta-analysis study is presented in Figure 3.

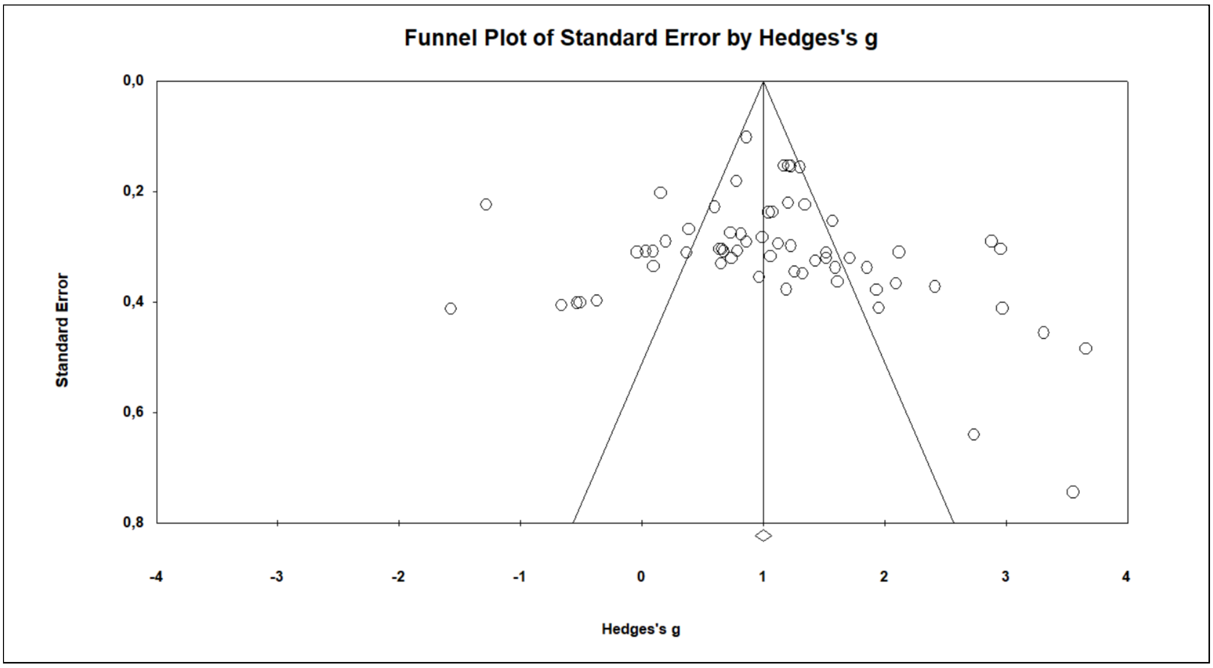

Figure 3. Funnel plot with effect sizes

Upon scrutinizing the funnel plot depicted in Figure 3, it becomes apparent that the effect sizes of the studies exhibit a symmetrical distribution, indicating no evidence of publication bias. Nevertheless, to further examine potential publication bias, Classical Secure N and Orwin's Secure N statistics were utilized. The Classical Safe N statistic indicated that 3401 additional studies would be required to negate effect sizes larger than 320 (5k+10). Similarly, Orwin's Safe N statistic indicated that a substantial number of missing studies, specifically 62104, would be needed to reduce Hedge's g value to an insignificant level of 0.001. Consequently, based on these analyses, it was concluded that the meta-analysis study does not suffer from publication bias (Dinçer, 2022; Rosenthal, 1979; Şen & Yıldırım, 2020). Moreover, Begg and Mazumdar Rank Correlation statistic was employed as another method to assess publication bias. The expectation was for the Tau coefficient to be close to 1.00, and for the two-tailed p-value to be greater than 0.05 to avoid significant differences. In this study, the Tau coefficient was found to be 0.13, and the p-value was 0.11 (p>0.05), suggesting the absence of publication bias (Dinçer, 2022). Finally, Egger's method, specifically Egger's Regression Intercept or Regression test in CMA, was employed to test for publication bias. This approach evaluates bias using the precision (1/standard error) to estimate the standardized effect, obtained by dividing the effect size by the standard error. In this study, the t-value was calculated as 1.079, with 60 degrees of freedom at a 95% confidence interval ranging from -0.98 to 3.30. The two-tailed p-value was determined as 0.284 (p>0.05), indicating the absence of publication bias in the meta-analysis study (Şen & Yıldırım, 2020).

Findings Related to the Second Sub-Aim

In the second sub-objective of the research, the answer to the question "Do the effects of the implemented education programmes on the social development of preschool children differ in terms of publication types?" is sought. The effect sizes of the studies in terms of extension types are presented in Table 9.

Table 9. Effect sizes of studies in terms of publication types

Moderator Variable					%95 Confidence Interval	
	Qb	p	N	ES	Lower	Upper
Types of Publication	0.55	0.45				
Master's degree			43	1.03	0.74	1.32
PhD			19	1.18	0.90	1.47

The homogeneity value (Qb) was computed as 0.55 for the groups formed by considering the publication types of the studies. By referring to the X^2 table, the critical value corresponding to a 95% significance level and one degree of freedom was determined as 3.84. As the homogeneity value between the groups is smaller than the critical value, it indicates that there is no statistically significant difference between the groups formed based on the publication types of the studies. In other words, the distribution of effect sizes among the different publication types does not vary significantly, suggesting a level of homogeneity in the results obtained from the studies categorized according to their publication types.

Findings Related to the Third Sub-Aim

In the third sub-objective of the research, the focus is on investigating the question, "Does the effect of the implemented education programmes on the social development of preschool children vary based on the institutes where the studies were conducted?" To address this question, the effect sizes corresponding to the institutes where the studies were carried out are presented in Table 10. The objective is to examine whether there are significant differences in the effect sizes across the various institutes, which may shed light on potential variations in the impact of the education programmes on preschool children's social development depending on the institutional context.

Table 10. Effect sizes according to the institutes where the studies were conducted

Moderator Variable					%95 Confidence Interval	
	Qb	p	N	ES	Lower	Upper
Institutes	7.81	0.09				
Education Sciences			32	1.33	1.03	1.63
Social Sciences			9	0.52	-0.16	1.21
Health Sciences			6	1.13	0.96	1.30
Science			6	1.35	0.69	2.02
Postgraduate Education			9	0.57	-0.10	1.24

As indicated in Table 10, the homogeneity value (Qb) computed for the groups formed based on the institutes where the studies were conducted was determined to be 7.81. By referring to the X^2 table with four degrees of freedom at a 95% significance level, the critical value was calculated as 9.48. Since the homogeneity value between the groups is smaller than the critical value, it indicates that there is no statistically significant difference between the groups formed according to the institutes where the studies were conducted. In other words, the effect sizes do not vary significantly across different institutes, suggesting a level of homogeneity in the results obtained from the studies conducted in various institutional settings regarding the impact of education programmes on preschool children's social development.

Findings Related to the Fourth Sub-Aim

In the fourth sub-objective of the research, the investigation centers around the question, "Does the effect of the applied education programmes on the social development of preschool children differ based on the duration of the experimental process in the studies?" To address this question, the effect sizes of the studies corresponding to the duration of the experimental process are displayed in Table 11. The objective is to explore whether there are significant variations in the effect sizes across different experimental process durations, which may provide insights into the potential impact of the education programmes on preschool children's social development concerning the length of the intervention period.

Table 11. Effect sizes of the studies according to the duration of experimental procedures

Moderator Variable	Qb	p	N	ES	%95 Confidence Interval	
					Lower	Upper
Experimental Procedure Periods	3.99	0.13				
4-7 Weeks			9	0.96	0.31	1.62
8-11 Weeks			32	1.29	0.98	1.59
11 Weeks and over			21	0.85	0.54	1.15

As observed in Table 11, the homogeneity value (Qb) computed for the groups formed based on the experimental process durations of the studies was determined to be 3.99. By referring to the X^2 table with two degrees of freedom at a 95% significance level, the critical value was found to be 5.99. Since the homogeneity value between the groups is smaller than the critical value, it indicates that there is no statistically significant difference between the groups formed according to the experimental process durations of the studies. In other words, the effect sizes do not exhibit significant variations across different experimental process durations, suggesting a level of homogeneity in the results obtained from studies conducted with varying lengths of intervention periods concerning the impact of education programmes on preschool children's social development.

Findings Related to the Fifth Sub-Aim

In the fifth sub-objective of the research, the main inquiry revolves around the question, "Does the effect of the implemented education programmes on the social development of preschool children differ based on the sample sizes of the studies?" To address this question, the effect sizes of the studies corresponding to the sample sizes are presented in Table 12. The objective is to explore whether there are significant discrepancies in the effect sizes across different sample sizes, which may offer insights into the potential influence of sample size on the impact of education programmes on preschool children's social development.

Table 12. Effect sizes of studies according to sample sizes

Moderator Variable	Qb	p	N	ES	%95 Confidence Interval	
					Lower	Upper
Sample Sizes	3.25	0.19				
10-40 Sample			18	0.73	0.24	1.23
41-70 Sample			28	1.27	0.97	1.57
71 Sample and above			16	1.11	0.75	1.47

The homogeneity value (Qb) calculated for the groups formed based on the sample sizes of the studies was determined to be 3.25. By referring to the X^2 table with two degrees of freedom at a 95% significance level, the critical value was found to be 5.99. Since the homogeneity value between the groups is smaller than the critical value, it indicates that there is no statistically significant difference between the groups formed according to the sample sizes of the studies. In other words, the effect sizes do not exhibit significant variations across different sample sizes, suggesting a level of homogeneity in the results obtained from studies conducted with varying sample sizes concerning the impact of education programmes on preschool children's social development.

