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## Reflections of a Web Based Application Tool on Classroom Management

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### Abstract

The purpose of this study is to determine how a web-based assessment tool developed for a social studies course is reflected on classroom management and how much students reflect their learning at school to their lives. In line with this purpose, the study was designed according to the mixed method research where both quantitative and qualitative methods are used. The participants of the study consisted of students who were in the second grade of a primary school with a medium socio-economic environment. The quantitative data of the study were based on the scores the students achieved in the assessment tool. The qualitative data of the study were collected through semi-structured interviews with both the students and the teachers. According to the results obtained from the study, it was observed that using a web-based assessment tool in the learning environment positively affected both the students' motivation and the process of attracting their attention. However, it was observed that the students could not reflect their learning at school to their lives.

**Keywords:** Primary School, Classroom Management, Social Studies, Web-Based Application.

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## INTRODUCTION

When the classrooms are considered to be production places, the classroom management role of the teacher comes to the forefront. Class management is composed of all of the activities which enable the students to interact positively in social aspects and in which the teacher plays an active role to create an effective and motivating environment for learning. Class management is also defined as teachers' organizing and managing students' behaviors and educational activities in the class (Richards and Schmidt, 2010). Soodak and McCarthy (2013) define classroom management as activities that enable teachers to create an academic and social-emotional learning environment. It is very important that a teacher, who is responsible for educating individuals suitable for the purpose, have effective classroom management skills. Class management is defined by American Federation of Teachers (1995) as the management of the physical environment, the management of the educational program, the management of the discipline, and the management of the in-class processes (Cited by Hue and Li, 2008, p. 45). It is also defined as all of the activities related to the systematic and conscious application of principles, concepts, theories, models and techniques in relation to planning, organization, application and evaluation functions in order to achieve the determined educational objectives. Traditionally, classroom management is perceived and practiced as establishing authority over students, taking them under control and establishing the discipline. On the other hand, the contemporary sense of classroom management related to the classrooms where 21st century students are located is considered as the art of establishing a positive classroom climate and managing the education effectively (Hue and Li, 2008, p. 46). From this point of view, classroom management necessitates the provision of a collaborative classroom management with motivation tools, effective communication, democratic classroom environment, and use of technology but not with the culture of fear and the tools, techniques and practices to put the pressure on the students. This expectation requires the multidimensional development of the teacher (Jones, Bailey & Jacob, 2014).

This situation requires the teacher not only to be patient, tolerant, humble, supportive, conscientious and fair but also to be a field specialist, to have the competence to use technology effectively and efficiently, and to operate assessment and evaluation processes properly. Within this context, an effective classroom leader is the person who designs his/her lessons the most effectively, attracts the students' interest and attention, plans interesting lessons, engages the students in the process, uses all his/her authority to observe their views and needs, cooperates with the school members and the parents, and manages the in-class processes in a democratic way. In order to reach these features, the teacher should choose contents that are suitable for the outcomes, prepare education materials and design activities (Hue and Li, 2008, p.45-47; Türnüklü, 2001; Gürkan and Gökçe, 1999: 165). Utilizing technology in the implementation of these activities is a highly attractive, intriguing, and motivating tool for children of the digital age. Technology can offer students an opportunity to explore beyond the classroom with a shared voice and interaction (Crane, 2012). Therefore, integrating technology into lesson plans and using web tools are an effective way for students.

According to the CEO Forum on education and technology (2001), educational technology is the method and material used to achieve an educational objective. It is based on the use of technology by both the student and the teacher and It depends on many different variables. The International Society for Technology in Education-ISTE has stated that educational data processing and technologies are used for many different purposes such as (1) conveying, developing, improving, and evaluating the instruction, (2) serving as a problem-solving tool, (3) classroom and school management, (4) educational research, (5) access to and exchange of electronic information, (6) personal and professional productivity, (7) computer education (International Society for Technology in Education, 2000).

When researches conducted in the field are examined, it is seen that using technology in the education process increases students' motivation and affects their participation in the course positively (Wenglinsky, 1998; Middleton and Murray, 1999; Ravizza, Hambrick & Fenn, 2014; Chou&Lee, 2017). In addition, using technology in the education process contributes to the process of students' gathering and sustaining their attention (Fatimah & Santiana, 2017). According to the reports of the



Software & Information Industry Association (1999), technology has a considerable positive effect on success.

Practices aiming high quality and equality of opportunity in education through bringing a technology such as FATİH Project (Fırsat Artırma ve Teknolojiyi İyileştirme Hareketi-The Act of Increasing Opportunities and Improving Technology), carried out in Turkey between 2010 and 2015, into the classroom shows that fairly large budgets have been allocated for the integration of technology into education all over the world as well as in Turkey.

Web environments have undergone various evolutions with the development of technology, and the transformation of the individual from a passive audience to an active participant has taken place especially thanks to Web 2.0 tools. This active participation has enabled the Internet to be perceived as an active and multi-component network based on participation, rather than being a static resource that allows only browsing. The use of this web in the classroom enables students to take part in the network platform as individuals who increase production with technology support, not as individuals limited by technology (Anderson, 2007; Ullrich, Borau, Luo, Tan, Shen ,L. & Shen, R., 2008; Rollett Lux, Strohmaier, Dösingerm & Tochtermann, 2007;). Today, most of the students who are called “digital native” (Prensky, 2007) use Web 2.0 technologies more in their daily lives.

Web 2.0 technologies encourage students to reuse the resources and create new information (An, Aworuwa, Ballard & Williams, 2010). Thanks to Web 2.0 technologies, it is now possible to develop highly interactive, participant-oriented systems and to use them in educational activities. Today, digital tools appear mostly with web-based activities, games and animations. Since these tools include many applications such as web-based activities, games, puzzles and animation, they offer a rich variety of learning methods enabling students to think at a higher level (Eyal, 2012).

Web based tools are used to ensure the realization of activities that cannot be implemented in the classroom or in the real life (Paliç & Akdeniz, 2012; Akça, Barut & Önder, 2014; Çetinkaya & Taş, 2016) and to enrich the learning environment (An, Aworuwa, Ballard, & Williams, 2010; Bingimlas, 2009). In this study, a web-based learning environment was presented to second grade students of a primary school in their social studies lesson, and it was aimed to describe its reflections on classroom management. For this purpose, the outcome of “HB.2.3.2. the student can prepare a list of meals suitable for a balanced diet” (MEB, 2018) in the unit titled Healthy Life for the second-grade curriculum of the Social Studies Course was chosen and a web-based tool was developed based on this outcome. The purpose of this study is to establish the connection between school learning and daily life, to determine how students reflect school learning to their lives, and to describe the reflections of this process on classroom management.

## METHOD

The study was designed as an explanatory mixed design by collecting both quantitative and qualitative data in the study. According to Creswell (2008), the basic assumption of the mixed method researches is that the use of qualitative and quantitative research methods together or in a blend provides a better understanding of research problems and questions than using these methods separately. Therefore, mixed design studies are defined as studies in which both quantitative and qualitative methods, concepts or techniques are used together in order to better understand the research problem, and both quantitative and qualitative data are collected, analyzed or combined at some stages of the research (Creswell, 2008; Gay, Mills and Airasian, 2006; Johnson and Christensen, 2008; Johnson and Onwuegbuzie, 2004).

Since the quantitative data are collected before the qualitative data in the study, it was designed as the explanatory mixed model research, which is one of the mixed research models. In explanatory mixed method studies, firstly quantitative data are collected, and then qualitative data are collected to explain the quantitative data (Firat, Kabakçı Yurdakul, & Ersoy, 2014).

### **The Study Group**

Criterion sampling, one of the purposeful sampling types, was used in determining the study group. Criterion sampling is based on the study of all situations involving various predetermined criteria (Yıldırım & Şimşek, 2013). Because the school does not have a computer laboratory, the residential area is at a medium level socioeconomic level, and the participant students have taken lessons related to the outcome, making a sandwich was determined to be the criterion of the study due to its compatibility with the outcome of “HB.2.3.2. the student can prepare a list of meals suitable for a balanced diet” within the scope of the study. In determining the participants of the study, the fact that their skills of using technology are at a medium level and that there is not a computer lab in the school were deemed important in terms of the data of the study. The semi-structured interviews of the study were carried out with students who had great hesitation and with the ones who did not have any hesitation in the drag and drop operation during the playing process of the web-based assessment tool. In this context, the semi-structured interviews were conducted with 20 students. While 12 of these students were boys, 8 were girls. The other participants of the semi-structured interview were the teachers of the students included in the study. One-to-one interviews were held at different times with a total of six classroom teachers, four of whom were female and two of whom were males. All of the participating teachers had more than 20 years of professional seniority.

### **Data Collection**

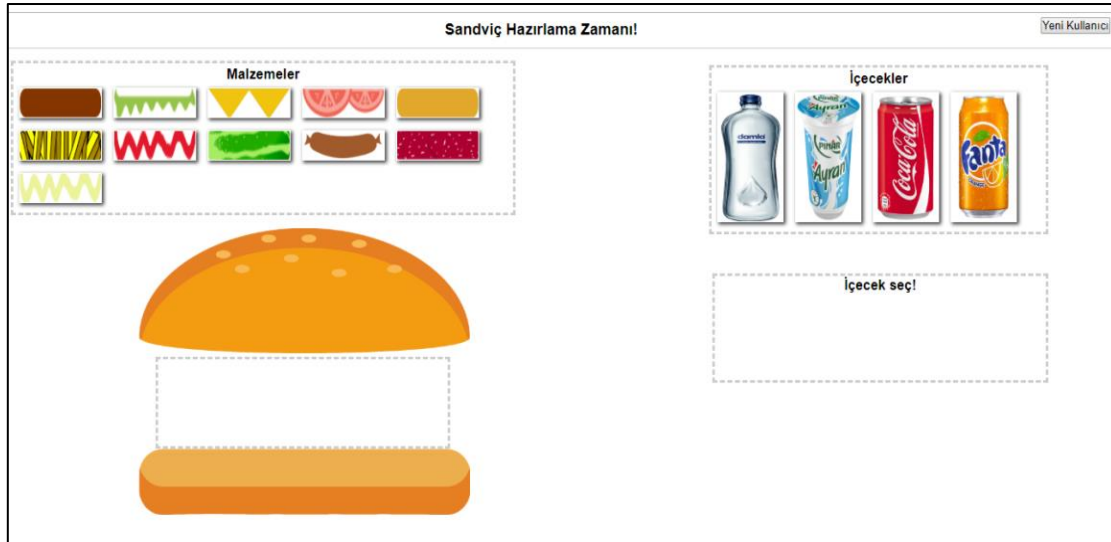
The data of the study were collected in April in the spring term of 2018-2019 academic year. The web-based assessment tool was applied to different classes on three different days. The students participated in the application process in groups of two or four through laptops in the meeting room of the school in a way that they could not see each other.

At the end of the application, a semi-structured interview was held with the students. The semi-structured interview form consists of questions that aim to examine how and why the items in the web-based assessment tool are selected by students, the feelings of the students in this process and the technical processes experienced in the use of the tool. In the semi-structured interview form, there are questions for the teachers about the effectiveness of the web-based application on student motivation, control of misbehavior among the students, and time management, which are of vital importance for classroom management.

### **Development of Web Based Evaluation Tool**

The sandwich ingredients used in the development of the web-based assessment tool were determined by taking into consideration the outcome of “HB.2.3.2. the student can prepare a list of meals suitable for a balanced diet”. For beverages to be consumed with sandwiches, the researchers determined four most consumed beverage types. Two faculty members from the science teaching department were consulted about which ingredients should be included in the assessment tool and what kind of visuals should be selected. Technologies that can be used for the development of the web-based assessment tool used in the study were researched, and a decision was made on a design that supports drag and drop technology and gamifies the assessment process for the students by considering the age and technological competencies of the target audience.

In the web-based evaluation tool whose screenshot is given in Figure 1, 11 sandwich ingredients are shown at the top and 4 drinks are shown on the right. When approaching the sandwich ingredients with the mouse, the name of the ingredient is seen. The student tries to place each sandwich ingredient between the pieces of sandwich bread that is bordered by the dashed lines below by drag and drop method. The students have the freedom to change the ingredient they choose. Similarly, when they complete preparing the sandwich, they can select any of the 4 different drinks on the right side by dragging and dropping to the Select Beverage field below. Since there is no restriction on the choice of drinks for the students, they can choose all 4 drinks.



**Figure 1: Web Based Assessment Tool**

JavaScript libraries that offer drag-and-drop feature were used in order for the students to perform the application on tablets or mobile devices and for the ones who did not have the ability to use a mouse not to experience any difficulty during the process. Additionally, the visual design template was chosen by considering the features of the target age.

### **Application Environment**

139 students used the web-based assessment tool. The students were taken to the computers sometimes in groups of 2 and sometimes in groups of 4 under the guidance of the researchers and the data were collected from 6 different classes. Each student completed the application within an average of 2-3 minutes.

### **Data Analysis**

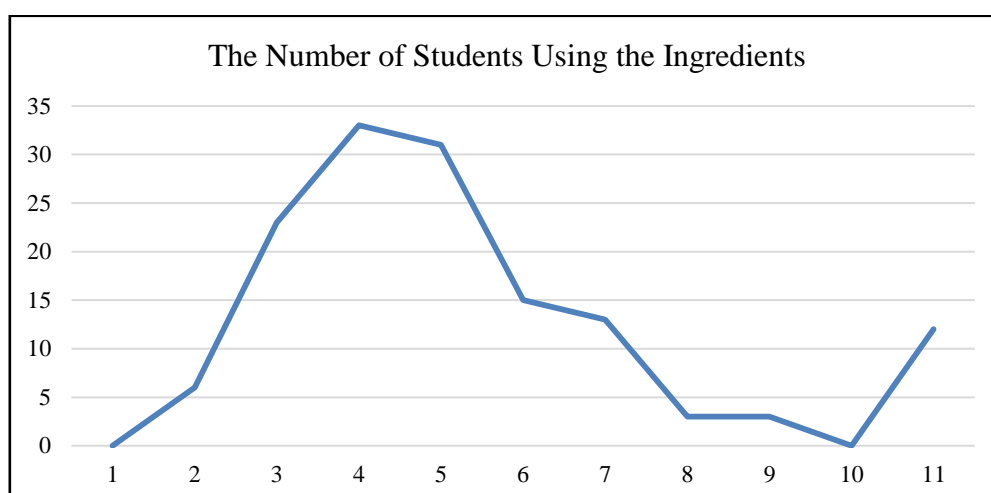
The qualitative data of the study were analyzed by using the content analysis technique. The purpose of content analysis is to reach concepts and relationships that can explain the data (Yıldırım & Şimşek, 2008). The data obtained through the audio recording were written into the interview form as they were without making any changes, and the data obtained from the study were themed by considering the basic meanings and relationships. The researchers and an expert worked independently of each other in the creation of the themes. The results of the analysis were compared, and the encodings were coded as agreement and disagreement. Fit was achieved (91%) according to Miles and Huberman (1994) reliability formula. In order to support the reliability of the research, the opinions of the participants were presented with direct quotations.

The quantitative data of the study were collected by using the web-based assessment tool applied to the participants. Each ingredient that the participants placed in the sandwich and the drink served with the sandwich were collected in the MySQL database in the background and then they were transferred as Excel data. The data of the research were presented in graphics and tables by frequency.

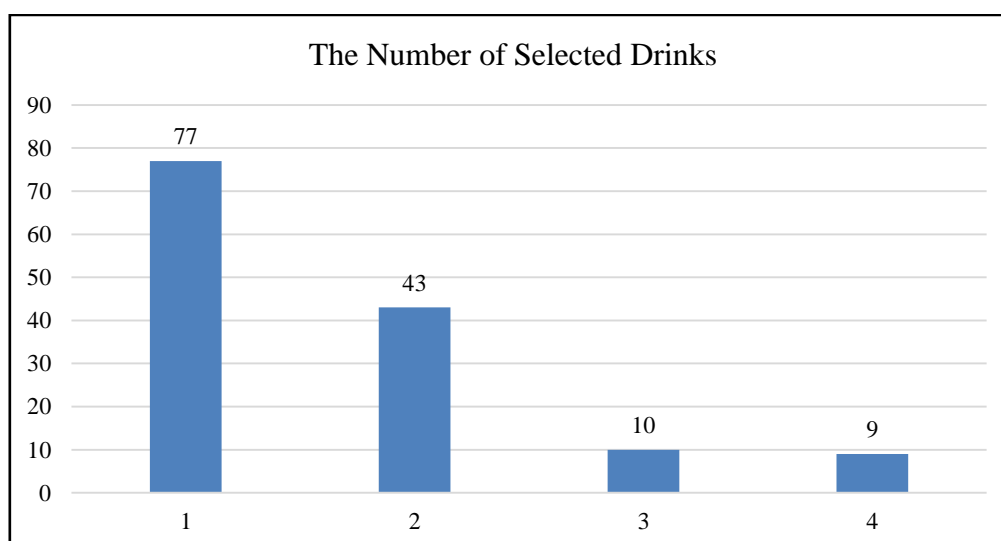
## **FINDINGS**

In this section, firstly the quantitative data obtained from the web-based assessment tool and qualitative data obtained after semi-structured interviews are presented.

### Findings Regarding the Achievement Level of the Outcome



**Figure 2. The Total Number of Students Using the Ingredients**



**Figure 3. The Number of Selected Drinks**

When Figures 2 and 3 are examined, it is seen that the students mostly created their sandwiches with 4 or 5 ingredients and chose only one drink. It was observed that students had high motivation while using the application. Many students made requests to do the practice for the second time. Sample expressions regarding the discourse of the students who expressed their feelings in the interviews are presented below.

“They are like the computer games I play at home. That was so fun. I would love to play again” (Ö 12).

“I got hungry while playing the game. I prepared my sandwich with great enthusiasm. My favorite foods were already in the game” (Ö 9).

“The game lasted very short. I wish we had prepared more sandwiches” (Ö 3).

“I want to play such games in my classes as well. It was very enjoyable ”(Ö 10)

The students who chose all the ingredients and drinks at the same time during the application stated their opinions as follows.

“I prepare sandwiches for myself at home like this. I eat them all” (Ö 15).

*“I chose all of them because I wanted to taste all of them” (Ö 8)*

*“Because I didn’t know the taste of mayonnaise, I chose mayonnaise” (Ö1).*

Approximately half of the participant students chose one drink, while nine students chose four drinks. Sample expressions of the students regarding their beverage preference are as follows.

" Because my sandwich is too big, I chose all of them. One drink is not enough for me" (Ö 2).

"I am not allowed to drink acidic beverages at home, but here I can choose whatever I want" (Ö 5)

“I don't have to drink all of them now, I have taken them for tomorrow as well” (T4).

The data regarding the students’ preferences on sandwich ingredient in the web application carried out within the scope of the study are given in Table 1.

**Table 1. The Use of Ingredients**

Ingredient	Number of Use	Rate of Use%	Hesitation
Meatball	65	%9	8
Sausage	62	%8	10
Chicken	38	%5	7
Salami	48	%7	18
Potato	67	%9	8
Ketchup	68	%9	7
Mayonnaise	45	%6	7
Cheese	75	%10	5
Tomato	109	%15	4
Lettuce	63	%9	8
Cucumber	92	%13	20
Total	732	%100	102

When Table 1 is examined, it is seen that students chose a total of 732 ingredients to make their sandwiches. During the application process, it was observed that the students put plenty of ingredients in the sandwiches. The school where the research was conducted has a medium level socio-economic structure. Most of the families work for the minimum wage. This situation may explain why students tend to use all of the ingredients. However, as can be seen in Table 1, tomatoes were mostly preferred in making sandwiches. 109 students out of 139 students made their sandwiches by using tomatoes. Cucumbers were most preferred after tomato. The least preferred ingredient in making sandwich was chicken and mayonnaise. Cucumbers were the most undecided item to choose as an ingredient in sandwich making. The high preference of tomatoes can be explained by the presence of tomatoes in students' lives. In contrast to this, mayonnaise can be interpreted as a taste that is not often found in students' homes and that has no place in their lives. Sample statements regarding the reasons for student preferences in making sandwich are presented below.

“Meatballs, potatoes and tomatoes are my favorites. When I saw these in the game, I immediately put them in my sandwich” (Ö 5).

"I made a very big sandwich. I put what I saw in it" (Ö 6).

"I added sausage, potato, tomato, cucumber and ketchup. I didn't take mayonnaise because I don't know its taste at all, I didn't put it in my sandwich in case I didn't like it" (Ö 7).

"I made my sandwich with meatballs and sausage. I did not put chicken in it, because my mother cooked chicken at home last night" (Ö 11).

"..... I was shocked. I thought the food I chose would arrive at the feeding time. When my teacher learned that this was a game and it was not entered as an order, I got very sad" (Ö 2)

"I prepared my sandwich with such a care, but it wouldn't come. We just made it arbitrarily" (Ö 13)

**Table 2. The Use of Ingredients**

Ingredient	Number of Use	Rate of Use %	Hesitation
Water	58	25%	4
Ayran	104	45%	7
Fanta	28	12%	6
Cola	39	17%	17
Total	229	100%	34

When Table 2 is examined, it is seen that the students chose a total of 229 drinks. During the application process, it was observed that the students preferred more than one drink. When Table 2, which gives the use of beverages, is examined, it is seen that 104 out of 139 students chose ayran as a drink. Fanta was the least chosen drink. Cola was the drink that the students hesitated the most whether to choose or not. Explanations of the students' beverage preferences are given below.

"I did not choose coke because my mother said there were rat droppings in it, and I disgust it" (Ö 14).

"My mother always makes ayran at home. Also, I love ayran" (Ö 19).

"Since my father always says that ayran is drunk with meatballs, I chose ayran and I also took water" (Ö 18).

"My parents get angry when I drink coke at home, and I chose both cola and fanta here" (Ö 20).

"I chose all of them because it was somehow a game, I liked selecting and dragging, and it was also free" (Ö 10).

"I took all of them because I liked using the mouse" (Ö 7).

The students' socio-economic levels and home lives and their parents' education levels are observed to be effective in students' beverage preferences. However, it is understood from the statements of the students that their families benefit from the culture of fear in child education.

### ***Teachers' Views Regarding Reflections of Web Based Application Tool on Classroom Management***

In the study, the teachers' views on the reflections of the web-based application tool on classroom management were gathered under four themes. In the first theme, the reflections of the web-based application tool on student motivation are discussed. The web-based application tool developed according to the opinions of the teachers within the scope of the study supports the motivation of the

students regarding the subject. The statements reflecting the views of the teachers on this theme are below.

“The students liked doing something on the computer. When I bring a different learning tool to the classroom, I can immediately attract the students’ attention. And if it is supported by technology, they like it more. They saw this whole process as a game rather than a lesson. I think this situation is reflected on their motivation” (T 4).

“This technological tool is very nice. My students were very excited while playing the game, and they continued to talk about the game during the lessons. It didn't seem like a lesson to them. We also learn new things. Thank you for making this web application available to us” (T 5).

“Actually, it was good for diversity; the students were very pleased, and it was a good example for us. I think there should be these kinds of applications in the lessons. These children are the children of the digital age, so we need to organize activities according to them. If you leave this application to us, we will use it in our lessons” (T 6).

The second theme created from the data obtained through semi-structured interviews with the teachers is the control of misbehavior. Within the scope of this theme, teachers stated that the web-based application tool used in the study was effective in attracting students’ attention. On the other hand, they stated that there would be problems during the application in the classroom because the opportunity for individual application could not be created due to some students’ lack of a computer. In spite of this, they stated that it can be used via the interactive board, but this situation may lead to difficulties in classroom management due to the impatience and distraction of other students. The teachers’ statements regarding the theme of controlling unwanted student behavior are presented below.

“We have an interactive board in our classrooms, we try to reflect technology in our lessons. However, we cannot make the students do individual practices on technological applications. Even the issue of who will do the activity on the interactive whiteboard first creates a problem. Students would not have to wait for each other if they had tablets” (T 3).

“I think technology-supported teaching tools will be effective in controlling unwanted behavior. Especially technological games attract the attention of students a lot. Everyone can play at their own pace and complete the activity, and because there are no bored students, unwanted behaviors do not occur. Nobody is asking permission for toilet, they are not thirsty. I have observed this more in your practice” (T 1).

“Normally, in my opinion games are important tools for teaching rules. Here, the conversion of the lesson into a game also teaches the rules. They tried to obey all the rules you shared with the children before the application. They listened to your statements with all their attention. Normally, it is not easy to get the attention of all children in the classroom” (T 2).

“This kind of digital applications actually save us time. I think such practices should be widespread in the acquisition of the content to be taught, in reinforcing the subject and in the evaluation process as they increase the readiness of the student” (T 1).

“It is important not to spend too much time to attract the attention of the students, and not to spend too much time to maintain their attention. Knowing the students and acting according to their interests is effective in terms of time. Digital age children should be offered digital materials” (T 4)

“Since we will spend less time on unwanted behaviors, technological applications enable us to devote more time to education and training applications” (T 6).

“If I had asked students to verbally prepare a meal list for a balanced diet, they would do so. We focused on all of them in the lesson. They chose more according to their wishes in your application” (T 3).

“Unfortunately, the theoretical knowledge they learned in the lesson did not appear in practice. Their drink preferences were generally correct, but it cannot be said that they chose healthy things when preparing their sandwiches” (T 1).

In the study, the fourth theme created depending on semi-structured interviews with the classroom teachers is the students’ accessibility to the outcome of “HB.2.3.2. the student can prepare a list of meals suitable for a balanced diet”. In this theme, the teachers stated that the students partially reached the relevant outcome. They stated that the students do not make a choice regarding a balanced diet, but rather act according to their wishes. The sample expressions regarding the theme are as follows.

“Neither we nor the families can set a good example for our students I suppose. What they see around them often does not match with the school. The importance of family-school interaction has once again been revealed” (T 6).

"I am sure that if I had applied this application right after I had taught the subject and if we had discussed about it, they would make much healthier choices." (T 1).

## **CONCLUSION, DISCUSSION AND SUGGESTIONS**

In this study, it was aimed to determine the reflections of the developed web-based application tool on classroom management and how the students reflect their school learning to life. For this purpose, the outcome of “HB.2.3.2. the student can prepare a list of meals suitable for a balanced diet” (MEB, 2018) in the unit titled Healthy Life for the second-grade curriculum of the Social Studies Course was chosen and a web-based tool was developed based on this outcome. The reflections of the web-based application tool on classroom management were examined under three themes.

When the research results were examined in terms of the motivation theme, the first theme, it was concluded that the web-based application tool increased the motivation of the participant students, that the students enjoyed the process, that the application excited them, and that they wanted to try the same application several times. In addition, it was observed that students were excited about the use of laptops and mouse in the classroom. The studies concluding that the use of technological tools in the classroom increases students’ motivation to learn support the “motivation themed result of this research (Kay & Lauricella, 2011; Samson, 2010; Mouza, 2008; Barak, Lipson & Lerman, 2006; Trimmel & Bachmann, 2004). Another result related to the theme of “motivation” is that teachers were also convinced in the activity that web 2.0 applications motivated students in the teaching process. The research of Shihab (2008) supports the beliefs of both students and teachers that technological tools support motivation in the classroom. According to the research result of Shihab (2008), web 2.0 applications make the education and training process more efficient. According to another result of the mentioned research, web 2.0 applications were found to be entertaining by both the students and the teachers and they enjoyed the application. Another research supporting the conclusion of this research that using technology in the classroom increases student motivation is the research of Chou & Lee (2017). According to Chou & Lee (2017), web 2.0 applications affect students’ success positively. In the same study, it was observed that the students did the applications with pleasure and had a lot of fun.

The second theme obtained in the study is about the students’ attention in the learning process. In this theme, the results obtained from the semi-structured interviews with the teachers of the students participating in the application indicate that the students were not distracted during the process, and there was no need for a different strategy to attract their attention. The result regarding the second theme of the study is supported by the studies of Zhao, Pugh, Sheldon, & Byers (2002) and Fatimah



and Santiana (2017). For example, according to the results of the research conducted by Zhao et al. (2002) in experimental design, using technology in the classroom increases student interest and academic success. Özmen, Aküzüm, Çakmak& Baysal (2011) suggested in their study about the functionality of social networks in educational settings that it is important to offer opportunities for effective use of Web 2.0 tools in the classroom.

It was observed that participant students did not exhibit any undesirable behavior during the application process regarding the theme of the control of misbehavior, determined as the third theme in the study. This situation can be explained by the interests of the students and their pleasure from using the application tool. In this context, it was concluded that using the web-based application tool in the learning environment at a primary school level has positive reflections on classroom management.

In line with the data obtained from the research on how school learning, which is another dimension of the study, is reflected on life, it was concluded that the family environment and social environment prevented school learning and that a functional bridge could not be established between what was learned at school and life. It was concluded that the knowledge, skills and habits acquired in the social environment appeared to be more dominant in students' preferences. This situation emphasizes the importance of school-family cooperation, and it reveals the importance of planning activities related to removing the barriers between school and life in the learning environment. In this context, the enrichment of the learning environment and the integration of technology with the lessons transform the classroom into a rich learning environment for students instead of being an environment built with walls on its all four sides. At the same time, web-based applications create connections between life and school for students who use computer technologies in their daily lives, thus providing support for affective elements such as attention and motivation in which students experience difficulties in the learning environment. According to Solomon and Schrum (2007, p.21), through web 2.0 applications, students can develop skills and attitudes in terms of reasoning, analyzing and performing on the subject.

If the general evaluation of the research is made, it can be said that web applications enrich the classroom activities and have an increasing effect on the performance of the course work, and thus affect the students' motivation levels positively. According to the research conducted by Cho, Gay, Davidson & Ingraffie (2007), it was concluded that technological tools significantly affect students' in-class performances, collaborative working levels and effective communication. According to Mayer's (2010) research results, when students use web 2.0 applications, their learning level increases more. In addition, the experimental research conducted by Korucu (2013) supports the conclusion of the research that the use of technology in the classroom has a positive effect on students.

In the light of the results of this research, it is recommended that practitioners use technology in the classroom for effective classroom management and adapt web 2.0 tools to the course contents. It can also be suggested that Web 2.0 tools are frequently used in distance education. Especially during the pandemic period, one of the most effective ways to include students in lessons and attract their attention will be to use web 2.0 applications in the lessons.

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## **The Effect of Using Social Networks in The Inquiry-Based General Chemistry Laboratory Course**

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### **Abstract**

The aim of this research is to examine the effect of social network environment supported use of inquiry-based activities developed for the general chemistry laboratory course. Throughout the research, Attitude Towards General Chemistry Laboratory Scale and Science Process Skills Perception Scale were used as quantitative data gathering means and applied to students before and after the implementation. Eighty-three pre-service science teachers participated in this study. Study group was chosen from first graders who take "General Chemistry Laboratory" course with criterion sampling method that is one of the purposive sampling methods. Laboratory activities which were developed in terms of Science Process Skills (SPS) were used for Experimental Group 1 and these activities were also supported by social network and were applied for group Experimental Group 2, for group Control Group the Laboratory activities in curriculum textbooks that are weak in terms of SPS were applied. The effects on students' attitudes towards general chemistry lab and their perception of SPS were studied for all three groups. As a result of the research, it has been determined that the inquiry-based learning approach positively affects the Science Teaching students' perceptions of SPS but has no positive or negative effect on their attitudes towards the general chemistry laboratory. Moreover, it turned out that social network support positively contributed to students' attitudes towards the laboratory. When designing and implementing the activities included in the Science Education curriculum, it is important to consider all valuable teaching technologies, including internet and social networking sites. In case of an effective injury from these, efficiency in education and training can also increase positively.

**Keywords:** Inquiry, Laboratory, Social Networking, Science Process Skills

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## INTRODUCTION

In a world full of technological products developed in the light of scientific research, it has become a necessity for everyone to be scientific literate in terms of understanding and using technology. Everyone should be smartly engaged in public discourse and debates on important issues involving science and technology. Everyone should share their experiences and develop individually in order to learn all about nature (Zhong and Xu, 2019). In science lessons, students encounter many concepts and phenomena and begin to get to know themselves, nature and the world. Adapting the information in science lessons to daily life is important for students to learn meaningfully. It is necessary to develop scientific thinking, inquiry, research and problem-solving skills in order to enable students to learn information meaningfully (Lim, 2001).

Science education program in Turkey is based on constructivist approach. Constructivist approach aims to raise individuals who can discover, question, are willing to learn, understand, use and develop new technologies, can self-manage, make decisions and take the responsibility of their decisions, and have advanced problem-solving skills. In other words, today, the events that occur in our society together with the world are affected by scientific activities (MoNE, 2018). It is necessary to analyze the reflections of these scientific activities on our social life. Furthermore, raising critical and questioning individuals is an important element as stated in the aims of Ministry of National Education (MoNE). Based on the stated objectives of the science curriculum, it is important to implement inquiry-based learning in schools (MoNE, 2018).

Inquiry-based learning is a learning approach based on constructivist theory, that focuses on the research process rather than creating products or problem solving, and develops high-level thinking and research skills. Inquiry-Based Learning transforms the learning process into a form where the student is an active participant and structures his learning by doing research with activities (Lim, 2001). Inquiry-Based Learning is a way of asking questions, researching and accessing information, finding something new about a phenomenon. In other words, in Inquiry Based Learning, which is defined as science operations, the student learns science by combining scientific knowledge and processes by using cause-effect relationship and critical thinking. Inquiry-Based Learning enables students to learn science concepts, to evaluate "what do we know and how do we know?", to understand the nature of science, to gain the skills required to become independent researchers in the natural world, and to develop their attitudes, skills and abilities related to science (NSES, 1996). There are four forms of application of the inquiry-based teaching approach in the classroom environment: confirmation inquiry, structured inquiry, guided inquiry, and open inquiry (Banchi and Bell, 2008). Through confirmation inquiry, students confirm a principle through an activity when the results are known in advance. In structured inquiry approach, all stages of the teaching are determined by the teacher and the students follow these stages and reach the result by being guided by the teacher. In the guided inquiry approach, the students shape the teaching themselves and the teacher guides this process. In open inquiry approach, students determine the teaching process, the teacher does not participate in the process, watches from outside or gives little guidance in departments where students have difficulty (Çelik, Şenocak, Bayrakçeken, Taşkesenligil, and Doymuş, 2005).

Inquiry-based learning is a thinking process. Teachers should demonstrate model behaviors that show students how to think and use inquiry research. Inquiry-based learning includes educational activities in which students participate individually or in groups. In this type of learning approach, the student takes part in the whole process of inquiry and learns in this process (Gilardi and Lozza, 2009). While students are questioning, they learn more about the subject and learn to learn (Shih, Chuang and Huang, 2010). The aim of inquiry-based science education is to help students develop their inquiry, research and process skills (Duban, 2008).

Studies in the literature show that inquiry-based teaching activities are more effective than traditional teaching activities on variables such as achievement, attitude, and scientific process skills (Colburn, 2006; Çalışkan, 2008; Dilbaz, Yelken, and Özgelen, 2016; Geier et al. 2008; Gibson and Chase, 2002; Karapınar, 2016; Şensoy and Yıldırım, 2017; Wilson, Taylor, Kowalski, and Carlson,

2010). However, these studies are mostly on the theoretical basis and ignore social and interactive way of teaching and learning. Suzić, Dabić, and Ćirković Miladinović (2013) implies that, high level of communicative competence is something that is essential to students for their development, and can be achieved through well-organized classes with an emphasis on interactive communication. The term “educational communication” here needs to be defined. Unlike the standard definition of education which states that it is the process by which people exchange information or express their thoughts and feelings, definition of educational communication is more complex, because in addition to the standard communication criteria (number of participants, means of communication, and content of communication) educational communication incorporates an incomplete ability of one person to communicate with the other (communication between a student and a teacher or other source of information). Therefore, it is said that the main goal of educational communication is to help students develop skills for a complete and independent communication with people and media of communication (Suzić, 2005). With the constructivist approach, education is no more a one directional information flow. Rather it is a process of communication between student and teacher as well as student and student.

Today, we can clearly see that the way we communicate and the way we interact greatly differs for 20 years back. The introduction of social networks to our lives reshapes how we communicate with others and also how we express ourselves. Moreover, we observe this communicational shift more intensely on the young population whom we may consider as the audience of the education process.

Social network websites are websites that enable individuals to identify themselves on the internet in the community life, to communicate with people with whom they can easily get along at the same cultural level, by internet communication methods, and to establish social communication by showing symbolic movements that symbolize various gestures in social life. Today, many social networking websites have emerged and these sites are reshaping the way people communicate, interact, collaborate, work together and even learn. Today, millions of users are online on social networks with their real identities. Social networks have features that improve students' and teachers' communication skills, expand participation, strengthen peer support, and enable collaborative learning (Wang et al., 2020). It is easy for students and teachers to create an educational community by following simple steps through social networks, share among themselves, communicate and receive feedback. Social network sites also provide opportunities such as supporting the learning process of students and supporting the teaching and evaluation process of the teacher by enriching the learning and teaching processes with materials such as text, video, and audio (Pallora and Zhu, 2011).

Within the literature there are numerous researches about social network supported educational environments mostly about information and communication technology education (Karabulut, 2017; Öztürk and Tetik, 2015; Tınmaz, 2011) and partly about language education (Çimen, 2015; Fuquene, 2020). The studies about social network support in science education and especially in laboratory setting are highly limited (Whittaker, Howarth and Lymn, 2014; Pai et. Al, 2017). From this point of view, we yield great importance to this study as it stands as a rare example of this practice.

The aim of this research is to examine the effects of social network-supported, inquiry-based and SPS-enriched activities on students' attitudes towards General Chemistry Laboratory Course and their perceptions of SPS.

## METHOD

In this study, quasi-experimental design was used. The pattern stands out by taking the measurements of the dependent variable of the groups before application. There is no random assignment in the pattern and therefore, it can be said that the pattern is open to many threats in terms of internal and external validity (Büyüköztürk, 2016). Knowing the starting point of the groups regarding the measured quality, so that the change that can occur can be measured and tested,



increases the usability of the pattern. The pattern can be defined as an experimental design without random assignment because it contains process conditions and repeated measurements (Fraenkel & Wallen, 2006).

### Participants

Study group of the research were determined to be 83 students of the Science Teaching program of the Faculty of Education. participants were chosen from first graders who take "General Chemistry Laboratory" course with criterion sampling method that is one of the purposive sampling methods. In this method, participants are composed of individuals, events, objects or situations with the qualifications identified in relation to the problem (Büyüköztürk, Akgün, Karadeniz, Çakmak, and Demirel, 2013). Students with Internet access and actively using social networks are particularly preferred for the Experimental Group 2 (EG2). No criteria were used to select Experimental Group 1 (EG1) and Control Group (CG) students. Laboratory activities which were developed in terms of SPS were used for EG1 and these activities were also supported by social network and were applied for group EG2, for group CG the Laboratory activities in curriculum textbooks were applied. The total of 27 students with Internet access and actively using social networks were chosen for the EG2. Initially both CG and EG1 groups consisted of 29 students each but two students withdraw in the process and finally EG1 group shaped as 27 students.

### Data Collection Tools

#### Attitude Towards General Chemistry Laboratory Scale (ATGCLS)

ATGCLS was used to observe the pre-service teachers' attitudes towards the General Chemistry Laboratory before and after the application. This 5-point likert-type attitude scale was developed by Kaya (2012), which contains 22 positive and 13 negative items with Cronbach alpha reliability coefficient as .844. 13 items that were negative were evaluated by reversing. In this respect, the lowest score that can be obtained from the scale, which contains a total of 35 items, is 35 while the highest score is 175. One-way ANOVA was used to compare the mean scores of the students before and after the treatment.

#### Science Process Skills (SPS) Perception Scale

SPS Perception Scale was used to observe the pre-service teachers' perceptions about their SPS. Namely, we wanted to see how the students feel about their competency on SPS throughout the study. In this study SPS was considered under two sub headings as Basic Process Skills and Integrated Process Skills (Table 1) in line with the approach of Ongowo and Indoshi (2013).