Discussion, Conclusion and Recommendations

After conducting a meta-analysis of postgraduate theses in Turkey concerning educational programmes supporting the social development of preschool children, it was determined that these programmes have a strong and positive effect according to Cohen et al.'s (2021) effect size classification. This finding signifies that educational programmes supporting preschool children's social development contribute to enhancing social and emotional skills, self-care abilities, and values like love, respect, responsibility, cooperation, tolerance, sharing, and solidarity, as well as improving communication and self-control (MOE, 2013). The literature review revealed that various studies (Akyel, 2020; Aslan, 2018; Dinç, 2022; Durualp, 2009; İnce, 2014; Kacır, 2015; Kurt, 2007; Sevgen, 2016) support the positive effect of such educational programmes on social development. Additionally, the results of Basit & Deniz's (2021) meta-analysis on preschool children's cognitive, psychomotor, social, and emotional development using the random effects model align with the findings of this study.

Regarding the publication types of the studies, both master's and doctoral theses demonstrated positive effect sizes, indicating that education programmes implemented at both levels have a beneficial impact on preschool children's social development. The effect sizes were found to be homogeneous across the publication types, leading to the conclusion that although the effect size of doctoral level studies may be larger than master's level studies, the difference between them is not statistically significant. This may be due to the fact that doctoral theses include a more elaborate research process than master's theses and a more comprehensive process is followed based on the experiences of the researcher.

When examining the effect of educational programmes based on the institutes where the studies were conducted, positive and homogeneous effect sizes were observed in all five institutes. While the institute of science exhibited the highest effect size value, the institute of social sciences presented the lowest value. These results imply that educational programmes supporting preschool children's social development have a positive impact in all institutes, without any significant difference between them. Furthermore, when considering the experimental process durations, positive and homogeneous effect sizes were evident across all intervals. The highest effect size was observed in the 8-11 week interval, while the 4-7 week and 11 weeks and above intervals showed comparable effect sizes. Consequently, it can be deduced that educational programmes supporting preschool children's social development are particularly effective during the 8-11 week period compared to other intervals. In the meta-analysis study conducted by Basit and Deniz (2021), it was determined that the total duration of the educational interventions applied for 10 weeks or more increased the effect of the educational intervention on children's development. This supports the results of our study. In addition, this may mean that the programme has a certain and critical time interval for the programme to show its effect. As a matter of fact, as this period gets shorter, the effect of the programme may not be sufficient, and as the duration of the experimental process gets longer, it may limit the effect of the intervention. Likewise, when analyzing the effect of educational programmes based on the sample sizes of the studies, positive and homogeneous effect sizes were found in all sample groups. The highest effect size was noted in the 41-70 sample size category, whereas the lowest effect size was observed in the 10-40 sample size group. These findings indicate that educational programmes supporting preschool children's social development yield positive outcomes across all sample sizes without any significant differences. In the meta-analysis study conducted by Basit and Deniz (2021), it was determined that the number of children in the intervention group below 20 increased the effect of educational intervention on children's development. However, in our study, the lowest effect size was found to have the lowest sample size. Therefore, this finding does not coincide with the results of our study.

Based on the research results, several recommendations can be made:

• Given the strong effect of educational programmes on preschool children's social development, it is essential to develop alternative education modules and programmes that specifically focus on enhancing social skills in the preschool period.

• Expanding the scope of future research to include theses, articles, and papers from international sources would contribute to a more comprehensive understanding of the topic.

• To ensure reliable meta-analysis studies, researchers should provide clear and detailed descriptive statistics, including arithmetic mean, sample size, and standard deviation in their studies. Encouraging researchers to report these statistics transparently would enhance the reliability and robustness of future meta-analyses.

• The moderator variables examined in the process of the research can be included in future meta-analysis studies and the change between them can be focused.

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"Drama in Education" Lesson According to Pre-service Teachers in Terms of Individual and Professional Development

Research Article

Eda TEKIN[1], Genc Osman ILHAN[2]

[1]Yıldız Technical University, Faculty of Education, Department of Turkish and Social Science Education, Istanbul, Türkiye 0000-0001-6831-8101

[2] Yıldız Technical University, Faculty of Education, Department of Turkish and Social Science Education, Istanbul, Türkiye 0000-0003-4091-4758

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ABSTRACT

This study aims to examine how pre-service teachers who took the "Drama for Education" course evaluated the course in terms of individual and professional development. The research was carried out with a case study, which is one of the qualitative research designs. Within the scope of the study, 58 pre-service teachers from different departments who took the "Drama in Education" course as an elective were studied. During the data collection process, an open-ended form was used with 58 pre-service teachers and interviews were conducted with 10 pre-service teachers at the end of the semester. The obtained data were analyzed by content analysis method. According to the results of the research, at the beginning of the semester, pre-service teachers associated the "Drama in Education" course with a theoretical process and children's games. At the end of the term, pre-service teachers expressed a number of positive views, both individually and professionally (for example, gaining empathy, increasing self-confidence, gaining teaching experience). These findings support that the creative drama course is an effective tool that can contribute positively to both the individual development of pre-service teachers and their future teaching careers. This study emphasizes the potential of creative drama education to increase the pedagogical competencies of pre-service teachers and the importance of integrating such courses into the education process of pre-service teachers.

Keywords:

Creative drama, drama in education, individual development, professional development, pre-service teachers

[1]Corresponding author's address: Yıldız Teknik Üniversitesi

Telephone: +905077885728

e-mail: edatkn@hotmail.com

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Introduction

As the roles of teachers and students change in today's educational environments, students have become more active, and it is important for teachers to start their professional life equipped with the knowledge and skills that will enable this activity. The change in educational environments continues to evolve with an approach that encourages students to hands-on learning. Drama is one of the activities that keeps students active. The frequent use of the drama method of hands-on learning rather than teacher-centred teaching, in a school environment where student-centric teaching is at the forefront, can increase the efficiency of the learning-teaching process (Toksun, 2019: 145). Teachers may choose not just traditional narrative methods for their educational goals, but methods that students can learn hands-on experience. One of these teaching methods is that drama is an effective means of communication (Güven, 2012). This could be achieved through the spread of drama lessons in schools. Creative drama lessons have begun to be taught in educational environments that continue from pre-school until the end of university education, and even individuals who take courses or training specifically for individual development are available.

Creative drama is a group work in which observation, experience, feelings and experiences are embodied (Adıgüzel, 2018; San, 2002; Üstündağ, 2016). Creative drama is a method that enables people to know themselves and others and develop empathy through direct and mutual communication (Susar Kırmızı, 2015).

For years, the classroom atmosphere was a passive environment where the teacher gave information to the students and asked them questions. Such an environment did not allow students to be creative. It was just important to get the information. In this respect, creative drama can provide the student with opportunities for focus and effective learning. Creative drama in the classroom helps to develop different thinking skills, creativity, cognitive thinking skills and encourage the development of oral and written communication skills (Annarella, 1992). The most general form of creative drama in education is the use of techniques such as naturalization, role-playing, animation of any subject, based on their lives with a group. This animation process takes advantage of the general principles of the game, and the creative drama process is carried out in a particular place, accompanied by a leader (Adıgüzel, 2006). Creative drama provides activeness instead of passivity. With creative drama, the individual discovers himself, becomes self-confident, social development is supported, and gains different thinking skills (Susar Kırmızı, 2009:52). Since drama makes constant demands on a person’s imagination, it develops a learner’s ability to think more effectively (Athiemoolam, 2004: 4).

Creative drama benefits individuals in many ways. In this respect, teachers' ability to use creative drama effectively in educational environments is directly proportional to the education they receive. (Kaf Hasırcı et al., 2008). Teachers are one of the essential components of a quality education. In this context, the training they receive before and after the profession is important and they need to improve themselves. For this reason, using effective methods in their lessons enables students to participate more actively in the learning process (Aykaç & Metinnam, 2019). The positive effects of using creative drama to go beyond traditional teaching on teachers, pre-service teachers and students have been revealed in many studies (Kaf, 1999; Namdar & Camadan, 2016; Okvuran, 1994; Özsoy, 2003; Susar Kırmızı, 2015). It is necessary for effective education and training that the teacher, leaving the dimension of being a knowledge-transmitter, provides an environment in which they can perform communication, creativity and multidimensional thinking skills in their lessons. In order to create this environment, the teacher must have theory and practice skills related to creative drama (Adıgüzel, 2006).

According to Yassa (1999), there was a notable absence of studies addressing the relationship between drama education and the development of a broad spectrum of social skills. The study's findings shed light on the typical attitudes and behaviors observed in the daily interpersonal interactions among students engaged in creative drama. They also reveal that, in many instances, participation in drama classes has a positive effect on social interaction and self-confidence. Katz (2000:2) argues that drama serves as a valuable tool for comprehending individual and human experiences. It provides students with the opportunity to immerse themselves in fictional scenarios and characters, facilitating an exploration of emotions, attitudes, opinions, and relationships. This immersive approach allows students to grasp abstract concepts more easily by translating them into a concrete form through dramatic representation.

The significance of this study lies in its potential to illuminate the transformative impact of the "Drama in Education" course on pre-service teachers. By exploring how these aspiring educators perceive drama and its role in both their personal and professional development, the research can inform teacher training programs, improve teaching methods, and contribute to the broader educational literature. It has the capacity to highlight the value of creative drama courses in shaping future educators who are not only more adept in their teaching skills but also more engaged and effective in the classroom, ultimately benefiting students and the education system as a whole.

In this study, it was aimed to examine the individual and professional evaluations of the pre-service teachers who took the creative drama course. For this purpose, answers to the following questions were sought;

• How do the prospective teachers who take the "Drama in Education" course view drama and the lesson at the beginning and end of the term?

• How do pre-service teachers who take the "Drama in Education" course evaluate the course and the process in terms of individual development?

• How do pre-service teachers who take the "Drama in Education" course evaluate the course and the process in terms of professional development?

Methodology

Model

The research was designed in a qualitative research design. Case study, one of the qualitative research designs, was used in the study. A case study involves examining a modern phenomenon in its authentic real-life environment and dealing with a situation where the distinction between the phenomenon and its context isn't clearly apparent (Yin, 1993).

Study Group

In this study, convenience sampling method (Marshall, 1996) was chosen to collect information from participants who are easily accessible to the researcher (Palinkas et al., 2013) to constitute the study group, consisting of students enrolled in the "Drama in Education" course . The study group consists of 58 pre-service teachers from 9 different departments who have chosen the "Drama in Education" course at Yıldız Technical University Faculty of Education. The distribution of pre-service teachers according to their fields is presented in Table 1.

Table 1. Distribution of Pre-Service Teachers by Departments

Department	**f**
Department of Computer and Instructional Technologies Teaching	12
Department of Social Studies Teaching	8
Department of Preschool Teaching Education	7
Department of Primary School Teaching	7
Department of Turkish language Teaching	7
Department of Science Education	6
Department of English Language Teaching	5

Department of Guidance and Psychological Counseling	3
Department of Elementary Mathematics Education	3
Total	58

Data Collection Tools

Two open-ended forms were used as data collection tool in the study. The first form was applied in writing to all students before the lessons started and after the term finished. The other form is a semi-structured interview form and it was applied by interviewing 10 pre-service teachers at the end of the semester after the classes were over. Both forms were developed by the researchers and the forms were finalized with the opinions of two experts. The content of the first form consists of a single question for obtaining preliminary information about drama. The semi-structured interview form, on the other hand, was created in order to take the statements of the participants from the individual and professional perspectives, as well as the questions about the lesson and the drama. After interviews with pre-service teachers, these interviews were transcribed.

Collection of Data and Analysis

The data collected through the research's data collection instruments and were analyzed by using content analysis. Coding was carried out in accordance with the research's objectives. Both the data derived from students' written responses and that obtained from interviews were systematically categorized into codes through content analysis. This approach enabled the identification and exploration of themes that emerged from the students' perspectives, providing a comprehensive understanding of the research data. In addition, another researcher who had previous experience in qualitative research coded the data and the compatibility between the coding of the two coders was evaluated. The analysis results were calculated with the simple percent agreement developed by Miles and Huberman (1994: 64), and the percent agreement was calculated as 91%.

Ethics Committee Approval

The study was approved by the Social and Human Sciences Research Ethics Committee of Yildiz Technical University (Date: 01.12.2022, Session No: 2022.12).

Findings

In this section, the findings of the research are given. These findings are presented below within the scope of the data obtained at the beginning and end of the semester and the direct opinions of some pre-service teachers are included.

Beginning of The Term

The opinions of the pre-service teachers about the Drama in Education course, which they stated in the open-ended form before the lessons at the beginning of the semester and at the end of the term were examined.

Table 2. Pre-service teachers' first opnions about the drama lesson at the beginning of the semester

First Opinions	**f**
Pre-service teachers thought that the drama course would proceed in a theoretical process	48
Pre-service teachers described drama as a field of children's games	10

The pre-service teachers stated that they thought that the drama course would proceed in a theoretical process before the lessons started at the beginning of the semester. They also described drama as a field consisting of children's games.

At the end of the Term (Written Opinions)

Table 3. Pre-service teachers' last opinions about drama lesson at the end of the term

Last Opinions	f
Fun	31
Hands-on experience	8
Permanence in teaching	6
Establishing eye contact	5
Concrete teaching	5
Group dynamics formation	4
Motivation	4
Total	63

The data reveals that students found the drama course highly enjoyable, as indicated by the prominent frequency of "Fun" with a count of (31). They also appreciated "Hands-on experience" with (8) mentions and recognized the lasting impact of the teaching, noted as "Permanence in teaching" (6) and "Concrete teaching" (5). Additionally, interpersonal aspects like "Establishing eye contact" (5) and "Group dynamics formation" (4) were significant, along with "Motivation" (4), showing that students were actively engaged and motivated in their learning.

At the end of the Term (Interviews)

As a result of the interviews with 10 pre-service teachers at the end of the term, the concept of drama and the views of the Drama in Education course in terms of individual and professional development are given in the tables below. The selection of pre-service teachers for interviews was based on their representation from various departments and their level of participation in the class, as determined by specific criteria.

Table 4. Opinions about the drama lesson

Drama Lesson	f
Creating group dynamics	10
Empathy	10
Fun	10
Creativity in teaching	10
Concrete teaching	6
Making eye contact	5
Active participation in teaching	5
Focusing	4
Learning by experience	4
Motivation	4
Total	68

The views in the table reflect various perspectives on the concept of drama as a result of interviews with 10 students. While the opinions focus on the fact that drama teaching can increase student participation, create group dynamics, create empathy, have fun; it also highlights their potential to embody and perpetuate learning and foster creativity. Eye contact, active participation, focusing, learning by experience and motivation also have an important place among the views. There are also opinions that drama activities can motivate students, focus their attention and encourage their active participation. This diversity demonstrates the potential of drama teaching to provide a wide range of positive effects that can address students' different learning styles and needs.

The opinions of some of the interviewed pre-service teachers as follows:

S2 expressed the view that, "I believe that activities where individuals form groups with different people and present a game as a group contribute to developing our social identity. These activities are both instructive and entertaining, and they are among the activities I want to implement for my own students."

S3 shared the sentiment that, "I felt that learning through drama is very enjoyable and lasting. In my professional life, I plan to apply these activities in science classes to make the concepts learned more memorable and make the lesson more exciting for students."

Table 5. Opinions About Individual Development

Individual Development	f
Raising awareness	10
Empathizing	10
Communicate	10
Socialization	6
Self-knowledge/discovery	2
Self-confidince	2
Total	40

Reflecting the results of the interviews with 10 pre-service teachers, it reveals the potential of the drama course for individual development. The opinions emphasize the potential of the drama course to improve awareness, empathy and communication for individual gains. Drama activities can offer students the opportunity to develop empathy, which is the ability to understand their own emotional states and the feelings of others. At the same time, it is thought that communication skills can be increased through staging and role-playing practice. Among the views, attention is drawn to gains such as "self-knowledge/discovery", which allows students to better understand themselves, and "self-confidence", which has the potential to increase self-confidence. Although there is a lower frequency of opinions among some participants about socialization, it is generally concluded that the drama course can affect the individual development of students in an enriching way. This table highlights the potential of drama activities to develop students' individual and emotional aspects. The opinions of some of the interviewed pre-service teachers as follows:

S4 reflected on the impact of Drama in Education, stating, "I believe that Drama in Education has added many valuable things to me in various areas. Firstly, I want to mention a personal development. When I entered new environments, I used to be very shy, didn't want to speak, and felt embarrassed. Thanks to the ice-breaking activity we did in the first class, I quickly adapted to the environment I needed to get used to for a long time. While I used to hesitate to make eye contact with most of my classmates in the class, that day I was comfortably making eye contact and smiling. This was a significant improvement for me."

S7 stated that "Throughout the entire process, I generally had positive impressions of the course. Everyone was friendly, and our instructors were experts in their fields. The class hours were spent very productively. Having teacher candidates from various departments broadened our perspectives. Even if we all took the same drama course, each of us had different interpretations and reflections related to our own fields. During breaks, we were able to share our thoughts with each other."

S9 shared his insight, stating, "I gained various awarenesses during this course. The first one is that we can learn while having fun. We achieved many gains through the most enjoyable methods. Most of the time, we were in groups when doing this. Being in groups and playing games in drama classes led to me getting to know new people."

Table 6. Opinions About Professional Development

Professional Development	f
Gaining Experience	10

It shows the importance of drama course for professional development by reflecting the views of 10 pre-service teachers. At the focal point of the views, the drama course has the potential to offer pre-service teachers the opportunity to gain professional experience. This table highlights the potential of the drama course to enrich pre-service teachers' pedagogical skills and lay a solid foundation for their teaching careers.

The opinions of some of the interviewed pre-service teachers as follows:

S1 stated that, "Getting to know people, establishing the right communication with them, trying to understand what they feel... These are very important things, and this course provides a child with these skills. It enriches them in a way. Hopefully, in the future, I can convey what I feel in this course to my children. Thank you."

S8 stated, "This course took me back to my childhood, to the time when we used to play games in the streets. It was a lot of fun, and I learned a lot. If I become a teacher in the future, I definitely plan to engage my students in educational activities like these games."

Conclusion and Discussion

As a result of the research conducted with pre-service teachers from different departments, it was determined that the creative drama course has many individual and professional benefits for pre-service teachers. Teachers stated what drama means to them and revealed various features of drama. The fact that pre-service teachers receive a qualified drama education before starting their professional life will enable them to develop their professional life in a more positive way. It is difficult and even impossible to carry out drama activities in schools without any training. Tutuman (2011) concluded that Turkish teachers who participated in in-service drama training and took courses related to drama were better at recognizing and applying drama than teachers who did not take drama lessons.