**Table 1. Science Process Skills**

Basic Process Skills	Description
Observing	Use of five senses to derive data
Classifying	Sorting, grouping and arranging based similarities and differences
Measuring	Using standard and non-standard measures to describe dimensions
Predicting	Stating the outcome of a future event based on a pattern of evidence
Inferring	Explanation of observations and data
Communicating	Using words or symbols to describe an action, object or event
Integrated Process Skills	Description
Formulating Hypothesis	Stating the expected outcome of an experiment
Controlling Variables	Identifying variables, keeping variables constant and manipulating
Interpreting Data	Organizing, concluding from data and making sense of data
Defining Operationally	Stating how to measure a variable in an experiment
Experimenting	Testing by following procedures to produce verifiable results
Formulating Models	Creating a mental or physical model of a process or event

The 5-point likert-type perception scale, developed by the researcher, contains 18 items, was conducted on 146 people and the Cronbach alpha reliability coefficient was found to be .76 for all dimensions of the scale. The lowest score that can be obtained from the scale, which contains a total of 18 items, is 18 while the highest score is 90. One-way ANOVA was used to compare the mean scores of the students before and after the treatment.

### Research Procedure

In this study, within the scope of General Chemistry Laboratory II course, an experimental guide, which has already been using for years and seemingly insufficient in terms of achievements related to SPS and designed at a level that can attain maximum 6 SPS (Table 2), was used for the CG group.

**Table 2. Addressed SPS in the Control Group Laboratory Guide**

Experiment Number	Science Process Skills												Total Addressed SPS Count
	Basic Process Skills						Integrated (Experimental) Process Skills						
	Observing	Classifying	Measuring	Predicting	Infering	Communicating	Formulating Hypothesis	Controlling Variables	Interpreting Data	Defining Operationally	Experimenting	Formulating Models	
1	+	-	+	-	-	-	-	-	+	-	+	-	4
2	+	-	+	-	-	-	-	-	+	-	+	-	4
3	+	-	+	-	-	-	-	-	+	-	+	-	4
4	+	-	+	-	-	-	-	-	+	-	+	-	4
5	+	-	+	-	-	-	-	-	+	-	+	-	4
6	+	-	+	-	-	-	-	-	+	-	+	-	4
7	+	-	+	-	-	-	-	-	+	+	+	-	4
8	+	-	+	-	-	-	-	-	+	-	+	-	4
9	+	-	+	-	-	-	-	-	+	-	+	-	4
10	+	-	+	-	-	-	-	-	+	+	+	+	6

For groups EG1 and EG2, SPS enriched 10 activities were re-designed with the aim of providing at least 9 SPS (Table 3), instructions for students on how to implement these activities, and instructions containing various laboratory safety warnings were used.

**Table 3. Addressed SPS in the EG1-EG2 Group Laboratory Guide**

Experiment Number	Science Process Skills												Total Addressed SPS Count
	Basic Process Skills						Integrated (Experimental) Process Skills						
	Observing	Classifying	Measuring	Predicting	Infering	Communicating	Formulating Hypothesis	Controlling Variables	Interpreting Data	Defining Operationally	Experimenting	Formulating Models	
1	+	+	+	+	+	+	+	+	+	-	+	-	10
2	+	-	+	+	+	+	+	+	+	-	+	-	9
3	+	+	+	+	+	+	+	+	+	-	+	-	10
4	+	-	+	+	+	+	+	+	+	-	+	-	9
5	+	-	+	+	+	+	+	+	+	-	+	-	9
6	+	-	+	+	+	+	+	+	+	-	+	-	9
7	+	-	+	+	+	+	+	+	+	-	+	-	9
8	+	-	+	+	+	+	+	+	+	-	+	-	9
9	+	-	+	+	+	+	+	+	+	-	+	-	9
10	+	+	+	+	+	+	+	+	+	+	+	+	12

The names of the experiments conducted in this study carried out for ten weeks are as follows:

Experiment 1: Preparation of Solutions with Specific Concentration Values.

Experiment 2: Solubility Event and Effect of Temperature on Solubility.

Experiment 3: Concept of pH and Acid-Base Indicators.

Experiment 4: Freezing Point Depression (Cryoscopy)

Experiment 5: Chemical Equilibrium.

Experiment 6: Chemical Kinetics: Effect of Concentration on Reaction Rate.

Experiment 7: Chemical Kinetics: Effect of Temperature on Reaction Rate.

Experiment 8: Material Separation from Solution with The Help of Electric Current.

Experiment 9: Reaction Heat.

Experiment 10: Chemical Bonds and Molecule Models.

In the activity guide developed, students are oriented by the guiding sentences that can actively apply scientific processes and gain these skills, and these sentences are expressed with more emphasis (like bold writing). For example; “... **observe the event**”, “... **based on your assumptions about solutions and solubility event**”, “**establish based on the hypotheses given below based on the variables that can affect the solubility of the substance**”, “**make predictions based on your daily life experiences and may affect the solubility of the substance write down your estimates about the variables and discuss them with your group members**”, “... **record the data, show them on the chart and draw the temperature-resolution chart**”, “... **interpret the results**”, “... **classify the water-soluble and insoluble substances**” and so on. It can be stated that such an approach may result in great contributions in the implementation of student-centered strategies in science teaching.

A newer “Experiment Report Format” was also proposed to experimental group students to report their observations and results about the experiments related to the activities implemented for 10 weeks. Students were encouraged to record and report their hypotheses, their observations on implementation, their results, and their answers to evaluation questions through this report format. In the below table a brief summary of the research process was tabulated (Table 4).

**Table 4. Addressed SPS in the EG1-EG2 Group Laboratory Guide**

Group	Pre-test	Implementation Process (10 weeks)				Post -test
		Report Format	Before Experiment	During Experiment	After Experiment	
CG	ATGCL and SPSPC Applied	Standard Report Format Used	No Applications	Standard Activities Carried Out	No Applications	ATGCL and SPSPC Applied
EG1	ATGCL and SPSPC Applied	An Inquiry Based Report Format Used	No Applications	Inquiry Based Activities Carried Out	No Applications	ATGCL and SPSPC Applied
EG2	ATGCL and SPSPC Applied	An Inquiry Based Report Format Used	Question-Answer Contest Over Facebook	Inquiry Based Activities Carried Out	Medias Shared in Facebook Group	ATGCL and SPSPC Applied
				Medias (Video, Picture) Taken to be Shared on Social Network	Experiment Results Discussed in Facebook Group	

The EG2 is an experimental group where inquiry-based and social networking supported experimental activities are performed. Experimental activities in the EG2 were developed by enriching the experimental activities used in the CG based on inquiry-based learning approach and SPS and supporting these activities using social networks.

Experimental activities prepared within the framework of the steps of initiating inquiry, focusing on research and sharing understanding for the EG1 were supported with social networking opportunities for the EG2 group. A Facebook group was established for the EG2 students under the name of “K.Ü. Deney Grubu” and all students participated in this group (Figure 1).



Figure 1. EG2 Facebook Group Page

The initialization step starts for the EG2 before coming to the laboratory via the social network. The students were asked a question about the experimental activity to be held at the same time, each week on the same day, to prepare themselves for the activity, to trigger their curiosity, to reveal their current knowledge and to relate the experiment to daily life. 24 hours were given to answer the question; accurate and quick answers were encouraged by a scoring system (Figure 2).



Figure 2. Question-Answer Contest in Facebook Group

The answers sent by the students through private messages are as important as the initiation step of questioning, encouraging them to prepare before the application, determining their misconceptions and knowing the current knowledge levels in advance (Figure 3).



**Figure 3. Student Responses to Question-Answer Contest**

The activity can be reviewed and changed from these messages. It was thought that the experimental activity might be more efficient, if the students could perform a research on the subject before the activity in the laboratory.

During the experimental activity, students are asked to take photos and/or videos of the experimental stages and share them in the related section of the social network group. The student's sharing of the images and videos recorded while participating in the experiment and also discussing about the experiment in the social networking group ensures that they stay in the experimental activity in different learning environments even after they leave the laboratory (Figure 4).

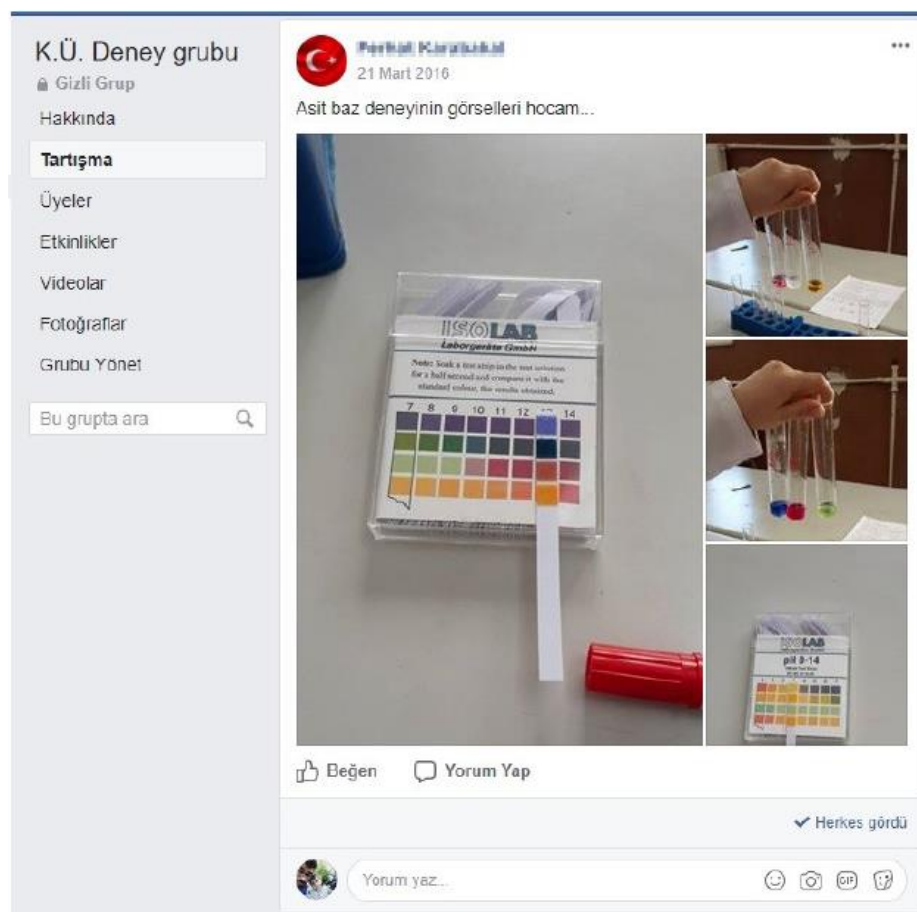


Figure 4. Images of Experiments Shared by Student in Facebook Group

## RESULTS

In this section, we presented the Pre-test and Post-test scores of the data collection tools. Moreover, some statistical analysis was given about the mean difference significance parameters. ATGCLS Pre-test Scores are presented in the Table 5.

Table 5. ATGCLS Pre-test Scores

	Group	N	$\bar{X}$	S
ATGCLS Pre-test Scores	CG	29	65.19	11.14
	EG1	27	65.10	15.39
	EG2	27	63.36	12.71
	Total	83		

As a result of the pre-test, the average CG pre-test was found to be 65.19, the average EG1 was 65.10 and the EG2 was 63.36. In order to see if any of these values differ from one another significantly, variance analyze was applied. ATGCLS Pre-test ANOVA Results are shown in Table 6.

Table 6. ATGCLS Pre-test ANOVA Results

Source of Variation	SS	DoF	MS	F	p-value
Between Groups	58.45	2	29.22	.17	.85
Within Groups	13835.80	80	172.95		
Total	13894.25	82			

As seen on Table 6 one-way analysis of variance on means revealed that the group averages did not differ significantly ( $p = .845 > .05$ ). After the implementation, the same scale applied as the post-test. ATGCLS Post-test Scores are shown below in Table 7.

**Table 7. ATGCLS Post-test Scores**

	Group	N	$\bar{X}$	S
ATGCLS Post-test Scores	CG	29	65.66	12.08
	EG1	27	73.70	15.09
	EG2	27	76.70	12.90
	Total	83		

After the implementation, the ATGCLS CG group average score was 65.66, while the mean EG1 group was 73.70 and the EG2 group was 76.70. ATGCLS Post-test ANOVA Results were presented in Table 8.

**Table 8. ATGCLS Post-test ANOVA Results**

Source of Variation	SS	DoF	MS	F	p-value
Between Groups	1841.73	2	920.87	3.80	.027
Within Groups	19399.81	80	242.50		
Total	21241.54	82			

One-way analysis of variance on posttest mean scores in Table 8 showed a statistically significant difference between mean scores ( $p = .027 < .05$ ). In order to identify the sources of this significant mean difference Scheffé Test was applied. Results are shown on Table 9.

**Table 9. General Chemistry Laboratory Attitude Scale Post-test Scheffé Test Results**

Groups		Mean Difference	Std. Error	Sig.
CG	EG1	-8.05	4.11	.161
	EG2	-11.05	4.16	.034*
EG1	CG	8.05	4.11	.161
	EG2	-3	4.24	.779
EG2	CG	11.05	4.16	.034*
	EG1	3	4.24	.779

Scheffé Test Results revealed that there is a significant difference between groups CG and EG2 and in favor of EG2 (Table 9). Accordingly, inquiry based, and social network supported activities positively affected students' attitudes towards General Chemistry Laboratory.

SPS Perception Scale was applied to the CG and EG's before and after the experimental application in order to determine the perception levels of science teaching students towards SPS. SPS Perception Scale Pre-test Scores are tabulated as Table 10.

**Table 10. SPS Perception Scale Pre-test Scores**

	Group	N	$\bar{X}$	S
SPS Perception Scale Pre-test Scores	CG	29	61.21	4.87
	EG1	27	60.85	7.21
	EG2	27	63.33	6.87
	Total	83		

As a result of the pre-test, the CG pre-test average was 61.21, the average EG1 group was 60.85 and the EG2 group was 63.33. In Table 11 variance analyze can be seen to check if any of the mean scores differ significantly.

**Table 11. SPS Perception Scale Pre-test ANOVA Results**

Source of Variation	SS	DoF	MS	F	p-value
Between Groups	97.93	2	48.97	1.21	.304
Within Groups	3240.17	80	40.50		
Total	3338.10	82			

As seen on Table 11 one-way analysis of variance on the means revealed that the group averages did not differ significantly ( $p = .304 > .05$ ), considering that the students did not do any study based on SPS prior to the application. Therefore, this result can be considered a consistent result. After the experimental process, SPS Perception Scale was applied again as a post-test (Table 12).

**Table 12. SPS Perception Scale Post-test Scores**

	Group	N	$\bar{X}$	S
SPS Perception Scale Post-test Scores	CG	29	61.59	5.42
	EG1	27	68.30	7.02
	EG2	27	69.04	7.34
	Total	83		

After the experimental application, the re-applied SPS Perception Scale was found to be 61.59 for the CG, and 68.30 for the EG1 and 69.04 for the EG2. SPS Perception Scale Post-test ANOVA Results in Table 13 shows whether these mean scores differ significantly.

**Table 13. SPS Perception Scale Post-test ANOVA Results**

Source of Variation	SS	DoF	MS	F	p-value
Between Groups	953.29	2	476.64	6.02	.004
Within Groups	6329.63	80	79.12		
Total	7282.92	82			

One-way analysis of variance on posttest mean scores on Table 13 showed a statistically significant difference between mean scores ( $p = .004 < .05$ ). Scheffé Test was applied in order to identify the sources of this significant mean difference (Table 14).

**Table 14. SPS Perception Scale Post-test Scheffé Test Results**

Groups		Mean Difference	Std. Error	Sig.
CG	EG1	-6.71	2.29	.023*
	EG2	-7.45	2.39	.010*
EG1	CG	6.71	2.29	.023*
	EG2	-0.74	2.42	.954
EG2	CG	7.45	2.39	.010*
	EG1	0.74	2.42	.954

Scheffé Test Results show that the significant difference is in favor of EG's between CG and EG1 and EG2 groups. There was no significant difference between EG1 and EG2 groups (Table 14). According to these results, it can be said that the laboratory activities based on inquiry have a positive effect on the students' perception of SPS.

## DISCUSSION AND CONCLUSION

This research showed that, social networking integration to the laboratory process enhanced the students' attitude towards the laboratory positively. Inquiry based activities alone also had a positive impact on students' attitudes but this contribution was not found statistically meaningful. Aydoğdu (2013) examined the effect of internet supported science and technology course on students' achievement, attitude and questioning skills and conceptions. He found that internet supported teaching method was more effective on students' academic achievement than traditional teaching



methods and had a positive effect on their attitudes towards science and technology course, questioning learning skills and concept perceptions. There are different studies in the literature indicating that social networks, computer-aided and internet-supported learning environments positively affect students' attitudes towards the related course or learning environment (Clements, 2015; Pitiporntapin and Lankford, 2015; Soomro, Kale, and Zai, 2014; Villafuerte and Romero, 2017; Yeo, 2014; Yüksel and Olpak, 2015). These results are in line with our findings and support our results in some respects.

One other important finding of this research appears out to be is that students' perceptions about their SPS have improved with the interference of inquiry-based activities. It has been stated in the literature that inquiry-based approaches improve students' SPS (Greenwald and Quitadamo, 2014; Maxwell, Lambeth, and Cox, 2015; Molefe, Stears, and Hobden, 2016; Yaman and Yalçın, 2014). Myers and Dyer, (2006) examined the effect of inquiry-based laboratory approach on students' content knowledge and SPS. As a result of the study, it was seen that most of the students adopted the inquiry-based laboratory approach in terms of content knowledge and SPS. Tatar and Kuru (2006) stated that the inquiry-based learning process is applicable at all educational levels and every course from kindergarten to university. Windschitl (2000) also states that even the youngest elementary school learners have the capacity to engage in inquiry. In addition, as a result of the study, it was mentioned that there was a significant increase in the SPS of the students who took courses with questioning learning approach after the application compared to the pre-application. In another study, conducted by Koray, Köksal, Özdemir, and Presley (2014), a positive effect of creative and critical thinking-based laboratory activities on students' SPS was determined. Yang and Heh (2007) examined the effect of virtual physics laboratory applications on the achievement of physics, SPS and attitudes towards computer in the 10th grade students. As a result of the study, it was concluded that virtual laboratory applications have a more positive and higher effect on the SPS. Şimşek and Kabapınar (2010), in their work with primary school students; found that the science learning environment based on inquiry positively affected the students' SPS. For these reasons, to implement applications based on SPS rather than traditional laboratory applications was proposed. Additionally, we have found that social networking integration barely had an effect on students' SPS perceptions. This may be due to that no additional SPS activities were held on over the Facebook.

Based on the results obtained from this research, it may be advisable to provide teacher candidates with assignments and projects that will increase the use of internet for research purposes. These results show that, in applied science education, laboratory activities based on SPS, designed in accordance with the constructivist approach, may have important results for an effective science education when used with social media supported applications.

It can be stated that the correct learning and experience of inquiry-based learning approach for preservice science teachers will positively affect the future teaching life of the preservice teachers. This is vital especially when considering that the elementary science program was developed on inquiry-based learning approach. At this point, science teaching students are required to encounter more inquiry-based learning examples from the first grade to the last grade. It should be noted that interrogation practices may be different in the course and in the laboratory. It is important to present inquiry applications to students in different subjects, in different courses and in different learning environments.

In order to carry out inquiry-based practices in a healthy and productive manner, communication between teacher and the students have great importance even before the class. Being in touch with the students at any time with the help of social networks will be an important advantage at this point.

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## **A Career Adaptability Model for Psychological Counselors\***

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### **Abstract**

The main aim of this research is; to propose and test a model of structural equality that examines career adaptability of psychological counselors, career calling and skills used in the fields of vocational identity experience for psychological counselors. This research was designed as a causal pattern. 231 volunteer psychological counselors participated in the study. The data were collected by “career adaptability scale, career calling scale, communication skills scale and perceived self- efficacy in counseling competencies scale”. Structural equation modeling was used for data analysis. According to the research findings, career calling predicts career adaptability in a statistically positive and meaningful way. At the same time, it was found that the skills used in the fields of vocational identity experience (communication skills and competence perception) for psychological counselors positively and significantly predicted career calling. Finally, the relationship between career adaptability and skills used in the fields of vocational identity experience for psychological counselors (communication skills and competence perception) has been shown to have a full mediating effect of career calling. As a result of this research, a career adaptability model for psychological counselors was reached. Experimental programs that will be prepared to increase career adaptability of psychological counselors can include dimensions of the model discussed in this research.

**Keywords:** Career Adaptability, Career Calling, Fields of Vocational Identity Experience, Counselor

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## INTRODUCTION

There are many professions that provide psychological assistance to individuals. One of them is the field of psychological counseling and guidance. The psychological counseling profession is a helping profession (Corey, 2008). The main actors of this assistance profession are counselors. According to Corey (2008), being an effective counselor is a professional identity acquisition process. This acquisition process actually shows the representation of the counselors 'selves' suitability for their profession (Savickas, 2013). At this point, the concept of career adaptability, which shows the adaptability of individuals' selves to their profession. Career adaptability is defined as an individual's ability to be ready for changes in dimensions such as decision making, exploration, knowledge, and planning in the career development process (Duffy, 2010). Savickas (2005) is the researcher who contributed the most to career adaptability. He is the theorist who created the career construction theory, which is the first and only theory about career adaptability. Career adaptability is defined by Savickas (2005) as that provides resources to cope with career obstacles, career transitions and career changes that individuals encounter in their business lives. On the other hand, there are various studies in the literature about the dimensions of career adaptability. Stumpf, Colarelli, and Hartman (1983) dimensioned career adaptability into career exploration and career planning. Similarly, by Han and Rojewski (2015) career adaptability was evaluated as a structure consisting of two important components. The first component, career exploration is to reveal whether individuals are consistent in their career development by recognizing themselves and the characteristics required by their profession. The second component is career planning, individuals' determination of goals in career development and their efforts to achieve these goals (Han and Rojewski (2015). Similarly, career adaptability was classified as career exploration and career planning by Eryılmaz and Kara (2016) On the other hand, Savickas (2013) emphasized career adaptability as the most important concept in the center of career construction theory. In addition, it is emphasized that using these adapt abilities in this theory increases career adaptability of individuals. There are various variables that affect career adaptability (Savickas, 2013). One of them is career calling.

### ***Relationships between career adaptability and career calling***

Career calling defined as a motivational structure that includes a meaning for the individual, efforts to help others and helps them to actively orient their career development (Duffy & Sedlacek, 2007). In addition, according to Duffy and Sedlacek (2010), career calling consists of three important components. These are, first of all, the motivation of the individual to experience his / her job, then the individual's search for meaning in the career development process, and finally, the desire and tendency to be personally beneficial to others.

It has been revealed in the literature that career adaptability and career calling are related variables (Eryılmaz & Kara, 2018a; Hall & Chandler, 2005; Savickas & Porfeli, 2012; Xie, Xia, Xin, & Zhou, 2016). As a result, in this study, it is assumed that career calling is an important variable that predicts career adaptability, based on the above mentioned information.

### ***Relationships between career adaptability and skills used in vocational identity experience areas for counselors:***

Another variable that affects career adaptability is the skills used in vocational identity experience areas for psychological counselors. Identity shaped by the individual's emotions, thoughts, behaviors, beliefs, values and social interactions. This shaping presents integrity, continuity and consistency, in short "Who am I?" is the answer given to the question (Erickson, 1994). Vocational identity is defined as a composition formed by the individual regarding who and what person is professionally (Kielhofner, 2002). There are two main theoretical orientations in the literature that emphasize the importance of experience areas in vocational identity development, these are vocational self and vocational identity theories.

There are many researchers who discuss that vocational self-theories develop by influencing the vocational self's experiences in work life. The most important of these is Super. In Super's lifelong life space theory, individuals acquire their vocational selves in the vocational development process. Work life is also an important part of the vocational development process (Super, 1980). Similarly, Betz is the researcher who worked on the above-mentioned theory. Betz; He states that an individual's vocational self is made up of desires, attitudes, thoughts and feelings about himself in work life (Betz, 1994).

Another vocational self theory that emphasizes the importance of vocational experience areas of individuals is the vocational self-crystallization theory. According to this theory, individuals; they form their vocational selves from the needs, interests, attitudes, values and abilities related to their vocational. The field in which needs, interests, attitudes and values manifest itself is the experience of individuals in the work world (Barrett & Tinsley, 1977).

Another area that emphasizes the importance of the vocational experience areas of individuals is the field of identity development. Marcia's theory of identity status provides important information on this subject. Marcia states that the process of identity acquisition evolves through experimentation and decision making (Marcia, 2002). Although identity development is addressed in emerging adulthood (Arnett, 2000), identity acquisition is actually a lifelong process (Erickson, 1994). Identity experiments in this process take place during the period of their education for university students, and work life experiences for individuals who start their vocational life (Winter, 2009).

Theorists who place a direct emphasis on vocational identity experience areas are vocational identity theorists. For example, Christiansen (1999) states that individuals' vocational identities will be structured only if they perform their vocational. Thus, individuals in the process of forming their vocational identities lead a meaningful life by taking part in vocational experience areas, thereby giving meaning to their lives. According to Kielhofner (2002), among the researchers who emphasized this issue, vocational identity consists only of their experiences and experiences in vocational identity experience fields. According to him, vocational identity as a living being consists of vocational habits, experiences and orientations. As a result, it is seen that there are two important theoretical orientations that draw attention to the vocational experience areas of individuals. One of them is vocational self-theorists and the other is vocational identity theorists. In this study, the concept of vocational experience areas is examined from the perspectives of vocational identity theorists.

Vocational identity experience areas are defined as individuals' making judgments about the professions they want to have by experiencing different experiences in their career development processes (Tierney & Rhoads, 1994). In addition to these, there are theoretical explanations about the vocational identity experience areas of those working in different fields in the literature. For example, according to Winter (2009), the experience processes of individuals during their doctorate education shape their vocational identities. On the other hand, Beijaard, Meijer, and Verloop (2004) emphasize that teachers' vocational identities develop based on their work lives. In addition to these, Day, Kington, Stobart and Sammons (2006) found that factors affecting teachers' vocational identities; demonstrated that they have a distinct purpose, self-efficacy, motivation, commitment and job satisfaction. What has been explained so far includes theoretical information about the vocational identity experience areas of those working in different professions.

While there is theoretical information about the vocational identity experience areas of those working in different fields, there is no research on the vocational identity experience areas of counselors. However, the characteristics of each vocation and career development processes for that vocation are different from each other. In addition, the vocational knowledge, skills and self-structures required for each vocation group to perform their vocation differ (Super, 1980). Therefore, this research was conducted because there are no studies that reveal the necessary skills related to the vocational identity experience areas of counselors. The information and findings in the literature suggest that counselors should be able to reveal the skills necessary for vocational identity experience areas (Eryilmaz & Mutlu, 2013; Korkut, 2005; Larson & Daniels, 1998).



In this study, the vocational identity experience field skills of the counselors are discussed under two headings, based on the literature. These are communication skills and skills related to competence (Clark & Parker, 2002; Çam, 2016; Eryılmaz & Mutlu, 2013; Hill & O'Brien, 1999; Ivey & Ivey, 2003; Korkut, 2005; Larson & Daniels, 1998). It has been supported in both theoretical explanation (Larson & Daniels, 1998) and empirical research (Eryılmaz & Mutlu, 2013) that competence skills are an important part of the vocational identity experience field skill of counselors. In addition, communication skills are an important component of the vocational identity experience field skill of psychological counselors both in theoretical explanations (Hill & O'Brien, 1999; Ivey & Ivey, 2003; Korkut, 2005) and empirical research (Clark & Parker, 2002; Çam, 2016) has been proven. As a result in this research; based on the above-mentioned theoretical and empirical research, it was assumed that communication skills and competency skills are one of the vocational identity experience field skills for counselors.

In the literature, the relationships between career adaptability and skills used in vocational identity experience areas for counselors are handled indirectly in three focuses. The first focus is on research between vocational identity and career adaptability (Haibo, Xiaoyu, Xiaoming, & Zhijin, 2018; Merino-Tejedora, Hontangas, & Boada-Grau, 2016). The second focus is on research that examines the relationships between career adaptability and the concept of work experience related to the career field (Fasbendera, Wöhrmann, Wang, & Klehe, 2019; Urbanaviciute, Udayar, & Rossier, 2019). The third focus is on research between skills related to communication and competence and career adaptability (Jiang, Hu, & Wang, 2018; Koto, Febriaty & Nasution, 2019; Pan, Guan, Wu, Han, Zhu, Fu & Yu, 2018; Sawin, 2018 ). As a result, in this study, it was accepted that the skills used in the vocational identity experience areas for counselors affect career adaptability, based on all the information and findings inferred from the three focuses mentioned above.

#### ***Relationships between career calling and skills used in vocational identity experience areas for counselors***

In the literature, the relationships between career calling and skills used in vocational identity experience areas for counselors are discussed from two aspects. The first is the research between career calling and vocational identity experience areas. The second is the research between skills related to communication and competence and career calling among the vocational identity experience field skills. In the studies between career calling, which is the first direction, and vocational identity experience areas (Duffy, Autin, England, Douglass & Gensmer, 2018; Klotz, Billett, & Winther, 2014; Dalla Rosa, Vianello, & Anselmi, 2019), these two variables were found to be related.

Another aspect of the relationship between career calling and skills used in vocational identity experience areas for counselors is the research between skills related to communication and competence from skills in vocational identity experience areas and career calling. Studies within this scope (Duffy, Allan & Dik, 2011; Nath, 2017; Praskova, Creed, & Hood, 2015; Zhang, Hirschi, Dik, Wei, & You, 2018) found a relationship between these concepts. In conclusion, in this study, it was accepted that the skills of counselors used in vocational identity experience areas, communication and competence skills, are an important variable that predicts their career calling, based on the above-mentioned findings, information and logical inferences.

When the literature is examined, it is seen that there is a limited number of studies on field-specific career adaptability. For example; Guan, Capezio, Restubog, Read, Lajom, and Li (2016) evaluated the relationship between career adaptability and career decision self-efficacy among Chinese undergraduate students studying in engineering. Acar and Ulutaş (2017) evaluated the career adaptability of the students of the Department of Computer Education and Instructional Technologies. In addition, Ömeroğlu (2014) developed a career adaptation psycho-education program for the fourth grade students of the Police Academy. The above mentioned information and findings are intended to explain the career adaptability of individuals working in different professions. In this research, it is predicted that it will contribute to the literature as it is aimed to empirically test the field-specific career adaptability specific to counselors. Because career adaptability has a psycho-social structure

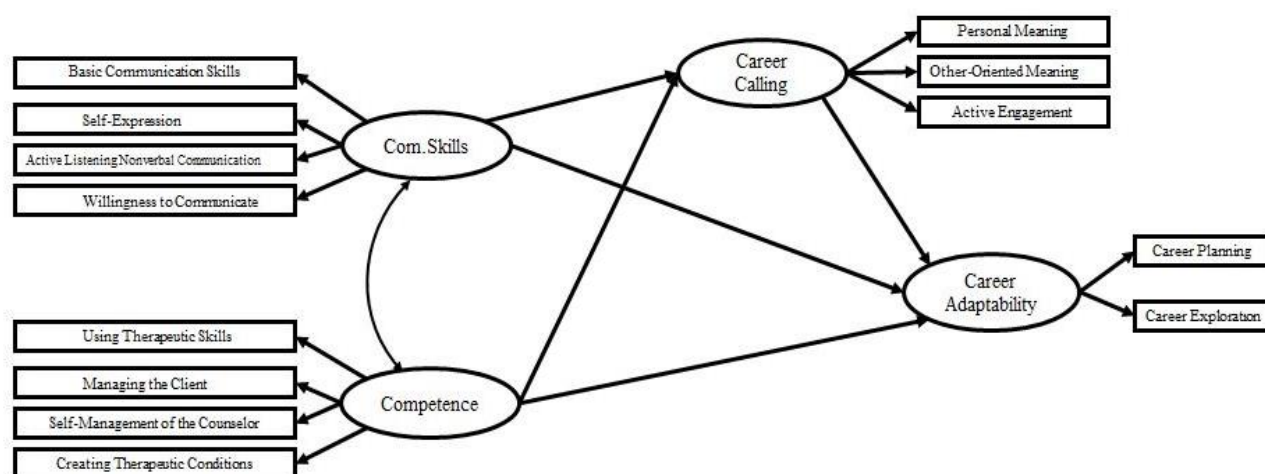
that empowers individuals. In other words; by increasing the career adaptability of individuals, job engagement (Rossier, Hansenne, Baudin, & Morizot, 2012), job performances (Haibo, Xiaoyu, Xiaoming, & Zhijin, 2018), job self-efficacy (Jiang, Hu, & Wang, 2018), job satisfaction (Urbanaviciute, Udayar and Rossier, 2019), emotional intelligence (Merino-Tejedor, Hontangas, & Petrides, 2018), self-esteem (Duffy, 2010), resilience (McIlveen et al., 2019), subjective well-being (Hartung & Taber, 2008), hope and their optimism (Santillia, Nota, and Hartung, 2019), life satisfaction (Ramos & Lopez, 2018), career optimism and self-efficacy (McLennan, McIlveen, & Perera, 2017), career decision self-efficacy (Guan, Capezio, Restubog, Read, Lajom & Li, 2016) and career satisfaction (Ocampo, Restubog, Liwag, Wang, & Petelczyc, 2018) are rising. Also; as individuals' career adaptability increases, job stress (Fiori, Bollmann, & Rossier, 2015), career barriers (Eryilmaz & Kara, 2018b), and career anxiety (Shin & Lee, 2019) decrease.

In conclusion, in line with the theoretical explanations and empirical findings mentioned above, it is known that individuals with a high level of career adaptability both have positive mental health development and experience a positive career development process. In addition, researches to increase the career adaptability of counselors can contribute to a positive career development process. This research; the counselor is important as it is thought to make a significant contribution to the field of career development, the field of counseling training and the field of counselor career adaptability.

In addition to these, when career adaptability studies are examined, it is seen that more general research has been done (Savickas, 2005, Zacher, 2014, Zikic & Klehe, 2006). However, the characteristics of each profession and the career development processes for that profession are different from each other. In addition, the professional knowledge, skills and self-structures required for each occupational group to perform their profession differ (Super, 1980). Therefore, this research is extremely important in terms of addressing career adaptability on counselors.

However, based on the above mentioned information and findings; although there are separate theoretical and empirical explanations about the relationships between career calling, vocational identity acquisition for counselors and career adaptability, there are no studies in the literature that address these three variables in a structural model.

It is thought that conducting such a research will meet the aforementioned need. As a result, the main purpose of this research is tested a structural equation model that addresses the career adaptability, career calling, and the skills (communication skills and competence-related skills) skills used in vocational identity experience areas for counselors. The theoretical model suggested in the research is shown in Figure 1. The hypotheses created in line with this general purpose are included in Table 1.



**Figure 1. Theoretical Model**

*Note.* Com.Skills: Communication Skills; Competence: Competence Related Skills

**Table 1 Research Hypotheses**

H <sub>1</sub> : The competence related skills of counselors are a significant predictor of career callings.
H <sub>2</sub> : The competence related skills of counselors are a significant predictor of career adaptability.
H <sub>3</sub> : Communication skills of counselors are a significant predictor of career callings.
H <sub>4</sub> : Communication skills of counselors are a significant predictor of career adaptability.
H <sub>5</sub> : Career callings of counselors are a significant predictor of career adaptability.
H <sub>6</sub> : Career callings have a mediating effect on the relationship between counselors' communication skills and career adaptability.
H <sub>7</sub> : Career callings have a mediating effect on the relationship between counselors' competence related skills and career adaptability.

## METHOD

### Research Model

This research was conducted in a causal pattern. The causal research design is used when it is assumed that there are cause and effect relationships between variables (Neuman, 2016). In this study, career calling and vocational identity experience fields for counselors are cause and career adaptability is the result variable.

### Participants and Procedure

In this study, 567 counselors who worked at the Ministry of National Education for at least four years were first reached. Eighteen of these 567 counselors were excluded from the study because they stated that they had a negative attitude towards their vocation. 318 of the remaining 549 counselors stated that their service area was educational guidance.

In the field of educational guidance service, counselors focus on providing information to clients about facilitating their learning and increasing their success. On the other hand, in the field of counseling, counselors aim to contribute to their personal development and adaptation by applying their counseling skills to their clients during the counseling process. In this study, 318 counselors who stated that their service area was educational guidance was not included in the study because active use of counseling skills of the participants in the counseling process was taken as the exclusion criterion. As a result, a total of 231 counselors who both stated that they have a positive attitude towards their vocation and who provide active counseling constitute the study group of this study.

**Table 2 Demographic Characteristics of the Study Group**

Options		1	2	3	4	Total
Gender		Female	Male			-
	n	162	69			231
	%	70.1	29.9			100
School Type		Primary school	Middle School	High school		-
	n	60	74	97		231
	%	26.0	32.0	42.0		100
Age		20-30	31-40	41-50	51+	-
	n	124	55	41	11	231
	%	53.7	23.8	17.7	4.8	100
Seniority		4-9	10-14	15-20	20+	-
	n	144	30	21	36	231
	%	62.3	13.0	9.1	15.6	100

## **Data Collection Tools**

In this study, the data were obtained using four different measurement tools. Information about the psychometric properties of the measurement tools to be used in the research is given below.

### ***Career Adaptability Scale (CAS)***

This scale was developed by Eryılmaz and Kara (2016) to determine the career adaptability levels of individuals and is in the 10-item 5-point likert type. It consists of two dimensions: career exploration and career planning. There is no reverse substance. When the score calculation of CAS is examined; highest score: 50; lowest score: 10. As the scores of individuals on this scale increase, their career adaptability levels increase. Validity and reliability analyzes were made by Eryılmaz and Kara (2016). In this context, exploratory and confirmatory factor analysis techniques were used for construct validity.

In the exploratory factor analysis findings made by Eryılmaz and Kara (2016), it is seen that the factor loads of CAS are between .57 and .80, the explained variance is 55.87% and it has a two-dimensional structure. In addition, in the confirmatory factor analysis findings, it was determined that CAS had goodness of fit indexes ( $X^2 / df$  70.75 / 34 = 2.08; RMSEA: 0.07; CFI: 0.98; NFI: 0.95; AGFI: 0.90; NNFI: 0.97 and GFI: 0.94). On the other hand, reliability analyzes were evaluated by Eryılmaz and Kara (2016) with test-retest and internal consistency coefficients. In this direction, it was determined that internal consistency is in reliability analysis findings (career exploration: .84; career planning: .71 and all of the cas: .85). In addition, test-retest reliability analysis findings (career exploration: .82; career planning: .87) were determined.

### ***Career Calling Scale (CCC)***

This scale was developed by Praskova, Creed, and Hood (2015) to evaluate the career calling of individuals, and its Turkish adaptation, validity and reliability analyzes were performed by Seymenler, Küçü, and Siyez (2015). CCC is a 15-item and 6-point rating type. CCC is 3 dimensional. These dimensions are: personal meaning, other-oriented meaning and active engagement. CCC score calculation is as follows: The highest score that can be obtained from this scale is 90, while the lowest puran is 15. It can be interpreted that the increase in the scores of the individuals from the CCC indicates that their career desire is high. In addition, in the internal consistency reliability analysis findings conducted by Seymenler, Küçü, and Siyez (2015), it was found that the internal consistency coefficient values between CCC sub-dimensions ranged from .80 to .88.

### ***Communication Skills Scale (CSS)***

This scale was developed by Owen and Bugay (2014) in order to reveal individuals' perceptions of communication skills, and validity and reliability analyzes were conducted. CSS is in the style of 25-item and 5-point Likert. It contains 4 dimensions. These; basic communication skills, self-expression, active listening nonverbal communication and willingness to communicate. When the score calculation of CSS is examined, the highest 125 and the lowest 25 points are obtained. The high scores of individuals in CSS can be interpreted as their perception of communication skills is successful.

Looking at the validity and reliability analysis made by Owen and Bugay (2014); Exploratory and confirmatory factor analysis was used for construct validity, and internal consistency coefficient method was used for reliability. In the exploratory factor analysis findings used in construct validity, the explained variance of IAS was 45.95% and its four-dimensional structure was confirmed. In the confirmatory factor analysis findings, goodness of fit values were determined as ( $X^2 / sd$  = 1.40; RMSEA: 0.04; CFI: 0.91; IFI: 0.91; TLI: 0.90 and GFI: 0.94). For the reliability analysis, the internal consistency coefficient (basic communication skills: 0.79; self-expression: 0.72; active listening non-verbal communication: 0.64, and willingness to communicate: 0.71) was determined.

### ***Counselors' Perceptions of Counselor Competencies Scale (CPCCS)***

This scale was developed by Eryılmaz and Mutlu (2013). CPCCS consists of 13 items. GAS is a four-point rating type measurement tool. CPCCS has a 4-dimensional structure. These dimensions are; using therapeutic skills, managing the client, creating therapeutic conditions, self and management of the Counselor.

CPCCS validity and reliability study was conducted by Eryılmaz and Mutlu (2013). For the construct validity study, the exploratory factor analysis technique was used. When the exploratory factor analysis results were examined, a scale with four dimensions and explained variance of 61.91% was obtained. In the reliability analysis, the internal consistency coefficient technique was used. Considering the reliability coefficients calculated for the overall scale and subscales; using therapeutic skills was calculated as .65, managing the client .69, creating therapeutic conditions .68, management of the Counselor .71, and .81 for the of the all scale.

### **Data Analysis**

Data were analyzed by two-step structural equation modeling. The Maximum Likelihood Method was used as the estimation method. In this two-step structural equation modeling, the measurement model is tested first. In the measurement model, whether the observed variables have significant contributions to the implicit variables and the significance of the cyclical relationships between the implicit variables are tested. After this measurement model was verified, in the second stage, the theoretical structural model was tested. In the structural model, regression paths are established to determine the cause-effect relationships between implicit variables, and whether these path coefficients are significant and the goodness of fit indexes are examined (Kline, 2019).

The types and names of the goodness of fit indices used in this study are as follows: Chi-square statistics [ $\chi^2$ , Chi square], [df, degrees of freedom] and  $\chi^2$  / df's ratio), [NFI, Normed Fit Index], [CFI, Comparative Fit Index], [GFI, Goodness of Fit Index], [AGFI] and [RMSEA, Root Mean Square Error of Approximation] indexes were used. (Meydan and Şeşen, 2015). In this study, the nested models strategy was used to test the mediation effect. Testing the mediation effect according to the nested models strategy is based on determining the deterioration or improvement in the model by chi-square difference test by removing or adding the mediation-related paths from the structural model.

Finally, the significance level of the indirect effects in the model was also tested with the Bootstrapping method (Shrout & Bolger, 2002). In this method, a statistical significance range is calculated by obtaining a certain number of samples from the sample within the scope of the study with the help of the program. In this study, for the significance of the indirect effects in the structural model, 1000 bootstrap (resampling) was performed and confidence intervals with lower and upper limits and bootstrap coefficient were created. As an acceptance criterion, the fact that the lower and upper limits in the confidence interval do not include zero as a result of the bootstrap procedure indicates that their indirect effects are significant (Hayes, 2017). Within the scope of the research, the level of significance in statistical operations was determined as .05.

## **RESULTS**

### **Preliminary Analysis**

Preliminary Analysis were made regarding the prerequisites of structural equation modeling before testing the measurement and structural models that were wanted to be tested within the scope of the research. These preliminary analysis are explained below:

*Normal distribution:* Kurtosis and skewness values were taken as basis to control the conformity of the data to normal distribution (Kline, 2019). In the study, it was determined that the

skewness and kurtosis values of twelve variables are below  $\pm 3$ , but the dimension of self-expression is 3.46. Accordingly, it can be stated that kurtosis and skewness values of the observed variables in the structural model in this study do not show excessive deviation from the normal (Finney & DiStefano, 2006). As a result, the skewness-kurtosis values for variables are shown in Table 4.1.

*Multicollinearity assumptions:* Multicollinearity assumptions means that the variables are extremely interrelated. It poses a problem when the relationship between variables is .90 and higher. In this study, when checking whether there is a multicollinearity problem between variables, it was determined that the correlation coefficient between any variables was not above .90 (see Table 4.4). In addition, it is stated that VIF and tolerance values should be taken into consideration when checking the multicollinearity assumptions (Kline, 2019). The fact that the VIF value is less than 5 and 10 and the tolerance value is greater than .10 indicates that there is no multicollinearity problem (Hair et al., 2010). When the values in this study are examined; It was seen that the VIF values ranged from 1.22 to 1.57 and the tolerance values ranged from .63 to .81. As a result, it has been proven that there is no multicollinearity problem in this study.

### **Descriptive Statistics and Reliability Findings Regarding Observed Variables in the Structural Model**

While the structural model determined within the scope of the research are tested, descriptive statistics and reliability findings regarding the observed variables in the models are given in Table 4.1

**Table 4.1 Descriptive Statistics and Reliability Findings of the Observed Variables in the Structural Model**

Variables	$\bar{X}$	Sd	Skewness	Kurtosis	$\alpha$
Personal Meaning	22.50	4.63	-0.58	0.09	.45
Other-Oriented Meaning	25.37	3.68	-0.97	1.12	.84
Active Engagement	20.71	3.68	-0.18	-0.18	.80
Career Exploration	25.32	3.99	-0.85	0.55	.91
Career Planning	16.16	2.87	-0.65	0.56	.83
Basic Communication Skills	43.09	5.31	-0.64	-0.01	.84
Self-Expression	17.53	2.36	-1.41	3.46	.84
Active Listening Nonverbal Communication	26.28	3.04	-0.68	0.39	.79
Willingness to Communicate	21.34	2.80	-0.65	0.09	.80
Using Therapeutic Skills	8.50	1.74	-0.16	0.43	.66
Managing the Client	9.96	1.86	-0.88	1.00	.80
Self-Management of the Counselor	12.80	2.55	-0.68	0.40	.80
Creating Therapeutic Conditions	9.90	1.89	-0.82	1.01	.78

When the given values were examined, it was observed that the skewness and kurtosis values of twelve variables were below  $\pm 3$ , but the dimension of self-expression was 3.46. According to these findings, it is seen that the values of skewness and kurtosis are within the multivariate normality criteria (Finney & DiStefano, 2006).

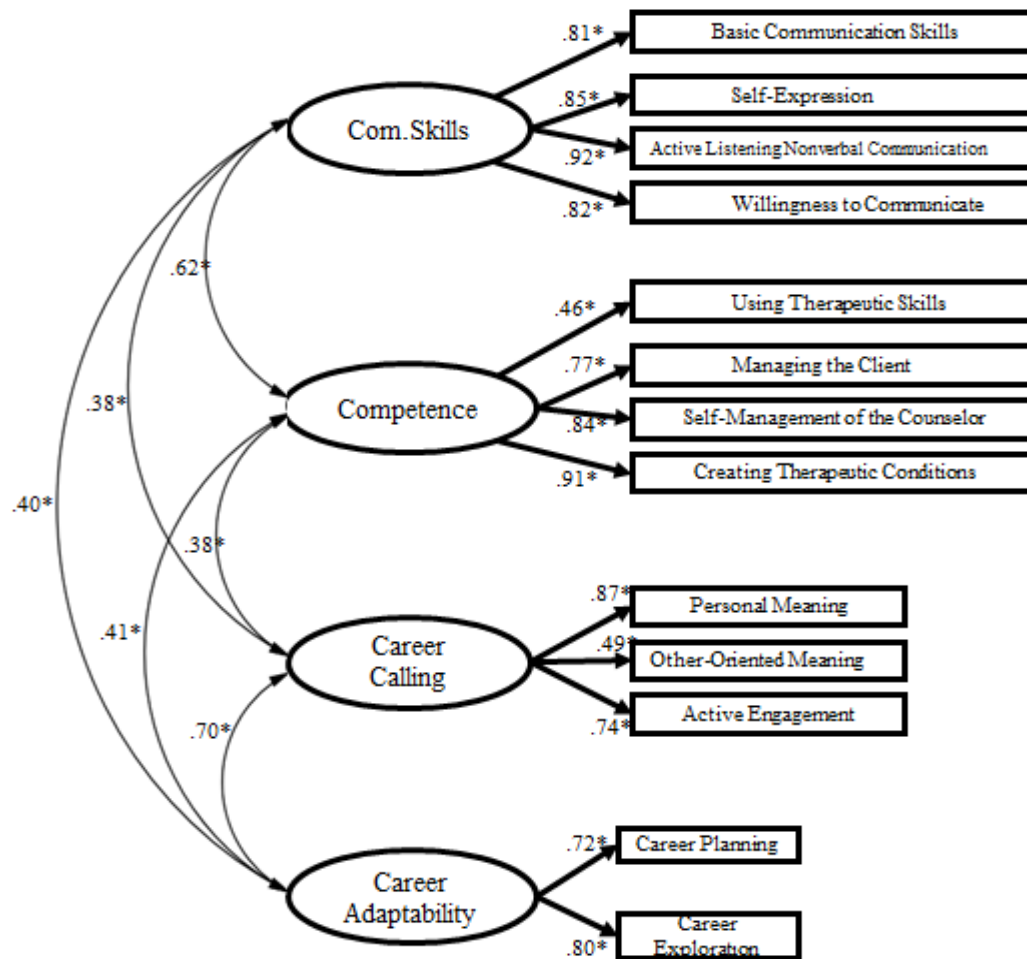
### **Testing the Measurement Model**

Since the two-stage approach is adopted in the model test, the measurement model related to the model is tested before testing the structural model determined to be tested (Figure 3.1). Goodness of fit indices of this model formed as a result of the analysis are given in Table 4.3.

**Table 4.3 Goodness of Fit Indices of the Measurement Model**

Goodness of Fit Indices	Values
$\chi^2/df$ (126.47/59)	2.14
RMSEA (% 90 CI = 0.054; 0.087)	.071
NFI	.92
CFI	.96
GFI	.92
AGFI	.88

When the goodness of fit values for the model are examined, it can be stated that the measurement model of the model fits well with the data. The model obtained as a result of the analysis is given in Figure 4.1.



**Figure 4.1. Standardized Factor Loads of the Measurement Model \*p<.01.**

**Note.** Com.Skills: Communication Skills; Competence: Competence Related Skills

When the measurement model was tested, correlations regarding implicit variables were obtained. Correlation values obtained are presented in Table 4.4.

**Table 4.4 Correlations Related to the Implicit Variables in the Structural Model**

Implicit Variables	1	2	3	4
1. Communication Skills	-			
2. Competence Related Skills	.62*	-		
3. Career Calling	.38*	.38*	-	
4. Career Adaptability	.40*	.41*	.70*	-

**Note.** \*p<.01

When the given correlation values are examined, it is seen that all relations are statistically significant. While the highest relationship between the implicit variables was observed in a significant, positive and high level ( $r = .70$ ,  $p < .01$ ) between career calling and career adaptability, the lowest relationship was found between career calling and communication skills, career calling and competence related skills. was observed in the positive direction and moderate ( $r = .38$ ,  $p < .01$ ). The correlations between the observed variables in the structural model to be tested are also presented in Table 4.5.

**Table 4.5 Relationships between Observed Variables in the Determined Structural Model**

Observed Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. Personal Meaning												
2. Other-Oriented Meaning	.42**											
3. Active Engagement	.64**	.38**										
4. Career Exploration	.48**	.28**	.40**									
5. Career Planning	.46**	.16*	.37**	.57**								
6. Basic Communication Skills	.22**	.13*	.20**	.25**	.13*							
7. Self-Expression	.30**	.14*	.26**	.34**	.27**	.65**						
8. Active Listening Nonverbal Communication	.28**	.16*	.25**	.28**	.13*	.78**	.76**					
9. Willingness to Communicate	.32**	.23**	.29**	.41**	.23**	.59**	.74**	.75**				
10. Using Therapeutic Skills	.05	-.11	-.01	.05	.04	.27**	.27**	.21**	.11			
11. Managing the Client	.26**	.11	.20**	.21**	.23**	.38**	.47**	.39**	.38**	.39**		
12. Self-Management of the Counselor	.36**	.14*	.31**	.31**	.30**	.45**	.55**	.47**	.43**	.35**	.62**	
13. Creating Therapeutic Conditions	.27**	.09	.24**	.30**	.25**	.50**	.53**	.45**	.43**	.43**	.70**	.76**

*Note.* \* $p < .05$ ; \*\* $p < .01$ .

### Testing the Structural Model

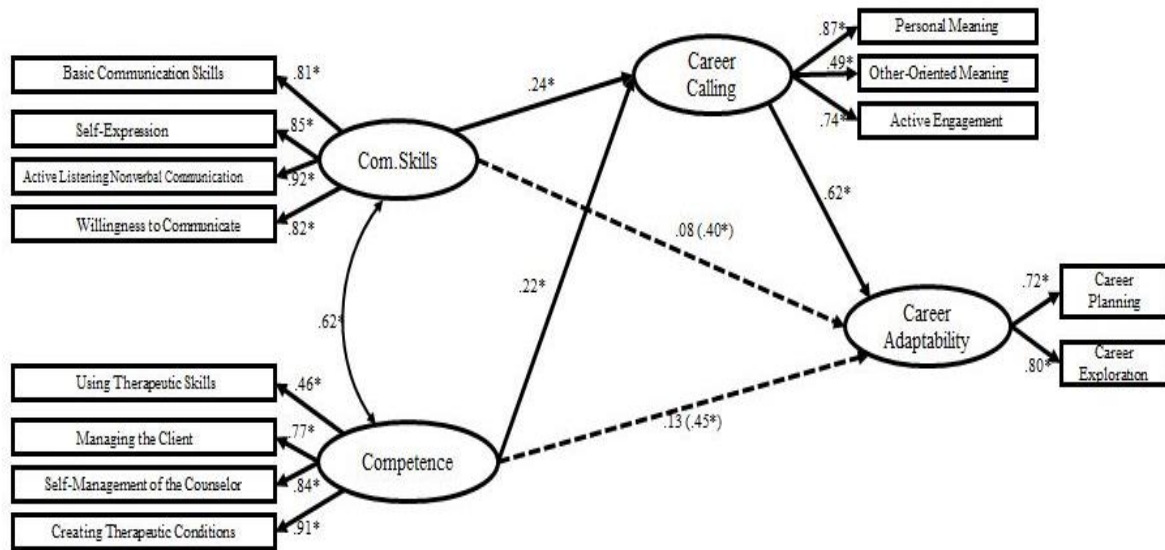
*The research conducted structural model test after testing the measurement model of the model intended to be tested. The goodness of fit values resulting from the analysis are given in Table 4.6.*

**Table 4.6 Goodness of Fit Indices of the the Structural Model**

Goodness of Fit Indices	Values
$\chi^2/df(126.47/59)$	2.14
RMSEA (% 90 CI = 0.054; 0.087)	.071
NFI	.92
CFI	.96
GFI	.92
AGFI	.88

When the goodness of fit values regarding the model are examined, it can be stated that the model fits well with the data. It is seen that the values of goodness of fit are within acceptable limits. Standardized path coefficients for the model formed as a result of the analysis are given in Figure 4.2.





**Figure 4.2. Standardized Path Coefficients Calculated in the Structural Model \* $p < .05$ .**

**Note.** Com.Skills: Communication Skills; Competence: Competence Related Skills

According to the result of the structural model analysis, career calling of competence related skills ( $\beta = .22$ ,  $p < .05$ ); career calling of communication skills ( $\beta = .24$ ,  $p < .05$ ) and career calling has a significant predictive effect on career adaptability ( $\beta = .62$ ,  $p < .05$ ). The mediation effect of career calling in the relationship between competence related skills and career adaptability was found to be 0.14. In addition, the mediating effect of career calling in the relationship between communication skills and career adaptability was calculated as 0.15. The total effect size of competence related skills on career adaptability was determined as 0.27. Finally, it was revealed that the total effect size of communication skills on career adaptability is 0.23. In addition to these, while interpreting the effect size according to Kline (2019); If the standardized path coefficient is higher than 0.50, it is explained as high, if less than 0.30, medium, and if lower than 0.10, it is explained as small. As a result, the evaluation of the structural model is included in Table 4.7.

**Tablo 4.7 Evaluation of the Structural Model**

Model pathways	Standardized Coefficients	Effect Size
<i>Direct effect</i>		
Communication Skills $\rightarrow$ Career Adaptability	0.8	Low
Competence Related Skills $\rightarrow$ Career Adaptability	0.13	Moderate
Career Calling $\rightarrow$ Career Adaptability	0.62	High
<i>Mediator Effect</i>		
Communication Skills $\rightarrow$ Career Calling $\rightarrow$ Career Adaptability	0.15	Moderate
Competence Related Skills $\rightarrow$ Career Calling $\rightarrow$ Career Adaptability	0.14	Moderate
<i>Total Effect</i>		
Communication Skills $\rightarrow$ Career Adaptability	0.23	Moderate
Competence Related Skills $\rightarrow$ Career Adaptability	0.27	Moderate

### Mediation Test for Structural Model

After testing the structural model, the stage of testing mediation relationships was initiated. In the framework of the research, the mediating effects of career calling, which is considered as a mediator variable, were tested. The nested models strategy was used to test the mediation effect in the study.

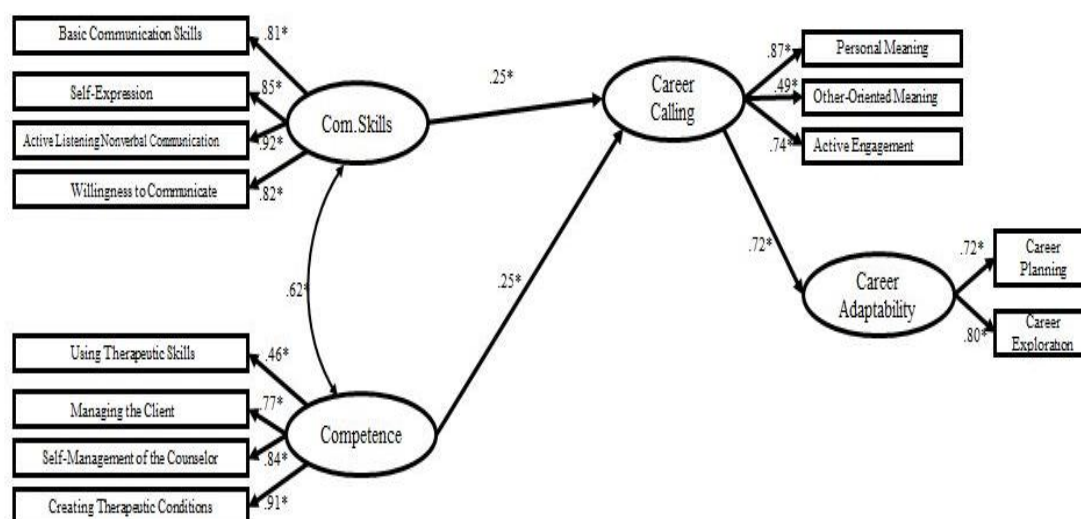
Testing the mediation effect according to the nested models strategy is based on determining the deterioration or improvement in the model by chi-square difference test by removing or adding the mediation-related paths from the structural model.

In order to test the mediating effect of career calling in the relationship between competence related skills and communication skills and career adaptability, competence related skills and between communication skills and career adaptability the paths were removed from the model, respectively, and the distortions in the model were evaluated.

First of all, when the path from competence related skills to career adaptability is removed from the model and the model is re-tested, the goodness of fit values;  $\chi^2/df$  (128.44 / 60) = 2.14,  $p = .00$ , NFI = .92; CFI = .96; IFI = .96; GFI = .92; AGFI = .88; It was determined that RMSEA = .070 (confidence interval for RMSEA = .054 – .087). According to the result of the chi-square difference test, it was determined that removing the path to career adaptability from competence related skills did not cause a significant deterioration in the model (1.97, 1:  $p > .01$ ). Since it was determined that there was no significant deterioration, it was decided to exclude this path from the model.

Then, when the path from communication skills to career adaptability is removed from the model and the model is re-tested, the goodness of fit values;  $\chi^2/df$  (132.90 / 61) = 2.18,  $p = .00$ , NFI = .92; CFI = .96; IFI = .96; GFI = .92; AGFI = .88; It was determined that RMSEA = .072 (confidence interval for RMSEA = .055 – .088). According to the results of the chi-square difference test, it was determined that removing the path from communication skills to career adaptability did not cause a significant deterioration in the model (4.46, 1:  $p > .01$ ). Since it was determined that there was no significant deterioration, it was decided to exclude this path from the model.

As a result of the Chi-square difference tests, it was revealed that career calling was a full mediating relationship between competence related skills and communication skills and career adaptability. These findings showed that it is important for counselors to use career callings as well as having communication skills and competence related skills for career adaptability. The mediation test reached as a result of the analysis is given in Figure 4.3.



**Figure 4.3. Mediation Test Regarding Structural Model \* $p < .05$**

**Note.** Com.Skills: Communication Skills; Competence: Competence Related Skills

### Significance of Indirect Effects for the Structural Model

The significance level of the indirect effects in the model was also tested with the Bootstrapping method (Shrout & Bolger, 2002). In this method, a statistical significance range is calculated by obtaining a certain number of samples from the sample within the scope of the study with the help of the program. Estimation ranges were calculated for the significance of indirect effects in the structural model, given in Table 4.8.

**Table 4.8 Bootstrap Test Results**

Independent Variable	Mediator Variable	Independent Variable	Bootstrap Coefficient ( $\beta$ )	%95 CI
Communication Skills	Career Calling	Career Adaptability	.15*	[.048, .288]
Competence Related Skills	Career Calling	Career Adaptability	.14*	[.013, .288]

**Note.** Bootstrap was conducted on 1000 samples (Hayes, 2017).  $\beta$  = Standardized. \*  $p < .05$ .

When the bootstrapping coefficients in Table 4.8 and the confidence intervals of these coefficients are examined, it is seen that all indirect effects in the model are statistically significant at .05 level. Therefore; It has been proven that career calling has a full mediating effect on the relationship between communication skills and competence related skills and career adaptability.

When the variances explained in the model in general are evaluated, it is determined that communication skills and competence related skills variables explain approximately 18% of the career calling variable, communication skills, competence related skills and career calling variables together, and approximately 52% of the career adaptability variable.

### CONCLUSION, DISCUSSION AND SUGGESTIONS

In the research, it has been hypothesized that career adaptability will be affected statistically by career calling. This hypothesis is based on both empirical research results and theoretical explanations between career calling and career adaptability. When the studies of career calling and career adaptability in the literature (Douglass ve Duffy, 2015; Dumulescu, Balazsi ve Opre, 2015; Eryilmaz & Kara, 2018a; Hall & Chandler, 2005; Hirschi ve Herrmann, 2013; Praskova, Hood ve Creed, 2014; Savickas & Porfeli, 2012; Xie, Xia, Xin, & Zhou, 2016), these two variables were found to be related. In the findings of this research, career calling has a positive and significant effect on career adaptability. In line with this finding, this research confirms the findings of the above-mentioned studies and the interpretation of their theoretical explanations.

In the research, it was hypothesized that communication skills may have a statistical effect on career adaptability through career calling. This hypothesis was created based on logical inferences and theoretical explanations (Sawin, 2018; Pan, Guan, Wu, Han, Zhu, Fu, & Yu, 2018). According to Pan, Guan, Wu, Han, Zhu, Fu, and Yu (2018), communication skills bring individuals' career adaptability to a positive point. Likewise, according to Sawin (2018), communication skills contribute to the career development of individuals. However, in this study, it was found that the communication skills of counselors did not have a significant effect on their career adaptability through career calling. Accordingly, this research hypothesis has not been confirmed. This finding in the study differs from the literature information in this respect. This finding can be considered in terms of the characteristics of the study group. It is extremely important to establish whether communication skills are really effective. For this, counselors should be evaluated in two groups as those who use communication skills effectively and those who do not. With this method, it can be revealed to what extent communication skills are effective. Thus, the effect of communication skills on the career development process of 1 counselors can be observed more easily as a process. To achieve this, counselors should be divided into two groups as those who use their communication skills effectively in the career development process and those who do not use them effectively. In this study, counselors were not divided into two as those who use communication skills effectively in the career

development process or those who do not use them effectively. At this point, the career adaptability process will not be the same between counselors who use communication skills effectively in the career development process and those who do not. If this study was conducted on counselors who use communication skills effectively in the career development process, communication skills would have a much greater impact on career adaptability.

In the research, it was hypothesized that career adaptability would be affected statistically by competence related skills through career calling. This hypothesis has been established in line with the findings of both empirical research and theoretical explanations (Guan, Capezio, Restubog, Read, Lajom ve Li, 2016; Jiang, Hu & Wang, 2018; Koto, Febriaty, & Nasution, 2019; Larson & Daniels, 1998; McLennan, McIlveen ve Perera, 2017). In the study conducted by Koto, Febriaty, and Nasution (2019), a significant and positive relationship was found between career adaptability and career decision-making self-efficacy. Jiang, Hu, and Wang (2018) revealed a significant and positive relationship between job self-efficacy and career adaptability. However, in the finding of this study, the effect of counselors' competence related skills on their career adaptability through career calling is not significant. At this point, this research hypothesis has not been confirmed. In this respect, it differs from research findings and theoretical explanations in the literature.

In the research, the hypothesis has been developed that career calling can be statistically affected by communication skills. This hypothesis was developed based on the information and logical inferences inferred from theoretical explanations (Praskova, Creed, & Hood, 2015, Zhang, Hirschi, Dik, Wei, & You, 2018). According to Praskova, Creed, and Hood (2015), individuals' use of reflection skills in their career development processes and improving their communication skills with their environment contributes positively to their career calling. In addition, it is stated by Zhang, Hirschi, Dik, Wei, and You (2018) that positive development of self-expression skills in individuals will have a positive effect on their career callings. In the findings of this study, communication skills were found to be a significant and positive predictor of career calling. This finding is similar to the literature information.

In the research, it has been hypothesized that competence related skills may affect career calling. This hypothesis was formed based on empirical research findings and logical deductions (Choi, Cho, Jung ve Sohn, 2018; Domene, 2012; Duffy, Allan, & Dik, 2011, Nath, 2017; Park, Sohn ve Ha, 2016). In the research study conducted by Duffy, Allan, and Dik (2011), it was found that there is a significant and positive relationship between career calling and career decision-making self-efficacy. In her qualitative research, Nath (2017) stated that one of the variables that affect the career calling of individuals after they start to receive vocational education is self-efficacy. In this study, the hypothesis that counselors' competence related skills have a significant effect on their career callings was confirmed. This research finding supports the findings of the studies mentioned above.

In the research, it was hypothesized that career calling has a mediating effect on the relationship between skills (communication skills and competence related skills) used in vocational identity experience areas for counselors and career adaptability. This hypothesis was created on the basis of both logical inferences and information derived from theoretical explanations (London, 1983; Savickas, 2005). In the study, the hypothesis that career calling has a full mediating effect on the relationship between skills (communication skills and competence related skills) and career adaptability used in vocational identity experience areas for counselors was confirmed.

The closest theories that explain the findings are career construction model (Savickas, 2005) and career motivation model (London, 1983). In Savickas' career construction model, three important concepts are emphasized in the career adaptability process. These concepts; adaptivity, adaptability resources and adapting responses. Adaptivity is defined as a personality trait that reflects the willingness of individuals while structuring their career development processes. Adaptability resources are expressed as self-regulatory powers or capacities that help individuals cope with current or anticipated changes in their career development. Adapting responses are explained as the real behaviors of individuals such as making career decisions, career exploration and career planning in

structuring career development processes (Johnston, 2018, Sverko & Babarovic, 2019). In line with the above information; When comparing the variables in this study with Savickas' career construction model concepts, it can be said that career calling coincides with adaptivity, skills used in vocational identity experience areas adaptability resources and career adaptability, career exploration and career planning adapting responses.

In addition, this research finding can be explained by the career motivation model developed by London. According to London (1983), career motivation is defined as a multidimensional structure that reflects employees' behavior, thoughts and preferences in their career development and is affected by business elements. There are three important variables in the career motivation model. These variables are individual characteristics, situational variables, and career behaviors and decisions. Individual characteristics are a variable consisting of three domains for individuals to be aware of themselves and their abilities regarding their needs, interests and personality traits in career development processes. These three areas are career flexibility, career comprehension and career identity. Career comprehension is described as the energy source of motivation, which encourages individuals to make career behaviors such as making decisions and career plans in the career development process. Career identity is defined as the direction of motivation. Career flexibility is expressed as the continuity and protection component of motivation (London & Noe, 1977).

Situational variables reflect many elements of the work environment that shape individuals' individual characteristics. Examples of these are employment policies, job design, group cohesion, leadership style, support for learning and skill development, career development and communication programs. Finally, the third variable includes career behavior and decisions, individuals' adaptation to changing environmental conditions, being aware of their abilities and interests, and as a result, determining career goals, discovering their careers and making career decisions (London, 1983). Based on the theoretical explanations stated above; When the variables in this study are matched with the variables in London's career motivation model, career calling corresponds to individual characteristics, skills used in vocational identity experience areas, situational variables, and career adaptability to career behavior and decision. As a result, this research finding was supported by the concepts of career construction model career structuring theory and career motivation model.

Based on the results of this research, suggestions for practitioners and researchers have been developed. As suggestions for practitioners, a career adaptability model for counselors was reached in this study. These model dimensions can be shown as an important source of information for professionals working in university career research centers. The professionals working in this center should take into account the career callings of the counselors in career counseling services that they will develop and implement in order to train a counselor compatible with their career. Before increasing the career adaptability of counselors, they should regulate their career callings. They should also help them gain skills that they can use in vocational identity experience areas. In this research, it was determined that the communication skills, competence related skills and career calling of the counselors positively predicted their career adaptability. From now on, career counseling training programs can be organized in experimental research in the field of career counseling to increase the communication, competence related skills and career calling of counselors, and in this way, they can contribute to increasing their career adaptability.

As suggestions for researchers, the effects of counselors with high career adaptability on their clients can also be addressed in the future. Qualitative research can be conducted to gather in-depth information to discover the causes of career adaptability processes of counselors and the factors that may be effective. This research was conducted with counselors working in schools affiliated to the Ministry of National Education. Similar studies can be conducted on teachers working in the field, counselors working in private schools or institutions, and teacher candidates studying in different undergraduate programs.

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## Developing Anxiety Scale For Arabic Translation Course

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### Abstract

Translation courses in foreign language teaching are an important and integral part of language teaching at almost every level. Knowing how the translation course, which has such an important place in the eyes of students will help the language instructor to apply different methods and techniques during translation education. In addition, knowing the existence of foreign language department students' anxiety about translation courses may provide various benefits in language teaching. Accordingly, this study aimed to develop an Arabic translation course anxiety scale for the students of Arabic Translation and Interpretation departments. For this purpose, the item pool prepared by the researchers was presented to field experts for their opinion, and 19 items were deemed appropriate for the application. The designed scale was applied to 114 students from the Department of Arabic Translation and Interpretation, and a 5-point Likert-type 19-item scale was developed under a single factor in line with their analysis. The developed scale is a valid and safe tool and it is thought to be useful in determining the anxiety of Arabic Translation and Interpretation students towards translation lesson.

**Keywords:** Translation, Arabic Translation, Anxiety, Translation Anxiety

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## INTRODUCTION

Translation plays an important role in the globalizing world where intercultural interaction is rapidly increasing. Because translation, which is defined as the transfer of words or text from one language to another in its simplest definition, is a communication tool between people speaking different languages. Translation, which started to develop with the desire of people speaking different languages to communicate, has become a necessity for effective communication in the international arena. People learn foreign languages to communicate with communities speaking different languages. However, since learning all languages is impossible, people overcome the problem of intercommunal communication through translation, which acts as a bridge between the two languages.

The translation which is defined by Catford (1965, p.1) “as an operation performed on languages: a process of substituting a text in one language for a text in another” is needed in every field from science to art and from literature to international relationships. The increase in intercommunal interaction in recent years has further increased the need for translation.

Grossman believes that “Translation expands our ability to explore through literature the thoughts and feelings of people from another society or another time. It permits us to savor the transformation of the foreign into the familiar and for a brief time to live outside our own skins, our own preconceptions and misconceptions. It expands and deepens our world, our consciousness, in countless, indescribable ways” (Grossman, 2010, p.14). Newmark (1988, p.7) considers translation as a craft in which the translator tries to replace a written message in one language by the same message in another language.

Anxiety is regarded as a part of human life that people have faced throughout their lives. Spielberg (1983) defines anxiety as “the subjective feeling of tension, apprehension, nervousness, and worry associated with an arousal of the nervous system.” Scovel (1991, p. 18) further states, that “anxiety is a psychological construct, commonly described by psychologists as a state of apprehension, a vague fear that is only indirectly associated with an object.” It is a natural situation that translators who carry out translation activities in all areas of life, face anxiety.

There are many factors that affect language learning such as fear, anxiety, and embarrassment. The most commonly studied emotion in second language learning is anxiety (Dewaele & MacIntyre, 2014). Anxiety is a feeling that learners usually possess when they learn a new language. They have to confront uncertainty in their abilities and they may fear failure. This feeling is a negative component of learning a language (Klanrit, P., & Sroinam, R. 2012 p. 1). Based on this, we can say that learning a foreign language causes anxiety in students. We can say that students may experience anxiety during the translation learning process as well as during the foreign language learning process. Because the process of writing a sentence written according to the rules of the source language to in the target language according to the rules of the target language may cause anxiety in students. Based on this, we can say that the translation learning process can bring along anxiety in the students.

Translators are communication and language experts who read, comprehend source text and translate it from source language to target language. In the translation activity process, translators want equivalence in their translation into the target language. Their sole purpose is to achieve equivalence in the target language. Deviation in the source text causes concern for them. In addition to this, intensive workload, difficulty of translation texts, short deadlines for translation and not being familiar with translation texts are among the causes of anxiety for translators. In translation, anxious translators cannot focus on the text and cannot present a good translation because decentralization does not allow them to get the concept of the texts to be translated. Ravakhah's study reveals that anxiety has impact on translators. In this study, it is seen that the translations made with low, medium and high anxiety differ from each other (Ravakhah, A., Dastjerdi, H. V., & Ravakhah, M. 2015).

Based on the above mentioned, it is aimed to develop an anxiety scale for translation in order to measure the anxiety of translators towards translation.

### **The Place of Translation in Arabic Language Teaching in Turkey**

The existence of different languages brings along the existence of the phenomenon of translation. Translation activity, which has an important place in foreign language education, also has an important place in Arabic language education. This situation makes translation a compulsory activity to be used and learned in foreign language teaching. It is possible to see translation as an integral part of language education. Güngenci (2018, s.20), emphasizes that translation can be seen as a learning skill as reading, writing, listening and speaking, which are the four basic skills in language education. A person who learns a language other than their native language naturally needs to transfer what they have learned in a foreign language to their native language. This shows how important translation is in foreign language education. The aim of translation education, which has an important place in language education, is to give the learner the ability to translate between two language pairs. Yücel (2007, s.145), states that the view that a person who knows a foreign language can be capable of translating without the need for translation training is well established in the society, but the situation is not that simple at all. Especially in today's world, the view of organizing translation trainings for certain areas is gaining importance. In this case, the necessity of translation education at different academic levels gains importance. When translation training is given in full, the differences between languages can be minimized through translation. CUITI was established in the mid-20th century to ensure cooperation between universities for academic translation education. This institution has listed the elements to be found in the translation education curriculum as follows (Gürçağlar, 2016, s.91-94):

“- An academic translation training program teaches students to analyze a written text and transfer it to the target language in accordance with the function of the text and the expectations of the target culture. During the program, the student is taught the basic elements and techniques of translation by working on different text types.

- Successful translation training programs provide students with competence in their mother tongue and the languages they will use in translation. In addition, students should gain competence in intercultural communication and a theoretical perspective on translation.

- Translation programs should teach different models and methods of translation, and students should give information about translation technologies.

- Students should also acquire social skills and communication skills, and possess features such as the ability to conduct teamwork, which are the requirements of the professional world.”

In addition to the importance of translation education, having some theoretical knowledge about translation education will give a privilege those who will translate between languages . Yazıcı (2010, s.27), says that having theoretical knowledge in the field of translation expands the horizons of the translator, that is, it teaches you to look at translation from very different angles, rather than looking at it one-dimensional, and is instrumental in realizing that translation is not a transfer job limited to grammar and vocabulary.

Arabic-Turkish translation mobility has a long history. Even if you look only at the field of literary translation, it is possible to see that literary works from modern Arabic literature have been translated from Arabic to Turkish (Şanverdi, 2019, ss. 90-92). Suçin (2014, s.207), states that the novel took the first place in translations from Arabic to our language, followed by classical works, and in the third place the poem was translated. Therefore, translation has an important place in Arabic education. Referring to the Arabic language departments in Turkey, we can see translation courses in Arabic language departments.

Considering the curriculum of Arabic translation and interpretation departments, it is possible to say that there is an intensive translation education, while there is less translation courses in Arabic teaching and Arabic language and literature departments.

Below are given some Arabic language departments in Turkey and Arabic-Turkish translation courses in the curriculum of these departments. With regard to Arabic language in Turkey there are Arabic language education, arabic language and literature and arabic translation and interpretation departments.

Translation courses are available in every semester of the education level in relation to the content of the program in the Department of Arabic Translation and Interpretation in Ankara Yıldırım Beyazıt University (AYBU) (Arapça Programı Müfredatı, 2020):

**Table 1. AYBU Arabic Translation and Interpretation Program Curriculum**

<b>1. Year</b>	
<b>1. Semester</b>	<b>2. Semester</b>
Legal Translation I (Arabic-Turkish)	Legal Translation II (Turkish-Arabic)
Media Translation	News Translation I (Arabic- Turkish)
<b>2. Year</b>	
<b>1. Semester</b>	<b>2. Semester</b>
News Translation II (Turkish-Arabic)	News Translation III (Arabic-Turkish)
Literary Translation I	Consecutive Translation I (Arabic-Turkish)
Legal Translation III (Arabic-Turkish)	Literary Translation II
	Legal Translation IV (Turkish-Arabic)
<b>3. Year</b>	
<b>1. Semester</b>	<b>2. Semester</b>
Consecutive Translation II (Turkish-Arabic)	Consecutive Translation III
Simultaneous Translation I (Arabic-Turkish)	Simultaneous Translation II (Arabic-Turkish)
Literary Translation III	Tourism Translation II
Tourism Translation I	Technical Translation II
Tecnical Translation I	Religious Texts and Terminology Translation I
Diplomacy Translation	Medical Translation I
Legal Translation V	
<b>4. Year</b>	
<b>1. Semester</b>	<b>2. Semester</b>
Religious Texts and Terminology Translation II	Digital Media Translation
Medical Translation II	

As a department of Translation and Interpretation, the student who is successful in preparatory education receives translation education in different fields of translation in both semesters of each academic year for 4 (four) years when starting education at the undergraduate level.

As a department of Translation and Interpretation, the student who is successful in preparatory education takes translation education in different types and fields of translation in both semesters of each academic year for 4 (four) years when starting education at the undergraduate level. Here, the courses of a department are taken as an example. The courses and contents of the same department in other universities may differ from this department.

When the curriculum of the Department of Arabic Language and Literature at Ankara University is examined, it is seen that the following translation courses are available during the undergraduate period. (Ankara University Arabic Language and Literature Department Course List, 2020):

**Table 2. Ankara University Arabic Language and Literature Department Translation Courses**

<b>2. Year</b>	
<b>1. Semester</b>	<b>2. Semester</b>
Turkish Arabic Translation I	Turkish Arabic Translation II

When the curriculum of the department of Arabic language and literature is examined, it is seen that the translation-oriented education is only available in the second year of the undergraduate period, and this translation course is only a translation course from Turkish into Arabic. The courses offered by other departments of Arabic language and literature in other universities on translation education vary from one to another.

The curriculum prepared by the higher education board for faculties of education is applied in the Department of Arabic Language Education at Gazi University. When this curriculum is examined, the courses on translation education are as follows: (Arabic Teaching Undergraduate Program, 2018):

**Table 3. Arabic Teaching Undergraduate Program Translation Courses**

<b>2. Year</b>	
<b>1. Semester</b>	<b>2. Semester</b>
Arabic Turkish Translation 1	Arabic Turkish Translation 2
<b>3. Year</b>	
<b>1. Semester</b>	<b>2. Semester</b>
Turkish Arabic Translation 1	Turkish Arabic Translation 2

In the Department of Arabic language education at Gazi University, translation education between both language pairs is given in the 2nd and 3rd years during the undergraduate period.

It is seen that translation courses are more intensive in translation and interpreting departments than the other departments in Turkey. However, the necessity of some updates in other departments regarding translation education can also be discussed. Because language education has become widespread and therefore translation education has gained importance, it is necessary to make an update by addressing different opinions on how the translation-oriented courses and their contents should be included in the curriculum. The reason for this intercultural communication based on a long history between the Arabic-Turkish language pairs. In fact, when we look at the translations made from Arabic to other foreign languages, it can be said that the translated works made into Turkish lag behind in quantity. Depending on the cultural communication between these two cultures, the necessity of updates in translation education in the fields of Arabic language in Turkey should be discussed. Accordingly, in this study, it was thought to develop an anxiety scale in order to understand the level of anxiety of Arabic translation and interpretation students towards Arabic translation.