In this research, creative drama; It has been determined that the pre-service teachers have characteristics such as creating group dynamics, making eye contact with people, concrete teaching, permanence in teaching, fun, active participation in teaching, focusing, creativity in teaching, hands-on learning, motivation. Similar categories have emerged in the researches. Toksun (2019), in his research to determine the self-efficacy of Turkish teachers regarding the use of creative drama, teachers were asked what drama means to them. Categories such as taking action, empathizing, learning through play, development of cognitive skills, creativity, imagination, imitation, concretization, learning by having fun, being active, hands-on learning, and associating with real life by experiencing have emerged. Similarly, Elitok Kesici (2014) concluded that the drama course developed many positive behaviors in students such as socializing, developing creativity, self-confidence, taking responsibility and having fun in the lesson. It has been determined that creative drama activities have a positive effect on pre-service teachers' communication with each other, being in harmony and getting to know each other (Demir, 2019). It can be said that creative drama contributes to students getting along with their friends better, getting to know each other better, sharing more and creating a more effective communication environment (Aykaç & Adıgüzel, 2011). With the creative drama of pre-service teachers; social skills, verbal skills, communication skills, self-confidence, empathy skills, creativity, body language, cognitive skills, awareness, learning by experience, psychomotor skills, taking responsibility skills, and problem solving skills (Çetingöz & Günhan, 2011). Moreover; creative drama has also been described as an effective, entertaining, creative and socializing method by pre-service geography teachers (Bütün et al., 2015). According to the findings, pre-service teachers stated that the drama course they took at the university would contribute to their professional life and that it was an enjoyable course (Ormancı & Şaşmaz, 2010). Incebacak et al. (2017) in their research on the evaluation of creative drama activities according to student views, they concluded that students had a lot of fun and were happy to work together, and that creative drama also contributed positively to students' social development. In addition, Koç and Geçit (2020) determined in their study that the creative drama method increased the interest, excitement, participation and interaction between students in the lesson. Çetinkaya Aydoğdu and Kırpık (2021) stated that creative drama activities positively affected students' interest in social studies course. According to Tokmak et al. (2023), it has been determined that students generally hold favorable opinions regarding the use of drama as a method in social studies lessons. They mentioned that lessons conducted in this manner are more memorable and enjoyable.

Noting that the pre-service teachers developed themselves professionally by taking drama in education, all of them stated that they had experience in this subject and that they would use the drama method in their professional lives. It is important that pre-service teachers receive such an education and be experienced in this regard, because many studies have stated that teachers cannot apply this method because they do not take drama lessons in their education life, even if they do, it is not enough. Elitok Kesici (2014) stated in his research that drama education for teachers is insufficient and stated that all teachers who take drama courses should undergo training on drama. As a result of the research conducted by Güven (2012), it was seen that most of the participants did not receive creative drama training. Almost all of the teachers who participated in the interview did not receive drama training during their education or professional life.

Creative drama is far from the traditional understanding of learning and gives teachers a constructivist perspective. For this reason, it is important for teachers to bring creative drama together with different disciplines and apply them (Aykaç & Metinnam, 2019). In the study on the benefits of the drama method, teachers emphasized that learning by doing and experiencing would be achieved by using this method in lessons (Guven, 2012). Horasan-Doğan and Cephe (2020) revealed in their research that participants who participated in drama activities stated that they improved their pedagogical skills as well as individiual and social development. According to Tokmak et al. (2023), it was found that both social studies and Turkish language teachers predominantly prefer direct instruction based teaching methods when it comes to topics related to nature and the universe. Despite some teachers mentioning student-centered approaches and activity-based methods in their teaching, these practices were limited overall. However, it was determined that students positively respond to instructional approaches using the drama method, where they actively participate. Students described these drama-based lessons as memorable, providing concrete experiential learning, enhancing understanding and original thinking skills, and being enjoyable and satisfying. Maden et al. (2022), in their research on the research tendencies of the drama method in Turkish teaching, they found that there is a common opinion that the education about drama during undergraduate education is limited according to the opinions of the teachers in the studies examined. For this reason, the drama course in undergraduate education and the application of this course according to the requirements are important for pre-service teachers who will start their professional life in the future.

All of these outcomes emphasize the significant role that creative drama education can play in enhancing the individual growth and pedagogical competence of pre-service teachers. Moreover, the study highlights the importance of incorporating such courses into the broader teacher education curriculum. By doing so, teacher training programs can better equip aspiring educators with the essential skills and perspectives needed to excel in their future teaching careers, ultimately benefiting both educators and their students alike.

Recommendations

- The results of the study show that the creative drama course makes positive contributions to the individual and professional development of pre-service teachers. As a suggestion, it may be important for universities to place more emphasis on creative drama courses in their teacher education programs and to add such courses as compulsory or optional.
- The results of the study show that the skills gained by the pre-service teachers with the creative drama course can increase their pedagogical competencies. In this direction, drama education can be offered to pre-service teachers. This training can help students learn effective teaching methods that will grab their attention.
- The study reveals that pre-service teachers' creative drama course gives students empathy, self-confidence and teaching experience. These results may encourage greater use of creativity in pedagogical approaches. Pre-service teachers can be provided with training to teach creative methods that will increase student participation in future classroom settings.
- The study shows that creative drama practices have positive effects on the development of pre-service teachers. In the future, the effects of creative drama practices on student achievement and teacher performance can be evaluated in more detail with similar studies.

Ethics Committee Approval

The authors have to provide and submit an "Ethics Committee Approval" document while submitting their manuscript to IOJES journal. This document should be obtained from the related Ethical Committees of the universities. It is a requirement by ULAKBIM TR DİZİN for the journals waiting for possible inclusion in the TR DİZİN. All qualitative or quantitative studies which included data collection from participants by questionnaire, interview, focus group study, observation, and experiment must have the Ethics Committee Approval document. Ethics Committee Approval is not required for review articles. Ethics Committee Approval information (the title of the ethics committee, date, and number) must be stated clearly in the method section as well as on the last page of the manuscript.

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The Relationship between the Preferred Values of Children Aged 5-6 and Their Mothers' Values

Research Article

Nuray KOC[1], Handan Asude BASAL[2]

[1]Bursa Uludağ University, Faculty of Education, Department of Educational Science, Bursa, Türkiye 0000-0002-8630-9548

[2]Bursa Uludağ University, Faculty of Education, Department of Educational Science, Bursa, Türkiye 0000 0002-4112-4339

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ABSTRACT

This study aims to determine the relationship between the preferred value of their children aged 5-6 and their mothers' values, as well as the values they would like to transfer to their children. The study group consisted of 390 kindergarten children and their mothers from 11 preschools in Bursa. The Picture-Based Value Survey for Children, developed by Döring (2008), was used to ascertain children's preferred values. The Portrait Values Questionnaire, developed by Schwartz et al. (2001), was used to find out the personal values of mothers. The Value Transfer Survey, developed by Demirutku (2007), was used to ascertain the values they would like to transfer to their children. In this research, a relational scanning model was used. In the results, the mother's values significantly differ from their working status and age variables. Also, children's preferred values differ according to gender, socioeconomic status, and mother's educational and employment status. According to the findings, "Universalism" is the most essential value in a mother's values; however, they emphasize "Achievement" value in conveying values to their children. İn addition, to the preferred values of the children, it was seen that the value of "Achievement" was preferred the most. As a result, the relationship between mothers' children's values, it was determined that they mostly took their mother's values as a model.

Keywords:

Values, Personal values, Preferred values, Preschool education, kindergarten children

Introduction

Values are facts that make people human and help people organize their lives. People construct their value judgments, which are good-bad, beneficial-harmful, sin-good deeds, and right-wrong adjectives, according to their value system (Kuçuradi, 2010). Values in human life are practical in many areas, such as social relations, moral behaviors, religious and political views, habits, choice of profession and spouse, and parenting attitudes (Bardi & Schwartz, 2001). For this reason, many researchers have worked on how values

[1]Corresponding author's address: Bursa Uludağ Üniversitesi
Telephone: +902242962044
e-mail: nuraykoc@uludag.edu.tr
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are acquired in societies and individuals (Hofstede, 2001; Inglehart & Baker, 2000; Rokeach, 1993; Roy, 2003; Schwartz, 1992), one of the most compelling theories on values was developed by Schwartz.

Schwartz (1994) stated that values guide individuals in regulating their needs and interests with biological, social interaction or social institutions and motivate individuals by giving direction and emotional intensity to behaviors. According to her, values both direct individual perspectives and play a role in the social framework of the generally accepted norms of society. With this in mind, Schwartz determined 56 values and classified them into ten different values (İşcan, 2007; Döring, 2018).

Schwartz placed the value types as four main dimensions and ten sub-value types as a circular diagram in the value classification. This classification has grouped itself into two main dimensions, horizontally and vertically. The horizontal dimension name is *Openness to Change/Conservation.* Values in the Conservation field include the values that ensure continuity in the relations of individuals with the people, institutions, and traditions around them. Conformity, Security, and Tradition value types are in the Conservation dimension. Conformity value; includes values such as politeness, obedience, and self-discipline. Security value; contains values such as national security, family safety, belonging clean, and social order. The Tradition value includes values such as respect, commitment, and modesty. Values in the Openness to Change field allow individuals to realize their emotional and intellectual interests. This dimension includes the values of Self-direction and Stimulation. While the self-direction value includes sub-values such as creativity, curiosity, and freedom, the stimulation value includes being brave and having a dynamic and exciting life.

The second dimension, the vertical dimension, is called the *Self Transcendence/Self Enhancement* dimension. The Self-transcendence area in this dimension encompasses the Universalism and Benevolence value types. It includes values for the individual to give up her selfish goals for the benefit of all people, near or far and nature. While Universalism includes values such as equality, social justice, peace, and protecting the environment. Benevolence includes helpful, honest, and forgiving values. In the Self Enhancement field at the other end of the dimension, there are "Achievement" and "Power" consisting of values that allow the individual to act in her interests, even at the expense of others. While the power value includes sub-values such as authority, social power, and wealth, the achievement value includes capability, success, and ambition. Of these ten value types, only the "Hedonism" value has elements of both Self Enhancement and Openness to Change (İşcan, 2007; Schwartz, 1994; Schwartz, 2006). The value of Hedonism includes sub-values such as pleasure, sensuousness, and enjoying life. In detail, Schwartz's values diagram is given in Figure 1, combined with the pictures related to the values in the scale used for children in the study.

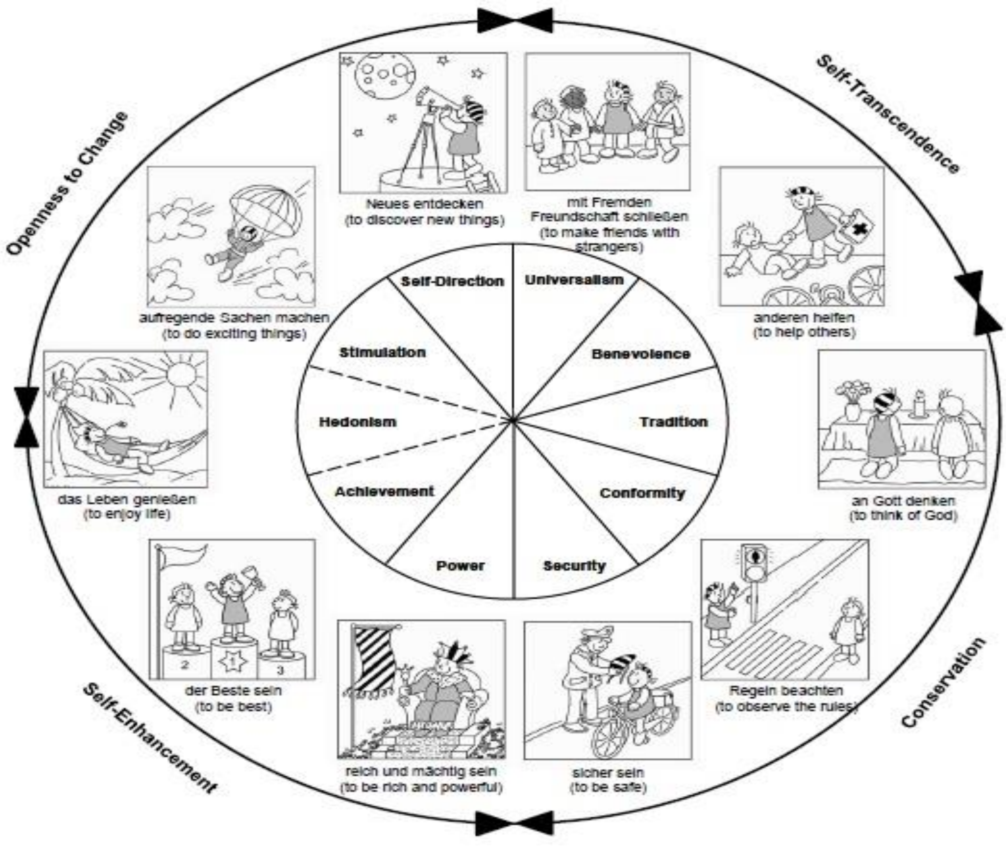

Figure 1. Schwartz's (1992) universal human values model and its equivalent representation in the PBVS-C (according to Döring, 2018, p. 51).

As seen in Figure 1, Schwartz predicts that value types opposite each other on the circular structure are contradictory, while value types close to each other are compatible. In addition, the value types in Schwartz's value theory exhibit a motivational continuity; therefore, it argues that the relationships between value types that are close to each other in the structure and any external variable (attitudes, behaviors) will be similar (Hofmann-Towfigh, 2007; Gedik, 2010). Schwartz's model lends itself to research developmental dynamics after substantial life events and changes in time, experiences, and age (Döring et al., 2016).

There is a reciprocal cycle between values and people. Therefore, all communities, traditions, and nations worldwide have given importance to transferring some values to future generations and equipping them with certain moral principles and virtues (Cevizci, 2012). Although various systems such as country policies, education, and mass media are effective in transferring values, the family system, which is the smallest building block in society, has great importance. Parents' primary duty is to protect the values rapidly disappearing in recent years and leave a more livable world for children (Öztürk, 2011). Parents' attitudes towards their children differ according to the conditions of the time they live and the culture they live in. However, children shape their value judgments and priorities in any case, especially by modeling their mothers, who are the first to teach social and moral rules (Seçer et al., 2006).

Moral values are laid in the first six years of the preschool period and are reinforced and internalized in the following ages (Koca, 1997). Therefore, while laying the foundation for the moral thoughts of children in this period, the values transferred from mother to child are essential. When examining the values of individuals, it is necessary to consider the individual as a whole. For this reason, the families, especially their mothers, with whom individuals communicate closely, are the starting point of this work. Every mother tries to convey her values to her children consciously or unconsciously. What is important here is which values are conveyed and how, and which values are given to children. When the literature is examined, it is seen that values education with children can be done by direct suggestion or modeling, as well as by making applications especially with children (Sapsağlam, 2015; Kirişçi et al., 2022). For example, Topaç (2022) tried to teach children values with a song-supported value education program consisting of the values of responsibility, tolerance, kindness, helpfulness, cooperation, self-control, friendship, love, respect and honesty. The significant of this research is to determine the relationship between the personal values of young children in the arms of the modern world and their mothers, who are the leading people who convey value to them. Although the PBVS-C scale applied to children in the research has been studied on primary school children in our country (Acar-Bayraktar et al., 2021; Çakmak et al., 2018; Kapıkıran & Gündoğan, 2018; Petersen, 2013; Özvanlıgil, 2013), the study has not yet been conducted with preschool children. In our country, family and teacher forms have generally been used to examine the preferred values and value acquisitions of preschool children, and an objective measurement tool that can directly measure the values of children has been used less frequently (Atabey, 2014; Neslitürk & Çeliköz, 2015). Existing scales can generally be used to determine the values of honesty, respect, responsibility, sharing, cooperation, friendship/friendship, and it is also missing to identify some values within the values of 21st-century skills such as children's self-direction, being creative, independent thinking, being a leader, appears to be. In this sense, it is clear that the study will contribute to the field in terms of meeting such a need.

This study aim is to reveal the relationship between the personal values of mothers and the preferred values of 5-6-year-old children and the values they would like to convey to their children. For this purpose, scales were applied to both mothers and children to identify the preferred values of mothers and their children. For this purpose, scales were applied to both mothers and children to obtain the preferred values of mothers and their children. The answers given to the scales were evaluated according to different variables, and the relationship between the personal values of the mothers and the value gains of their children was examined. As a result, the research sought answers to the following questions:

1- What are the personal values of mothers with children between the ages of 5-6 according to the Portrait Values Questionnaire?

2- Is there a difference between the personal values of the mothers and the variables of age, education level, employment and socioeconomic status of the mothers?

3- According to the Value Transfer Questionnaire, what values do mothers with children between the ages of 5-6 want to convey to their children?

4- What are the preferred values of 5-6-year-old children according to the Value Survey for Children with Pictures?

5- Is there a difference between the preferred values of children aged 5-6 years and the variables of gender, age, education level, employment and socioeconomic status of mothers?

6- Is there a relationship between mothers' personal values and children's preferred values?

7- Is there a relationship between the values that mothers want to convey and the preferred values of children?

Methodology

Research model

Since it was aimed to determine the current situation in the research, the related scanning model was used. Scanning models are quantitative research approaches that aim to describe a past or present situation as it is (Karasar, 2007). In the study, this model was preferred because mothers and 5-6 years old children attending pre-school education will be handled in their own circumstances and their values will be examined as they are.

Sample of the Research

The sample of the study consists of 390 children aged 5-6 years and 390 mothers who attend kindergartens in 11 primary schools in Osmangazi, Nilüfer and Yıldırım districts of Bursa. The sample in the study was selected by the "stratified simple random sampling" method. The stratified simple random sampling method is called simple random sampling, which is applied for each group by dividing the units into groups in terms of one or more attributes (Karasar, 2007). The demographic characteristics of the sample group of the study are shown in Table 1.

Table 1. Descriptive statistics on children and mothers

Variables	Subcategories	f	%	Total
Age	20-25 years	25	6.4	390
	26-35 years	27	69.2	
	35 years and above	95	24.4	
Educational status	Literacy	8	2.1	390
	Primary education	187	47.9	
	High school	13	33.3	
	University	60	15.4	
	Master's degree	5	1.3	
Working status	Not working	265	67.9	390
	Working	125	32.1	
Socio-economic status	Lower income	135	34.6	390
	Middle income	138	35.4	
	Top income	117	30	
Gender of children	Girl	194	49.7	390
	Boy	196	50.3	

Data collection tool

After obtaining the permission of the ethics committee, the Portrait Values Questionnaire (PVQ) and the Value Transfer Questionnaire (VTQ) were applied to the mothers to determine the preferred values of the mothers and children aged 5-6 years. The Children's Value Questionnaire with Pictures for Children (PBVS-C Scale) was administered to the children.