### **Aim of Study**

Scales are measurement instruments that determine the rules and restrictions to be followed in order to classify, rank or determine the quantity and degree of the properties subject to measurement. In addition to facilitating the measurement process, scales also enable the determination of the quality of the results obtained. Scientific development is based on measurement and measurements made with sensitive scales also increase this development. (Tavşancıl, 2002). The aim of this study is to develop a valid and safe Likert type scale that can be used to measure the anxiety levels of students studying in Arabic Translation and Interpreting departments of universities.



## **Participants**

The research was carried out with 114 students studying in a state university, Faculty of Humanities and Social Sciences, Department of Translation and Interpretation (Arabic). The study group consisted of 28.07% of prep class students, 30.4% of 1st grade students, 18.42% of 2nd grade students, 22.81% of 3rd grade students and 0.88% of 4rd grade students.

## **Instruments**

The following steps given in the literature were followed in the preparation of the scale. (Karasar, 2009; Tavşancıl, 2005):

- Creating an item pool
- Deciding on the type of scale in which the reactions against each sentence are stated
- Pre-application by taking expert opinion
- Making validity and reliability studies

The literature on the concepts of anxiety and translation studies was examined in order to write items on the Arabic translation lesson anxiety scale. Studies on similar subjects such as translation anxiety and foreign language anxiety were analyzed, and the scales used in these studies were examined. (Uçar, 2013; Uçar, 2015; Aydın ve Ustuk, 2020; Russell, 2020).

In the first stage, a draft form consisting of 25 items was prepared in order to develop a valid and reliable measurement tool to measure the anxiety of students studying in the Department of Arabic Translation and Interpretation at universities.

Content validity is an expert opinion on the extent to which items or questions can explain the target area. (Christensen, 2004). This type of validity is carried out by obtaining expert opinion on measuring different properties of the items and reflecting the subject in the scale according to the specified target area.

In content validity, rather than the model of the answers or measurement, the representation of the scale to the targeted subject content is discussed. (Cohen, Manion & Morrison, 2002).

In the second stage, the expressions in the draft form were presented to expert opinion in order to evaluate the adequacy of the expressions in measuring the anxiety level, sampling and content validity.

A table of tokens was presented to 4 Arabic languages and 2 assessment and evaluation experts to evaluate the scale and their opinions were received. Then, some of the items in the draft form were corrected and 6 items were removed from the scale. Thus, the measurement range consisting of 19 items was made suitable for statistical validity-reliability study.

Likert-type five-point grading consisting of "strongly disagree", "disagree", "undecided", "agree", "absolutely agree" was used in the scale. In the scale, numerical expressions ranging from 1 to 5 were given from "strongly disagree" to "absolutely agree" to indicate the level of anxiety.

## **Data Analysis**

In this section, the results of the validity-reliability analysis of the Arabic translation lesson anxiety scale developed are presented. In the study, frequency analysis results of demographic variables and descriptive statistics for scale items were firstly included. In order to determine the sub-

dimensions of the scale, Varimax rotation and Principal Components estimation techniques and explanatory factor analysis (EFA) were applied. Horn's parallel method was used to determine the most appropriate factor number.

Cronbach Alpha and reliability analysis were applied to evaluate the developed internal consistency. The Arabic translation course developed was evaluated with confirmatory factor analysis (CFA) to test the validity of the anxiety scale. Since the data of the Arabic translation lesson anxiety scale are likert type and categorical, the Diagonal Weighted Least Squares (DWLS) technique was preferred in the estimation stage of the CFA. In addition, the affinity validity was examined by calculating the AVE (Mean Explained Variance) and CR (Structural Reliability) values of the scale. All of the statistical analyzes were carried out with the R-Project program (R Core Team, 2020) and lavan (Rosseel, 2012), semTools (Jorgensen et al., 2021) packages. The margin of error in the study was evaluated at a 95% confidence level ( $p < 0.05$ ).

**Table 4. Frequency distribution of demographic information of individuals**

Variable	n	%
Gender		
Woman	85	74.56
Man	29	25.44
Age		
18-22	87	76.32
23-27	22	19.30
28-32	1	0.88
33-37	2	1.75
38-42	1	0.88
43 years and older	1	0.88
Class		
1st Class	34	29.82
2st Class	21	18.42
3st Class	26	22.81
4st Class	1	0.88
Preparatory class	32	28.07

n: Number of Observations%; Percentage data

The frequency distributions of the demographic information of the individuals participating in the study are given in Table 1. In the frequency analysis, the distributions regarding the gender, age and class groups of the individuals participating in the study were obtained.

**Table 5. Results of the explanatory factor analysis of the Arabic translation lesson anxiety scale**

Item	F1	Community
s9	0.820	0.672
s17	0.756	0.572
s7	0.748	0.559
s8	0.744	0.553
s4	0.740	0.548
s3	0.733	0.537
s14	0.716	0.513
s11	0.701	0.491
s16	0.699	0.489
s2	0.675	0.456
s10	0.660	0.435
s5	0.645	0.415
s12	0.593	0.352
s18	0.587	0.345
s6	0.577	0.333
s1	0.574	0.329
s19	0.562	0.316
s15	0.562	0.316
s13	0.551	0.304

Table 5 shows EFA results of the Arabic translation lesson anxiety scale. According to Horn's parallel method, the scale is represented under a factor. According to the variance explanation rate, the Arabic translation lesson anxiety scale can be explained by a single factor at the level of 49.9%. According to these results, factor loadings of all items belonging to EFA are above 0.50 under a single factor. Ayrıca ölçek maddelerine ait komünaliteler 0.30'dan yüksektir.

**Table 6. Basic hypothetical findings of the Arabic translation lesson anxiety scale regarding EFA process**

KMO	0.850
Bartlett Test of Sphericity	644.070
p	<0.001

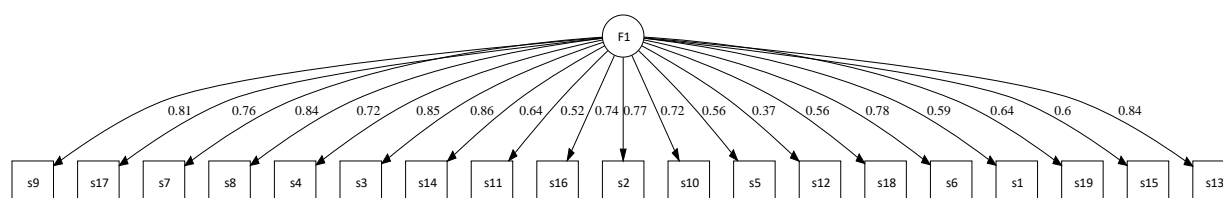
In Table 6, Kaiser Meier Olkin (KMO) sampling adequacy statistics and Bartlett's test of sphericity are presented for the Arabic translation lesson anxiety scale, including the basic assumptions of EFA findings. The KMO statistic is over 0.7 ( $KMO=0.850>0.7$ ) and this result indicates that the Arabic translation lesson anxiety scale is sufficient for the sample. As a result of Bartlett's test of sphericity, there is a statistically significant correlation between the items of the Arabic translation lesson anxiety scale ( $p<0.05$ ).

**Table 7. Reliability analysis results of Arabic translation course anxiety scale**

Item	Med	IQR	Corrected correlation	Alfa if item deleted	Cronbach Alfa
s9	2	1	0.808	0.923	0.930
s17	3	2	0.748	0.924	
s7	2	2	0.728	0.925	
s8	4	3	0.708	0.925	
s4	3	3	0.725	0.925	
s3	3	2	0.725	0.925	
s14	2	2	0.685	0.926	
s11	4	3	0.703	0.925	
s16	3	3	0.681	0.926	
s2	3	2	0.658	0.926	
s10	2	3	0.655	0.927	
s5	2	2	0.632	0.927	
s12	2	1	0.555	0.928	
s18	3	3	0.590	0.928	
s6	3	2	0.564	0.928	
s1	3	2	0.553	0.928	
s19	3	2	0.576	0.928	
s15	2	2	0.543	0.928	
s13	3	2	0.552	0.928	

Med: Median, IQR: Inter-Kantian gap

In Table 7, descriptive statistics and Cronbach Alpha reliability analysis results for the sub-items of the Arabic translation lesson anxiety scale are shown. As a result of the Cronbach Alpha reliability analysis, all of the corrected correlation values for the items of the Arabic translation lesson anxiety scale were found to be positive. Since no increase in the reliability coefficient is observed when the item is removed from the Arabic translation course scale, no item has been removed. The Cronbach Alpha coefficient of the scale was calculated as 0.930 and it was determined that the developed scale was highly reliable.



**Figure 1: CFA graph for the Arabic translation lesson anxiety scale**

**Table 8: CFA statistics for the Arabic translation lesson anxiety scale**

Item	$\beta$	STD( $\beta$ )	z-statistics	p
s9	1.000	0.812	-	-
s17	1.071	0.758	12.355	<0.001
s7	1.205	0.838	13.088	<0.001
s8	1.017	0.723	11.928	<0.001
s4	1.178	0.850	12.953	<0.001
s3	1.214	0.858	13.112	<0.001
s14	0.959	0.636	11.066	<0.001
s11	0.657	0.515	10.027	<0.001
s16	0.978	0.744	12.087	<0.001
s2	1.116	0.769	12.263	<0.001
s10	0.971	0.724	11.830	<0.001
s5	0.668	0.561	10.266	<0.001
s12	0.490	0.365	7.317	<0.001
s18	0.827	0.561	10.331	<0.001
s6	1.128	0.782	12.535	<0.001
s1	0.736	0.595	10.585	<0.001
s19	0.982	0.638	10.987	<0.001
s15	0.794	0.597	10.460	<0.001
s13	1.286	0.838	12.851	<0.001

$\beta$ : Beta coefficient; STD ( $\beta$ ): Standardized B-beta coefficient

Table 8 shows the CFA statistics regarding the Arabic translation course anxiety scale. Figure 1 shows the CFA graph for the Arabic translation lesson anxiety scale. According to the CFA findings, all items of the Arabic translation lesson anxiety scale are collected in a statistically significant way ( $p < 0.05$ ). Standardized path coefficients in all items of the scale are also above 0.40.

Fit indexes of the developed Arabic translation lesson anxiety scale were calculated as a result of CFA. According to the fit indices, the chi-square statistic was calculated as  $\chi^2 = 90.594$  ( $sd = 152$ ) and the ratio of  $\chi^2/sd = 0.596$  was found below 2. As a result of CFA, according to the significance value of the model ( $p = 1.000$ ), it was determined that there was a significant harmony with the research data of the developed Arabic translation lesson anxiety scale.

Other CFA fit indices of the Arabic translation lesson anxiety scale were calculated as CFI = 1, GFI = 0.976, AGFI = 0.970, TLI = 1, NNFI = 1, IFI = 1 and all statistics are above 0.9. One of the fit indices, RMSEA was found to be 0.000 and this error value is below 0.05. When the CFA findings are examined in general, it is seen that the developed Arabic translation course anxiety scale is statistically valid. (Mulaik et al., 1989).

Affinity validity was calculated as  $CR = 0.952$  and  $AVE = 0.504$  for the subscale of the scale. Since  $CR > AVE$  and  $AVE > 0.50$  conditions are also met for these values, the affinity validity of the Arabic translation lesson anxiety scale is provided.

## RESULTS

In this study, it was aimed to develop a translation course anxiety scale for students. The draft form of the scale with 19 items was applied to 114 undergraduate students. The Cronbach Alpha coefficient of the scale was calculated as 0.930 and it was determined that the developed scale was highly reliable. The designed scale was collected under a single factor. As a result of Bartlett's test of sphericity, it was observed that there was a statistically significant correlation between the items of the Arabic translation lesson anxiety scale ( $p < 0.05$ ). As a result of CFA, according to the significance value of the model ( $p = 1.000$ ), it was determined that there was a significant harmony with the research data of the developed Arabic translation lesson anxiety scale. In addition, the affinity validity of the Arabic translation lesson anxiety scale is provided. The items in the scale consist of problems arising due to anxiety during the translation process. This scale is suitable for determining the anxiety of the students of Arabic Translation and Interpretation, Arabic Language Teaching and Arabic Language and Literature departments about translation courses.

Since some of the items determined by the researchers cannot be included in the scale, additional interviews can be made with the students while determining the items. In addition, researchers can work with different sample groups in order to reach more comprehensive information within the framework of scientific attitudes and continue their studies by using qualitative research method.

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## Ek-1

### Çeviri Dersine Yönelik Kaygı Ölçeği

Sevgili Öğrenciler,

Bu ölçek “çeviri dersine yönelik kaygınızı tespit etmek amacıyla hazırlanmıştır. Toplam 20 madde içermektedir. Ankete vereceğiniz yanıtlar çeviri dersine yönelik karşılaşılan problemleri tespit etme ve çözüm önerileri sunma açısından büyük önem taşımaktadır. Araştırmaya katkılarınız için teşekkür ederiz.

#### 1.Cinsiyetiniz nedir?

( ) Erkek ( ) Kadın

#### 2.Yaşınız nedir?

( ) 18-22 yaş ( ) 23-27 yaş ( ) 28-32 yaş ( ) 33-37 yaş  
( ) 38-42 yaş ( ) 43 veya daha yukarısı yaş

#### 3.Hangi üniversitede eğitim almaktasınız?

.....

#### 4.Kaçıncı sınıftasınız?

( ) Hazırlık Sınıfı ( ) 1. Sınıf ( ) 2. Sınıf ( ) 3. Sınıf ( ) 4. Sınıf

**Lütfen yanıtlarınızı yuvarlak içine alırken aşağıdaki derecelendirmeyi göz önünde bulundurunuz.**

- 1= Kesinlikle katılmıyorum  
2= Katılmıyorum  
3= Kararsızım  
4= Katılıyorum  
5= Kesinlikle katılıyorum

1-Çeviri yaparken hata yapmak beni endişelendirir.	1	2	3	4	5
2-Çeviri yaparken kendimi yetersiz hissettiğim için kaygılı olurum.	1	2	3	4	5
3-Çeviri yaparken üzerimde baskı hissedirim.	1	2	3	4	5
4-Çeviri yaparken kendime yeteri kadar güvenmiyorum.	1	2	3	4	5
5-İlgi alanım dışındaki konularda çeviri yaparken kendime güvenmem.	1	2	3	4	5
6-Çeviri yaparken metinde bilmediğim kelime ile karşılaştığımda tedirgin olurum.	1	2	3	4	5
7-Çeviri yapmanın zor bir iş olduğunu düşündüğüm için çeviri esnasında endişeli olurum.	1	2	3	4	5
8-Çeviri dersinde hazırlıksız çeviri yapmak zorunda olduğumda endişe duyarım.	1	2	3	4	5
9-Yaptığım çevirinin beğenilmeyeceğinden korkarım.	1	2	3	4	5
10-Yaptığım çevirilerin doğruluğundan emin olamam.	1	2	3	4	5
11-Çeviriyi yapamadığım zaman kendimi kötü hissedirim.	1	2	3	4	5
12-Çeviri yaparken hata yaptığımda çeviriden soğuyacağımı düşünürüm.	1	2	3	4	5
13-Çeviri derslerinde diğer öğrencilerin benden daha iyi çeviri yaptığını düşünürüm.	1	2	3	4	5
14-Çeviri derslerinde hata yaptığımda diğer öğrencilerin benimle dalga geçeceğini düşünürüm.	1	2	3	4	5
15-Çeviri derslerinde öğreticiye soru sormaktan çekinirim.	1	2	3	4	5
16-Çeviri derslerinin sınavlarında kendimi gergin hissedirim.	1	2	3	4	5
17-Çeviri derslerinde öğretici soru sorduğunda kendimi gergin hissedirim.	1	2	3	4	5
18-Çeviri dersinde sorulara gönüllü olarak cevap vermekten çekinirim.	1	2	3	4	5
19-İlgi alanım dışında bir metni çevirirken huzursuz olurum.	1	2	3	4	5

## Teachers' Views on Teacher Leadership: A Qualitative Analysis

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### Abstract

Contemporary theories emphasize the importance of teacher leaders who can impress and sincerely value the student and become a model and guide in the process of learning and production in order to be successful in the transformation and development of the educational organizations. The purpose of this study is to investigate the phenomenon of teacher leadership from the teachers' perspective and raise the awareness of teachers on their teacher leadership level. In that sense, the teachers were asked about the qualities a teacher leader must have, the obstacles to become a teacher leader, and the ways to improve leadership skills. The study group consists of 40 teachers who serve in primary, secondary, high school, and private schools in Trabzon province of Turkey. A semi-structured interview form was used to collect the research data, and the data were analyzed manually by using the content analysis technique. As a result of the research, key characteristics of teacher leaders were found to be being fair and reliable as a person, self-developing and a role model as a professional, and having effective communication skills as a social person. The emerging results from the views of the teachers showed that administration, colleagues and hierarchical structure of the system pose crucial obstacles for teacher leaders, and in order to nurture teacher leadership in schools teachers should be provided with professional development opportunities especially through with trainings focusing on improvement of leadership skills.

**Keywords:** Teacher Perceptions, Teacher Leader Characteristics, Teacher Leadership Obstacles, Teacher Leadership Supports

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## INTRODUCTION

For a long time, only the principals and other administrator stuffs have been recognized as the “leaders” in schools, yet there has been an increased recognition, in recent years, that more attention needs to be paid to ‘teacher leadership’ (Sinha & Hanuscin, 2017). Leadership in education plays a pivotal role in schools' progression and provide a vision, guide, and support for change for the better, and leaders who have impact on organizational change don't necessarily need to be positioned at the top of the organization. (Harris and Muijs, 2005).

Contemporary approaches describes teacher leadership as part of a broad structure that elucidate the learning stance to improve other teachers and empower their leadership capacities, values the students sincerely, and encourages them to learn and produce new roles and ideas both for the school-development process and student learning (Khan and Malik 2013; Nappi, 2014; Uribe-Florez et al. 2014).

Danielson (2006) defined teacher leadership as the abilities, responsibilities, passion, and expertise that enable the teacher to influence, persuade, and mobilize those outside of the classroom in order to increase the success of the school while continuing to teach students. Huth (2002) stated that teacher leadership is defined as a collegial, collaborative, and open process that begins with an interest in a subject and culminates in sharing the knowledge with colleagues. Murphy (2005) describes the characteristics of teacher leadership as influencing the behavior of students and adults in school, encouraging people, helping students through helping other teachers, and encouraging joint decisions for school development. According to Frost (2010) teacher as a leader means "taking the initiative to improve practice, acting strategically with colleagues to embed change, gathering and using evidence in collaborative processes, contributing to the creation and dissemination of professional knowledge" (p.210). Teacher leaders are defined as the ones who lead in and out of the classroom, continue their learning, motivate their colleagues for the realization of advanced instructional practices and take responsibility for achieving positive results. (Katzenmeyer and Moller, 2013).

Teacher leaders must have some skills to exercise leadership in their schools. These skills are explained by Danielson (2006) as using evidence and data in decision making by recognizing an opportunity and taking initiative; mobilizing people and resources around a common purpose; monitoring progress and adjusting the approach as conditions change; sustaining the commitment of others and predicting negativity, and contributing to a learning organization.

Based on all these definitions, it can be stated that developing teacher leadership is fundamental to empowering teachers and improving teacher professionalism (Crowther, Ferguson, and Hann, 2009). Teachers who have remarkable skills in pedagogy and strong willingness to help other teachers are critical for school success. These teachers can offer alternative leadership forces in addition to executive leadership (Pang and Miao, 2017). However, the question of whether teacher leadership exists in a school is not the issue; rather the problem is how long it exists, how it emerges and is enacted or restricted by the dominant organizational structure and culture. (Supovitz, 2018). Given these points, it can be said that teacher leaders are resources that are often not utilized to their fullest potential (Cosenza 2015; Greenlee, 2007).

Research supports the dissemination of leadership ideas in education and encouraging teachers to take ownership of the school and contribute to the school's development by delivering quality teaching (Ankrum, 2016; (Leithwood et al., 2004). In this respect, one of the variables related to teachers' professional behavior is thought to be a school culture that supports teacher leadership. (Demir, 2014). A principal's power-sharing, vision-sharing, and having a philosophy of raising teachers' awareness of administrative ideas, decisions, and policies are also perceived as a key feature of building teacher leadership capacity (Angelle and Teague, 2014).

Teacher leadership is a leadership style that focuses on improving learning and is based on the principles of professional collaboration, development, and growth. It is not a formal role,

responsibility or set of tasks. Rather, it is more a form of an agency that teachers are empowered to lead improvement work which has direct influences on the quality of teaching and learning (Lazaro, 2011). To contribute to school development, it is imperative to understand the underlying beliefs of teachers concerning the improvement of teacher leadership. Among these perspectives, the support and facilitation provided by the principal are the key factors that directly affect teachers' professional commitment, formal and informal participation in decision-making processes, and willingness to assume leadership responsibility in schools (Hulpia & Devos, 2010).

However, a closer look to the literature reveals that although attempts to improve teacher leadership practices have gained momentum in recent years, there is still lot to discover about the ways for the effective preparation and supporting of teacher leaders (Berg, Carver, & Mangin, 2014). In addition, examining teachers' perspectives on teacher leadership will provide them with a window of opportunity to become aware of themselves as leaders (Angelle and Schmid, 2007). With these in mind, this study aimed to reveal the opinions of teachers, working in different school types (primary, secondary, high school, and private school) in Trabzon, about teacher leadership.

In this study, teachers were asked about the characteristics that a teacher leader must have, the barriers to become a teacher leader, and the ways to enhance their leadership skills. In this way, the concept of teacher leadership was examined through investigating the teachers' evaluations about the issue, and it was aimed to increase the awareness of teachers about their leadership levels, thus contributing to the production of more effective and efficient education policies. This study aimed to answer the following research questions:

1. What are the characteristics that teacher leaders should have according to teachers?
2. Are there any obstacles to become a leading teacher according to the teachers? If so, what are they?
3. What are the ways to enhance teachers' leadership skills in schools?

## **METHOD**

### **Research model**

Qualitative research is the preferred methodological paradigm in the research, as the data are to be examined in depth within their natural environment. (Yıldırım and Şimşek, 2016). Basic qualitative research focuses on how people interpret their experiences, construct their worlds, and make sense of their lives (Merriam, 2013, p.23).

### **Study group**

Maximum variation sampling was employed as the sampling method to reveal the common or different aspects and patterns between various situations which show alignment with the purpose of the study and research problems (Büyüköztürk et al., 2010). To represent different dimensions of the problem and clarify varying opinions, the study group includes 40 teachers from 10 primary, 10 secondary, 10 high schools, and 10 private schools, working in the central district of Trabzon. They were randomly selected from different schools among those who volunteered to participate in the study. To clearly reflect the perspectives of the participant teachers on the teacher leadership, attention was paid to the selection of 10 teachers from different schools at primary, secondary, high school, and private school levels. Primary school teachers are coded as P1, P2..., secondary school teachers are coded as S1, S2..., while high school teachers are coded as H1, H2... and private school teachers are coded as PR1, PR2... The demographic information of participants who volunteered to participate to the study is presented in Table 1.

**Table 1. The Distribution of Participants in terms of Demographics**

School	Gender	Seniority	Degree	Discipline
Primary School	6F, 4M	16-20 years (2)	Bachelor (9)	Classroom (10)
		20+ years (8)	Associate (1)	
Secondary School	7F,3M	1-5 Years (2)	Bachelor (10)	Science (2)
		6-10 years (3)		Turkish (2)
		11-15 years (3)		English (2)
		16-20 years (1)		Vocational training (1)
		20+ years (1)		Social studies (1)
				Mentally handicapped (1)
				Music teacher (1)
Private School	6 F, 4M	1-5 years (2)	Bachelor (9)	Geography teacher (1)
		5-10 years (1)	Master (1)	Turkish language teachers (2)
		6-10 years (2)		Classroom (4)
		11-15 years (3)		Math (1)
		16-20 years (1)		Social studies (1)
		20+ years (1)		Physical education teacher (1)
High School	6F, 4M	1-5 years (1)	Bachelor (9)	Turkish language teachers (3)
		6 -10 years (1)	Master (1)	German language (1)
		11-15 years (1)		Special education (1)
		16-20 years (5)		Math (2)
		20+ years (2)		Vocational trainer (1)
				English language (1)
				Health education teacher (1)

6 of the teachers participated in the research in primary schools were female and 4 were male, while 2 teachers had 16-20 years seniority and 8 teachers had 20+ years. One of the teachers had an associate degree while 9 of them hold a bachelor's degree, and the whole group consisted of classroom teachers.

At the secondary school group, 7 of the teachers were female and 3 were male, 2 teachers had 1-5 years, 3 teachers had 6-10 years, 3 teachers had 11-15 years, 1 teacher had 16-20 years, and 1 had 20+ years seniority. All of the teachers hold a bachelor's degree in this group. The group was composed of 2 sciences, 2 Turkish, 2 English, 1 vocational education training, 1 social studies, 1 special education, and 1 music teacher.

In private schools group, there were 6 female and 4 male teachers. 2 of them had 1-5 years, 1 teacher had 5-10 years, 2 teachers had 6-10 years, 3 teachers had 11-15 years, 1 teacher had 16-20 years, and 1 teacher had 20+ years seniority. One of the teachers had a master's degree, and the others had an undergraduate education. Regarding the private schools group, 1 of the teachers was geography teacher, 2 of them were Turkish language teachers, 4 of them were classroom, 1 was math, 1 was social studies, and 1 was physical education teacher.

When it comes to the distribution of teachers in high schools, 6 female and 4 male teachers participated in the study. 1 of them had 1-5 years, 1 had 6 -10 years, 1 had 11-15 years, 5 had 16-20 years, and 2 had 20+ years seniority. Only 1 of the teachers had a master's degree. While 3 of the teachers were Turkish language teachers, 1 was German language, 1 was special education, 2 were math, 1 was a vocational education training teacher, 1 was English language, and 1 was a health education teacher.

### Data Collection

A semi-structured interview protocol was used to obtain teachers' views on teacher leadership. While forming the interview protocol, the researchers aimed to locate intentional and necessary variety of questions considering the research questions and the purpose of the study (Meriam, 2013). Afterwards, 2 experts from the educational sciences department were consulted to review the protocol in terms of its content and appropriateness for the aim of the study and research questions. A pilot interview was conducted with 7 teachers in order to test the validity of the interview questions, and no

problem was observed. Teachers who participated in the pilot interviews were not included in the main study. In the process of collecting the data, all of the primary, secondary, private, and high schools in Trabzon were listed. Then, 5 schools were selected by simple random sampling for each application and the administrators of these schools were informed about the content of the study. Instead of 1 secondary school and 1 high school whose teaching staff did not want to participate in the study, two new schools were chosen with the help of simple random sampling.

Before the interviews, the teachers were informed about the purpose and significance of the study and provided with information about the confidentiality issues. Personal and face-to-face interviews were conducted on a designated day and time and in a place deemed appropriate by the participant teacher. Participant confirmation was sometimes used to check whether the answers of the participants were correctly understood during the interviews. The interviews with the participant teachers lasted about 15 to 20 minutes. All interviews were recorded and then transcribed by the researchers. After reading the written opinions several times, they were grouped under certain codes, categories, and themes (Creswell, 2012).

### **Data Analysis**

Content analysis which aims to reach the concepts and relationships to explain the data in depth was used in the analysis of the research data (Silverman, 2001). During the analysis of the data the systematic procedure of content analysis was employed, which involves coding of the data, finding the categories and then the themes, organizing and defining the data according to the themes and interpreting the findings (Yıldırım and Şimşek, 2016).

In the analysis and interpretation of the data, firstly coding and elimination were conducted. In this phase, each participant was allocated a code. From the collected data, categories, such as the characteristics that teacher leaders should have, the barriers to become a teacher leader, and the ways to increase leadership skills, were reached. Then, the themes expressed by the codes were found. In the next step, the findings were described and interpreted using the data.

To ensure the internal validity, opinions were encoded, and the codes were supported by direct quotations. Significance and completeness of the findings were tested by the researcher continuously. To ensure the consistency of the findings, the consistency of the concepts constituting the themes was evaluated and tested to make a meaningful whole. To ensure the external validity, details of the research process were explained. The findings were interpreted by comparing them with the related literature and real situations in practice were tried to be reached. (Demir et al., 2015) In addition, in order to ensure reliability, a clear definition of the data source of the research were provided through presenting the demographic characteristics of the participants in a table and only those teachers who volunteered to participate in the study were selected for validity and reliability. (Yıldırım and Şimşek, 2016: 274-275). In addition, in order to prevent the influence of the researcher on the data while trying to reveal the participants' thoughts about teacher leadership, participant confirmation was used to check whether the answers were understood correctly; and thus, an objective attitude was adopted as much as possible to ensure external reliability.

To increase the credibility, it is one of the methods to ask experts who have general knowledge about the researched subject and specialized in qualitative research methods to examine the research in various dimensions. (Creswell, 2012). Therefore, in addition to examination of related literature, the opinions of two experts from educational science department of a university were asked to ensure that the themes were classified correctly. The results obtained from the expert opinions were compared with the codes and themes obtained by the researcher. In the comparisons, the number of consensus and disagreement was determined, and the reliability formula developed by Miles and Huberman (2015) ( $\text{reliability} = \frac{\text{consensus}}{\text{consensus} + \text{dissidence}}$ ) was used for the reliability of the data analysis. According to the coding control which gives internal consistency, the consensus among the encoders is expected to be at least 80%. Also, in the reliability study conducted specifically for this study, a consensus (reliability) of 86%, 89% and 91% was achieved, respectively. In the presentation

of the findings, direct quotations from the participants were also included to support the themes. In the last stage, the number of participants representing each category (f) and their percentage (%) was calculated. The obtained values were interpreted by presenting them in tables.

## FINDINGS

### *Teachers' views on the characteristics of teacher leaders*

When the participant teachers were asked about the characteristics of teacher leaders, 44 teacher leadership characteristics were revealed. 19 of these characteristics were related to personal characteristics of teachers, 17 of them were about professional characteristics of teachers and 8 were associated with the social characteristics of teachers. Among these, the most common teacher leadership characteristics was found to be being able to improve himself (f = 16), and having effective communication skills (f = 14). These features are followed by being a role model, an example (f = 12), fair (f = 11), reliable, trusting others (f = 10), influencing others (f = 10), solution-oriented (f = 8), vision holder (f = 8), open to innovation (f = 8), expert in his field (f = 8), loving and respecting his students (f = 8), successful in classroom management (f = 6), guiding, encouraging (f = 6), and having a strong character (f = 6). 73 of the opinions about the characteristics of teacher leaders were proposed by high school teachers, 54 of them by secondary school teachers, 49 of them by private schools, and 38 of them by primary school teachers. Table 2 illustrates the opinions of teachers about the characteristics of teacher leaders.

**Table 2. Characteristics of teacher leaders according to teachers**

Characteristics of teacher leaders	f	%	T
Personal			
Fair	11	28	19
Reliable, trustworthy	10	25	
Strong character	6	15	
Persuasive	4	10	
Confident	3	8	
Possessing values and sharing	3	8	
Being aware of strengths and weaknesses	3	8	
Open-minded	3	8	
Tolerant, understanding, harmonious	3	8	
Patient	3	8	
Hardworking	2	5	
Cheerful	2	5	
Effective decision-maker	2	5	
Esteemed	2	5	
Hopeful, positive thinker	2	5	
Good listener	2	5	
Good sense of humor	1	3	
Questioner	1	3	
Responsible	1	3	
Professional			
Self-improving	16	40	17
Role model	12	30	
Solution-oriented	8	20	
Vision holder	8	20	
Innovative	8	20	
Professionalism	8	20	
Loving and respecting students	8	20	
Effective classroom manager	6	15	
Guiding, encouraging	6	15	
Knowing students well	5	13	
Passionate about his/her job	5	13	
Using technology well	4	10	
Encourage to think differently	3	8	
Good at crisis management	3	8	
Researcher	3	8	
Inclusive	1	3	

Good time manager	1	3	
<b>Social</b>			
Effective communicator	14	35	
Affecting people's lives	10	25	
Establishing empathy	5	13	
Collaborative	5	13	8
Sharing emotions, opinions	4	10	
Using body language well	2	5	
Respectful for diversity	2	5	

As revealed in the table, regarding the characteristics of teacher leaders many teachers expressed their ideas about the personal characteristics that a teacher leader should possess, and 19 themes were obtained. To illustrate, emphasizing the importance of fairness in the classroom P1 stated that "Teacher leaders communicate well with each of their students and parents, loves them equally. They are fair, reliable and a good model". In this regard, another important emphasis on teacher leadership was being "reliable and reassuring". S1 referred to this feature by expressing that "A teacher should be reliable, coherent, empathetic, lovely for the students, and a teacher with a good relationship with students could be a leader". On the other hand, by making references to different qualities of teacher leaders PR4 maintained that:

"A teacher should love her/his job, love students as well, and be a social, modern, exemplary character, open to development, be able to use technology, be equal to everyone without discrimination, be empathetic. S/he should value education more than teaching and be a good speaker, must be patient, trustful, tolerant, and lovely. S/he should be in good relationship with parents and behave like a teacher."

In addition, teachers voiced their ideas about the professional characteristics of teacher leaders and 17 themes were obtained related to the issue. Most participants highlighted the need for teachers to build and strengthen the skills necessary for enhancing student learning. On this basis, S9 explained that "A teacher should be someone who develops himself with the knowledge and skills of the period, loves to read, likes research, listens to people's opinions and ideas, knows the technologies of the age, and has a broad perspective". PR5 expanded on what S9 voiced by stating that:

"A teacher must be visionary, problem-solver, a good leader and analyzer. S/he must foresee the future and produce new projects accordingly and be a leader for students to help them with new developments and take education beyond the classroom. The teacher with these characteristics will also be a good example for his/her students as a leading human model."

Likewise, many teachers underlined that a teacher leader must inspire and encourage students during the process of teaching and learning. In this regard, H10 declared that "A teacher should be a model for the students and society with his/her dressing and speech style, and behaviors".

Although the third dimension, social characteristics, was the one with the least code, aspects related to this theme was voiced by many teachers. The findings about this dimension imply that teachers recognize the interpersonal skills which will be used to establish connections among various stakeholders to enhance student learning, as a primary means of teacher leader effectiveness. To exemplify, S7 mentioned about this expectation by reporting that "Teachers must have self-confidence, practical intelligence and must be humorous. They must develop warm relationships with the students and guide them by being able to attract their attention." Moreover, the other common belief related to social aspects of teacher leadership was the ability to affect people. Related to the issue, H7 described his/her ideas by making references to other dimensions:

"Teachers should be open to self-development and be able to establish good relations with parents, colleagues, and students. They should be guiding and encouraging and must keep up with the new developments and adapt themselves to the requirements of the era. They should have a strong character to guide the society and be an inspiring leader."

*Teachers' opinions about the obstacles to becoming a teacher leadership*

When teachers were asked about the obstacles to become a teacher leader, 19 obstacles were mentioned. Regarding the teachers' evaluations on the barriers to be a teacher leader, 11 opinions were associated with the system, 3 with teachers themselves, 1 with the families, 1 with the faculty of education, 1 with the colleagues, and 1 with the administrators. In addition, 4 teachers (S3, S10, H9, and T7) stated that there are no obstacles to being a leader. Considering the obstacles to be a teacher leader, the biggest obstacle is seen as the system with a very high-frequency level. When the frequency distribution of teacher evaluations is examined, it is seen that the highest frequency belongs to administrators ( $f = 13$ ), which is followed by colleagues ( $f = 12$ ), being not free in the hierarchical structure ( $f=12$ ), different groups' pressure ( $f=8$ ), and teachers' disbelief on themselves ( $f=8$ ).

39 of the views on barriers to teacher leadership were delivered by high school teachers, 21 by primary and secondary school teachers, and 17 by private school teachers. The barriers to become a teacher leader are presented in table 3.

**Table 3. The obstacles to becoming a teacher leader**

Obstacles to teacher leadership		f	%
Administrator	Administrators	17	43
Colleague	Colleagues (jealousy etc.)	16	40
System	Hierarchical structure	8	20
System	Pressure of various groups (parents, students etc.)	7	18
System	Legislation and Curriculum	5	13
System	Low status	4	10
System	Changing teacher roles	4	10
System	Politicians' point of view	4	10
System	Teacher recruitment with low score	3	8
System	Hindering critical thinking	3	8
System	Nonmerit-based appointments	3	8
System	Crowded classes	2	5
System	Unfair reward	2	5
Faculty of Education	Poor education	2	5
System	Disbelief	2	5
System	Uneducated	1	3
System	Deficiency in Idealism	1	3
Parents	Overprotective parenting	1	3

As can be seen from Table 3, the most important obstacle to teacher leadership is seen as "managers and colleagues" with the highest frequency level. Regarding the issue, H7 notes that "School administrations do not want teachers to go beyond the lines determined by the legislation and they are content with completing just the required works. A new idea that a teacher wants to do with enthusiasm is ignored by the majority of administrators". Similarly, H10 maintained that "Teachers try to hinder their prominent colleagues who are successful, remarkable, positive teacher leaders. They do not want to benefit from their experiences, they want them to be unsuccessful and try to obstruct them".

Thus, it can be seen from the interviews that more than half of the teachers recognize the administrators and their colleagues as a strong barrier against teacher leadership. Concerning the two obstacles, S8 expressed that:

"The biggest obstacle to a teacher leader is the administration, and their colleagues. What a shame. Most of our administrators do not want a teacher to come to the fore with leadership qualities and be admired by the school. Therefore, they try to prevent teacher leaders' endeavors. Another obstacle is the colleagues in the school. Teachers do not lean towards the idea of a teacher leader since a teacher leader is the pioneer in social and cultural events, curriculum implementation, sporting success, and the use of technology. To be honest, teacher leaders are being blocked by their colleagues due to jealousy. Also, as long as the bureaucrats in the MoNE (Ministry of National Education) are

not appointed consciously and properly, they also do not have the capacity to appreciate the teacher leadership".

Regarding the obstacles to teacher leadership, the most common theme was found to be the system barrier. In addition to the themes considered in the system barrier, evaluations regarding the system phenomenon were also made in general. In this respect, S2 contemplates on the problems aroused from the educational system in the country by noting that "The current system and education policy prevents teachers from leading the students and education as they wish, hinders questioning, critical thinking and seeking their rights, limits the students, and therefore does not encourage the teachers to use their imagination and creativity". On the same basis, S1 maintained that "Others are weaker, but the system is the strongest obstacle. Because the system tries to create a professional who is robotized only providing information, rather than a teacher who makes a creative difference".

Partly related to this problem, many teachers also emphasized that hierarchical structure in the system prove a handicap to develop and practice teacher leadership skills in order to establish and sustain a vision for improvement. Considering the view of "hierarchical obstacle", P2 stated that "We have to act in accordance with established rules and programs. We cannot act on our own will. Administrators, curricula, regulations... we have limits on what we want to do". Similarly, P9 added that "The existing system dulls the teachers' leadership characteristics and blocks their way. The system is managed within the order-command hierarchy which is subject to strict rules".

Additionally, teachers mentioned about the lack of supportive environment and external pressures. Concerning the pressure exerted to teachers, P7 stated that "While practicing our profession, there are some problems due to the pressure of the environment and the family. Teacher is viewed critically every time, and loses dignity in society", and P5 maintained that "There are obstacles caused by students and parents. School administrators cannot achieve the necessary balance". On the other hand, PR4 drew attention to the overprotective approaches of families by explaining that "Parents do not accept the negative behaviors of their children and see them on the top but us at the bottom. Teacher cannot be a leader; leaders are always students".

Another obstacle hindering the success for teacher leadership emerged as "poor quality education" in the faculty of education. In this context, PR2 stated that

"I think that the colleges that train teachers do not fully fulfill their responsibilities. During the teacher selection process, the teacher must be subjected to difficult exams and be selected very well. S/he should be able to get adequate education to organize the education process himself/herself accordingly by considering the factors like environment, school, etc."

Moreover, the findings show that teachers also criticized themselves as having lack of interest towards professional development and developing and sustaining teacher leadership skills. Again, H6 stated that "Leadership requires ongoing development. The teachers in the system do not follow improvements, do not read and improve themselves". At this point, S4 drew the attention to the causes of this problem by emphasizing especially the external factors and stated that "The exposure of teachers to practices that lower their dignity, both by the students and the society, has a negative impact on their leadership, and they are regarded as responsible for all failures in the system. The teacher, the architecture of the future, with these perceptions loses his/her self-belief and delays new enterprises". From a broader perspective, discussing the problems that inhibit effective practices of teacher leadership and underlining the state of teachers among these factors, H3 explained that:

"...The system, schools, individual differences, environment, circumstances, and many other obstacles can be considered. Yet, in my opinion, the most important one is the inadequate number of idealistic teachers. How far can you go with inadequate teachers both academically and pedagogically? The biggest problematic point related to the system is the admission into university with low scores. Considering the education faculties as a factory, the product will be useless unless the raw material is fruitful. How can an average teacher lead a student who is far ahead in terms of



intelligence, equipment, and technological accumulation? The quality of the teachers should be developed as soon as possible."

*Teachers' views on the ways to increase teachers' leadership skills.*

When teachers were asked about the ways to improve their leadership skills, 23 suggestions were elicited. While 18 of the teachers made suggestions about the amendments on the education system. 1 suggestion was linked with improvements in administrators, 1 was about education faculties, and 3 of them were related to changes teachers can make on themselves. When the frequency distribution of teachers' evaluations is examined, the following sequential order is observed in terms of the codes: development environments should be presented to the teachers (f=17), teacher leadership education should be given to the teachers in cooperation with the university (f=16), free spaces should be left for the teacher (f=8) and teacher status should be increased.

40 of the opinions about the ways to increase teachers' leadership skills were presented by high school, 23 by secondary school teachers, 20 by primary and 17 by private school teachers. Table 4 presents the ways to increase leadership skills of teachers according to opinions of teachers.

**Table 4. The ways to increase leadership skills in teachers**

What can be done?		f	%
System	Development environments should be offered to teachers	17	43
System	Training / leadership training should be provided	16	40
System	Free areas should be left to the teacher	8	20
System	Teacher status should be increased	7	18
System	Selection of faculties of education should be multifaceted	5	13
System	Personal rights of teachers should be improved	4	10
System	Idealist people should be selected for the profession	4	10
System	Teachers leaders should be selected	4	10
System	Teachers should be encouraged for innovations	3	8
System	Teacher leadership should be supported	3	8
System	Application training should be focused on	3	8
System	Teachers' opinions should be considered	2	5
System	Successful examples should be shared	2	5
System	Exam-oriented system should be avoided	2	5
System	There should be equity in appointments	2	5
System	Drama education must be compulsory	1	3
System	Teacher academies should be established	1	3
System	Teachers must have a foreign language requirement	1	3
Administrators	Teacher leadership should be supported	7	18
Faculty of education	Quality education should be provided	5	13
Teachers	Communication skills should be increased	3	8
Teachers	Teachers need to improve	2	5
Teachers	Should participate in congresses and symposiums	1	3

Findings obtained from the data showed that teachers see the development opportunities provided to them as the most effective mean to pave the way for improving teacher leadership skills. Additionally, participants underlined the importance of trainings, in this sense, focusing on the preparation of teacher leaders. In this context, S5 expressed that:

"Teacher leadership qualities are an integral part of the character. In order to remove the barriers in front of teacher leadership and to benefit from these qualities of the teacher in a positive way during the process of education and training, it is possible to increase the opportunities provided to the teacher leaders in terms of project development, to create resources for independent and original work, to be the supporter of the teacher. MoNE should be organized as a system that does not limit the teacher, rather frees it"

Similarly, H6 expressed that "Teachers' academies should be established, compulsory in-service activities should be brought, the harmonization of curricula and MoNE should be ensured and

teachers should be provided with training opportunities in the areas they feel assistance, more importance should be given to language education, and leadership training should be provided". In the same vein, P7 suggested that "various seminars can be organized for the teachers. To raise the status of teachers in the community, the ministry must support to the teachers and restore the prestige of the profession."

The view that administrators should support teacher leadership is emphasized as an important point to increase leadership skills in teachers, as well. To develop teacher leadership, H7 argued that "School administrations need to play an active role in providing teachers with free spaces in which they can apply their ideas and thoughts in their own classroom". Regarding the issue, H2 added that "School administration should be with the teachers, not against them. When observed problems are reported to the administration, they should be able to act without delay. An apathetic administration wipes out everything that is done and wants to be done".

The teachers underlined the responsibility of the education faculties in instilling the inspiration to develop leadership skills into the teachers and emphasized the importance of "quality education" offered to pre-service teachers. PR10, in this sense, explained that "All steps, from student selection to the education faculties, training of them to practices done in practicum schools should be carefully arranged and monitored, and finally injustices in appointments should be eliminated". In this regard, S4 said that "It is necessary to increase the admission scores for the faculties of education and to accept qualified students. In order to educate these young people as teacher leaders, it is necessary to introduce them to practices that will make them recognize the holiness of this task from the very first moment".

Last but by no means the least, had the teachers also drawn attention to what they can do themselves to increase teacher leadership skills. Within this context, increasing communication skills, self-development and participating in academic studies were expressed by the teachers to strengthen leadership skills. Contemplating on the issue, H1 expressed that:

"Teaching is not a profession but a way of life. Those who have this understanding should be teachers. A man who does not believe in himself does not believe what he does. People with high exam scores should be encouraged to teach. In addition, the destroyed reputation of the teacher should be restored, and personal rights of teachers should be regulated. Self-educated, socially talented, willing people should be teachers... In a system that does not ignore teachers, the teacher can educate him/herself and will be eager to bring out his/her existing leadership skills".

## **DISCUSSION, CONCLUSION AND SUGGESTIONS**

A teacher's personal perspective or vision about teacher leadership affects self-leadership perceptions and contributes to the ongoing process of identity formation (Angelle and Schmid, 2007). For this reason, the research was conducted to understand the perspectives of teachers working in different school type and branches about the characteristics that teacher leader should have, the barriers to become a teacher leader, and the ways to increase leadership skills in teachers.

According to the results of the study, the characteristics that the teacher leaders should have were evaluated under three categories which are personal, professional, and social characteristics. Opinions about teacher leaders' personal characteristics were found to be being fair, reliable, strong, convincing, confident, valuing and sharing, aware of the good and bad sides, open-minded, and so on. While the opinions about the professional characteristics were revealed as being self-improving, role models, solution-oriented, visionary, and open to innovations, competent in their field, loving and caring about their students, and successful in classroom management. The social traits that teacher leaders should have, on the other hand, were being able to carry out effective communication, being influential, empathetic, and able to form a "we" mindset, sharing his/her feelings and ideas, using the body language effectively, respectful to differences and being open to criticism.

It is possible to say that the essential teacher leadership qualities found in this study are significantly similar to those effective teacher leader characteristics proposed by Nudrat and Akhtar (2014) such as, having leader ethics, emotional strength, interpersonal communication skills, teaching competence, learning power, collaboration, entrepreneurship. In this regard, Wenner and Campbell (2017) defined teacher leaders as people being located beyond the classroom walls, supporting professional learning in their schools, involved in any stage of policy or decision making, and focused on learning, achievement and development of their students. Similarly, definition of teacher leaders made by Hanuscin et.al. (2012) focused on their being cooperative, devoted, reliable and reflective, having a clear vision, positive attitude, and high intrinsic motivation. Parallel to the results of this research, Arslan and Özdemir (2015) underlined that teacher should have qualities like being responsible, valuing different ideas, being a team player, a role model, having an appetite for learning something new, be able to take a risk, self-reliant, good at communication, and an expert on his field. Again similar to the results of the research, Dağ and Göktürk (2014) stated that teacher leaders are the ones who can share the vision of teaching with the students, trust the students, play a guiding role in the classroom, analyze the characteristics of the group well and exhibit appropriate leadership characteristics.

Additionally, it is revealed that the obstacles to become a teacher leader are the hierarchical structure of the system, various pressure groups (parents, students, etc.), colleagues and administrators, legislation and curriculum, low status of teachers, changing teacher roles, politicians' perspective, recruitment of teachers with low scores, the lack of quality teachers in the faculties of education, the lack of self-belief, idealism, and the protective approaches of parents towards the children.

In this study, the number of teachers who consider school administrators as an obstacle to teacher leadership is quite high. This finding is in agreement with the results of Arslan and Özdemir (2015) which show that executive attitudes and behaviors, peer approach, student achievement, physical elements, bureaucratic organization, personal problems, and leadership skills deficiencies are obstacles in the way to be teacher leader. Likewise, Işık and Bahat (2018) state that school principals are decisive in terms of paving the way for teacher leaders or putting obstacles. In their research, although the administrators stated that their expectations for teacher leadership were high, they admitted that some administrators are worried about the power and influence of teacher leaders in the school environment. Similar to the study, Özdemir and Devicioğlu (2014) stated that problems such as bureaucratic structure of schools and legislation-based decision-making prevented school stakeholders from developing leadership characteristics. In the same parallel, Cemaloğlu and Savaş (2018) argued that the hierarchical structure in the education system is expected to systematize the behaviors expected from teachers and teachers are seen as an employee who is expected to teach only within a set of rules, procedures and principles. Clark (1988) states that teachers in schools where the bureaucratic system is predominant are away from creativity, waiting for everything from others, not taking responsibility, and preferring to be controlled and directed. Again Kurt (2016) states that due to the centralized structure of the education system in Turkey, the authority of school administrators in schools is very limited and the responsibilities are transformed into strict legislation pursuits which prevents school administrators and teachers from taking initiatives, producing creative solutions and assuming new roles beyond their job descriptions.

Again, Can (2006), similar to the findings of this study, states that the factors affecting teacher leadership at school are inadequacy in professional training, ineffective management support, time limit, formal burden of teachers, lack of support provided by colleagues, lack of training and development environment, lack of additional effort and insufficiency of democratic trust and participation environment. Likewise, Johnson and Donaldson (2007) argue that although teachers have leadership skills, they are reluctant to identify themselves as leaders due to the school culture that does not give teachers the opportunity to show leadership behavior, the teachers who think that they do not have the skills to lead other adults, and the egalitarian approaches that see everyone equal in the school decrease the motivation of teachers who want to improve their leadership skills. On the other hand, Balyer (2016), which is largely similar to the results of the research, states that teacher leaders are not

provided with freedom, although the profession seems to be a free field; teachers are not free enough and do not have the time or competence to lead.

The study also shows that teachers criticize their colleagues for not following professional development opportunities and improve themselves to enhance student learning. In this regard, parallel to this finding Margolis and Deuel (2009) defined teacher leadership as a function that supports teacher development, and stated that one of the most positive results of teacher leadership is that teachers continue to develop and sustain their personal goals, professional aspirations and moral imperatives, while influencing others and transforming themselves. Again, Frost and Durrant (2003) explained the basics of teacher leader behaviors as their development skills, awareness of participation and change, visionary thinking, program analysis, providing community and family support, and resistance to obstacles. Similarly, Bozkuş et al. (2015) argue that teachers do not take part in professional work groups and thus neglect their professional development.

The study also showed that in order to increase the leadership skills of the teachers, quality pre-service education should be provided in the faculties of education, and school administrations should provide a leadership supportive environment. Teachers' communication skills, self-development and participation in congresses and symposiums were suggested by teachers as ways to strengthen the leadership skills of teachers. In this regard, teachers also expressed that they should be provided with systematic development environments and leadership trainings conducted in cooperation with the university, they should be given freedom, their status should be increased, and multi-functional student selection system should be established to education faculties. This finding is supported by previous research (Can, 2010; Işık & Bahat, 2018) which show that school administrators need to create an infrastructure that supports teacher leadership and allow teachers to lead and they need to create professional learning communities. Again, similar to this finding, Cemaloğlu and Savaş (2018) found that administrative support is an important element in showing leadership behaviors of teachers and contributing to individual-professional and institutional development processes. Likewise, Öztürk (2015) and Ngang et al. (2010) stated that creating a supportive culture by school administrators in their schools provided the opportunity for teacher leadership to emerge and played an important role in the development of teachers. Similarly, Gabriel (2005) stated that managers play an important role in creating the conditions and support needed to develop teacher leaders and that providing support to leadership roles has a significant impact on educational change.

According to the research findings, one of the issues pointed by the teachers were the necessity for the amendments to be made to the curriculum of the education faculties to encourage the development of teacher leadership skills of pre-service teachers. This finding is supported by Balyer (2016) and Işık and Bahat (2018) which showed that in the process of teacher training, it is necessary to include training and programs in which prospective teachers can develop their leadership skills. Katzenmeyer and Moller (2013) similarly suggested that the curricula of the faculties in which pre-service teachers were trained should be reconsidered for teachers to demonstrate leadership roles beyond classes. In parallel to this view, Ngang et al. (2010) argue that teacher leadership training should be a capacity building strategy to enable teacher candidates to better manage their habits, attitudes and practices in order to improve their achievement levels. Teachers should be provided with professional development programs to understand their roles, leadership practices, and also, they should be supported with new approaches to improve the quality of teaching. Can (2009) argued that teacher training programs need to train teachers that loves their profession, tries to improve themselves in every way, can be a role model to their environment, have effective communicational skills and high level of interest and curiosity. On the other hand, similar to the finding of the study that teacher should be provided with free spaces to act on; Emira (2010) stated that the basic principles for developing teacher leadership are to convey clear ideas and strategic aspirations, to include other people in ideas and to create individual space for teachers to innovate.

In this research, teachers evaluate their participation in decision-making process as important for the development of teacher leadership. This finding is in line with the previous research (Beycioğlu

& Aslan, 2012; Spillane & Healey, 2010) which propose that in order to develop teacher leadership, more shared leadership approaches are expected to be adopted by all school stakeholders. Similarly, Frost (2012) argues that teacher leadership is considered as a strategy used for school development by mobilizing teachers' innovative leadership potential. However, in order to use this strategy, the system should leave free spaces for educators, and be the driving force for teacher leadership. In this respect, it can be suggested that the system and school administrators should take steps to support teacher leadership. In the study, it was seen that teachers had difficulty in defining teacher leadership. Similarly, Balyer (2016) found that most of the teachers were alien to the word “teacher leadership” although they managed some initiatives and developments.

Even though teacher leadership has an important place in foreign literature, it can be said that there are shortcomings in Turkey in this regard. It may be suggested to conduct new researches, projects and providing new trainings in order to introduce, develop and implement teacher leadership. Yiğit, Doğan, and Uğurlu (2013) and Balyer (2016) talked about the need to define teacher leader's roles in the system more clearly in order to dismiss the unplanned, unscheduled efforts of teachers regarding teacher leadership.

As Helterbran (2010) states, teacher leadership needs to be cared and developed to overcome the “I am just a teacher” syndrome that causes teachers to underestimate their profession and themselves. In this sense, it can be suggested that the characteristics of the teacher leaders should be determined and defined by research. It should be included in the managerial texts, and the teachers who have leadership characteristics should be selected and developed in a systematic way. In order to eliminate the obstacles stemming from the teachers themselves and the social structure, the teacher leadership phenomenon should be integrated in the curriculum of education faculties and teacher leadership can be processed and applied by methods such as case studies, life stories and modeling.

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## Teachers' Opinions About the Impact of the Covid-19 Pandemic on Values

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### Abstract

Values are social acceptances that affect and guide behaviors and decisions in daily life. Developments in science and technology and natural or human disasters play an essential role in the maintenance or disappearance of the values in society. The COVID-19 pandemic, which appeared in December 2019 and became a global challenge, also influenced and changed individual and social values. This study aimed to determined teachers' opinions about the impact of the pandemic on values. This research was designed in terms of qualitative research methodology. The study sample consisted of 100 volunteer teachers from different primary and secondary schools in different provinces. The data were collected using interview forms and analyzed by using descriptive analysis methods. According to teachers' opinions, the values positively emphasized during the pandemic were patience, responsibility, helpfulness, self-control, respect, love, and friendship. The damaged values included justice, honesty, respect, and patience. The participant teachers suggested organizing activities that promote psychological support, education, empathy, patience, and communication to overcome the challenges related to values.

**Keywords:** Values, Pandemic, Teachers, Impact

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## INTRODUCTION

Values are social norms that guide behaviors and judgments about what is necessary, fair, and right in life. Our values are our essential human characteristics and the source of the strength and resilience that facilitates taking action to cope with everyday problems (MEB, 2018: 4). They can be considered standards or criteria that help people select and assess the behaviors, policies, events and decide what is good or bad, right or wrong (Schwartz, 2012: 4). Values have an important place in society's regular functioning, and they refer to the moral principles and beliefs accepted by the majority in a small group or community and reflect shared feelings, thoughts, goals, and interests (Yazar, 2019: 109).

The continuous transfer of social values across generations is vital for the survival of a community, so moral and values education has always been appreciated and embraced in all communities. Values are like joints between bones. They offer both interdependence and appropriate behaviors and actions. Social adaptation is only possible by recognizing the community's social values, making moral judgments, and behaving accordingly.

One of the standard features in the renewed curriculum of 2018 is the emphasis on values education. For example, one of the social studies course goals is to raise students who appreciate the significance and ways of being virtuous by adopting national, spiritual, and universal values. Furthermore, life sciences' goal is to raise students who know the fundamental values of family and society and make national, spiritual, and human values alive (MEB, 2018: 8). The underlined values are listed in the curriculums accordingly. The general and universal values accepted and maintained for years by many societies include leadership, honesty, morality, justice, responsibility, and helpfulness that can be considered an ideal person (Topal, 2019: 246). The "root values" in the curriculum of 2018 are justice, friendship, honesty, self-control, patience, respect, love, responsibility, patriotism, and helpfulness (MEB, 2018: 4).

Our values show what matters to us in life. We all have many values with different degrees of importance (e.g., success, safety, benevolence). A particular value can be meaningful for someone but not for another (Schwartz, 2012: 3). The source of values can be traced in one's social life and cultural experience (Tezcan, 2018: 5), and they can differ by the time, place, society, and experiences. Change is inevitable, and people can only have a good life thanks to the adaptation to changes. However, if it is a positive change, it is called *development*. Otherwise, it is considered degeneration or regression. According to Topal (2019: 246), values either disappear over time or can be protected and maintained by generations for years.

The intense effects of globalization on time and the environment lead to the rapid spread of both positive and negative outcomes in all societies (Karakas, 2020: 545). In recent years, many countries, including Turkey, have had to cope with many natural and social crises, one of which is the Covid-19 pandemic today. The Covid-19 first appeared in Wuhan, China, in December 2019 and then rapidly spread to other countries. The World Health Organization declared a global pandemic on March 11, 2020, which led to many fundamental social life changes.

Most countries have had to take severe measures against the pandemic, which has affected personal and social life. Those measures included curfews, campaigns to stay at home, social distance, the prohibition of social gatherings, home-work and distance education practices, and closing schools, universities, and other public places such as café, restaurants (Wolf et al., 2019: 618). According to He and Harris (2020: 176), the Covid-19 pandemic potentially changes how we see the world, how we perceive and manage our lives. It also has positively or negatively affected the values.

The study aimed to determine teachers' opinions about the impact of the Covid-19 pandemic on values and sought answers to the following questions:

1. According to the teachers, what are the values positively affected during the pandemic?

2. According to the teachers, what are the damaged values during the pandemic?
3. According to the teachers, what can be done to compensate for the pandemic's harmful effects on values?

In the literature, the majority of the researches on the impacts of the Covid-19 pandemic were exclusively focused on physical health, and the number of studies on its effects on social life was limited (e.g., Delen Eryarsoy and Davazdahemami, 2020; Çobanoğlu, 2020; Dodonova and Dodonov, 2020; He and Harris, 2020; Öztekin, 2020; Tabernero et al., 2020; Bavel et al., 2020; Karakaş, 2020; Wolf et al., 2020). However, there is no study addressing the effect of the pandemic on values. Scientific and technological developments and natural or human disasters play an essential role in maintaining or losing values in societies. Living conditions also have an impact on the importance attached to values. Societies can survive natural and social crises only by protecting their values. It is thought that this research will contribute to the studies in the field of values and value education.

## METHOD

### Research Model

It was a qualitative research aiming to reveal teachers' opinions on the impact of the Covid-19 pandemic on values (Yıldırım & Şimşek (2018: 41). defines qualitative research as "*a study in which qualitative data collection methods such as observation, interview, and document analysis are used, and qualitative procedures are followed to reveal perceptions and events realistically and holistically.*" The most distinctive feature of qualitative research is that the researcher attempts to examine the events, facts, norms, and values from the target group's perspectives (Ekiz, 2015: 31). In the study, the phenomenology design, which aims to reveal and interpret individual perceptions about a phenomenon (Yıldırım & Şimşek, 2018), was used.

### Data Collection Instruments and Analysis

The researchers prepared a structured interview form to collect the data after making a literature review and pre-interviews with two social studies and three classroom teachers. The interview form was then checked by two experts in values and social studies education. Moreover, the final version was completed following the expert opinions and suggestions. The interview form consisted of five open-ended questions and two parts: demographic information and values. The online interview form was sent to WhatsApp groups, and those filled were analyzed. The data were analyzed using descriptive analysis techniques and categorized and interpreted accordingly. According to Yıldırım and Şimşek (2018), the inclusion of experts in the research process is one of the measures that increase the quality of the research. In order to ensure the internal validity of the research and to control subjectivity, two experts working on values education were provided to examine and verify the data, whether the expressions related to the values in the teachers' opinions reflect the values determined as the theme. In addition, the credibility of the research was increased by giving direct quotations from the teachers' opinions.

### Study Group

The study group of the research was determined by easy sampling method. This method was preferred because it was difficult to reach volunteer teachers during the epidemic period. In phenomenological studies, data sources are individuals who experience the phenomenon that the research focuses on and can reflect this phenomenon (Büyüköztürk et al., 2016: 21). In this study, it was deemed appropriate to interview teachers with different assignments, branches and years of service, with the thought that it would clarify the details requested from the study. For this reason, 100 teachers were included in the sample. Table 1 shows the demographic information of the participant teachers.

**Table 1. The demographic information of the participant teachers**

<b>Gender</b>	<b>n</b>
Female	64
Male	36
<b>Branch</b>	<b>n</b>
Classroom teachers	55
Social studies teachers	12
Pre-school teachers	7
Turkish teachers	6
Math teachers	5
Religious Culture and Ethics Course	4
Special education teachers	3
School counselors	3
English counselors	3
Science teachers	2
<b>Occupational seniority</b>	<b>n</b>
1-5 year	15
6-10 year	8
11-15 year	25
16-20 year	20
21 year and over	32
<b>Total</b>	<b>100</b>

Among the participants, 64 were female, and 36 were male teachers who voluntarily participated in the study. The majority of the participants were classroom teachers (55) and social studies teachers (12). Half of the teachers had ten years of seniority and professional experience in terms of service time.

## FINDINGS

In this section, teachers' answers and quotations are shown in the tables below. Table 2 demonstrates the positively affected values during the pandemic.

**Table 2. The positively affected values during the pandemic**

<b>Positively affected values</b>	<b>f</b>	<b>%</b>
Patience	65	26
Responsibility	48	19
Helpfulness	42	17
Self-control	34	13
Respect	20	8
Love	17	7
Friendship	10	4
Patriotism	7	3
Caring for family unity	5	2
Tolerance	2	1
<b>Total</b>	<b>250</b>	<b>100</b>

As seen in Table 2, patience (26%), responsibility (48%), helpfulness (42%), self-control (34%), respect (20%), love (17%), and friendship (10%) were among the positively affected values in the pandemic. Other values included patriotism, family unity, and tolerance.

When the teachers were asked to explain the reasons for the positive effects of the pandemic on specific values, they stressed that people had to spend more time together during the quarantine, they financially supported each other, especially the poor, and there were several attempts of Vefa

Support Groups and municipalities to meet the needs of the elderly (over 65). Some of the teacher quotations supporting these findings are presented below:

*T4: As people spent more time at home during the pandemic, they became aware of their home responsibilities. We have embraced the feeling of patience at home. We went out to work, and we patiently stayed at home for the rest of the time. As for helpfulness, I watched on TV that some municipalities helped people in need, especially lonely and older adults who could not go out in these difficult times. Yozgat Municipality is an excellent example of helpful municipalities.*

*T6: Social distance emphasized the worth of friendship; the long-term pandemic underlined the importance of patience; taking precautions not to infect anybody showed the importance of responsibility; and lastly, Vefa support groups positively affected philanthropy.*

*T56: I think the value of helpfulness should specifically be stressed considering the financial support of the Vefa groups for elderly individuals. The government's economic support to small tradespeople should also be mentioned. Besides, I think that social responsibility awareness increased as people started to pay attention to wearing a mask, keeping social distance, and cleaning. As for self-control, I can argue that staying at home for a long time positively affected our ability to provide isolation.*

*T60: Due to the curfews, the aids to the elderly and animals increased. Besides, there were attempts to raise respect for healthcare professionals.*

*T78: During the pandemic, people realized that their actions and behaviors influenced themselves and others, and big problems could not be overcome without cooperation.*

*T90: Staying at home for a long time taught us to be patient. We were generally alone and worried about our loved ones. Wearing a mask and keeping social distance improved our self-control. We miss our loved ones near and far. Distance education has also improved students' senses of honesty and self-control.*

The teachers' opinions about the damaged values due to the pandemic are given in Table 3:

**Table 3. The damaged values during the pandemic**

<b>Negatively affected values</b>	<b>f</b>	<b>%</b>
Justice	27	16
Honesty	23	13
Respect	21	12
Friendship	20	11
Patience	17	10
Self-control	16	9
Thriftiness	15	6
Responsibility	10	6
Patriotism	7	4
Helpfulness	7	7
Solidarity	6	3
Love	6	3
<b>Total</b>	<b>175</b>	<b>100</b>

As shown in Table 3, the damaged values were justice (27%), honesty (23%), respect (21%), friendship (20%), patience (17%), self-control (16%) and thriftiness (15%). Other damaged values included responsibility, helpfulness, patriotism, love, and solidarity.

When the participant teachers were asked to explain why the pandemic damaged certain values, they stressed the psychological problems due to quarantine and curfews, unwillingness to make prudent decisions, less communication and interaction, unemployment, and financial problems. Some of the teacher quotations are presented below:

*T5: Long-term homestay made people angry, and their self-control mechanisms deteriorated. If we mention the value of justice, it should be noted that the difficulties related to the distribution of financial supports and assistance and the privileges for specific groups and tourists have damaged the value of justice.*

*T6: Due to being closed at home for a long time, people became psychologically deteriorated and inclined to think destructively about past regrets. They started to behave anxiously, disrespectfully, and impatiently in the streets, shopping malls, and traffic.*

*T30: When we had to lead a sedentary lifestyle at home due to the pandemic, we became less tolerant. Our social relations decreased, and distant education led to less respect for teachers. Besides, if the government had not imposed a ban and penalties, people would have failed to apply quarantine and distance rules, which showed a lack of self-control skills.*

*T38: I think keeping social distance impaired friendship. I also guess that people withheld their help for fear of being infected. Unfortunately, it proved that the values of solidarity and friendship were damaged.*

*T81: Challenging conditions pushed some people to selfishness and egocentrism, which damaged the sense of love. The sense of respect was also damaged by those who did not obey the government's measures.*

Teachers' opinions and ideas about what can be done and the measures to eliminate the pandemic's adverse effects on values are presented in Table 4:

**Table 4. Thoughts and suggestions to improve the damaged values**

Suggestions	f	%
Psychological support	29	18
Media events	27	17
Solidarity	21	13
Being patient	19	12
Values education	16	10
Social events	15	9
Developing empathy skills	12	8
Control and punishment	10	6
Sharing good examples	7	4
Activities to promote communication	4	3
<b>Total</b>	<b>160</b>	<b>100</b>

When teachers' responses about the alternatives to improve the damaged values were examined, it was determined that teachers made specific suggestions and underlined particular concepts such as psychological support (%18), media/social event (%17 / %9), solidarity (%13), patience (%12), , values education (%10), empathy (%8), control and punishment (%6), sharing good examples (%4) and organizing events to promote communication (%3). Some teacher quotations are presented below:

*T15: There are really useful and practical public service advertisements and announcements about healthcare in media and press. Good examples of those advertisements and announcements can be broadcast frequently.*

T18: *Because of the quarantine and curfews, people became psychologically distressed and unavailable. Anxiety, worry, fear... People should have psychological support in order to realize values again.*

T28: *I tried to write a small play about empathy, respect, self-control, and patience with my students, and they played it via “zoom program” for values education.*

T32: *We should organize campaigns to eliminate educational inequalities stemming from the pandemic and financially support our citizens.*

T52: *People should give up selfishness and should empathize with others. Families should get psychological support against divorce and depression. People should go to gyms or dieticians to lose weight. Unemployment rates should be decreased soon. Every citizen should be vaccinated. Thus, we can return to our normal life as soon as possible. Specific regulations and plans should be made to compensate for the educational gaps stemming from the pandemic.*

T67: *Activities for values education should also be planned in distance education lessons, and the families and students should be informed accordingly.*

## DISCUSSION AND CONCLUSION

The Covid-19 pandemic has influenced all areas of social life, as well as personal values. The study results indicated that the pandemic positively affected the values of tolerance, responsibility, helpfulness, self-control, respect, love, and friendship. On the contrary, the damaged values were determined as values of justice, honesty, respect, friendship, tolerance, self-control, and prudence. In this sense, teachers thought that the pandemic affected certain values both negatively and positively.

Since the pandemic has led many people to worry about the health and safety of themselves and their loved ones, along with a large amount of distress and efforts, there can be changes in personal values for survival. According to Inglehart (1997), when the values related to financial welfare and security are disturbed, they become essential. In other words, the importance of values decreases in tranquility. For example, people realize the significance of freedom when their freedom is threatened, and they are desperate to protect it (Schwartz, 2012: 3). Therefore, people who suffer from poverty and social exclusion attach more importance to authority and security than those living in comfort and security (Daffin, 2012: 61). According to Bavel et al. (2020: 2), individuals adapt their values to specific conditions. Therefore, individuals attach more importance to the values of security, welfare, power, and self-management in the face of any threat. According to Dodonova and Dodonov (2020: 21), pandemics reveal the selfishness, egocentrism, and self-preservation behaviors inherent in human nature. Natural disasters, economic crises, and even wars lead people to unite, but pandemics have a different nature. They separate and isolate people by imposing feelings of fear and despair. However, solidarity is the essential and primary value for humanity. Since pandemics require a real struggle and collaboration to overcome, they directly trigger the feelings of social organization and solidarity in individuals and the masses. Protection from the short and long-term consequences of pandemics is only possible when everybody acts with a sense of responsibility towards others (Taştan, 2020: 20).

The transition to distance education due to the pandemic has resulted in disturbances in values education, as in other activities. During the pandemic, children had to spend more time on television, tablet, phone, and computer, which reduced communication and interaction among family members. It indirectly damaged the values education. From a positive sense, people have had time for themselves and their families thanks to the pandemic. Öztekin (2020: 13) stressed that the family bonds gradually weakened significantly in cities due to the fast-paced modern life. In this sense, the lockdowns refreshed the family relationships during the pandemic. People had the opportunity to watch and

reflect on the events in different countries and learned to be patient, tolerant, and empathic. It is observed that the value of benevolence is positively correlated with the values of empathy and cooperation (Balliet et al., 2008; Schwartz, 1996). The value of empathy is characterized by self-transcendence, and empathic individuals are more likely to help others during a pandemic (Daffin, 2012: 70).

The study findings indicated that the value of justice was affected both positively and negatively during the pandemic. The participant teachers explicitly mentioned those who had to live and work in unfavorable conditions environments and were unable to access health services. They also emphasized the unfair delivery of aids and supports. Those all negatively influenced the value of justice. People also witnessed that the virus did not distinguish between the poor and rich, and the meaning of life was better understood. They recognized the importance of cooperation and solidarity rather than hostility and separation, and they learned that the problems could only be solved by collaboration (Öztekin, 2020: 13).

The concept of "social distance" has shaped our behaviors during the pandemic. The participants expressed that one of the most important reasons that changed our values was staying away from our loved ones, that is, social distance. Delen, Eryarsoy, and Davazdahemami (2020: 7) described social distance as a general term that includes different intervention types, such as case isolation, school closure, quarantine, remote work, and reducing social contact in public places. Social distance has led to the rediscovery of the values of love and respect. Since older adults are more vulnerable to the virus, the fear and anxiety of losing them also have increased interest, love, and respect for them. The societies in which there are traditional family structures and family bonds and social solidarity are thought to be tighter than western societies have been practical and functional to meet the needs of the elderly and those in need of care (Taştan, 2020: 39).

Regarding the reasons of positive and negative effects of the pandemic on values, the teachers stressed certain situations such as anxiety disorders due to the quarantine, reluctance to uphold precautionary decisions, decrease in communication and interaction, dysfunctional procedures of aid campaigns, the rising rates of unemployment despite the governmental regulations, quarantine and social distance rules for particular age groups, and the problems of family communication. Teachers recommended receiving psychological support, improve the values of empathy, patience, and solidarity, generalize values education, and organize online activities and events to eliminate the negative impacts of the pandemic on values.

Internet and technology use has grown considerably during the pandemic. Since face-to-face communication was limited, people chose to meet their needs through social media, smartphones, and the internet. It can be inferred that the effects of media tools on values are notable in this sense. According to Yazıcı (2019: 144), media imposes a negative effect on values as media organizations' primary goal is to increase commercial profit instead of protecting social interest and values. It can be observed that they often broadcast legal but immoral shows that do not consider social values. In this sense, the participant teachers suggested raising awareness through effective public service announcements, educational programs, and aid campaigns in the media.

The Covid-19 pandemic has confronted humanity with great challenges and unexpected death and, therefore, showed the worth of life and health. Indeed, we have remembered that life is full of surprises, a natural event or disaster can completely change our lives, and that our existence and survival depend on protecting nature and the ecosystem. When we locked ourselves in our biggest shelters, our homes, we realized that we did not need many things to be happy. We also appreciated the importance of being with our loved ones and the values of friendship, cooperation, unity, and solidarity (ASBÜ, 2020: 5). According to J. Shapiro, "The pandemic will be over, and we will eventually leave our homes. However, when it comes, we will be ashamed of how we behaved and want to forget what we did (Dodonova and Dodonov, 2020: 21). The Covid-19 pandemic will be referred to as one of the turning points in human history. Today, the whole world wishes to overcome the pandemic with the least damage, which will continue to affect economically, sociologically, and



psychologically (Taştan, 2020: 40). According to He and Harris (2020: 176), the human tragedy of lost lives, broken families, and communities, along with the economic and social changes due to the pandemic, will remain in our memories for a long time and be passed on to future generations.

Suggestions made based on the results of the research are as follows:

- Values education that has been neglected in distance education should be integrated into the online curriculum.
- Individuals should be financially encouraged to receive psychological support.
- Online counseling activities/webinars should be organized to improve family communication.
- Awareness of values should be created through the media.
- Quantitative research can be conducted to examine the effect of the pandemic process on values.

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## English as an International Language Teaching and Perceptions: A Case Study of Thai Tertiary English Language Teachers

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### Abstract

This study scrutinized English as an international language teaching (EILT) and perceptions of Thai tertiary English language teachers through a 20-item Likert Scale questionnaire and a 7-question semi-structured interview protocol. The results from these two instruments disclosed some inconsistencies. Although the questionnaire results revealed that the participants (n=15) perceived the role of EILT to a great level, the semi-structured interview results indicated that they did not entirely implement EILT in their classroom. It was manifest that participants were confused with the concept and principles of EILT as they considered it a new language teaching paradigm. Therefore, they were uncertain how to implement EILT into practice. Some were misunderstood and misled to provide linguistic and cultural literacy to their students. Besides, they disregarded to raise awareness on the dispossession of English and underline the proud localism concept to their students. However, it was noteworthy that participants best applied English as an international language interpretation in their classroom. Overall results evidenced that a case study of the English teaching situation found from this study remained far from the progress of moving toward EILT and suggested that the EILT paradigm should be urgently and sustainably endorsed and integrated into the English teaching curriculum in Thailand.

**Keywords:** English as an International Language Teaching (EILT), English as a Foreign Language (EFL), English as a Global language (EGL), World Englishes (WE)

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## INTRODUCTION

Globalization empowers English everywhere. It is undeniable that the use of English is varied perceive among English users or non-native speakers (NNS). Crystal (2006; 2018; 2019) summarizes that English users these days adopt two forms of English in place; one is ordinary gathering from the English they learn with their families, on streets, from media, from their friends, from their workplaces, from tourists, and so forth which can be called a local Creole. Another is when they are in schools they learn Standard English.

It is noteworthy that people are compelled to use both forms since they are human beings that are outward-looking in the way to read the rest of the world, and inward-looking that they need to be themselves and not like the other. These two forms of English are not supposed to take each other place and decry each other's identity (Alsagoff, 2012; Crystal, 2019; Matsuda & Matsuda, 2018; Richards, 2011). The question is, how do NNS teachers manage this balance?

Implementing EILT is likely to answer the above question. To elaborate, EILT is distinct since its key goal is intelligibility which defines that people need to understand each other (Crystal, 2006; Nelson, 2011). Crystal further states that this intelligibility instigates the evolvement of Standard English basically in a written or printed form which English learners learn from educational institutions as a requirement. For this case, Standard English intelligibility is there to verify and confirm that English learners comprehend each other domestically and universally.

The other case of intelligibility that spurs people to learn and use English as an International Language (EIL) is the internal desire to promote their national identity (Alsagoff, 2012; Jenkins, 2015; Richards, 2011). Concerning this, Richards (2011) an EILT maven, reaffirms that the essentiality for identity people have is the integrity to represent who they are and where they are from. This drive induces EILT to promote the increase in accents and dialects both at the national and international levels (Richards, 2011).

Consequently, implementing EILT can enhance NNS learners' fluency because their anxiety of distorting pronunciation is diminished and respect of accents as identity representations is supported (Alsagoff, 2012; Jenkins, 2015; Richards, 2011). That is to say, EILT reinforces NNS learners' confidence, integrity, flexibility, empathy, and tolerance to express themselves in their way to achieving intelligibility across cultures.

With this significance, considerable numbers of English teaching institutions in the areas of Outer and Expanding Circle countries (Kachru's 1992: Three Concentric Circles) have changed their focus from administering English as a Foreign Language (EFL) teaching to be EILT. The reason is that EILT is built on the notion of the English-speaking world which aims to acknowledge the diversity and intricacy as part of the real world in which our practice is grounded (Crystal, 2019; Jenkins, 2015, Matsuda & Matsuda, 2018).

Considering Thailand's English language teaching (ELT) situation, Thai ELT is grounded on the EFL teaching paradigm for several decades (Ngamwilaipong, Darasawang & Srimavin, 2007). Therefore, Thai English language teachers categorize themselves as EFL teachers. It is noted that EFL teaching means to equip learners with linguistic ability and NS's norms to use English accurately and fluently with NS rather than convincing them to practice using English in real-world phenomenon with other English users (Matsuda, & Matsuda, 2018; Ngamwilaipong, Darasawang & Srimavin, 2007).

Unfortunately, three times outnumber of NS today are the English users from Outer and Expanding Circle countries (Crystal, 2018; 2019). For this reason, demand for NS's norms is not supposed to be the achievement of ELT in Expanding Circle country like Thailand. This is largely due to NNS have unique local wisdom, cultures, and languages that are different from those of NS. Focusing on EFL teaching, therefore, is unlikely to prepare Thai EFL learners especially at the tertiary level to be ready to join the domestic or international workforce with sufficient English intercultural

and international communicative competence. Such Thai EFL teaching's drawbacks have been mentioned continuously in several studies such as in Wichien & Aksornjarung (2011), Ngowananchai (2013), Cheewasukthaworn & Suwanarak (2017), Jantadej & Charubusp (2018).

In that case, moving toward EILT seems to be a judicious decision to raise Thai tertiary learners' awareness of linguistic differences of English that confront them daily and prepare them to apply those differences effectively in intercultural conversations or future careers. However, in preparing Thai tertiary English language learners to be ready for their future workforce with EILT, first and foremost, Thai English language teachers must understand EILT's notion, perceive its roles, importance, and benefits learners will gain. Otherwise, the teachers fail to integrate EILT productively in the Thai ELT context.