Portrait values questionnaire (PVQ)

Portrait values questionnaire is a questionnaire that can be applied up to the age of 11. It indirectly measures the different value types that determine individuals' hypothetical personal goals and desires (Demirutku & Sümer, 2010). Schwartz et al. (2001) developed the Portrait Values Questionnaire (PVQ) in order to overcome the limitations of the Schwartz Value Questionnaire (SVQ) developed by Schwartz (1992) and to measure value orientations more functionally. The Portrait Values Questionnaire consists of 40 items, each consisting of two sentences, and was designed using a six-point Likert-type scale. Each item describes a fictional person with goals or aspirations associated with one of Schwartz's ten value types (Gedik, 2010). In order to use the scale on mothers with children between 5-6 years of age, a pilot study was conducted on a total of 90 mothers with similar characteristics to the sample group. As a result of the pilot application, the reliability value of Cronbach's alpha was found to be (.88). Cronbach's alpha reliability coefficients of items related to value types are; strength (.75), Universalism (.75), Achievement (.80), Stimulation (.74), Hedonism (.68), Self-direction (.70), Tradition (.67), Benevolence (.72), and Conformity (.78) was obtained as Security (.70).

Value transfer questionnaire (VTQ)

In the study, the *Value transfer questionnaire* developed by Demirutku (2007) based on Schwartz's value type definitions was used to determine the values that mothers would like to convey to their children. The questionnaire consisted of 10 items measuring the values mothers wanted to convey to their children and was prepared in a four-point Likert type. Each item in the questionnaire measures one of the ten value types Schwartz defines. In order to be able to use this scale on mothers with children between the ages of 5-6, a preliminary application was made on the pilot application group consisting of 90 mothers with similar characteristics to the sample group. As a result of the pilot application, Cronbach's alpha reliability coefficient of the questionnaire was found (.72).

Picture-based value survey for children (PBVS-C Scale)

Picture-based value survey for children (PBVS-C scale) is a questionnaire that can be applied to children between the ages of 6-11 and measures the child's values through pictures designed based on the value types defined by Schwartz. The Picture-based Value Survey for Children (PBVS-C scale) was developed by Döring (2010). The translation of the PBVS-C scale into Turkish was carried out for the first time by Şimşek (2012) to investigate the values of Turkish children living in Germany. A joint study was conducted by Döring, Işık, and Petersen in 2012 to adapt the scale to Turkey and see its applicability to children living in Turkey. According to the children's interpretations of the values in the pictures, some pictures were redesigned according to Turkish culture, the value definitions under the pictures were rearranged, and the scale took its final form. The PBVS-C scale consists of 20 pictures with a main character, printed as stickers, and a graded template, such as a five-point Likert type, on which children can rank the values according to their importance. The images in the scale are designed with two images for each of the ten value types that Schwartz defines and a description of that value type below each image (Döring, 2010). In order to be able to use this scale with 5-6 years old children in the study, the scale was applied with a pilot application group consisting of 90 children with similar characteristics to the sample group. As a result of the preliminary application, the results of the item analysis of the PBVS-C scale were examined, and it was obtained that the reliability coefficient and item-total correlations were sufficient for the whole test.

Data Collecting Process

The study data were collected using the Portrait Values Questionnaire, Value Transfer Questionnaire for mothers, and the PBVS-C scale for children. In order to collect data from mothers, parents' meetings were organized to inform them about the study, and the Portrait Values Questionnaire and Value Transfer Questionnaire were applied at these meetings. During the scale implementations, it was explained how the scales would be applied in the presence of the mothers and if there were questions that could not be understood so that accurate and reliable results could be obtained from the questionnaires. Since the PBVS-C scale will be applied to 5-6-year-old children, some changes have been made in the application guidelines in line with the opinions of the owner of the scale and other field experts. The pictures in the scale were not applied with a slide as in the original application but with an A3-sized book, and the pictures were applied by narrating the pictures. The PBVS-C scale was applied with 16 children similar to the sample group, and these applications were video recorded. By examining the video recordings, the most appropriate and understandable instruction sentences were created for children. Before the application, only warm-up games were played with the children in the first week, and the children were taken into practice individually in the next week. The applications were carried out with each child individually, providing a quiet environment. The application took an average of 20-25 minutes for every child.

Data Analysis

As the results of Kolmogorov-Smirnov and Shapiro-Wilk normality tests performed on the data obtained in the research, the distribution of the data did not show a normal distribution (p=0.00); analyses were made with non-parametric tests. In analyzing the data obtained from the questionnaires, frequency and percentage distributions were made to determine the demographic characteristics and distributions of the sample group. In order to determine the values of mothers and their children aged 5-6 years, first of all, the arithmetic averages and standard deviations of the items in both the scales applied to the mothers and the scales applied to the children and their general dimensions were calculated. Kruskal Wallis-H test, one of the non-parametric tests, was used to reveal the differences. When there was a difference between the groups the Mann-Whitney-U test and the Kruskal Wallis-H test were used to analyze the differences between the groups. In addition, since the sample group did not show a normal distribution, Spearman's Rank Order Correlation Test was applied to the data to see the relationship between the mothers' personal values and the children's preferred values.

Validity and Reliability

Since the PBVS-C scale, which was applied to children in the study to examine the preferred values of the children in the sample group, was used for the first time in Turkey with the 5-6 age group, a validity and reliability study was conducted for this scale. The expert's opinion was sought for the content validity and suitability of the PBVS-C scale, and a pre-application of this scale was made with 90 children aged 5-6 years attending preschool for the criterion validity of the scale. Multidimensional Scaling (MDS) method was used to test whether each value item of the PBVS-C scale is in the predicted value type and to determine the conformity of this scale with the construct validity. Analysis results are shown in Figure 2.

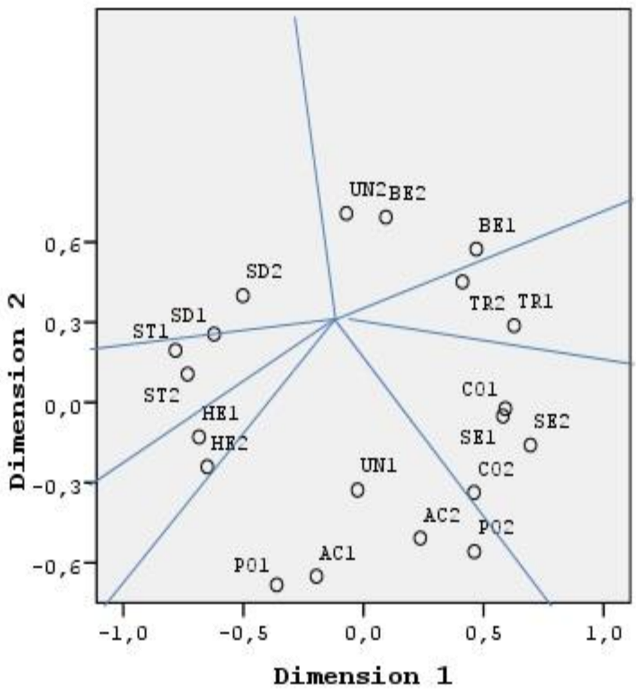

Figure 2. Multidimensional Scaling Analysis (MDS) Results of the PBVS-C Scale

In Fıgure 2, Multidimensional Scaling (MDS) analysis for the reliability of the test showed that the Stress-I value is 0.24 and with similar value types in the exact dimensions except for the UN 1 value. This result means that the distribution of the values in Schwartz's theory and the arrangement of the configurations in the circle obtained from the data were compatible.

Ethics Committee Approval

The scales to be used in the research were examined by the Bursa Uludag University Faculty of Medicine Clinical Research and Ethics Committee in terms of their Conformity with research ethics. They were accepted with the decision numbered B.30.2.ULU.0.20.70.02-050.99/167 on 20.05.2013. Before applying the data collection tools, the participants were informed about the ethical principles of the research, volunteering, confidentiality, and the right to withdraw from the research. All participants voluntarily participated in the research.

Findings

Among the sub-problems of the research, "What are the personal value preferences of mothers who have children between the ages of 5-6, according to the Portrait Values Questionnaire?" The averages of the answers given by the mothers to the Portrait Values Questionnaire are shown in Table 2.

Table 2. Findings regarding the personal values of the mothers according to the values in the scale

Dimensions	n	$\overline{\chi}$	ss
Universalism	390	5.15	0.68
Security	390	5.13	0.67
Conformity	390	5.10	0.74
Benevolence	390	5.04	0.79
Tradition	390	4.96	0.82
Self-direction	390	4.80	0.77
Hedonism	390	4.60	1.09
Achievement	390	4.37	0.97
Stimulation	390	4.20	0.95
Power	390	3.60	1.22

When Table 2 is examined, it has been revealed that the "Universalism" value among the values in the scale is the closest value to the mothers' values ($\overline{\chi} = 5{,}15$). According to this, the participating mothers have or have values such as being tolerant and understanding, taking care of the well-being of all people and nature, being open-minded and virtuous, being fair, protecting the environment, wanting peace in the world, living in unity with nature, which are under the Universalism value can be interpreted as caring. However, among the values in the scale, the "Power" value was found to be the least preferred value of the mothers among all values ($\overline{\chi} = 3{,}60$).

Among the sub-problems of the research, "Is there a difference between the personal values of mothers and the variables of age, education level, employment status, and socioeconomic status?" In order to answer the question, the Kruskal Wallis-H test and Mann Whitney-U test were applied by using the independent variables and the answers given by the mothers in the Portrait Values Questionnaire. Accordingly, there was no statistically significant difference between the mothers' education levels and socioeconomic status and their values ($p > 0.05$). However, according to the age variable, there was a statistically significant difference only between the Benevolence value and the age groups of the mothers ($p=0.041$); It can be shown that the Benevolence value is more priority for young mothers. It was found that there was a statistically significant difference between the working status and personal values of the mothers, only in the values of Tradition ($p=0.001$) and Conformity ($p=0.042$) and that the non-working mothers gave more substantial to the values of tradition and conformity than the working mothers. Among the sub-problems of the research, "What are the values that mothers with children between the ages of 5-6 want to convey to their children according to the Value Transfer Questionnaire?" In order to findings, the answers given by the mothers according to the values in the Value Transfer Questionnaire were discussed. The mean and standard deviation scores of the answers given by the mothers according to the ten fundamental values are given in Table 3.

Table 3. Mothers' Views on the Items in the Transfer of Value Questionnaire

Items	Value Type	n	$\overline{\chi}$	SS
S1 (social power, authority, wealth)	Power	390	2.36	0.31
S2 (national security, social order, family security, cleanliness, reciprocation of favors)	Security	390	2.67	0.24
S3 (self-discipline, obedience, politeness, honoring parents and elders)	Conformity	390	1.72	0.45
S4 (ambition, capability, success, influence on people and events)	Achievement	390	2.79	0.02
S5 (helpfulness, honesty, forgiveness, loyalty, responsibility)	Benevolence	390	2.60	0.02
S6 (curiosity, creativity, , independence, freedom, choosing one's own goals)	Self-direction	390	2.42	0.03
S7 (modesty, respect, humbleness, devotion, accepting one's portion in life)	Tradition	390	2.58	0.02
S8 (enjoyment in life, gratification of desires, self-indulgence)	Hedonism	390	2.33	0.03
S9 (a world at peace, wisdom, broad-mindedness, the environmental protection, beauty of arts, equality, social justice, unity with nature)	Universalism	390	2.61	0.02
S10 (daring, an exciting life, varied, and challenging life)	Stimulation	390	1.93	0.04

When Table 3 is examined, it has been revealed that the "Achievement" value among the values in the scale is the value that mothers would like to transfer and see to their children the most ($\overline{\chi} = 2{,}79$). Accordingly, it can be interpreted that mothers care most about the values of being successful and intelligent, which are under the Achievement value, and they want to see their children. On the other hand, the "Conformity" value, which includes obedience and acting according to social expectations and self-control, was the most negligible preferred value among all values ($\overline{\chi} = 1{,}72$).

In the study, the PBVS-C scale was applied to the children to obtain the preferred values of 5-6 children in the sample group. The distribution of children's values according to the values in the scale is shown in Table 4.

Table 4. Findings regarding children's personal values according to the values in the scale

Dimensions	n	$\overline{\chi}$	SS
Achievement	390	3.48	0.66
Tradition	390	3.47	0.72
Benevolence	390	3.46	0.75
Power	390	3.30	1.19
Security	390	3.15	0.76
Universalism	390	3.11	1.04
Conformity	390	3.01	0.66
Self-direction	390	2.79	0.76
Hedonism	390	2.59	0.86
Stimulation	390	2.16	0.82

When Table 4 is examined, it has been revealed that the "Achievement " value among the values in the scale is the closest value to the personal values of the children. ($\overline{\chi} = 3{,}48$). Accordingly, it can be stated that the children in the sample group prioritize values such as having social status, being successful and showing that they are successful. However, among the values in the scale, the "Stimulation" value was found to be the least preferred value of the children among all values ($\overline{\chi} = 2{,}16$).

Among the sub-problems of the research, "Is there a difference between the preferred values of children between the ages of 5-6 and their genders and also their mother's age, educational status, working and socioeconomic status?" Analyzes were made to find an answer to the sub-problem. The independent variables were applied to the Mann Whitney U and Kruskal Wallis-H tests. Consequently, there is a statistically significant difference according to gender, mother's educational level, working and socioeconomic status variables ($p< 0.05$).

In the results, according to the gender variable of the children, a statistically significant difference was found only in the "Tradition" values ($p= 0.001$). When we examine the median values to see which group favors this difference, it has been revealed that girls give more priority to traditional values than boys. When it was examined whether there was a statistically significant difference between the preferred values of the children according to the educational status of the mothers, it was found that Conformity ($p=0.040$), Security ($p=0.022$), Achievement ($p=0.022$), and Hedonism ($p=0.013$) according to the educational level variable. Statistically significant differences were found in the values.

When it was examined whether there was a statistically significant difference between the preferred values of the children according to the working status of the mothers, it was found that there was a statistically significant difference in the value of "Hedonism" according to the working status variable ($p=0.040$). Considering the children's prioritization of the "Security" value according to the mother's socioeconomic status, it was found that children with high-income mothers attach more importance to the Security value than children with low-income and middle-income mothers ($p=0.001$).

Among the sub-problems of the research, "Is there a relationship between the personal values of mothers and the preferred values of children?" In order to answer the question, Spearman's Rank Order Correlation Test was applied and the findings are given in Table 5.

Table 5. Relationship Between Personal Values of Mothers and Preferred Values of Children

Children \ Mother		Universalism	Benevolence	Tradition	Conformity	Security	Power	Achievement	Hedonism	Stimulation	Self-direction
Universalism	r	0.03	-0.10	0.03	0.01	0.03	0.03	0.02	0.04	0.03	-0.01
	p	0.45	0.04	0.50	0.74	0.55	0.51	0.56	0.39	0.45	0.85
Benevolence	r	-0.02	0.03	0.01	0.02	-0.02	0.03	-0.06	0.02	-0.03	0.00
	p	0.62	0.52	0.78	0.61	0.68	0.51	0.21	0.67	0.50	0.85
Tradition	r	0.07	0.00	0.39	0.35	0.10	0.01	0.04	0.00	0.02	0.03
	p	0.15	0.88	0.06	0.20	0.89	0.83	0.39	0.90	0.58	0.53
Conformity	r	-0.06	-0.02	-0.01	0.42	-0.08	0.07	0.01	-0.04	-0.12	-0.08
	p	0.20	0.07	0.84	0.03	0.10	0.14	0.72	0.33	0.69	0.08
Security	r	0.04	-0.06	-0.07	0.20	0.31	0.02	0.10	-0.33	-0.24	0.01
	p	0.40	0.22	0.14	0.92	0.02	0.57	0.07	0.51	0.33	0.83
Power	r	-0.02	0.03	-0.05	-0.44	0.00	-0.01	-0.01	0.03	-0.04	-0.02
	p	0.58	0.51	0.27	0.38	0.93	0.75	0.73	0.54	0.33	0.64
Achievement	r	0.05	0.05	-0.00	0.01	0.21	-0.01	0.20	0.00	-0.05	0.04
	p	0.32	0.32	0.95	0.71	0.71	0.70	0.04	0.99	0.26	0.40
Hedonism	r	-0.04	0.03	0.01	0.08	-0.00	0.08	0.12	0.08	0.09	-0.00
	p	0.38	0.52	0.84	0.09	0.96	0.10	0.06	0.08	0.06	0.91
Stimulation	r	-0.13	-0.05	-0.08	-0.11	-0.04	-0.01	0.03	-0.05	0.30	-0.03
	p	0.00	0.26	0.08	0.06	0.37	0.84	0.51	0.27	0.95	0.47
Self-direction	r	0.05	0.00	-0.01	-0.03	0.03	-0.09	-0.05	0.03	0.00	0.10
	p	0.26	0.98	0.80	0.50	0.56	0.06	0.32	0.49	0.87	0.93

When the research findings were examined, it was revealed that in some values in Table 5, the values the mother considers to be their values are the same as the values the child prioritizes, and there is a positive relationship. These values are conformity, Security, and achievement. On the other hand, it was found that there was a negative significant relationship between the mothers' values of Benevolence and their children is prioritizing the Universalism value (p=0.04, r=-0.10). Accordingly, the children of mothers who have Benevolence in their values do not attach much importance to the value of Universalism in their lives and do not prioritize it. In other words, as mothers adopt values such as being helpful and responsible, children's values , such as equality and protecting the environment, may fall into the background. It also revealed a negative significant relationship between the mothers' having the Universalism value in their mothers' values and their children's prioritizing the stimulation value (p=0.00, r=-0.13). In other words, it has been determined that children with mothers who are sensitive to others and the environment desire a dynamic and exciting lifeless.

Among the sub-problems of the research, "Is there a relationship between the values that mothers want to convey to their children and the preferred values of children?" In order to answer the question, Spearman's Rank Order Correlation Test was applied, and the findings are shown in Table 6.