The problem is that prior studies have declined to cite the definite depiction of Thai tertiary English language teachers' perceptions and practices toward EILT which is overshadowed by the popularity of the EFL teaching paradigm (Lai, 2008; Liou, 2010; Rajani Na Ayuthaya & Sitthitikul, 2016). Thus, the purpose of this current study is to make an effort to fill the gap by investigating perceptions and practices toward EILT of Thai tertiary English language teachers to indicate problems, and a tendency for Thai tertiary education in moving toward EILT. In this regard, research questions were as follows:

Research Question 1: To what extent do Thai tertiary English language teachers perceive the role of English as an international language teaching?

Research Question 2: To what extent do Thai tertiary English language teachers practice English as an international language teaching?

## LITERATURE REVIEW

Guided by the above research questions, the literature relevant to this study is comprised of the EILT paradigm and challenges of EILT in Thailand education. Besides, the conceptual framework is depicted.

### EILT Paradigm

EILT is an arising paradigm in ELT that endorses the linguistic, functional, and cultural diversity coincided with the current trend in the English language and presumes that this divergent and convoluted reality of the language needs to be activated in ELT (Matsuda & Matsuda, 2018; Marlina & Giri, 2014; McKay, 2002; Sharifian, 2009). Xu (2017: 708) further elaborates that EILT has been established “...alongside the glocalization—globalization and localization of English. It is a multicultural lingua franca of various cultural conceptualizations for international and intercultural communication which admits English variation and varieties, including different dialects of English and World Englishes”. In another word, EILT creates an equivalent approach to English learning for all learners and turns out to be a means to empower speakers to express their local and cultural identity to the world.

It is known that EILT does not mean to oppose the notion of native speakerism of ELT. On the other side, EILT ideology has reconsidered the possibilities of NS's model and its consequence on achieving communication in intercultural contexts (Galloway & Rose, 2015; Jenkins, 2015). Notwithstanding, EILT does not accept that NS teachers have sufficient linguistic knowledge solely from their nativeness (Cook, 1999). Mainly because EILT acknowledges the pluricentric attributes of English so that the feasibility that the diverse learners expect to learn and the diversity an NS teacher has may not match. Therefore, nativeness may helpless in this case.

Most importantly, the competency in intercultural communication, which is a substantial focus of EILT, is not something that all NS teachers achieve in common. Those who have not encountered

cultural differences in communicating and living abroad do not have as many direct experiences to develop intercultural competence or intercultural communicative skills as NS and NNS who commonly have opportunities to communicate with more diverse populations. Again, the native speakerism of a teacher becomes less advantageous when we reconsider the kind of experience, competencies, and knowledge needed for the users and teachers of EILT (Matsuda, 2014; Selvi, 2016). Also, NS do not sufficiently represent English language learners' future interlocutors.

Besides grounded on the existence of English varieties, users, cultures, and the stress on linguistic strategies that would provide learners with a capability of efficient EIL users, EILT underlines the progress of awareness and a sense of accountability among both NNS teachers and learners (Alsagoff et al., 2012; Marlina & Giri, 2014; McKay, 2002; Selvi & Yazan, 2013). In this case, EILT guides teachers and learners that the English varieties learners learn or even the English itself may not constantly be interpreted as the most applicable linguistic choice for all intercultural situations. They need to aware that the application of language choice depends on the sensibilities and expectations of representatives of each speech community. As a consequence, each choice requires the negotiation of meanings and the use of different strategies to achieve the goal of international communication—intelligibility (Crystal, 2006; Friedrich, 2012; Matsuda & Matsuda, 2010).

### **Challenges of EILT in Thailand Education**

Adapting or replacing EFL with EILT in the Thai educational context may count as a hardship. The problem is that in the public eye EFL teaching has long been the ELT paradigm in Thailand to serve the national and international demands. Nevertheless, several studies have approved that the EFL paradigm is impractical and insufficient to help Thai learners communicate successfully in the globalized community (Cheewasukthaworn & Suwanarak, 2017; Saengboon, 2017). If that so, EFL teaching is probably opposed to the aims for reforming Thai national education.

The point is that the EFL paradigm has not meant to help Thai English language learners ready for the rapid transformation of the world, bringing the ELT curriculum in educational institutions in Thailand cannot meet the needs for English use in the real contexts (Wiriyachitra, 2001). In another word, English from the lessons is inapplicable to learners' everyday speech. This disadvantage results in shyness and embarrassment of Thai English language learners when they make mistakes in using English (Boriboon, 2011).

As long as the Thai educational ideology still concentrates on EFL teaching, it is not easy to persuade Thai English language teachers and learners to promote Thai national identity and uniqueness without binding their English use with NS's model. This tends to cause teachers' incompetence of reinforcing learners' confidence in using English in their way with less worry of making local accent and English grammatical mistakes. Inevitably, teachers lose their chances to decrease the contrastive gap between NS and NNS, to increase learners' understanding of English in a global context concerning English in Thai socio-cultural, political, and economic arenas (Boriboon, 2011; Jindapitak & Teo, 2011).

Such aforementioned drawbacks should be urgently solved to serve the moment needs in Thailand. At present, Thai English language learners are amid the fluctuation of using English with variety of English users under several purposes. Accordingly, English in Thailand does not only become a required course at any educational level but it is also a conversational device for social and realistic use (Foley, 2005). Thus, promoting a realistic localized and globalized context like EILT is most likely to raise Thai English language learners' awareness and acceptance of differences in forms, functions, and accents among various English users that later on inhibit learners' shyness in Thailand.

### **Related Studies**

During the past decade, an increasing number of literatures relating to teachers' views toward EILT in several parts of the world have emerged. For instance, in Taipei, Liou (2010) established a 14-

item questionnaire to explore the views of Taiwanese college teachers and students toward EILT. In Japan, Tanaka (2010) investigated how 80 pre-service tertiary English language teachers and students perceived EILT and the ideal future of ELT using a self-developed 11-item Likert questionnaire. Altun-Evci (2010) conducted a distinguished big scale explorative and contrastive study. He investigated 448 English teachers' perspectives toward EILT in 71 different countries from the Expanding, Outer and Inner Circle countries through an online survey and 14 semi-structured interviews. In Bahrain, Elsheikh (2015) conducted a small scale exploratory study to investigate tertiary teachers' views and classroom practices of EILT through an open-ended questionnaire adapted from McKay's (2012) concepts. In Cambodia, Lim (2016) administered interviews and observations to examine pre-service teachers' attitudes toward ASEAN English varieties in the classroom. In Taiwan, Luo (2017) employed interviews and questionnaires to explore 7 Taiwanese English teachers' perceptions of English as a lingua franca in their classrooms. In India and Iran, Monfared and Khatib (2018) delivered questionnaires to investigate 260 English teachers' attitudes toward their own variant English in EFL teaching contexts.

Most of the above-mentioned studies revealed similar results. To elaborate, the main findings of each study discovered that no matter how much the teachers perceived and intended to integrate EILT principles into practice, they remained to adhere to teaching NS models causing by their personal beliefs and the NS's commercial course books they used. In respect of the content, most research participants wished to teach about the lifestyle and culture of several parts of the world including their home culture. Besides, the points about awareness of international use of English were raised to a greater extent among participants. They also perceived that the shift in forms and functions of English use should determine what they teach.

Quite a lot of these studies yielded pedagogical implications formed on their empirical findings. For instance, Monfared and Khatib (2018) suggested that, besides supporting and valuing the diversity of English, it is crucial to recognize and facilitate strategies to cultivate awareness of the global spread of English to both teachers and learners. Moreover, Curran and Chern (2017) recommended curriculum designers to seek modern methods or frameworks that integrate the notion of English as a lingua franca into teacher training programs. They further emphasized that it is most likely to be vital for pre-service teachers in expanding circle countries to have a clear knowledge and understanding of this ideology to meet the current global need.

In Thailand, studies on Thai teachers' perspectives toward EILT are petite. One was Saengsukka (2015) who explored 30 Thai EFL secondary school teachers on their beliefs toward World Englishes with a Likert scale questionnaire. The results demonstrated that most of the participants believed in using books and teaching materials with the World Englishes model. Nevertheless, they held firm beliefs on teaching grammar standard English to their students. Another was Huttayavilaiphan (2019) who investigated 10 Thai university teachers' beliefs, awareness of Global English (GE), and teaching practices using surveys, interviews, classroom observations, and document analysis. Similar to previous studies, the results were discovered that the NS's norms were the major teaching practices while GE's perspectives were the minor practices in participants' classrooms. The results suggested that the ambiguity of GE had caused the participants to hold misconceptions, negative attitudes, as well as unawareness of GE which were another factor for GE-based teaching practice decision.

In sum, all the above-mentioned studies show that the teachers' perceptions such as beliefs form a critical construct that vastly dominates decision-making on the teachers' teaching practices. If teachers adhere to the beliefs of NS's norms, it will be difficult to promote the ownership of the English concept to the teachers themselves and learners. This could lead to a failure in developing NNS learners to become global citizens who share the same global community under their own identity and dignity. It seems crucial for current NNS teachers to reconsider what to bring to classrooms to teach students in this current era.

## Conceptual Framework

Drawing upon the theories and practices on language attitudes, world Englishes, globalization, localization, and their consequences for language learning and teaching from Alsagoff (2012), Canagarajah (2013), Crystal (2019), Jenkins, 2015, Kumaravadivelu (2012), Matsuda and Matsuda (2018), Phillipson (1992), Selvi (2016), the four EILT pillars were emerged—Linguistic and cultural literacy, Awareness on the dispossessing of English, EIL interpretation, and Proud localism. These four EILT pillars were used to initiate a questionnaire and a semi-structured interview protocol to investigate Thai English language teachers' perceptions and practices toward EILT.

According to this study conceptual framework, “Linguistic and cultural literacy” requires NNS teachers to encourage NNS learners to aware that ELT does not mean to use English as a tool of linguistic and cultural dictatorship or homogenization by pursuing learners to attain and use the pragmatic rules of the English-speaking society. Rather, it supports teachers to provide learners with language and cultural differences experiences and implement awareness of those rules to develop global English and cultural sensitivity that may increase learner's linguistic and cultural horizons (Canagarajah, 2013; Matsuda & Matsuda, 2018; Phillipson, 1992).

As for “Awareness on the dispossessing of English”, this pillar expects NNS teachers to aware of the dispossessing of English and inform learners that English these days is manipulated by both its NS and NNS. Therefore, English is owned by all its users around the world and the notion of native-speakerism is obsoleted (Crystal, 2019; Widdowson, 1998). Learners should understand that it is insensible for NS guardians who think that English varieties can chunk the English language into mutually incomprehensible varieties. The fact is that varieties of Englishes are formed to serve various types of situations in various fields all over the globe (Crystal, 2019; Selvi, 2016). Thus, it is high time for English practitioners to notice learners with the use of English alongside other languages in diverse speech societies.

Next, “EIL interpretation” in this study reflects how teachers perceive the role of EIL plays in the world or the adjacent countries and help learners relate themselves to the global society which is not limited to the NS group, as a construct beyond the EFL framework. There are several terms used to name this condition such as EIL/WE Posture or Global significance of WE (Jenkins, 2015). All these terms interpret how well English users value EIL and realize that EIL lends itself to be as a local language as well as taking a role as a global language to respond to divergent local languages and cultural needs of EIL users (Alsagoff, 2012). Given that NNS teachers are obligated to interpret and cultivate this concept to learners.

Last but not least, “Proud localism” agrees with EILT flow of thought that the English language should be utilized to display learners' own culture and relate to others all over the world. Accordingly, “Proud localism” supports NNS teachers to aware that globalization is terminated in localization (Alsagoff, 2012; Kumaravadivelu 2012). Similarly, Brown (2007, p.7) advocated that *“our zeal for spreading English needs to be accompanied by concurrent efforts to value home languages and cultures”*. With this in mind, NNS teachers should inspire learners to be proud of their cultural self-identity through English use by simply aware that English is the best tool to represents the uniqueness and identity of everyone who uses it.

All the four EILT pillars mentioned above constructed a manifest and practical framework to guide the researcher in investigating Thai tertiary English language teachers' perceptions and practices to see the possibility of moving toward EILT of Thai ELT context.



## METHODOLOGY

### Research design

This study was a mixed-method sequential explanatory design, employing a quantitative method through a questionnaire and a qualitative method through a semi-structured interview to collect data from the research participants.

### Participants

The participants of this study were categorized into two groups according to the stages of the study. The first stage group comprised 15 Thai tertiary English language teachers from two faculties of LR University (Pseudonym)—Humanity and Social Sciences faculty, and Education faculty. This university is situated in the northern part of Thailand. Participants were recruited as the sample of this study by the purposive sampling technique. They participated in the study by responding to the EILT Perceptions questionnaire.

The second stage group included those who responded to the questionnaire in the first stage and volunteered to participate in the semi-structured interview. It was noted that five teachers volunteered to be the interviewees of this stage.

### Research instruments

There were two research instruments—an EILT Perceptions questionnaire, and a semi-structured interview protocol. The EILT Perceptions questionnaire was used to collect data for Research Question 1, To what extent do Thai tertiary English language teachers perceive the role of English as an international language teaching? The semi-structured interview protocol was used to collect data for Research Question 2, To what extent do Thai tertiary English language teachers practice English as an international language teaching?

As for the EILT Perceptions questionnaire, it was a 20-item closed-ended four-point Likert scale used to inform participants' perceptions on the role of EILT. The content of the questionnaire covered the four EILT pillars in the conceptual framework: 1) Linguistic and cultural literacy 2) Awareness on the dispossession of English 3) EIL interpretation 4) Proud localism. The internal consistency of the EILT Perceptions questionnaire was .91 (N=30) which showed that the EILT Perceptions Questionnaire was highly reliable for revealing teachers' perceptions on the role of EILT in Thailand. As Nunnally and Bernstein (1994) indicate that an alpha level of .80 or greater is considered a good level of reliability.

To triangulate the results from the questionnaire, a 7-item semi-structured interview protocol was developed based on the conceptual framework to elicit participants' practices that related to EILT as well as their suggestions for applying EILT to Thai tertiary educational context. The semi-structured interview protocol was validated by five experts in the field. The item-objective congruency (IOC) test on each item of the interview protocol was rated to 1, indicating that all items were strongly valid (Rovinelli & Hambleton, 1977).

### Procedure

At the beginning of August 2020, 15 copies of EILT Perceptions questionnaires were distributed to Thai tertiary English language teachers at the LR University. Each respondent received a set of three types of documents and an instruction note. The documents include: (a) the information sheet, (b) the consent form, and (c) the questionnaire. The teachers were asked to rate their perceptions regarding their understanding of EILT role on a four-point Likert scale questionnaire. Four weeks later, 15 copies of the questionnaires were returned to the researcher. Descriptive statistics, namely the Arithmetic Means, Standard Deviation, and Percentage were used to analyze the data collected.

Subsequently, five teacher participants who responded to the EILT Perceptions questionnaires volunteered to participate in the semi-structured interview. Each of them spent approximately 60 minutes to reflect their EILT practices and provide suggestions and comments for EILT at the tertiary level in Thailand. The interview data were analyzed mainly with a deductive content analysis by outlining and defining prior codes/categories based on the four EILT pillars framework. Codes and categories that did not belong to the framework but were relevant for explaining the phenomenon under discussion were analyzed by inductive content analysis.

## RESULTS

**Research question 1:** To what extent do Thai tertiary English language teachers perceive the role of English as an international language teaching?

First of all the results informed that 12 out of 15 respondents (80%) were female. Most of them aged between 31-40 years old (46.6%). 73.3% of them held a master's degree while the rest (26.6%) held a doctor's degree. The majority (86.6%) graduated in Thailand while the minority graduated from England (6.6%) and Australia (6.6%). A large number of the respondents had 6-10 years of teaching experience (46.6%).

The scores of perceiving the role of EILT from these 15 respondents were classified into four categories using Arithmetic Means—greatly perceive ( $M = 3.26-4.00$ ), somewhat perceive ( $M = 2.51-3.25$ ), rarely perceive ( $M = 1.76-2.50$ ), and not at all perceive ( $M = 1.00-1.75$ ). The results of respondents' perceptions on the role of EILT are displayed in detail in Table 1.

**Table 1: The EILT Perceptions reported by 15 teacher participants**

The Four EILT Pillars	4 Totally Agree (Person)	3 Somewhat Agree (Person)	2 Not Sure (Person)	1 Disagree (Person)	Mean 4.00	SD
<b>1. Linguistic and cultural literacy</b>						
1.1 EILT facilitates learners to learn from other cultures.	8	5	2	-	3.40	0.7
1.2 EILT encourages learners to acquire and use the pragmatic rules of the target community.	12	3	-	-	3.80	0.41
1.3 EILT attempts to replace biculturalism with interculturalism.	7	4	4	-	3.20	0.86
1.4 EILT encourages learners to acquire cultural heterogenization.	8	7	-	-	3.53	0.52
1.5 EILT discusses with learners that learning English preserves the local cultures around the globe.	5	10	-	-	3.33	0.49
<b>Revered Questions</b>						
1.6 EILT puts focus on the culture of native English speakers.	9	6	-	-	3.60	0.51
1.7 EILT encourages learners to acquire and use the pragmatic rules of native English speakers.	9	6	-	-	3.60	0.51
1.8 EILT discusses with learners that learning English threatens the local cultures around the globe.	11	4	-	-	3.73	0.46
1.9 EILT considers English globalization as the instrument of linguistic and cultural imperialism, and homogenization.	13	1	1	-	3.80	0.56
<b>Interpretation of score: Greatly perceive "Linguistic and cultural literacy"</b>					<b>3.56</b>	<b>0.56</b>

	<b>4 Totally Agree (Person)</b>	<b>3 Somewhat Agree (Person)</b>	<b>2 Not Sure (Person)</b>	<b>1 Disagree (Person)</b>	<b>Mean 4.00</b>	<b>SD</b>
<b>2. Awareness on the dispossession of English</b>						
2.1 EILT informs learners that English with its many varieties is utilized for a wide range of activities in different fields around the world.	4	10	1	-	3.20	0.56
2.2 EILT informs learners that English is everybody's language which belongs to all its users around the globe.	12	3	-	-	3.80	0.41
2.3 EILT informs learners that English language is going to be influenced by both its native speakers and non-native speakers.	15	-	-	-	4.00	0.00
<b>Revered Questions</b>						
2.4 EILT informs learners that English belongs to native English speakers.	14	1	-	-	3.93	0.26
2.5 EILT informs learners that the English language is going to be influenced by its native speakers	9	6	-	-	3.60	0.51
<b>Interpretation of score: Greatly perceive "Awareness on the dispossession of English"</b>					<b><u>3.71</u></b>	<b><u>0.35</u></b>
<b>3. EIL interpretation</b>						
3.1 EILT discusses with learners about the role of the English language plays in the world and in neighboring countries.	15	-	-	-	4.00	0.00
3.2 EILT encourages learners to relate themselves to the international community as a whole rather than any particular L2 group.	12	3	-	-	3.80	0.41
<b>Revered Questions</b>						
3.3 EILT raises its significance in enhancing relationship with the owner of the English language.	12	-	1	2	3.47	1.13
<b>Interpretation of score: Greatly perceive "EIL interpretation"</b>					<b><u>3.76</u></b>	<b><u>0.51</u></b>
<b>4. Proud localism</b>						
4.1 EILT discusses with learners that English language should be used as a means to present learners' language and culture and concerns to others around the globe.	4	9	2	-	3.13	0.64
4.2 EILT discusses with learners that globalization is culminated in localization.	3	8	4	-	2.93	0.70
<b>Revered Questions</b>						
4.3 EILT emphasizes learners with an essence of local culture of native English speakers.	12	-	1	2	3.47	1.13
<b>Interpretation of score: Somewhat perceive "Proud localism"</b>					<b><u>3.18</u></b>	<b><u>0.82</u></b>
<b>Overall interpretation of score: Greatly perceive the role of EILT</b>					<b><u>3.55</u></b>	<b><u>0.56</u></b>

The results from Table 1 showed that 15 teachers who responded to the EILT Perceptions questionnaire greatly perceived "Linguistic and cultural literacy", "Awareness on the dispossession of English", and "EIL Interpretation" (M=3.56, 3.71, and 3.76, respectively). Though participants

somewhat perceived “Proud localism” ( $M=3.18$ ), the overall picture revealed that they were greatly perceived the role EILT ( $M=3.55$ ).

**Research Question 2:** To what extent do Thai tertiary English language teachers practice English as an international language teaching?

At this stage, one male and four female participants agreed to participate in an individual semi-structured interview. Their ages were between 35-58 years old with 6 up to 22 years of English teaching experience. Two of them held a doctor’s degree from English-speaking countries majoring in Curriculum and Instruction, and English while the rest held a master’s degree in Thailand majoring in Teaching English, and Applied Linguistics. All the five volunteered participants reported greatly perceived the role of EILT ( $M = 3.26 - 4.00$ ). The results from their semi-structured interviews are presented under the four EILT pillars—“Linguistic and cultural literacy”, “Awareness on the dispossession of English”, “EIL interpretation”, and “Proud localism”.

For the first EILT pillar— “Linguistic and cultural literacy”:

Participants’ practices on this EILT pillar were revealed through two out of seven questions— Question#1, *“How do you do to facilitate your students’ cultural literacy?”*, and Question#2 *“Have you ever discussed with your students that an increasing interest in learning the English language today threaten the local languages and cultures around the globe?”*

Regarding question#1, most of the teacher participants reported that they mainly shared their cultural experiences from both English and non-English speaking countries to students with the hope to help them aware of cultural diversities in different countries (see an example answer in Excerpt 1).

**Excerpt 1:**

*“My students can learn a lot from me because I had been living in Australia before. I also have a lot of experience traveling to various countries both in Europe and Asia. So I often tell them about how I lived my life abroad, giving them several interpretations of verbal and non-verbal language the local people use, and of course the culture shock I faced in several parts of the world.”*

However, one teacher claimed that she tried to provide students with vocabularies and situations that reflected NS’s cultures to help them become culturally literate (see Excerpt 2).

**Excerpt 2:**

*“I add some vocabularies that reflect different cultural linguistics such as American say football but they mean American football while the English say soccer which means football. Besides, I explain some situations that enhance more knowledge of native English speakers’ culture to my students to develop their cultural literacy.”*

Question#2, *“Have you ever discussed with your students that an increasing interest in learning the English language today threatens the local languages and cultures around the globe?”*

The entire five teacher participants had never discussed with their students regarding this issue. For them, learning the culture of NS is part of English teaching to show that those cultures differ from home culture. It was marked that one teacher stressed on teaching home culture to her students than other cultures (see Excerpt 3).

**Excerpt 3:**

*"I've never said to my students that increased interest in learning English can destroy local languages and cultures. I don't think it can happen that way. The culture of each nation is unique. Teaching English is to help students use it to communicate with the world successfully. Therefore, English is just a tool, not a weapon to rule over the local language and culture. For me, I spend more time talking about Thai culture than other cultures in my class. This is not because I'm scared that my students will adopt British or American modern cultures into Thai. It is simply because Thai culture is my students' culture which they can truly understand the in-depth meaning of each aspect. It wouldn't be possible for my students to imagine or understand the indirect meanings of native speakers' cultures. Therefore, mentioning Thai culture is my concern for teaching English to my students here."*

Regarding questions#1 and 2, most of the participants agreed that the way they informed diverse cultural knowledge to students can develop their cultural literacy. Discussing home culture was another point one participant performed in her teaching to reassure students' gain genuine understanding on the issue she mentioned. Moreover, the majority of participants insisted that the English language today is not used as an instrument for linguistic and cultural colonialism but global understanding. Nevertheless, they had never discussed with their students that global understanding needs EIL to mediate between diversities of English, not just NS's language.

Participants believed that the local culture of each nation is high prestige but not superior to others. Thus, teaching NS's language and cultures is the way to help students understand that we are different. Given one teacher mainly focused on teaching NS's linguistics and cultures rather than cultivating EIL and interculturalism. She thought that following NS's model can develop students' linguistic and cultural literacy.

In sum, participants did not completely perceive the role of EIL as such they had not fully practiced "Linguistic and cultural literacy" in their teaching. The fact is "Linguistic and cultural literacy" seeks to develop global English language awareness and intercultural competence (Matsuda & Matsuda, 2018). Consequently, teaching biculturalism is satisfying but still not sufficient to develop learners' "Linguistic and cultural literacy" for a globalized society of the 21st century.

For the second EILT pillar—"Awareness on the dispossession of English":

Participants' practices on this pillar were revealed through question#3—"Which nation is the current owner of the English language?" And which English accent do you prefer to hear from your students?" Some participants' answers were exhibited in Excerpts 4 and 5.

**Excerpt 4:**

*"I guess it is owned by the UK and US. It's pretty hard for students here to imitate British or American accents. So I always tell my students that I don't prefer to hear any particular accents from them. It's their choice! What I expect from them is proper pronunciation. For me, whether Thai, British, or American accents are fine as long as they can negotiate meaning when speaking English."*

**Excerpt 5:**

*"I think no one owns spoken English language today because many people speak it. So it is changed by several speakers every day. But standard English which is used for formal or academic purposes is owned by the UK and US. These two forms of the standard are accepted universally. For accent, I told my students that*

*any accents that help them communicate with foreigners successfully are acceptable. People today are more concerned on how to understand each other than listening to what accent the other use."*

To answer question#3, three participants mainly viewed the English language as a property of the United Kingdoms (UK), and the United States (US) while one participant viewed that the English language is owned by all the English-speaking countries. There was only one participant who specified that spoken English belongs to no one else because it is daily spoken and changed by diverse English users in plenty areas of the world. This participant further stated that the written form of the English language is merely owned by the UK and the US as Standard English.

In response to the probe question, all of the participants expressed that they informed students to aware that the key success in English communication is an ability to negotiate of meaning, not native liked accents. In brief, the majority of participants in this study may fail to acknowledge students that English is used for a wide range of activities around the world so that English equally belongs to everyone who uses it effectively. Therefore, participants in this study declined to raise students' "Awareness on the dispossession of English".

For the third EILT pillar—"EIL interpretation":

Participants' practices on this pillar were revealed through question#4—"Have you ever discussed with students about the global significance of English? And How?" Some participants' practices were shown in Excepts 6 and 7.

**Excerpt 6:**

*"Sure, I have. I often share my abroad experiences so they realize that English is really important for us to survive in this digital and technology world. Everyone indeed wishes to progress in their future careers. Without having English communication skills, they may find it difficult to deal a business with foreign stakeholders or customers. They may lose benefits or good opportunities in their lives. Therefore, I always tell my students to be alert to learn English."*

**Excerpt 7:**

*"Yes, I have. I like to tell my students that people use English worldwide. So it is the world language. I told them that I lived in France before and whenever I stepped out of France I wouldn't survive without speaking English. I also told them that all kinds of knowledge and information are loaded on on-line search engines in English, so the lack of English literacy slowdowns their progress."*

The overall picture showed that teacher participants tended to apply "EIL interpretation" in their classroom. Some example excerpts displayed that participants were able to interpret and emphasize the global significance of English to their students. They capture a tendency to relate students' lives to international demands such as enhancing good opportunities for future careers and living life smartly in the digital world.

For the fourth EILT pillar—"Proud localism":

Participants' practices on this pillar were revealed through question#5—"Have you ever discussed with your students whether the destination of EILT is globalization or localization?"

Three out of five teacher participants had never discussed the aim of EILT with their students. They perceived that EILT inclines to be about globalization. They rarely found that the destination of EILT is localization (see an example answer in Excerpt 8).

**Excerpt 8:**

*"I've never discussed with my students that the destination of EILT is globalization or localization. However, I'm sure that localization is not the destination of EILT as EILT aims to promote globalization."*

Notwithstanding, two teacher participants somewhat encouraged their students to aware that English plays important role in both global and local contexts (see Excerpts 9, 10).

**Excerpt 9:**

*"I guess yes because I emphasize to my students that English is important both in global and local contexts. For example, when English is used in our country it is used as localization. But, when English is used to communicate outside our country it displays the role of English for globalization."*

**Excerpt 10:**

*"Not really. I rather tell them to study English to communicate with the people who able to use English. This is going to happen whether in local or international contexts."*

It can be seen that the majority of participants did not practice cultivating "Proud localism" in their students. They also misunderstood the purpose of EILT by purely interpreted its role as globalization and civilization that bring learners away from the locality. Furthermore, they did not seem to see the mutual goal between globalization and localization.

Although some of the participants underlined the significance of English as a tool to communicate with NS and NNS in local and international contexts to their students, they did not touch on EILT's purpose of teaching English to encourage learners to reveal their identity. In another word, they did not facilitate learners to proudly and comfortably use English in an international context without pretending to be the others.

This means that learners should be supported to feel free from NS's model and NS's norms when speaking English because they are not the NS's members. They have the right to speak English with the local accent which is based on their linguistic and cultural difference. Given the English language they speak can convey their national identity to the world. In this case, globalization promotes localization by drawing the world's acceptance and respect for revealing who the speakers are and where they are from.

Reconsidering participants' answers, it is possible that some Thai English language teachers still disregard to equip learners with the ability to use EIL to promote self-identity and "Proud localism". Without introducing the "Proud localism" concept to learners, teachers are much likely to trap NS's norms in their English teaching.

After asking participants about their practices on EILT, the researcher asked them to reflect on their weaknesses and strengths in teaching EIL with Question#6— *"What have been your weaknesses and strengths of teaching EIL?"*

Regarding the weaknesses, four participants remained uncertain about the concept of EILT. Two of them evaluated themselves on the lack of NS's cultural knowledge and pragmatic rule of the NS while another two wished to know plenty of cultural knowledge of the world to teach EIL to their students (see example answers in Excerpts 11, 12).

**Excerpt 11:**

*"I need to know more about idioms of the native English speakers so I can explain the indirect meaning to my students. For me, idioms can be one tool to develop students' pragmatic knowledge of the target language. Thus, the lack of idioms knowledge is my limitation to teach EIL."*

**Excerpt 12:**

*"I can't learn and teach plenty of cultures in this world. I wish I know a lot of them so I can pass them on to my students."*

There was only one participant that seemed to have more understanding of EILT than the rest of the participants. He attempted to concentrate on familiarizing his students with differences among cultures and the English language used by the global citizens. Yet, he considered himself having doubt about the concept of EILT and desired to learn more about it (see Excerpt 13).

**Excerpt 13:**

*"I'm not sure about the concept of teaching EIL. That's my weak point. I have to learn about it. However, what I do is to develop my students with linguistic and cultural awareness as much as I can to familiarize them with English and cultural differences. I do my best to prepare them for the global context."*

Regarding the strengths of teaching EIL, most participants expressed that they attempted to substitute their weaknesses by providing students with cultural information and authentic English conversations as much as they can to prepare students to communicate with anyone who speaks English (see an example answer in Excerpt 14).

**Excerpt 14:**

*"As I told you that I try to develop my students with linguistic and cultural awareness as much as I can to make sure that they can use skills and knowledge to communicate with anyone who speaks English. That's my strength."*

Question#7— *"What would you suggest for implementing EILT to tertiary level in Thailand?"*

This question was used to elicit participants' suggestions on EILT that may facilitate Thai learners to become global citizens. Some of their suggestions were reported in Excerpts 15 and 16.

**Excerpt 15:**

*"I suggest that applying EILT to tertiary education should begin from the teacher themselves. Tertiary teachers must research on EILT concept to truly aware of its significance and know how to pass on this knowledge and skills to their students. For me, I am still not sure about the concept of EILT. However, I guess EFL teaching is not similar to EILT. EILT tends to learn the language deeply and broadly but EFL teaching lays the ground on a surface knowledge, just like the knowledge of outsiders who are not the owners of the language. To develop students, the university should provide grants for teachers to train or learn international culture overseas which is not limited to English-speaking countries. This will make them acquire EILT knowledge to teach their students."*



**Excerpt 16:**

*"I think most English teachers have cultural knowledge and experiences. They are aware that language can't be separated from culture. So, they are supposed to add cultures in every English course they teach. EILT is new for me but I'm sure that the concept of EILT is developed for the majority of the world's citizens to be able to use English to communicate globally."*

It was manifest that participants were confused with the concept and principles of EILT. Thus, most of them recommended Thai tertiary English language teachers to develop themselves by learning to aware of the importance of EILT and understanding how to implement it into their classroom to assist learners to become successful communicators in the globalized communities.

## **DISCUSSION AND IMPLICATIONS**

### **Teachers' perceptions and practices on EILT**

The current study used a questionnaire and a semi-structured interview to reveal perceptions and practices toward EILT of Thai tertiary English language teachers. The overall results from the questionnaire informed that the participants greatly perceived the fundamental role of EILT which comprised four pillars—Linguistic and cultural literacy, Awareness on the dispossession of English, EIL interpretation, and Proud localism. However, they were dubious about how to integrate EILT into practices.

As for the semi-structured interview, the results revealed that participants did not completely perceive the role of EIL. They had ambiguities in interpreting and practicing on the four EILT pillars. To elaborate, they did not fully instill "Linguistic and cultural literacy" in their student. NS's norms played a key role in their classroom in which biculturalism and bilingualism dominated the diversity of English and interculturalism.

Although participants in this study did not expect to hear the UK or US accents from their students as long as students can use English to convey meaning, they failed to raise students' "Awareness on the dispossession of English". This is because the majority of them remained to limit English language ownership to the UK and US. It was noticeable that "EIL interpretation" seemed to be the only pillar of EILT that teacher participants applied in their classroom by relating the world demands of English to student's future careers.

Apart from that majority of participants were somewhat underdeveloped to advise the "Proud localism" concept to their students. They could not see that globalization and localization complement each other. Furthermore, they did not encourage learners to feel free from NS's norms when speaking English so that the English learners use may not convey their identity or a story of who they are to the world.

The most serious issue of EILT was that participants were not familiar with the ideology of EILT and considered it as a new language teaching paradigm. One participant even called for overseas training grants from their affiliations to help develop teachers' EILT proficiency that may enable students to become successful global communicators. However, the majority suggested that to develop learners' global citizenship the in-service English teachers themselves should first and foremost begin to learn more about the significances and principles of EILT to implement it effectively in their teaching.

These results are concurrent with Maley (2010) and Matsuda and Matsuda (2018) who indicate that EILT ideology is not commonly recognized by most teaching practitioners and it only sounds familiar to a limited group of researchers. Moreover, the description and interpretation of EILT is the major confrontation with ELT as they do not concurrently share the main aim. While EILT aims

to develop learners to understand the realism of global English language usage and intercultural sensitivity, ELT lays the ground on pursuing learners' language accuracy, fluency, and evaluation that are in accord with NS's model and NS's norms (Jenkins, 2015; Matsuda and Matsuda, 2018). With different interpretations, EIL may be used in the EFL classroom and intercultural contexts by default.

A vital implication for EILT is to cultivate the paradigm shift respecting the current use and users of English to teachers and learners to help them predict distinctive cultural views that are ingrained in English when using EIL for international purposes. With this in mind, they can acquire and achieve new literacy, proficiency, and competency that can engage them in intercultural situations.

Besides, a careful selection of particular teaching frameworks and better team working among EIL curriculum designers, applied linguists, researchers, and practitioners may deliver EILT to be closer and more convenient to teachers. This cooperation can create teacher education programs that sufficiently correspond to the means to incorporate EILT into classroom practices, evaluations, course books, curricula, and ELT pedagogical courses.

### **Perceive globally, perform locally, and teach English interculturality in EILT can create several kinds of awareness**

There was a big point to worry about participant's misunderstanding that the high goal of EILT is to support globalization, not localization. The findings pointed out that the development of Thai English language teachers' awareness and perspective on globalization and localization of the English language should be preceded in no time.

As mentioned earlier in the literature review that the final destination of globalization is to encourage localization. Nevertheless, localism is not likely to take root anywhere without a passion to perform it. Each community's member truly has to desire it. Thus, all the teacher practitioners who are not familiar with this ideology may begin to reset their mindsets in perceiving globally, performing locally, and teaching English interculturality.

To perceive globally, perform locally, and teach English interculturality in the classroom, Thai English language teachers may enhance their professional identity by considering using narrative to describe anecdotes, and novels about Thai culture that written or translated into English to inspire learners' self-actualization, cultural self-awareness, and language awareness. As Watkhaolarm (2005)'s study indicates that "Thai English has potential to develop further since English continues to have a strong presence in the professional lives of many Thais" (p. 145).

Besides, it is vital to make learners aware that the use of English is entirely dependent on each local context and practice. Consequently, the national and cultural identity of each country is naturally imbued with the use of their English. Accordingly, teachers need to cherish learners to proud of taking part as local representatives who use English to exhibit the local accent, invaluable wisdom, cultural heritage, and unique locality of their country to be visible to the world.

To this point, the more the English language teachers offer opportunities for these local representatives to communicate in intercultural situations with other English users, the more learners need to make use of pragmatic competence, sociolinguistic skills of dialect differentiation, conversational handling, and communicative strategies (Canagarajah, 2013) to convey their identity and achieve the fruitful shuttling between English varieties. This is truly teaching EIL for intercultural purposes.

Such capabilities that are rooted from perceiving globally, performing locally, and teaching English interculturality tend to gradually improve teachers and learners with an understanding of localization and several kinds of awareness and competencies, such as intercultural awareness, language awareness, linguistic competence, communicative competence, and intercultural

communicative competence. This awareness and competencies are relevant to ELT that can be applied in both the classroom practice and the real-world context.

## CONCLUSION

It is noteworthy to know that the findings in this study yielded the potential problems and challenges EILT poses to Thai academics, theorists, and curriculum designers to look at some particular hindrances from a teaching viewpoint, and call for more actions to help develop frameworks for a more practical utilization to move Thailand's ELT toward EILT.

The findings suggested all relevant stakeholders to investigate and analyze EILT's potentiality and practicality to cultivate its paradigm shift in respect of the prevailing use and users of English to learners. Such cultivation will help them become legitimate owners of English and overcome the English language barrier by knowing that there is no one English fit for all contexts. There is no real-world need for all humans but there are differences when English is used internationally. Those differences therefore should not be criticized as superior or inferior.

To this end, individual English learners will realize that English belongs to them when they use it and hence dignity. Given they will feel free to use English in their way to proudly transmit the uniqueness of the Thais to the world. Such qualifications tend to help learners obtain and achieve new knowledge, attitudes, and skills to engage in the global community.

Last but not least, how EIL is taught needs to be determined by local teacher practitioners who employ their critical consideration in justification for the proper materials and strategies of English instruction under their local circumstances. Therefore, it is imperative for these local teachers to be armed with local wisdom, yet well-informed sufficiently with the ideology and practice of EILT and current trends in ELT to meet both globalized and localized contexts.

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**Table 1: The EILT Perceptions reported by 15 teacher participants**

**4 3 2 1 Mean SD**

**The Four EILT Pillars Totally Somewhat Not Disagree 4.00 Agree Agree Sure  
(Person) (Person) (Person) (Person)**

**1. Linguistic and cultural literacy**

- 1.1 EILT facilitates learners to learn from other 8 5 2 - 3.40 0.7 cultures.
- 1.2 EILT encourages learners to acquire and use 12 3 - - 3.80 0.41 the pragmatic rules of the target community.
- 1.3 EILT attempts to replace biculturalism with 7 4 4 - 3.20 0.86 interculturalism.
- 1.4 EILT encourages learners to acquire cultural 8 7 - - 3.53 0.52 heterogenization.
- 1.5 EILT discusses with learners that learning 5 10 - - 3.33 0.49 English preserves the local cultures around the globe.

**Revered Questions**

- 1.6 EILT puts focus on the culture of native 9 6 - - 3.60 0.51 English speakers.
- 1.7 EILT encourages learners to acquire and use 9 6 - - 3.60 0.51 the pragmatic rules of native English speakers.
- 1.8 EILT discusses with learners that learning 11 4 - - 3.73 0.46 English threatens the local cultures around the globe.
- 1.9 EILT considers English globalization as 13 1 1 - 3.80 0.56 the instrument of linguistic and cultural imperialism, and homogenization.

**Interpretation of score: Greatly perceive “Linguistic and cultural literacy” 3.56 0.56**

**4 3 2 1 Mean SD Totally Somewhat Not Disagree 4.00**

**Agree Agree Sure  
(Person) (Person) (Person) (Person)**

**2. Awareness on the dispossession of English**

- 2.1 EILT informs learners that English with its 4 10 1 - 3.20 0.56 many varieties is utilized for a wide range of activities in different fields around the world.
- 2.2 EILT informs learners that English is 12 3 - - 3.80 0.41 everybody’s language which belongs to all its users around the globe.
- 2.3 EILT informs learners that English language is 15 - - - 4.00 0.00 going to be influenced by both its native speakers and non-native speakers.

**Revered Questions**

- 2.4 EILT informs learners that English belongs to 14 1 - - 3.93 0.26 native English speakers.
- 2.5 EILT informs learners that the English language 9 6 - - 3.60 0.51 is going to be influenced by its native speakers

**Interpretation of score: Greatly perceive “Awareness on the dispossession of English” 3.71 0.35 3. EIL interpretation**

- 3.1 EILT discusses with learners about the role of 15 - - - 4.00 0.00 the English language plays in the World and in neighboring countries.
- 3.2 EILT encourages learners to relate themselves 12 3 - - 3.80 0.41 to the international community as a whole Rather than any particular L2 group.

**Revered Questions**

- 3.3 EILT raises its significance in enhancing 12 - 1 2 3.47 1.13 relationship with the owner of the English language.

**Interpretation of score: Greatly perceive “EIL interpretation” 3.76 0.51 4. Proud localism**

4.1 EILT discusses with learners that English 4 9 2 - 3.13 0.64 language should be used as a means to present learners' language and culture and concerns to others around the globe.

4.2 EILT discusses with learners that globalization 3 8 4 - 2.93 0.70 is culminated in localization.

**Revered Questions**

4.3 EILT emphasizes learners with an essence of 12 - 1 2 3.47 1.13 local culture of native English speakers.

**Interpretation of score: Somewhat perceive “Proud localism” 3.18 0.82 Overall interpretation of score:**

**Greatly perceive the role of EILT 3.55 0.56**



## Developing a Scale to Measure Syrian Students' Attitude Towards Turkish (SSATT) and Examining Its Psychometric Properties

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### Abstract

The aim of the present study was to develop a valid and reliable measurement tool for identifying the attitudes towards Turkish of Syrian university students learning Turkish as a foreign language. The study group was comprised of a total of 489 individuals with 285 for exploratory factor analysis (EFA) and 204 for confirmatory factor analysis (CFA). Student opinions, relevant literature and expert opinions were utilized when developing the scale items thus putting forth a 53 item form. Eight items were excluded following the pilot application on first form for linguistic clarity thus conducting EFA with 45 items. A total of 20 items were excluded as a result of the EFA thus obtaining a 25 item, three factor form that explains 49.42 % of the variance. CFA was conducted with a new study group for examining the model fit of the obtained three factor structure and the results of CFA ( $X^2/sd= 2,46$ ; RMSEA= .085; CFI= .92; NNFI= .91; SRMR= .085; GFI: .79) set forth that the model fit of the scale is at a sufficient level. The dimension including items on the purpose and function for the use of Turkish by Syrian students was named as “Purpose/function”; items related with the daily use of Turkish were named as “Daily life” whereas the dimension including items including a negative approach towards Turkish was entitled as “Dysfunctional approach”. Reliability analyses were carried out for the scale as a result of which the Cronbach’s Alfa and Spearman-Brown coefficients were obtained as (.90) and (.86) for the “purpose/function”, (.83) and (.82) for the “daily life”, (.76) and (.74) for the “dysfunctional approach”. The findings of the present study indicate that SSATT is a valid and reliable tool in measuring the attitudes of Syrian university students towards Turkish.

**Keywords:** Turkish, Attitude, Syrian University Students, Scale

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## INTRODUCTION

Over 6.5 million Syrians were forced to emigrate from their country as a result of the internal conflicts that ensued in Syria in 2011 (UNHCR, 2019). According to the Directorate General of Migration Management data (GİGM, 2021) 3.655.067 Syrians are under temporary protection in Turkey as of 17.02.2021. Of the Syrian refugees under temporary protection, 492.430 (280.845 male, 211.585 female) are in the 19-24 age interval (GİGM, 2021) or in other words they are at an age suited for higher education.

Based on the Higher Education Information Management System data (YÖK, 2021) while 1405 male and 380 female Syrians were registered as university students during the 2013-2014 academic year equaling a total of 1785 Syrian university students, this number has increased up to a total of 37236 registered Syrian university students during the 2019-2020 academic year with 23823 male and 13413 female students. As can be seen from the aforementioned data, it is possible to say that the number of registered Syrian university students has increased dramatically in Turkey.

The concept of attitude as the tendency to behave either positively or negatively towards a certain social object can be defined as the state of readiness for behavior positioned before the behaviors themselves thus indicating a stance taken towards the objects they are in relation with (Bilgin, 2014). "Since knowledge of the attitude of an individual towards a certain object or stimulus will help us in predicting the behavior of that individual towards the related stimulus, this is very important in practice." (Üstüner, 2006). Allport defines attitude as, "a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon an individual's response to all objects and situations with which it is related" (Cited by Bilgin, 2014). It can be observed based on the aforementioned definitions and explanations that attitude is a concept positioned prior to behavior which reflects the positive/negative stance of the individual towards a social object.

Previous research findings in literature (Ellis 1994; Mitchell & Myles, 1998'den Cited by: Saracaloğlu & Varol, 2007; Selçuk, 1997; Lafaye & Tsuda, 2003; Kazazoğlu, 2011; Altunay, 2004) have put forth that the attitudes of students towards foreign language makes an impact on their level of achievement in learning that foreign language. Similarly, Karatay and Kartallıoğlu (2016) report that knowledge of the attitudes of students and organizing the education process accordingly will improve the quality of education and ensure that the process will be concluded successfully.

Several studies in literature have developed a scale on the attitude towards lessons in Turkish as the native language (Demirel, 2006; Kapar Kuvanc, 2008; Bölükbaş, 2010; Topçuoğlu Ünal & Köse, 2014; Aytan, 2016); on the attitude of learning Turkish as a foreign language (Yıldız & Gürlek, 2019) and on the attitude towards Turkish of Turks outside the country (Oyarkılıçgil Ateş, 2001; Karatay & Kartallıoğlu, 2012). Moreover, Şengül (2016) conducted a study in which a scale was developed for identifying the attitudes of students from eight different countries on Turkish and Turkish preparation courses. It was concluded when the related studies in literature were examined within the scope of the present study that there are no studies focusing on the attitudes of Syrian students towards Turkish. For this purpose, it was decided that there is a requirement for developing a scale for identifying the attitudes of Syrian university students towards Turkish.

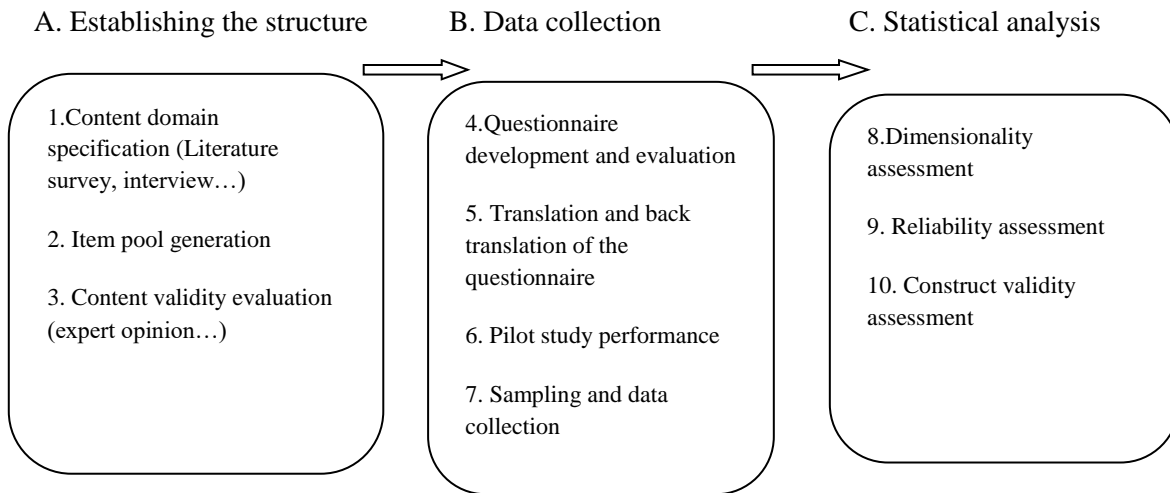
The aim of the present study was to develop a scale for identifying the attitudes towards Turkish of Syrian students learning Turkish as a foreign language.

## METHOD

### Study Model

This is a mixed model study since the qualitative and quantitative data collection and analysis processes were conducted simultaneously. Mixed model studies are those that incorporate qualitative

and quantitative research elements (Creswell, 2017). The interviews conducted comprise the qualitative aspect of the present study; whereas the implementation of the scale along with the statistical studies carried out within the scope of validity and reliability studies make up the quantitative aspect. The guideline suggested by Slavec and Drnovšek (2012) for developing a measurement tool was utilized in the present study that aims to develop a valid and reliable tool for measuring the attitudes of Syrian students towards Turkish (Figure 1).



**Figure 1: Three stages and ten steps of scale development (Slavec & Drnovšek, 2012)**

As can be seen in Figure 1, the present study is based on a model comprised of three stages and 10 sub-steps. The first step of this model consists of the literature survey for establishing the theoretical structure of the scale, item pool generation and content validity evaluation studies; while the second step includes the questionnaire development and evaluation, pilot study performance and data collection stage from a sample group with high representation strength. The final step consists of examination factor structure (exploratory factor analysis in this study); reliability analyses (Cronbach's Alfa, split half method in this study) and construct validity (confirmatory factor analysis in this study) studies.

### **Setting up the Theoretical Structure**

#### **Development stage of scale items**

The first step in the development stage for SSATT items was conducting a literature survey. The structure and items of measurement tools developed both inside and outside the country with the aim of measuring the attitudes towards learning a new language were examined in detail as part of this process. In addition, studies on the language education of Syrians in Turkey were also examined within the framework of the literature survey after which the findings of these studies were utilized during the development stage of the scale items. Secondly, face-to-face interviews were conducted with nine (six female, three male) Syrian students continuing their higher education in Turkey as part of the scale item development stage. During these interviews, questions were directed on the difficulties of continuing higher education in Turkey, the problems encountered in relation with the language, what learning Turkish means for them and their Turkish language practices in daily life. The responses of the students to these questions were examined and coded by two researchers separately after which they came together to review these codes and try to develop the scale items based on their common declarations. Finally, face-to-face interviews were conducted with three faculty members teaching a course at the Turkish Learning Center aimed at Syrian students during which the faculty members were asked to share their observations on teaching Turkish to Syrians in addition to contribute to the scale directly with item suggestions. An item pool comprised of 79 items was prepared during the first stage following the literature survey conducted for developing the scale items as well as interviews with Syrian students and faculty members. Finally, the item pool was reexamined

by the researchers within this scope as a result of which a 66 item test battery was obtained by excluding unrelated and repeated measurement items.

### **Content validity -> Expert opinions**

Expert opinions were obtained in order to identify the level at which the 66 item scale battery developed as a result of the scale item development process measures the attitudes of Syrians towards learning Turkish and the extent to which the items reflect the related content. Opinions were obtained from a total of four academics within this scope two of whom were from the language education (with one expert on teaching Turkish to foreigners), one from psychological guidance and counseling field and one from assessment and evaluation field. The academics working in the field of language education were asked to evaluate the content of the scale items, the academic working in the field of psychological guidance and counseling was asked to evaluate the assessment of attitude measurement whereas the expert working in the field of assessment and evaluation was asked to evaluate the accordance of the scale items with the rules of assessment. A three level assessment scale was identified for each item as appropriate-inappropriate-partially appropriate and opinions were requested for the items identified as partially appropriate in the form of “what would be your suggestions for the transformation of the items?”. It was concluded based on the expert opinions to exclude 13 items from the 66 item pool and to revise 16 items thus obtaining a 53 item pool.

### **Language Studies**

Feedback and suggestions were requested from two academics working in the field of Turkish language education for the assessment of the clarity of the 53 item scale pre-trial form and its spelling. Small revisions were made in three questions based on the feedback from the academics.

### **Pilot Study**

A pilot study was conducted for testing whether the expressions in the scale item pool will be understood by the study group or not. The pilot study included 18 Syrian students continuing their education at Hatay Mustafa Kemal University classroom teaching department during which they were asked to score their level of understanding each expression with a four level grading in the form of “I understood very well-I understood-I did not understand-I did not understand at all”. Eight items scored as “I did not understand” and “I did not understand at all” were excluded from the scale based on the feedback from the students as a result of which the pre-trial form of the scale was finalized with 45 items.

### **Study group**

Data were collected from two different study groups within the scope of the present study including one group for the exploratory factor analysis (EFA) and one group for the confirmatory factor analysis (CFA) Criterion sampling from among the purposive sampling methods was used for identifying the study groups. Criterion sampling is the inclusion in the study group of units which meet certain criteria in accordance with the objectives of the study (Büyüköztürk et al., 2008). The inclusion criteria used for the present study within this framework were as follows:

- Having come to Turkey from Syria,
- Continuing a higher education institution in Turkey,
- Ability to read and understand a text in Turkish.

*Study group 1:* The group formed for conducting an exploratory factor analysis (EFA). In this scope, data were collected first from a total of 294 people, however the data for nine participants were excluded after four participants marked the “no” option on the voluntary consent form, three

participants marked the same response for each question and two participants were identified as outliers thus conducting the analyses on 285 individuals. Of the study group including 285 individuals, 188 were female (66 %), 97 were male (34 %). The age average of the group was 21.68 (Sd= 3.17). The average time spent living in Turkey was 6.29 years (Sd=2.00). Syrian students continuing their education at 58 different universities took part in the study with the majority of the students from Hatay Mustafa Kemal University and Gaziantep University. Faculty of Education and Faculty of Engineering were the faculties with the highest participation.

*Study group 2:* The 25 item scale form obtained as a result of EFA was applied on a new group of Syrian students including 210 individuals in order to test whether the form can be verified with a different study group or not. Data for six individuals in the second study group were excluded from the analysis as a result of data cleaning procedures thus conducting the CFA on 204 individuals. It was observed when the demographic features of the CFA group was examined that there are 142 women (69.6 %); 62 men (30.4 %) with an age average of 22.84 (Sd= 4.07) and an average time spent living in Turkey of 6.52 (Sd= 1.95). It was observed when the distribution of the data for the second study group was examined with regard to universities that Gaziantep University and Hatay Mustafa Kemal University comprised the majority. It was observed that the distributions of the students subject to faculties were education (27,9 %), engineering (18.8 %), economics and administrative sciences (10.6 %) and science literature faculty 10.1 %).

### **Data collection tools**

#### **Reading Anxiety Scale (RAS) for Individuals Learning Turkish as a Foreign Language**

The Reading Anxiety Scale (RAS) for Individuals Learning Turkish as a Foreign Language developed by Altunkaya and Erdem (2016) was used within the scope of the criterion validity study for SSATT. Consisting of 16 items and 3 factors, the RAS reliability values were calculated for the full scale as .82 for alpha reliability, .80 for the first factor, .73 for the second factor and .71 for the third factor. It was identified as a result of the CFA studies conducted on the scale that the three factor structure explains 47 % of the total variance. It was determined when the sub-dimensions were examined that the Fear of Reading Skill sub-dimension explains 26.51 % of the total variance, Grammar Anxiety sub-dimension explains 13.10 % of the variance and that the Reading Comprehension Anxiety sub-dimension explains 7.05 % of the variance. These data indicate that the scale has sufficient validity and reliability values (Altunkaya & Erdem, 2016). It was set forth as a result of the reliability analysis performed within the scope of the present study that the Cronbach alpha internal consistency value was .90 for RAS in full.

### **Data collection**

The 45 item scale pre-form obtained as a result of the pilot study was sent via Google Form to Syrian students continuing their education at various higher education institutions in Turkey. Data were collected during the dates of October 2020 – January 2021 for EFA and during the dates of February – March 2021 for CFA. There are two primary reasons for the collection of data in the digital environment. The first reason was the fact that the higher education institutions continued distance education during the data acquisition period due to the COVID-19 pandemic, whereas the second reason was the fact that the Syrian students were enrolled at different higher education institutions all over Turkey. The scale forms were mostly sent to the participants via Whatsapp and Facebook groups. The participants reached were asked to share the study link with their own groups. Information (study objective, confidentiality, participation voluntariness, how the forms will be filled, and contact information of the researchers) was first provided on the study prior to the implementation of the scale form after which they were asked if they volunteer to take part in the study or not. The data of the participants volunteering to take part in the study were included in the analysis.

### **Data analysis**

EFA, CFA and reliability analyses were conducted during the present study aiming to develop a valid and reliable measurement tool for the assessment of the attitudes of Syrian students towards Turkish. The compliance of the data acquired for EFA was first examined via KMO and Bartlett sphericity test after which principal component analysis and Varimax rotation methods were utilized during the EFA process. In the second stage, CFA was used for examining whether the structure obtained as a result of the EFA can be verified with a different sample group or not and finally Cronbach Alfa and split-half analyses were carried out within the scope of reliability studies. Outliers and erroneous codings were first removed for testing whether the data acquired from the study groups are suitable for analysis or not after which the normality and multicollinearity issues were studied. SPSS and LISREL software were used in the analyses.

## **RESULTS**

This section presents the EFA and CFA results within the scope of the validity related findings followed with data on reliability.

### **Validity related findings**

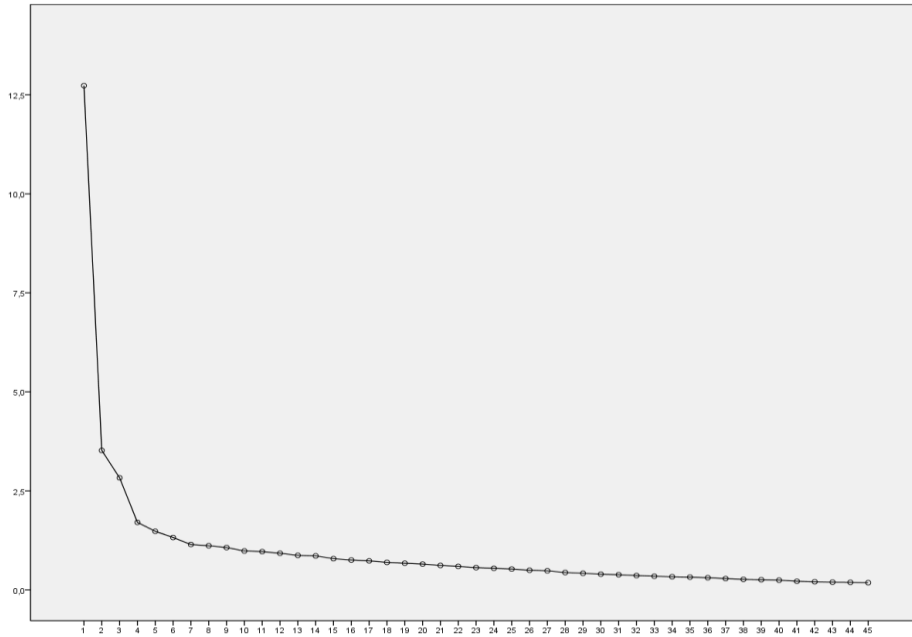
#### **Analysis Compliance of the Data**

KMO and Bartlett sphericity test results were examined as a criteria for identifying whether the data are suited for EFA or not prior to carrying out the exploratory factor analysis. The KMO (.91) and Bartlett sphericity test results ( $X^2 = 6123.41$ ;  $p < .01$ ) acquired indicate that the dataset is suited for EFA (Büyüköztürk, 2010; Çokluk et al., 2010; Field, 2009). It is required for majority of the multivariate statistics that the assumptions on normality, linearity and multicollinearity problems are met prior to the analysis (Can, 2019; Çokluk et al., 2010; Tabachnick & Fidell, 2015). It was concluded in the present study based on the Bartlett sphericity test results as well as the skewness and kurtosis values (both values should be between -1 and +1) that the data are distributed normally (Leech et al., 2005). The fact that the normality assumption has been met for the data within the scope of the study can be accepted as an indication of the linearity of the correlation between the variables (Leech et al., 2005; Tabachnick & Fidell, 2015). Finally, the multicollinearity problem between the variables was examined within the scope of the analyses on the suitability of the data. Kline (2005) indicates the presence of a multicollinearity issue when there is a correlation of above .85 between two variables. The highest value was observed as .68 when the correlation values between the items were examined in the present study. Accordingly, it was concluded that there is no multicollinearity issue between the variables.

#### **Exploratory factor analysis (EFA)**

Principal component analysis and EFA were conducted during this study aiming to measure the attitudes of Syrian university students towards Turkish since it was aimed to acquire information with the maximum accuracy with minimum measurements. At this point, Can (2019) states that the principal component analysis should be preferred if it is aimed to attain maximum accuracy with minimum measurements. One of the widely used criterion when deciding on the number of factors in exploratory factor analysis is accepting that factors with eigenvalues of 1.0 and above are important factors (Büyüköztürk, 2010; Field, 2009). It was observed as a result of the EFA conducted via principal component analysis on SSATT that there are nine factors with eigenvalues of above 1 which explain 59.82 % of the total variance. The fact that a total of nine factors were obtained which is a large number for the analysis during the first stage is an indication of the necessity to reduce the number of factors. At this point, Catell's scree plot test was used as a second criterion for identifying the number of factors. Pallant (2016) indicates that the curve changes direction during Catell's scree test thus stating that the point where the curve starts becoming horizontal from vertical can be

accepted as a criterion for identifying the number of factors. In addition, Can (2019) states that the contribution of a factor in explaining the total variance should not drop below 5 %.



**Figure 2. SSATT scree plot**

It can be observed when the eigenvalue graph of the scale is examined in Figure 2 shows that the line which continues vertically for the first three factors becomes horizontal with the fourth factor. Moreover, it was also identified that the rate of contribution to the explained variance has dropped below 4 % after the fourth factor. Accordingly, it was concluded that the scale can be evaluated as a three dimensional tool.

It was set forth after obtaining a three factor structure following EFA that the items are mostly accumulated in the first factor which has made it difficult to collect the factor at a common denominator. In this case, it can be put forth that a rotation procedure is required (Can, 2019). Varimax rotation was preferred since it is one of the most commonly used methods of rotation (Tavşancıl, 2002) and since it was desired to generalize the data of the present study for Syrian university students (Büyüköztürk, 2002). The criteria considered when deciding the items to be excluded from the EFA process of SSATT were items with a high factor load for its own factor and a low factor load for other factors. At this point, it is suggested that the item should have minimum factor load should be .33 (Ho, 2006) or .45 (Tabachnick & Fidell, 2015) for its own factor. In addition, it is also indicated that the difference between the load for its own factor and for other factors should be .10 (Büyüköztürk, 2010) or .15 (Can, 2019). Even though there is no exact criterion on starting the item exclusion procedure from items with low factor loads or overlapping items, Çokluk et al. (2010) suggests starting with overlapping items and excluding the items one by one. In this scope, nine items (5, 11, 18, 23, 24, 30, 32, 40, 43) with a load value difference of below .15 were excluded one by one starting with high overlap. Afterwards, the remaining eight items (1, 3, 17, 19, 20, 25, 27, 28, 39) with factor load values of below .50 were excluded thus leaving 27 items in the scale. Finally, two items (4 and 9) with low correlation (below .30) in the item total correlation analysis were excluded within the scope of item exclusion.

**Table 1. The load values of factors, common factor loads (CFL), item-total correlations (r), eigenvalues of the factors and explained variance**

		After Varimax Rotation				
		CFL	F 1	F 2	F 3	r
<b>Factor 1: Purpose/Function</b>						
42	Learning Turkish will help me establish good relations with Turkish people.	.61	.77			.63*
41	Learning Turkish will make my daily life easier.	.59	.75			.65*
44	I would like to be as fluent in Turkish as my native language.	.56	.73			.59*
13	Turkish is important for me.	.53	.71			.63*
16	I would like to speak Turkish fluently.	.48	.68			.56*
12	I would like to speak Turkish more.	.42	.64			.51*
31	I am happy when they say, "Your Turkish is very good"	.44	.62			.59*
6	I am happy when I learn a new Turkish word	.48	.62			.64*
21	I would like to improve my Turkish	.41	.61			.57*
33	I can learn Turkish culture too if I learn Turkish well	.48	.59			.66*
15	Knowing Turkish is important for my future	.38	.58			.56*
8	I am curious about the meanings of Turkish words	.37	.57			.55*
<b>Eigenvalue: 5.89; Contribution to total variance: 23.55</b>						
<b>Factor 2: Daily life</b>						
35	Speaking Turkish at home makes me happy	.65		.77		.61*
38	I enjoy reading poetry in Turkish	.57		.74		.41*
34	I would like to use Turkish for the rest of my life	.47		.66		.54*
29	I prefer speaking Turkish with those close to me	.47		.63		.56*
36	I enjoy writing in Turkish	.54		.63		.62*
45	I enjoy reading things in Turkish (newspaper/magazine/book)	.44		.62		.56*
26	I would like to select a Turkish related profession in the future	.36		.60		.36*
7	I like Turkish activities	.40		.54		.57*
<b>Eigenvalue: 3.83; Contribution to total variance: 15.33</b>						
<b>Factor 3: Dysfunctional approach**</b>						
14	I think that Turkish is a boring language**	.64			.74	.55*
10	I feel uncomfortable when speaking Turkish**	.55			.70	.47*
22	I feel uncomfortable when people speak Turkish near me**	.62			.70	.55*
2	I think that Turkish is a difficult language**	.47			.67	.33*
37	I find it difficult to listen to what is said in Turkish **	.41			.62	.32*
<b>Eigenvalue: 2.64; Contribution to total variance: 10.54</b>						
<b>Total Eigenvalue: 12.36</b>						
<b>Total explained variance: 49.42</b>						

\*p < .01; \*\* Reverse item

It has been identified based on the findings presented in Table 1 that the item total correlations of the items in SSATT vary between .32 and .66 and that all items display a moderately significant correlation with the total. It was observed when the load values of the items in the scale were examined that the purpose/function dimension consisting of 12 items has a factor load varying between .57 and .77; that the factor loads for the items in the daily life dimension consisting of 8 items vary between .54 and .77 and finally that the items have factor loads varying between .62 and .74 for the dysfunctional approach dimension comprised of 5 items. Based on the common factor loads in the scale, values were attained between .36 and .65. It was illustrated when the eigenvalues and the explained variance percentages of the sub-dimensions were examined that the purpose/function sub-dimension has an eigenvalue of 5.89 and a variance of 23.55 %; that the daily life sub-dimension has an eigenvalue of 3.83 and a variance of 15.33 % whereas the dysfunctional approach sub-dimension has an eigenvalue of 2.64 and a variance value of 10.54 %. It can be seen that the total eigenvalue of the scale is 12.36 and that the explained total variance is 49.42 %.

### Confirmatory Factor Analysis (CFA)

CFA was conducted on a new study group of 204 individuals in order to test whether the 25 item SSATT obtained as a result of EFA can be verified with a different sample group or not. Item



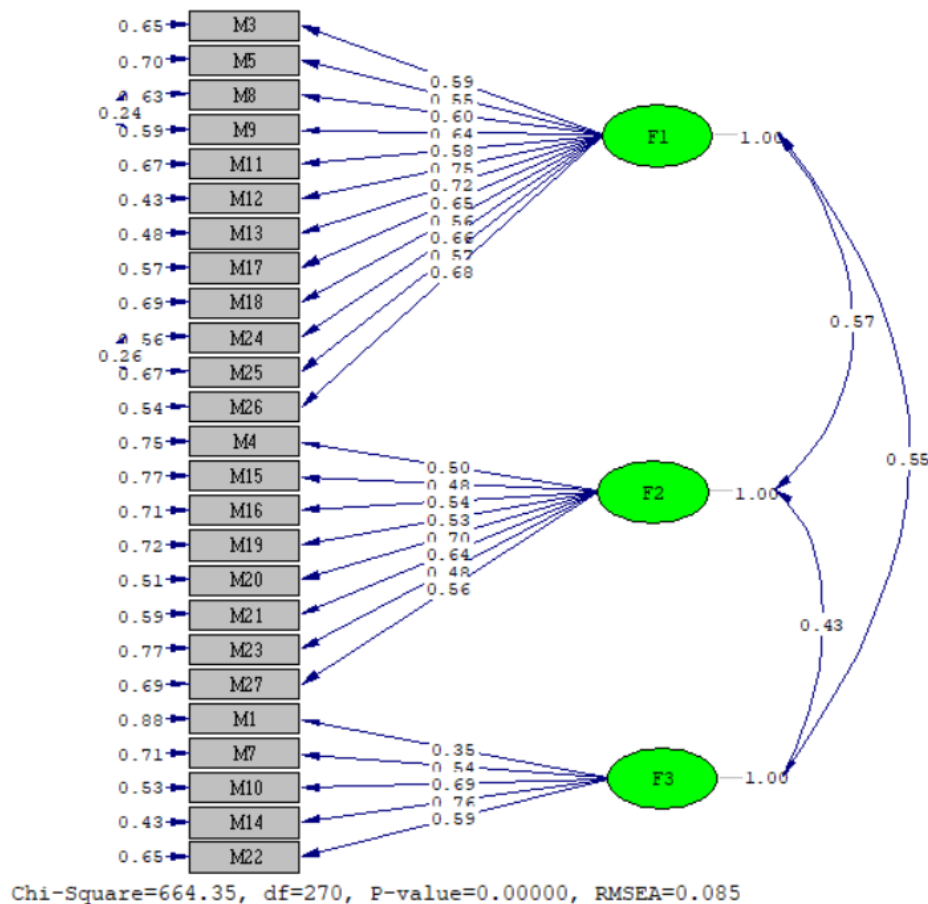
factor loads, goodness of fit and t values were considered as references for the assessment of the CFA results via Maximum Likelihood method. Table 2 presents the goodness of fit values used in the present study, the respective cut off points for these values and the goodness of fit values obtained from SSATT.

**Table 2 The fit values of the suggested model and the standard fit criteria**

Goodness of fit statistics	Acceptable	Estimated Model	Result
<sup>7</sup> $\chi^2$ /sd	$\chi^2$ /sd $\leq 5$	2,46	Accept
<sup>1,2,6</sup> CFI	CFI > .90	.92	Accept
<sup>1,2,6</sup> NNFI	NNFI > .90	.91	Accept
<sup>3,4</sup> RMSEA	.08 < RMSEA $\leq$ .10	.085	Accept
<sup>3,4</sup> SRMR	.05 < SRMR $\leq$ .10	.85	Accept
<sup>3</sup> GFI	.85 $\leq$ GFI < .95	.79	Reject

<sup>1</sup>Byrne, 2010; <sup>2</sup>Ullman, 2001; <sup>3</sup>Çelik & Yılmaz, 2013; <sup>4</sup>Kline, 2005; <sup>5</sup>Meydan & Şeşen, 2011; <sup>6</sup>Hu & Bentler, 1999; <sup>7</sup>Şimşek, 2007

As can be seen from Table 2, five out of the six goodness of fit values examined as part of the confirmatory factor analysis conducted on SSATT were in the acceptable reference interval. Furthermore, the goodness of fit values in Table 2 are those obtained as a result of the modification between the error terms of items 8-9 and items 24-25 in the purpose/function sub-dimension. In addition to the goodness of fit values, standard path coefficients for each item in the scale can be examined together with the t values that evaluate the significance of these paths. Figure 3 presents the correlations between the sub-dimensions and the standardized path coefficients obtained as a result of the analysis.



**Figure 3. The path diagram of SSATT**

As can be seen in Figure 3, the standardized path coefficients for the items in their dimension vary between .55 and .75 for the purpose/function dimension; .48 and .70 for the daily life dimension, .35 and .76 for the dysfunctional approach dimension. Moreover, it was also observed that the t values for the items in their respective factors vary between 5.51 to 12.11 and that all items make a statistically significant contribution to the model ( $p < .01$ ).

### Criterion validity

The criterion validity of SSATT was examined with regard to its relations with the Reading Anxiety Scale (RAS) for those learning Turkish as a foreign language. Table 3 presents the related correlation values.

**Table 3 The relationship of SSATT sub dimension and RAS and descriptive statistic**

	1	2	3	4	M	Ss
1. Purpose/function	-				52.40	6.62
2. Daily life	.47*	-			28.74	5.11
3. Dysfunctional approach	.38*	.24*	-		19.07	3.64
4. RAS	-.02	-.16**	-.60*	-	46.89	11.62

RAS: Reading Anxiety Scale \*  $p < .01$ ; \*\*  $p < .05$

As can be seen from Table 3, there is a statistically significant correlation between the purpose/function sub-dimension of the scale and the daily life sub-dimension at a level of .47 ( $p < .01$ ); similarly a statistically significant correlation at a level of .38 ( $p < .01$ ) was also observed between purpose/function and dysfunctional approach and finally a statistically significant correlation at a level of .24 ( $p < .01$ ) was observed between daily life and dysfunctional approach. While a correlation was not identified between the reading anxiety scale (RAS) scores for those learning Turkish as a foreign language and the SSATT and its sub-dimensions,  $r = -.02$  ( $p > .05$ ), a statistically significant correlation at a low level ( $r = -.16$ ;  $p < .05$ ) was observed between RAS and daily life sub-dimension and a moderate statistically significant correlation ( $r = -.60$ ;  $p < .01$ ) was present with the dysfunctional approach sub-dimension.

### Findings on reliability

Reliability studies for SSATT were conducted using Cronbach's Alfa, Spearman-Brown split-half test methods. Table 4 presents the values for the reliability analysis of the scale.

**Table 4. SSATT' Cronbach's Alfa and Spearman-Brown Split-half coefficient**

	Alfa	Split-half
1. Purpose/function	.90	.86
2. Daily life	.83	.82
3. Dysfunctional approach	.76	.74

As put forth in Table 4, the Cronbach's Alfa internal consistency values of the scale vary between .76 to .90 on the basis of its sub-dimensions, while the Spearman-Brown split-half test analysis results vary between .74 to .86.

### Standardization of the scale implementation

A directive with information on how to fill the scale, the objective of the study, data confidentiality and participant voluntariness was provided to the students prior to the implementation of SSATT aiming to measure the attitudes on learning Turkish of the Syrian university students continuing their education in Turkey. The scale was scored as a five-point Likert type scale with

“strongly disagree (1), “disagree” (2), “little agree” (3), “Agree” (4), “strongly agree (5)”. The five items (1, 7, 10, 14, 22) in the dysfunctional approach sub-dimension of the scale were scored reversely and it is suggested to rotate the scores of these items prior to the analysis. The scale has a total of 25 items with 12 items (3,5,8,9,11,12,13,17,18,24,25,26) in the purpose/function sub-dimension and eight items (4,15,16,19,20,21,23,27) in the daily life sub-dimension. An increase in the dysfunctional approach sub-dimension score following the reverse scoring conducted with the purpose/function and daily life sub-dimensions is an indication of positive attitude, whereas a decrease in the score is an indication of negative attitude.

## DISCUSSION AND CONCLUSION

Study group size is one of the most important parameters when conducting factor analysis. At this point, it is quite difficult to indicate the number of elements in the study group and to put forth precise criteria regarding the calculation of this number. Even though there are different opinions on the number of individuals in the study group, Tabachnick and Fidell (2015) specify that 300 and above is a good sample size. In addition, Kline (2005) states that 100-200 is “moderate” size for factor analysis and that measurements including a study group size of above 200 reflects a “large” study group. Ho (2006) points out that the sample group should not decrease to below 100 in factor analysis studies and that each indicator / observation ratio should exceed 1/5. While the analysis of the 45 item preliminary form for EFA was conducted with 285 people, CFA for the 25 item final form was carried out using data collected from 204 individuals. It can be concluded based on the sample group sufficiency criteria that the sample group size for EFA and CFA is sufficient in the present study.

The KMO value assessing the suitability of the study data for EFA indicates perfection as it approaches the value of 1 and weakness as it approaches zero; it is also indicated that values of KMO above .6 are sufficient for study groups with 250 people and above (Field, 2009). Statistically significant test results for Bartlett sphericity examining the correlations between variables are accepted as an indication to the suitability of the data matrix and in addition to its normality as well (Büyüköztürk, 2010; Çokluk et al., 2010). The KMO (.91) and Bartlett sphericity test values ( $X^2 = 6123.41$ ;  $p < .01$ ) obtained in the present study shown that the data set is suitable for EFA. Furthermore, skewness and kurtosis values ranging between -1 and +1 also an indication of normal distribution for the data (Leech et al., 2005) while the fact that there is no correlation between the variables above .85 (Kline, 2005) be considered as an indication that there is no multicollinearity issue.

Exploratory factor analysis (EFA) is a statistical analysis performed to discover the relations between variables (Pallant, 2016) and for identifying which variables are relatively independent from the others in order to reduce the number of variables (Tabachnick and Fidell, 2015). The criteria frequently used in EFA for deciding on the number of factors are having an eigenvalue of above 1.0 (Büyüköztürk, 2010; Field, 2009) and/or a contribution to total variance exceeding 5 % (Can, 2019). In addition, it is also indicated that the point at which the slope becomes horizontal in the Cattell scree test can be considered as a criterion for determining the number of factors when there are a lot of factors with eigenvalues above 1.0 (Pallant, 2016). It was identified based on the aforementioned criteria that SSATT has a three factor structure. Since majority of the items are collected under the most important factors when the factor structure first appears in the exploratory factor analysis, it becomes quite difficult to interpret the structure thus making rotation a necessity to overcome this difficulty (Can, 2019). The second decision that should be given after deciding to perform the rotation procedure is whether the rotation should be vertical or oblique. Büyüköztürk (2002) holds the opinion that vertical rotation should be preferred if the researcher is concerned with generalizability and that the results obtained from vertical rotation and oblique rotation do not differ significantly. Whereas Tavşancıl (2002) reports that varimax is the most frequently preferred method among the vertical rotation methods. Based on these inferences, the analyses were limited with three factors for identifying the factor structure of SSATT and varimax vertical rotation method was utilized.

It is desired in factor analysis studies that the load of an item in its respective factor is as high as possible. At this point, it is suggested that the lower limit for the item load in the factor can be accepted as .33 (Ho, 2006) but that factor loads of .45 and above should be accepted as the cutoff point for the factor load whenever possible (Tabachnick & Fidell, 2015). It is desired that the items are not overlapped meaning that the item does not have low load values in other factors while it has a high load factor in its principal factor (Çokluk et al., 2010). It is suggested that there should be a minimum distance of .10 between the load of the item in its principal factor and its load in other factors (Büyüköztürk, 2010), however it is also suggested to have a minimum difference of .15 if excluding items from the measurement tool will not disrupt the structure (Can, 2019). Within the framework of the criteria identified for item exclusion, nine items with a load value difference in two factors of less than .15 along with eight items with load values of less than .50 in their principal factors were excluded from the scale. Finally, two more items were also excluded from the scale since they displayed a low correlation with the total and thus obtaining the final version of the scale including a total of 25 items. It was observed after completing the item exclusion procedure that the three factor structure explains 49.42 % of the total variance. It can be stated that sufficient variance values have been reached for the present study based on the consideration that the variance explained between 40 % - 60 % is sufficient for structures with multiple factors (Büyüköztürk, 2010; Tavşancıl, 2002). Support was received from academics working in the field of Turkish education in order to name the factors after identifying the items that will remain in the scale. The items in the first factor focus mostly on why Syrian university students use Turkish as well as their opinions on the functions of Turkish thereby this item was named as “purpose/function”. Since the second factor focused on the use of Turkish in daily life it was named as “daily life”, while the third factor was named as “dysfunctional approach” because it includes items with negative approaches towards Turkish.

CFA was conducted as a separate analysis within the scope of the validity studies which is the statistical analysis of whether a pre-determined theoretical structure or standard measurement tool is verified by the present data (Byrne, 2010; Kline, 2005; Şimşek, 2007). At this point, CFA can be considered as the body of analyses for identifying the extent to which an already existing theoretical structure can be verified in the light of new data (Byrne, 2010; Kline, 2005; Meydan and Şeşen, 2011; Ullman, 2001). Goodness of fit values are among the most important criteria that provide an idea on whether a model has been verified at an acceptable level within the context of model data fit in CFA studies (Şimşek, 2007). In addition to the aforementioned importance, there are debates on the goodness of fit values evaluating the different reference points as well as debates on which data should be used in studies. At this point, Ullman (2001) states that different goodness of fit values mostly lead the researcher to similar results indicating that the goodness of fit values to be used mostly depend on personal preferences. While the values of  $X^2/sd$ , CFI, NNFI, RMSEA and SRMR put forth that the model is verified (Byrne, 2010; Çelik & Yılmaz, 2013; Hu & Bentler, 1999; Kline, 2005; Meydan & Şeşen, 2011; Şimşek, 2007; Ullman, 2001) as a result of the CFA analysis conducted, it was also illustrated that the GFI value of .79 was below the acceptable level. In this scope, even though it is examined within the scope of goodness of fit values in the present study, since GFI is indicated as a weak goodness of fit value for the assessment of the goodness of fit (Hu & Bentler, 1999) the fact that it was below acceptable limits was not considered as an obstacle for the verification of the scale.