Table 6 The Relationship Between the Values that the Mothers Want to Transfer and the Preferred Values of the Children

Children \ **Mother**		**Universalism**	**Benevolence**	**Tradition**	**Conformity**	**Security**	**Power**	**Achievement**	**Hedonism**	**Stimulation**	**Self-direction**
Universalism	**r**	-0.01	0.06	-0.04	-0.05	0.05	0.00	0.03	-0.00	0.01	-0.03
	p	0.75	0.21	0.36	0.30	0.31	0.96	0.53	0.96	0.82	0.54
Benevolence	**r**	0.01	-0.01	0.03	-0.01	-0.05	0.05	-0.05	-0.01	-0.05	0.02
	p	0.76	0.84	0.44	0.82	0.25	0.29	0.24	0.83	0.27	0.67
Tradition	**r**	0.07	0.01	0.30	-0.07	0.35	0.03	0.25	0.03	-0.04	-0.02
	p	0.16	0.82	0.04	0.13	0.28	0.51	0.30	0.51	0.19	0.69
Conformity	**r**	-0.00	-0.02	0.07	0.05	0.08	-0.01	-0.05	-0.05	-0.06	0.06
	p	0.85	0.65	0.15	0.31	0.08	0.78	0.30	0.30	0.23	0.22
Security	**r**	-0.01	0.02	-0.00	-0.00	0.01	-0.02	-0.06	0.04	-0.00	-0.01
	p	0.71	0.66	0.96	0.91	0.82	0.69	0.22	0.38	0.92	0.77
Power	**r**	0.04	0.03	-0.03	0.00	-0.04	0.01	-0.00	0.04	0.06	0.03
	p	0.38	0.54	0.47	0.99	0.42	0.72	0.98	0.43	0.20	0.51
Achievement	**r**	-0.06	0.05	0.04	-0.04	0.06	-0.01	0.06	0.02	0.00	0.06
	p	0.22	0.29	0.35	0.40	0.20	0.78	0.18	0.62	0.93	0.17
Hedonism	**r**	-0.06	-0.00	-0.04	-0.07	-0.07	0.05	-0.01	0.02	0.01	-0.03
	p	0.17	0.93	0.39	0.15	0.15	0.27	0.76	0.67	0.71	0.46
Stimulation	**r**	-0.03	-0.08	-0.08	0.08	-0.02	-0.04	-0.02	-0.04	0.04	-0.05
	p	0.54	0.11	0.09	0.09	0.61	0.39	0.57	0.39	0.37	0.25
Self-direction	**r**	0.02	-0.00	-0.01	-0.24	-0.04	0.03	0.21	0.00	0.01	-0.00
	p	0.63	0.92	0.71	0.00	0.34	0.55	0.08	0.95	0.80	0.88

When Table 6 is investigated, it has been observed that there is a positive and significant relationship between the tradition value in the values that mothers would like to transfer to their children and the children's prioritization of the tradition value (p=0.04, r=0.30). Accordingly, it has been revealed that mothers who care about conveying the value of tradition to their children also prioritize the value of Traditionalism in their lives.

In addition, it has been revealed that there is a negative significant relationship between the mothers' giving place to the value of Conformity in the values they want to convey to their children and the situation of giving priority to the self-direction value of the children (p=0.00, r=-0.24). Accordingly, it was revealed that mothers who care about conveying the value of Adaptation to their children give less priority to the Self-direction value of their children.

Discussion and Conclusion

According to the research results, it has been revealed that the mothers in the sampling request give the most importance to the "Universalism" value in their values and the least according to the "Power" values. Accordingly, it was seen that mothers prioritized more social values such as tolerance, protecting people and nature, and being fair. On the other hand, they placed lower values on individual values such as wealth and status. Although there is a possibility that some mothers may give a biased response due to social desirability anxiety in obtaining this result, when similar studies in the field are examined, it has been determined that the same results are obtained with these values chosen by the mothers (Boehnke, 2001; Demirutku, 2007; Schwartz, 2012).

When the effect of independent variables was examined on the personal values of mothers in the study, it was revealed that the age and employment status of the mothers created a significant difference between their personal preferred values. It was found that there was a significant difference in the value of "Benevolence" regarding the mothers' ages.

According to this, it has been determined that young mothers between the ages of 20-25 give more importance to values such as being helpful, loyal, and responsible than mothers in other age groups. Besides, it was obtained that there were significant differences between the personal preferred values of the mothers according to their working status, for the values of Conformity and Tradition. According to the research results, compared to working mothers, non-working mothers consider themselves humbler, obey the rules, and are loyal to their traditions and religion. When previous studies were examined, results in favor of non-working women were also found in studies examining the religiosity profiles of Turkish women (Topçuoğlu, 2010).

In the data obtained about the value transfer of mothers; mothers give the most "Achievement" value to their children; They stated that they wanted to gain the value of "Conformity" at least (Boehnke, 2001; Gedik, 2010; İşcan, 2007; Schwartz, 2012).

Considering the 5-6 years old children's preferred values in the research, children stated that they prioritized the value of "Achievement" the most and considered the value of "Stimulation" the least important. In the studies conducted by Petersen (2013) and Özvanlıgil (2013) with Turkish children attending primary school, children mostly prioritized the value of "Tradition". This situation can be interpreted as the fact that children may have prioritized being loyal to their traditions due to the difference in their developmental period and the excess of their experiences in social life.

When the effect of independent variables was examined on children's preferred values, it was seen that there were statistically significant differences between personal preferred values of children's gender, mothers' education level, employment status, and socioeconomic status. According to the research results, it was found that girls were more likely to prioritize the value of "Tradition" according to the gender of the children. This result is similar to many previous study results (Acar-Bayraktar et al., 2021; Çakmak et al., 2018; Petersen, 2013; Sari, 2005; Uzefovsky et al., 2016; Yapıcı & Zengin, 2003).

According to the educational status of the mothers, it was obtained that the children whose mothers graduated from primary education prioritized the value of "Conformity" more than the children with mothers who had a master's degree. According to the research of Yağmurlu et al. (2009), mothers with low education emphasized that they want their children to be the generation that respects their elders, adapts to the home and awakens the rules of society. It is an expected result that the child who grows up with such a maternal attitude should prioritize the value of Conformity.

The study showed that the children of mothers who graduated from university prioritize the value of "Security" more than those of mothers with a primary education degree. Since most mothers with high education levels are also working mothers, these mothers spend most of the day away from their children in their daily lives, so that they may be more concerned about the care and Security of their children. Therefore, mothers with higher education levels may show a more protective approach toward children. Erdoğan and Uçukoğlu (2011) stated that mothers who show restraint and overprotective approaches to their children are more likely to have children who are docile, timid, and sensitive about personal Security.

In addition, it was determined that children with mothers who graduated from high school and higher education attach more importance to the value of achievement than children with mothers with lower education levels. In the previous findings, mothers with a high education gave more importance to the value of achievement; It has been obtained that mothers with low education levels prioritize transferring the value of achievement to their children. Nevertheless, it has been revealed that children with mothers with higher education give more priority to this value. Similar studies have shown that girls with high educational levels and working mothers have higher academic success and more career passion than girls with lower education levels and unemployed mothers (Aktaş, 1994; Dworetzky, 1990). These results showed that while children gain values, they assimilate the values they take as models rather than the ones their mothers want to convey.

It was obtained that there was a significant difference in the value of "Hedonism" according to the working status of the mothers. Accordingly, it was determined that the children of non-working mothers gave more priority to this value. In this case, it can be shown that children whose mothers are not working can spend more time at home with their mothers and more easily meet their needs for trust and attention, so they can turn to things that will make them enjoy life more. According to the mother's socioeconomic status, it was determined that the children with lower income prioritized the values of "Hedonism" and "Stimulation" compared to the children with high income. Therefore, they were more courageous and open to innovations, caring about enjoying life.

In the research conducted by the United Nations Children's Fund (2013), the health and education status, living conditions, and happiness of children and young people between the ages of 11-15 in 29 industrialized countries were investigated. According to the research results, children living in countries with good economic opportunities and living conditions, such as Germany, stated that they were unhappier. In contrast, children in countries such as Spain and Greece, which experienced economic crises and reached record unemployment levels, were happier. This result shows that more than socioeconomic status is needed to be happy.

According to the study, when the relationship between the preferred values of children and their mother's values was examined, it was revealed that there was a positive relationship between the values of Conformity, Security, and Achievement in the personal values of the mothers and the same values in the preferred values of the children. In other words, it was concluded that children prioritize these values by identifying with their mothers. Similarly, in the study of Knafo and Schwartz (2004), the effect of identifying with parents on value transfer was examined, and it was found that there was a positive relationship between identifying and accepting the values of their parents.

In addition, it has been seen that there is a negative significant relationship between the personal values of the mothers, the "Benevolence" value, and the "Universalism" value of their children. It is seen that when mothers dedicate themselves to their children and take on the responsibilities that their children can do, more selfish and far from the concept of justice are raised (Yörükoğlu, 2002). In this case, it can be said that as mothers take responsibility for their children and do not allow them to act independently, their children attach less importance to justice and equality. In addition, it has been found that there is a negative significant relationship between the "Universalism" value of the mothers and the "Stimulation" values of the children. According to Schwartz (1992, 1994, 2006, 2012), these values are at different poles in the value array and have a negative relationship.

Accordingly, it has been obtained that there is a positive and significant relationship between the values of "Tradition", which is one of the values that mothers would like to convey to their children, and the status of giving priority to the value of "Tradition" by the children. In a similar study, Flor and Knapp (2001) found a positive relationship between families giving importance to traditional values and wanting to see this value in their children and children prioritizing traditional values. In addition, it was obtained that there is a negative significant relationship between the values that mothers want to transfer to their children, the value of "Conformity" and the status of giving priority to the value of "Self-direction". Similarly, Kemple and Nissenberg (2000) determined in their research that pressure, excessive control, and criticism would hamper children's creativity. Mothers of creative children generally did not use fixed and strict rules when guiding their children's behavior.

In general, the research findings show that children mostly model their mothers' personal values and shape their preferred values according to these values. In other words, children establish their values by modeling their mothers, identifying themselves with them, and imitating their attitudes and behaviors. Demirutku (2007) states that if mothers want their children to gain some values, they can give these values not only by "talking" but "doing" while giving values education to their children; that is, they should be models. This situation has reintroduced the importance of mothers being suitable models while bringing values, especially to preschool children. From this point of view, it can be considered that a family education program should be prepared for value education that will continue during the education period, a rich education program should be organized for mothers on this subject, and the same research should be done with fathers or teachers and compared (Koç, 2013). Although the scale was previously applied to children in the middle childhood age group, the scale's application method was changed and made suitable for 5-6 years old preschool children in this study. Eventually, using PBVS-C scale in different studies in early childhood can be presented as the research recommendations.

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