Finally, criterion validity was examined within the scope of validity studies for SSATT. Accordingly, the correlation between the Reading Anxiety Scale (RAS) for those learning Turkish as a foreign language and SSATT scores were examined and while a statistically significant correlation could not be identified between the purpose/function sub-dimension and RAS, a low correlation was observed between daily life and RAS, while a moderate and statistically significant correlation was identified between dysfunctional approach and RAS. At this point, the moderate level of correlation between the dysfunctional approach assessing negative approaches to Turkish and the anxiety related with reading in Turkish may be taken as proof of criterion validity.

The Cronbach Alfa and Spearman-Brown split half coefficient calculated within the scope of reliability studies assess the internal consistency of the items of the scale, or in other words the homogeneity between the items (Büyüköztürk, 2010; Can, 2019; Leech et al., 2005). Even though

there are debates in the related literature on the value of internal consistency, it is generally indicated that reliability increases as the values approach 1.00 and that values of .70 and above are acceptable (Büyüköztürk, 2010; Can, 2019; Leech et al., 2005). The fact that the values obtained as a result of the reliability analyses in the present study vary between .74 and .90 may be presented as proof that the measurement tool may make reliable measurements.

The findings obtained as a result of the present study point out that SSATT is a valid and reliable tool for measuring the attitudes towards Turkish of the Syrian university students. It was observed that the aforementioned scale can be utilized by researchers who will conduct studies on the attitudes towards Turkish of Syrian university students.

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## **Determining The Cognitive Levels of Preservice Science Teacher in Daily-life Problems Prepared on The Density Subject**

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### **Abstract**

The aim of this study is to evaluate the cognitive levels of pre-service science teachers according to Bloom's Taxonomy about "density" using daily life problems. The case study design was used in the study. This study was carried out with 45 pre-service teachers. In order to identify the cognitive levels of pre-service teachers about the density subject, a cognitive level test have been used created in line with the Bloom's Taxonomy, formed with the purpose of identifying their views about daily life problems requiring higher level thinking skills. When the cognitive levels of pre-service teachers have been analysed, it has been found out that all the pre-service teachers have completed the knowledge, comprehension and application levels while 20 of them have got through analysis level. 13 of them have passed into the synthesis level which requires a higher level thinking skill while 9 of them have reached the last stage, 'evaluation'. According to the findings, in order to progress within the cognitive thinking levels while learning 'density' subject, students should overcome the mathematical deficiencies and concentrate more on daily life problems which require a higher-level thinking skill.

**Keywords:** Cognitive Levels, Daily-Life problems, Density, Pre-service Science Teacher.

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## INTRODUCTION

In today's scientific age, one of the purpose of science classes taught in schools is giving students the ability of using their acquired knowledge in their daily life rather than trying to reach it. Besides, the role of teachers is explained in the curriculum as “developing students towards the levels of higher-level thinking, product development, making invention and innovation by guiding them to be able to integrate science, technology, engineering and mathematics” (Ministry of National Education (MoNE), 2018, p.10). Since the role of teachers in giving desirable skills to students is of much importance, it is utmost necessity to develop the pedagogical content knowledge and expertise of teachers by attaching the necessary attention to teacher training (Hashweh, 2016). Cachapuz and Paixao (2002) propose student-centered classes related to daily life, offering teaching strategies that force Pre-service teachers to higher-level thinking and encourage questions. Therefore, Pre-service teachers' skills related to high level cognitive processes need to be improved. Along with obtaining skills and abilities related to higher-level cognitive processes, students will be able to solve new problems arising from different situations and use process skills related to scientific method (Önder & Hürkan, 2012). Higher-level thinking is described as the ability of realising and controlling individual mental processes and re-organising and improving it when necessary for quality learning (Güneş, 2012). According to Bloom's Taxonomy, the levels of cognitive development has been described in six levels, sorted from simple to complex, and all six levels are as follows: knowledge, comprehension, application, analysis, synthesis, and evaluation. According to this taxonomy, knowledge, comprehension, and application levels are low-level thinking skills while the latter three, analysis, synthesis, and evaluation, are higher-level thinking skills (Şahinel, 2002). Therefore, according to this difference, individuals do not need to use much of their cognitive skills in the first three stages while the latter three are those that need to be used to reach and test one's own knowledge, comprehend the problem and look for a solution. Hence, while assessing the student success, teachers should not only ask questions evaluating the same level of learning but also use questions assessing different levels of learning (Gündüz, 2009).

Questions can be prepared for different levels of learning from daily life. It is provided by this way that science class do not consist of a pile of knowledge that needs to memorised, instead, it includes the very basic knowledge to be used in daily life (Yıldırım & Maşeroğlu, 2016). With the changes made in the science curriculum in 2018, it is aimed to provide students with the necessary knowledge and skills by providing exercises that will enable them to use science in their daily lives (Ministry of National Education (MoNE), 2018). In order to examine how the cognitive levels of the students change, the subject of density, which is constantly encountered during their studentship, can be examined. Mass, volume, and density are basic concepts in the science curriculum taught at all levels of education (Martínez-Borreguero, Naranjo-Correa, Cañada, Gómez & Martín, 2018). Density is a complex concept and therefore difficult for students to understand. This difficulty can be associated with the abstract nature of density as it must be understood by working with ratios or unit proportions. It cannot be observed directly as a clear property of matter, but instead must be calculated by first finding the mass and volume of the object and then dividing the mass by volume. Therefore, it is defined as the mass of an object per unit volume (Almuntasheri, Gillies & Wright, 2016). Although students are successful in calculating density by dividing mass and volume numbers when given numbers, they have difficulty understanding what this ratio means (Dawkins, Dickerson, McKinney & Butler, 2008; Kiray & Simsek, 2020). The subject of 'density', which has been included in science lessons since the sixth grade in Turkey, is also included in the curriculum of high schools and universities. According to Karakaş (2012), teaching practices made by associating the concept of density with daily life situations contribute to the professional development practices of science teachers. Moreover, teaching in this way can help Pre-service science teachers train in the future to teach their students a sound mind and perform skilfully.

The density subject is taught to Pre-service teachers in their field knowledge and teaching classes and they are required to develop themselves in analysis, synthesis and evaluation stages which necessitate higher level thinking skills. Allen and Taner (2012) have found out that the questions used to improve thinking skills during learning and teaching period are of importance in terms of both

assessing the student learning and affecting student thinking. According to Austin (2010), forcing students to think and solve scientific density problems results in more interesting and realistic science education and effective teaching on learning. Besides, Karamustafaoğlu, Sevim, Karamustafaoğlu and Çepni (2003) have indicated that using questions assessing the extent of learning from different levels helps students gain higher level thinking skills. Accordingly, students can think at the analysis, synthesis and evaluation levels by being asked their learning level at different stages.

The purpose of this study is to evaluate the cognitive levels of Pre-service science teachers with regard to the Bloom's Taxonomy on the 'density' subject which exists in the curriculum of universities, as well. In accordance with this purpose, problems related to the density subject have been used which, instead of memorising, requires transferring the learnt knowledge into daily-life. In line with this purpose, the sub-questions below have been identified:

1. What is the cognitive levels of Pre-service teachers related to 'density' subject?
2. What do the students think about daily-life problems requiring higher-level thinking skills?

## **METHOD**

Of the qualitative research methods, case study method has been utilised within this study which examines the cognitive levels of Pre-service science teachers in terms of Bloom's Taxonomy in the 'density' subject. Since the density subject has been deeply analysed in terms of cognitive levels of Bloom's Taxonomy, this study has been assumed as a case study.

### **Participants**

This research has been carried out on 45 first grade students, coded as 'S1, S2,...S45', attending Science Teaching Department of the Faculty of Education at a state university located. The study has been carried out with the students attending General Chemistry I course.

### **Data collection tools**

In order to identify the cognitive levels of Pre-service teachers about the density subject, a cognitive level test created in line with the Bloom's Taxonomy and interview questions, formed with the purpose of identifying their views about daily life problems requiring higher level thinking skill, have been used.

### ***The cognitive level test prepared in accordance with Bloom's Taxonomy***

The cognitive level test about the density subject used as the data collecting tool has been created after an extended literature review and applying for expert's views (science education, mathematics education specialist). The level test prepared by considering the knowledge, comprehension, application, analysis, synthesis and evaluation stages of Bloom's Taxonomy has been given in Table 1 below.

**Table 1. Pre-test success score results of the cognitive level test**

Stage	Questions
Knowledge	The density of ethylene glycol at 20°C is 1.11g/mL. What do you understand from this information? (The mass of 1mL solution is 1.11 gram).
Comprehension	What is the mass of 452mL of ethylene glycol in terms of grams?
Application	What is the mass of 18.6 L of ethylene glycol in terms of kilograms? What is the volume of 23.9 kg of ethylene glycol in terms of litres?
Analysis	How can you calculate the mass of cylindrical stainless steel having 18.24 cm height and 1.88 cm radius? The density is 7750 g/mm <sup>3</sup> . The mass of a wooden log having dimensions of 1.08 m, 5.1 cm and 0.62 dm is 2.52 kg. Knowing that it is a rectangular prism, what is the density in grams of the wooden log?
Synthesis	The mass of a 1 cm <sup>3</sup> diamond is 3.5 gr or 17.5 carats. The size of world famous Kaşıkçı diamond is 86/17.5 = 4.91 cm <sup>3</sup> . What can be said about the density of this diamond?
Evaluation	Evaluate by comparing the solution stages of daily life problems and routine problems (in course books).

The questions related to identifying lower-level cognitive skills are at the knowledge level (an expression about knowing the dependent variables of density concept [mass, volume and density]), comprehension level [placement within formula, making calculations, use of data], and application level [two questions requiring measurement of mass and calculating volume through calculating density formula; converting unit rates into required units (kilograms to grams, litres to millilitres)] (Table 1).

However, the questions related to the analysis level of the higher-level cognitive skills test prepared in accordance with the Bloom's Taxonomy aims to find out, through questions related to a cylindrical and a rectangular prism, the success level of students in;

1. Calculating the volume and density of the matter by considering its geometric shape,
2. Calculating the density of daily life objects,
3. Analysing the relationship between density and mass.

For the synthesis level of the higher level cognitive skills test, a screenshot from the news about Kaşıkçı diamond has been shown them (Fig. 1).



"The frame of Kaşıkçı Diamonds contains 49 brilliant stones and by this means, the diamond is like a full moon among the stars in the night sky. The mass of 1 cm<sup>3</sup> diamond is 3.5 grams or 17.5 carats. The size of Kaşıkçı diamond is 86/17.5 = 4.91 cm<sup>3</sup>."

(<https://www.arkeolojikhaber.com/haber-kasikci-elmasi-kasikci-elmasi-efsaneleri-23398/>)

**Figure 1. The screenshot of the news about synthesis question**

It is aimed to find out the cognitive thinking skills of Pre-service teachers about the density subject within the synthesis level and a problem has been created for them in order to identify whether they are able to interpret the results by correlating the data they encounter in their daily life. Within the evaluation level, they have been asked to assess the solution of the problem given in synthesis level.

### ***Interview questions***

The questions below have been used at the end of the application to find out the views of Pre-service students about daily life problems requiring higher-level thinking skills

Have you had difficulty in solving the daily life problems?

1. If your answer is “yes”, please write the possible reasons.
2. If your answer is “no”, please write how you have used the given data.

### **Data analysis**

A cognitive level test has been applied to Pre-service science teachers and the results have been evaluated. Two researchers have descriptively analysed the answers of the questions prepared in accordance with the cognitive thinking levels of Bloom’s Taxonomy. After this analysis, the percentages and frequencies of correct answers of respective levels have been calculated while content analysis has been applied to answers of interview questions. In order to be coded, all the data has been divided into meaningful sections and all the sections have been given a name. Then, the data has been coded and 4 themes have been created using these codes. These codes and themes have been systematically transformed into tables and some expressions of Pre-service teachers have been given as quotations. To determine the coding reliability for themes. The codes were determined separately by the two researchers and then the reliability level of the code analysis was determined with the formula of  $\text{agreements} / (\text{agreements} + \text{disagreements}) \times 100$  (Miles & Huberman, 1994). The reliability for two the coders is found to be approximately 96%.

## **FINDINGS**

The findings of the study have been given under the titles of ‘cognitive levels of Pre-service teachers in the density subject’ and ‘views of Pre-service teachers about daily life problems requiring higher-level thinking skills’.

### **Cognitive levels of Pre-service teachers in density subject**

A cognitive skills test was applied to Pre-service science teachers and the results was evaluated. The percentages and frequencies of questions prepared in accordance with the levels of Bloom’s Taxonomy have been given in Table 2.

**Table 2. Cognitive Levels of Pre-service Science Teachers**

Level	f	%
Knowledge	45	100
Comprehension	45	100
Application	45	100
Analysis	42	93.33
Synthesis	22	48.88
Evaluation	9	20

In Table 2, it is observed that while all the students have correctly answered the questions in knowledge, comprehension and application levels, the percentage of correct answers in analysis, synthesis and evaluation levels are 93.33%, 48.88%, and 20%, respectively. It is observed that all the

Pre-service teachers have completed the knowledge, comprehension and application levels. It has been found out that they know such dependent variables of density subject as mass and volume at the knowledge level and they correctly use the given data by properly placing it within formula and carrying out mathematical calculations at the comprehension level. At the application level, it has been determined that they are able to convert units into another one (kilograms to grams, litres to millilitres) and using them within the formula, calculating mass and volume through the formula, interpreting the density problem. It is found out that 93.33% of Pre-service teachers have correctly solved the density problems at the analysis level. They are required to calculate the volume and mass of matters by considering their geometric shapes, use the relationship between the density and mass, make an analysis by using their knowledge to calculate the density of objects and matters they encounter in their daily life. Two questions have been used at the analysis level and both questions require them to comprehend the geometric shape and calculate its volume and mass.

**Figure 2. The solution of S35 at the analysis level**

Fig. 2 shows the Pre-service teacher coded S35 that have reached the analysis level but haven't been able to find the correct solution. The student have tried to make some calculations while trying to find the solution but have written that he/she doesn't know the formula of rectangular prism. The same student has not been able to reach the correct result since he/she has wrongly calculated the volume of geometric shape in the second question.

48.88% of the students have correctly solved the problem of synthesis level. The aim of synthesis level question is to examine whether the student could use extraordinary data by making a correlation between them to reach the solution and decide whether the given data is useful or not while trying to find the solution of the problem. When Table 2 is examined, it is observed that there is a sharp decrease from 93.33% to 48.88% while passing to synthesis level from analysis level and this fact indicates that Pre-service teachers have difficulty in using the data while solving daily life problems and interpreting the result.

Since density is the mass of unit volume, the density of the diamond is 3.5 gr/cm<sup>3</sup> and this is equal to 17.5 carats. However, I couldn't understand what it means

**Figure 3. The solution of S19 at the synthesis level**

The data in Fig. 3 indicates that S19 doesn't have an idea about how the data from daily life news could be used and by writing "Since density is the mass of unit volume, the density of the diamond is 3.5 gr/cm<sup>3</sup> and this is equal to 17.5 carats. However, I couldn't understand what it means," it is understood that the student has failed at the synthesis level.

Handwritten student work for S23 showing calculations for density and mass. The work includes the formula  $d = \frac{m}{V}$  and calculations for density and mass.

Figure 4. The solution of S23 at synthesis level

The solution given in Fig. 4 demonstrates that S23 has correctly reached the result. Properly completing the synthesis level, the student has not made any evaluation although he/she is required to interpret the result at the evaluation level.

According to the data given in Table 2, 20% of the students has correctly interpreted the results. While 22 students has correctly answered the question in the synthesis level, 13 of them has not made any interpretation at the evaluation level. Pre-service teachers are expected to express their views about and evaluate phenomena and daily life problems at this level.

Handwritten student work for S44 explaining density and buoyancy. The text discusses the relationship between density, mass, and volume, and how density remains constant regardless of the size of the object.

"It is known that two battens at the same size does not submerge when thrown into water. If the size of battens is changed, the situations remains the same since the density is a fixed feature. The same rule applies to diamonds, as well. Their density remains the same no matter how much of their size is changed."

Figure 5. The solution of S44 at evaluation level

In Figure 5, it is observed that S44 has tried to explain the problem through another example by making the necessary evaluation required from them at the higher cognitive level.

Handwritten student work for S38 showing calculations for density and mass. The work includes the formula  $d = \frac{m}{V}$  and calculations for density and mass.

"Gram and carat are the units used to express the size of diamonds. The density of diamonds does never change no matter how much of their size is changed. Density is a peculiar feature and is only affected in terms of measurable results by high pressure and high temperature. We can demonstrate through digital data that density does not change. If these data have not been provided, then, in order to calculate the mass, the matter is thrown into water and overflow or remaining water level gives us the necessary knowledge about the volume of the matter. The matter is weighed then to find its mass and the found figure is placed into the proper place within  $D=m/v$  formula."

Figure 6. The evaluation of S38

Fig. 6 shows the correct solution of S38 where he/she has commented on the news and supported his/her idea scientifically by establishing a relationship between the current knowledge and the problem sentence. It is observed that the student has reached the knowledge, tested his/her own knowledge on the subject, understood the problem and come up with different solutions at the higher-level skills.

### *Views of Pre-service teachers about daily life problems requiring higher-level thinking skills*

The codes and themes obtained after content analysis which has been applied to the data from answers to interview questions created with the aim of finding the views of Pre-service teachers about daily life problems requiring higher-level thinking skills have been presented in Table 3. Apart from this information, some other expressions of Pre-service teachers have also been given to support the themes.

**Table 3. Codes and Themes obtained from the views of Pre-service teachers**

CODE	STUDENT	Frequency (f)	Theme
Being realistic	S9	1	<b>Interesting</b>
Incentive to think	S2, S7, S8, S33, S44	5	
Permanent learning	S2, S8, S10, S13, S20, S22	6	
Keeping away from memorising	S2, S19	2	
Being instructive	S8, S10	2	
Relationship between theoretical knowledge and daily life	S28	1	
Improve analysis skills	S33	1	
<b>Total</b>		<b>18</b>	
Thinking oriented	S10, S44	2	<b>Hard</b>
Requiring comment	S8, S11, S12, S19, S27, S29	6	
Being peculiar	S7, S13, S17, S18, S19, S20, S22, S25	8	
Commenting the result	S7, S14, S15	3	
Identifying necessary data	S6, S21, S23, S29, S30	5	
Unit conversion	S31, S45	2	
Analysis of question	S13, S21, S22, S23	4	
<b>Total</b>		<b>30</b>	
Commenting on the knowledge	S27	1	<b>Easy</b>
Relationship with daily life	S11, S26, S27	3	
Evaluating the result	S27	1	
Envisioning	S18	1	
Answer supporting data	S25, S26	2	
<b>Total</b>		<b>8</b>	
Non-routine problem	S13, S18	2	<b>Extraordinary</b>
Having redundant data	S16	1	
Identifying new concepts within question	S16, S17, S18, S22, S23	5	
<b>Total</b>		<b>8</b>	

In Table 3, 30 of the Pre-service teachers have had difficulty in solving daily life problems. The common reason of this difficulty is that they, daily life problems, have an extraordinary nature (f:8). Other expressions of Pre-service teachers include ‘requiring comment (f:6), identifying necessary data (f:5), evaluating the result (f:3), thinking oriented (f:2) and analysis of the question (f:4)’. Below are the comments of some Pre-service teachers:

*S7: ...I'm confused since the problem includes a regular density question and the Kaşıkçı diamond...*

*S16: The information given about carat has puzzled me. It has made the question more difficult...*

According to the data given in Table 2, the Pre-service teachers have frequently (40%) indicated that the use of daily life problems has given the question an interesting feature. The most common view under this title has been that use of daily life problems has yielded permanent learning (f:6). Some comments of Pre-service teachers related to this information has provided below:

*S13: ...I will remember these questions more easily. Besides they are fun to engage...*

*S20: ...I think I've permanently learnt the subject...*

*S3: ...Rather than applying in daily life, we use the knowledge we learn from course books only in exams. Trying to solve daily life problems make us think deeply. This way of learning is more permanent and let us use the knowledge in our daily lives...*

The Pre-service teacher coded S3 has not made it through synthesis and evaluation levels. The reason of this failure could be that the student is able to use the knowledge only in exams by memorising and then forgetting it.

The comments of Pre-service teachers about daily life problems requiring higher-level thinking skills within the theme of 'being interesting' are that being realistic (f:1), incentive to think (f:5), keeping away from memorising (f:2), being instructive (f:2), relationship between theoretical knowledge and daily life (f:1), and improving analysis skills (f:1). The comment of one of the Pre-service teachers is provided below:

*S8: ...I think that this question requires commenting on and deep-thinking...*

According to the data given in Table 2, it is observed that 8 of Pre-service teachers are of the opinion that the use of daily life problems requiring higher-level thinking skills is extraordinary. The most common view (f:5) under this theme is identifying new concepts within the question. Other views following this comment are non-routine problem (f:2) and redundant data (f:1). One of the comments is given below:

*S16: ...the expression of 17.5 carats has confused me. I haven't used all the given data. The information about carat has given only to puzzle the things...*

In Table 2 indicates 8 of Pre-service teachers think that it is easy to use daily life problems. The codes obtained within 'easy' theme are that relationship with daily life (f:3), supporting the answer (f:2), commenting on the knowledge (f:1), evaluating the result (f:1), and envisioning (f:1). When the answers of Pre-service teachers given to the questions requiring higher-level thinking skills are examined, it is observed that they are on the evaluation stage.

## DISCUSSION AND CONCLUSION

When the cognitive levels of Pre-service teachers about 'density' subject were analysed, it was observed that all of them have thoroughly completed the knowledge, comprehension and application levels while 93.33% of them have completed the analysis level. The reason of this result could be that the 'density' subject has repeatedly taught them throughout their education. According to the results, it could be stated that all the Pre-service teachers have correctly configured the density subject as the mass of unit volume since all of them are at the application level. Since they have calculated the mass and volume by using the relationship between the variables within the density formula with 100% success, it could be stated that Pre-service teachers have established the necessary relationship between the variables of  $d=m/V$  formula. Kalın and Arıkil (2010) have indicated that rather than memorising formulae, it is of much importance to know what they stand for and how to use them. In this sense, it has been determined that the Pre-service teachers who will teach the density concept in following years know the meaning of density formula and could use it while solving problems. When the solutions of failed students at the analysis level have been examined, it has been observed that



although they have successfully comprehended the geometrical shapes, they couldn't calculate the density of solids because of improper use of the formula. It could be stated that they failed to complete the analysis level due to the lack of mathematical knowledge (Austin, 2010; Dawkins et al., 2008; Hitt, 2005; Hashweh, 2016). In this case, 42 of Pre-service teachers have properly calculated the density of solids by correctly finding the volume of geometrical shapes and accordingly, they have been able to reach the synthesis level by completing the analysis level. The reason of this success could be explained by the fact that the density subject exists in the curriculum acquisitions of the Ministry of Education and is repeated in a volute way (MoNE 2013; MoNE 2018).

It is observed that 48.88% of Pre-service teachers have successfully completed the synthesis level. The reason of this decline from analysis level to synthesis level could be that they do not know how to use the data, density is a unital rate, and the question contains unfamiliar concepts. According to the findings obtained from the solutions at the synthesis level, it has been identified that Pre-service teachers have had difficulty in using the data and evaluating the result while solving daily life problems which they do not encounter in course books. Even though they have correctly placed the given data within  $d=m/V$  formula in earlier stages, they have not been able to make a correlation between extraordinary data obtained from daily life news while they couldn't identify necessary data to solve the problem and couldn't convert grams into carats in the synthesis level. Although Dawkins, Dickerson, McKinney and Butler (2008) pre-service teachers developed an understanding of density, it was stated that most of them had difficulty in connecting them to mathematical relationships. Pekdağ, Azizoğlu, Topal, Ağalar and Oran (2013) have identified that while students succeed in chemistry class, they have serious difficulty in using and transferring the knowledge into their daily life. Ürey and Cerrah (2015) have determined that although Pre-service primary school teachers are able to describe the concepts used in science, they have great difficulty in finding the equivalents of these concepts and using them in their daily life (Ürey & Cerrah Özsevgeç, 2015). It could be stated according to the findings of the study that Pre-service science teachers have difficulty in passing through analysis level up to higher levels in density subject which has been taught from secondary school.

It has been determined that 20% of the Pre-service teachers are at the evaluation level, which equals to 9 students out of 45. It has been found out from their responses that they are able to make generalisation by using the amount of substance and volume, both are the variables of the density of substances (wooden log), that the density does not change depending on changing of (increasing of decreasing) substance amount and volume, and that the density is not affected unless pressure and temperature changes. The fact that Pre-service teachers have made generalisation by correlating the density of diamonds and that of Kaşıkçı diamond through the result they obtained at the synthesis level indicates they have gained higher-level thinking skills. When the solutions of Pre-service teachers at the evaluation level have been examined, it is observed that 36 of them have wrongly commented on the subject and as a result have not been able to make a proper evaluation. In order to succeed at the evaluation level, Pre-service teachers should make and comment on inferences affecting their whole life; however, it has been found out that they have had great difficulty in solving the questions at synthesis and evaluation levels. Pre-service teachers could be given lots of higher cognitive level questions in order for them to be able to solve and comment on these type of questions. Üner, Akkuş and Kormalı (2014) have indicated that questions at the higher-level cognitive skills are rarely used in the exams; students are generally able to answer the questions at the knowledge level; about half of them solves the questions at the application level and the questions in the chemistry course book are generally at the application level. Ayyıldız, Aydın and Nakiboğlu (2019) have found out that the comprehension level has the highest number of acquisitions in the curriculum while the synthesis and evaluation levels has the least number of acquisitions. Zorluoğlu, Kızılaslan and Sözbilir (2016) have determined that the curriculum should be enriched in terms of content through the acquisitions having metacognitive knowledge and creation skills in higher level classes. Earlier studies examining course books and examinations have revealed that students rarely come across questions about higher-level cognitive skills since the knowledge is usually measured at lower cognitive levels (Nakiboğlu & Yıldırım, 2011; Özmen & Karamustafaoğlu, 2006; Zorluoğlu, Güven & Korkmaz, 2017). Other studies suggest that students given lower cognitive level tests throughout their education years have difficulty

in solving higher cognitive level tests (Ayyıldız, Aydın & Nakiboğlu, 2019; Üner, Akkuş & Kormalı 2014). Students could be given the opportunity of coming across much more tests questioning higher-level cognitive skills in order to be able to solve and comment on these type of questions. Enrichment of science teachers' pedagogical content knowledge specific to the subject of density will facilitate teaching the subject to secondary school students (Hashweh, 2016). Since Pre-service teachers will transfer their knowledge into their students, it is of much importance for them to be equipped with knowledge to the greatest extent possible. Therefore, students enrolling in universities with such lower-level cognitive skills as comprehension and application should be supported with the contents that will improve their higher-level cognitive skills in terms of pedagogical knowledge. In addition, it is recommended that the questions in the exams measure the difficulties and skills (Upahi, Israel & Olorundare, 2017).

When the views of Pre-service teachers about daily life problems requiring higher-level thinking skills have been analysed, it could be stated that they find these questions “interesting” by thinking they are realistic about the density subject, encourage them to think, provide permanent learning by keeping them away memorising, are instructive and have them correlate theoretical knowledge with daily life. The fact that Pre-service teachers, even those who couldn't succeed in solving the questions requiring higher level thinking skills, show interest in these questions about daily life, that they think them as necessary and would like to deal with them more frequently is a very important result. Pre-service teachers could gain higher-level cognitive skills by being exposed to daily life questions more frequently requiring higher-level thinking skills within learning environments where density subject is being dealt. Within this context, articles from newspapers, information in the websites and scientific subjects within movies could be given as homework to students and their higher-level thinking skills are supported by this way.

According to the findings, almost half of the Pre-service teachers have indicated that questions in the synthesis and evaluation levels are thinking oriented and extraordinary; requires commenting and evaluating the result and identification of the necessary data. They have also stated that they tried to solve the question, have lack of knowledge in conversion of the units and lastly they had great ‘difficulty’ in solving the question. Due to these reasons, Pre-service teachers have not been able to answer the questions in synthesis and evaluation levels. The possible reasons of this failure could be the lack of pre-conditioned learning, allocating insufficient time for and putting less importance on developing of thinking skills, failure in determining the given and required data – the important steps of problem-solving – and giving insufficient time for non-routine problems (Dawkins, et. al., 2008; Hitt, 2005). The statements of Pre-service teachers give clues about the underachievement in reaching higher-level cognitive skills. Higher-level thinking in chemistry teaching requires conceptual understanding (Tsaparlis, 2020). Accordingly, conceptual learning is important in order to develop higher-order thinking skills in intensity teaching.

Some of the Pre-service teachers have found the questions measuring higher-level cognitive skills as extraordinary in that they contain non-routine problems, include redundant data and necessitate identifying new concepts. The fact that the Pre-service teachers have not encountered non-routine problems identified as ‘extraordinary’ could be the reason of this thought. According to earlier studies, it has been found out that non-routine problems have positive effect on developing higher-level thinking skills (Apino & Retnawati, 2017; Retnawati, Djidu, Kartianom, Apino & Anazifa, 2018). Besides, Saido, Siraj, Nordin and Amedy (2015) have determined that teachers should make use of proper teaching methods in order for students to actively participate in learning process with the aim of developing or improving higher-level cognitive skills. In this case, the effect of non-routine problems in reaching higher-level cognitive skills could be explored.

Another important inference from the statements of Pre-service teachers is that they have found the questions measuring higher-level thinking skills as ‘easy’ in that they require commenting on the knowledge, necessitate a correlation between daily life and theoretical knowledge and evaluating the result, and support the given answer. These views prove that it is not a coincidence that

the cognitive levels of Pre-service teachers related to density subject is at the evaluation level, which is the highest level skill within Bloom's Taxonomy.

It could be recommended that the lack of knowledge of students related to mathematical operations (unit rates, changes between variables, volumetric calculations of solids, conversions between unit rates) should be overcome in order for students to improve themselves within cognitive thinking skills while learning density subject.

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## **A Comparative Review of Articles on Education of Patriotism: A Thematic Analysis\***

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### **Abstract**

Patriotism is an important and well-accepted value in educational institutions. As a civic virtue, it has always been included in education/training programs. This study aims to compare research articles on teaching of patriotism that were conducted in the last 20 years. The document analysis method was employed in the study for this purpose. The data were collected through the international databases e.g. Wiley, Jstore, Elsevier, Taylor&Francis. 218 articles were found by searching the keywords “patriotism”, “patriotic education”, and “teaching of patriotism”. Upon initial analysis, it was decided that 110 articles would serve the purpose of this study. Content analysis technique was employed to reveal patterns of the selected articles. The number of articles published on patriotic education in each countries, the publication dates of these articles and the comparison of these articles according to countries, purposes, is presented in this study. The paper at hand shows that only some articles have a critical perspective on patriotism. Implications is made based on results.

**Keywords:** Patriotism, Patriotic Education, Social Studies, Citizenship Education

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## INTRODUCTION

Patriotism is included in the curricula of a considerable number of countries in the world. Especially as a civic virtue, attention is always given to patriotic education. In Turkey, since 1913 with a course named “Musahabbatı-ı Ahlakiye” (Keskin, 2008), the value of patriotism has always been one of the important objectives of social studies teaching. The importance that social studies teaching attributes to the value of patriotism is undoubtedly related to citizenship education because citizenship education is above all a process of developing a sense of belonging and patriotism enables a person to develop a psychological belonging to the country he lives in. This belonging becomes the basis of the rights and responsibilities that citizens are expected to undertake (Schumann, 2016).

Patriotic person identifies himself with the social groups around him and develops a loyalty to a larger group. This aspect of patriotism is particularly emphasized in the literature. Beader (2007) emphasized the sense of belonging and security that patriotism offers to the individual, while Bar-Tal (1993) drew attention to the dimension of feeling as a part of the group. Another important point is that patriotism has a role in shaping the social identity of an individual. The distinction between us / them is important in the formation of social identity. ‘Us’ is the circle in which the individual is in and identifies himself with. Patriotism introduces ‘us’. The introduction itself marks the boundaries of the group as well as the “others” outside the boundaries. In this way, the feeling of “us” establishes psychological trust in the individual and protects him from possible anxieties (Bar-Tal, 1993). Although it is about the “other”, the marginalization evoked by the concept of nationalism has not been matched with patriotism. As can be seen in the construction of the word patriotism, it is grounded on the love of one’s homeland and loyalty to that homeland. It does not refer to an essentialist nation or race and in this respect, it is more inclusive (Yazıcı and Yazıcı, 2010).

However, the limits of the scope are national, not global. In fact, various definitions of patriotism (Curti, 1946, Westheimer, 2007; Staub, 1997; Kahne & Middaugh, 2007) postulate different scopes. Military patriotism and social patriotism (Curti, 1946) deal with patriotism in different ways. The authoritarian patriot will probably criticize the democratic patriot (Westheimer, 2007). Similarly, a citizen who blindly adopts patriotism will not find constructive patriotism (Staub, 1997) or active patriotism (Kahne & Middaugh, 2007) satisfactory. Although this theorizing is only two-way, it is still useful since it conceptualizes patriotism.

Therefore, two different varieties of patriotism can be mentioned: blind / military / authoritarian & democratic / social / constructive. The main elements that distinguish the two varieties are uncritical conformity and criticism (Schatz, Staub & Lavine, 1999). In blind, military, or authoritarian patriotism, national symbols and values are adopted without criticism and are seen above and beyond everything else. This variety of patriotism sees the state and the flag as the primary priority. Therefore, the concept of criticism includes danger or, at best, risk (Schatz et al., 1999; Kahne & Middaugh, 2007). On the other hand, the democratic / social / constructive variety takes criticism as an important requirement of patriotism. These two distinctive aspects of patriotism have been frequently addressed in international publications (Archard, 1999; Bar-Tal, 1993; Beader, 2007; Caballero, 1999; Curti, 1946, Westheimer, 2007; Staub, 1997; Kahne & Middaugh, 2007).

Upon reviewing the literature on social studies teaching in Turkey, it was investigated that there is a scarcity of research related to different dimensions of patriotism. In the existing studies, “perception, view, and attitude” were focused on and the participants were three groups of people: teachers, pre-service teachers, and students. In studies with teachers (Yazıcı, Pamuk, & Yıldırım, 2016; Gümüş, 2016; Avcı, İbret, & Karasu Avcı, 2017; Yıldız, 2018; Demirok, 2019; Karaderili, 2019; Kurt, 2007; Öztürk, Malkoç & Ersoy, 2016; Yazıcı and Yazıcı, 2010), teachers' views / perceptions regarding the meaning of patriotism and their attitudes were investigated. In studies conducted with pre-service teachers (Ersoy and Öztürk 2015; Karasu Avcı & İbret, 2016; Tarhan, 2019; Faiz & Karasu Avcı, 2020), the researchers investigated pre-service teachers’ perceptions and attitudes towards patriotism, who were studying in social studies teaching, primary school teaching, and early childhood education departments. Finally, the third group of studies examined the views of

teachers and students. These studies (Özcel, 2019; Bilginer, 2019; Avcı, 2015; Elban 2011; Kabaklı Çimen, 2017) examined students and teachers' definitions, views, and attitudes towards patriotism, who were at secondary school, high school, and university levels. A common feature of these studies is that they aim to reveal the meaning of the concept of patriotism through the eyes of the participants.

When the studies conducted in Turkey were reviewed, it was seen that comparative studies are rare. Another point that draws attention is that, as mentioned above, the existing studies only focused on perceptions, views, and attitudes. The exception to these two points is the doctoral dissertation of Yavuz (2018) and the study by Altıkulaç and Yontar (2019). Yavuz (2018) compared the social studies curriculums of 4 countries while Altıkulaç and Yontar (2019) compared social studies teachers' opinion of patriotism who working in USA or Turkey. Yavuz (2018) highlighted in the conclusion part of his dissertation that there is a need for comparative studies on patriotic education. This study aims to fill this gap by comparatively examining internationally published articles in the last twenty years.

Comparing the articles produced in the last 20 (2000-2020) years will make it possible to evaluate the studies on patriotic education from an international perspective. Revealing the distribution of the articles on patriotic education by country, the curve they have followed in the last 20 years, and the subjects on which they focus, has the potential to give a new perspective to the stakeholders. Another significance of this study is that it examines internationally published articles' problem statuses and their reasons. Examining the problem statements might give an idea about the researchers' perspectives on patriotic education and this would give readers an opportunity to approach patriotic education from a new and critical perspective. Following research questions were sought to answer in this study:

### **Research Questions**

1. What is the frequency of studies on patriotic education between 2000-2020?
2. What is the course of studies on patriotic education between 2000-2020?
3. What are the objectives of the studies on patriotic education between the years 2000-2020?
4. What are the problem statuses of the studies on patriotic education between the years 2000-2020?

### **Limitations of the Study**

The study is limited to the research articles published between 2000-2020 and indexed in Wiley, Jstore, Elsevier, Taylor & Francis databases. For this reason, studies conducted before 2000 and studies that do not focus on patriotic education / teaching are excluded from the scope of this study. Another limitation is that languages of the chosen articles are only English and Turkish, and this might cause the study to reflect more the contexts of Turkey, Britain, and North America. Studies on patriotic education that have been conducted outside Turkey and in languages other than English were not included in this study.

## **METHODOLOGY**

### **Method**

The texts examined in this study were analyzed in accordance with the qualitative research method. The document analysis method was employed in the study for this purpose. The texts in the selected articles were subjected to thematic content analysis. Thematic content analysis is based on analyzing studies in a specific field and presenting them as themes and templates (Çalık & Sözbilir,



2014). Thematic content analysis is chosen for this study because it is suitable for the study's aim to examine internationally published articles on patriotic education according to specific criteria.

### Data Collection

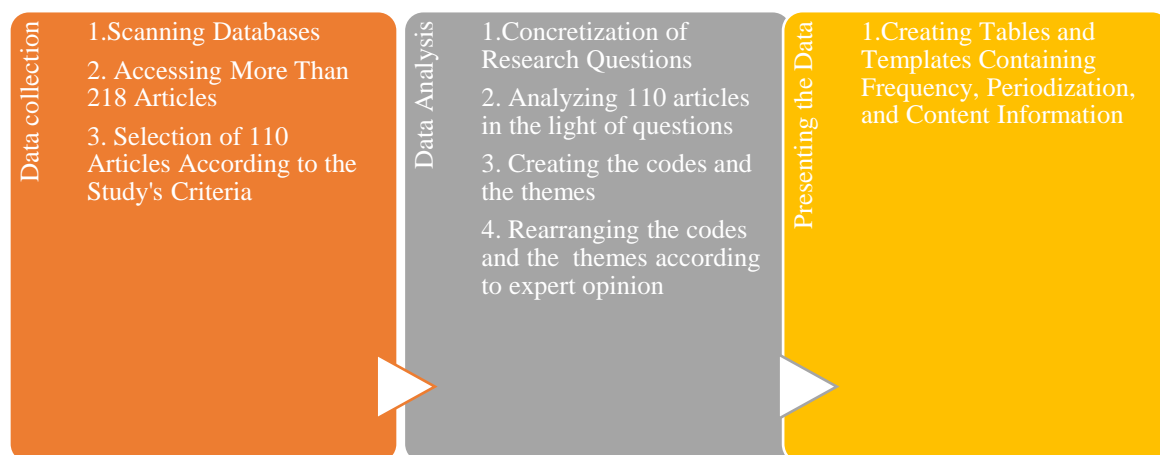
International databases (Wiley, Jstore, Elsevier, and Taylor & Francis) were used to access articles that were published during 2000-2020 on patriotic education. To be able to report both the recent trend and debates researchers decided to limit the timespan by 2000-2020. The databases selected since it is expected to gather articles as many as possible and these databases are respectful and accessible. These databases were searched with the keywords "patriotism", "patriotic education", and "teaching of patriotism".

TITLE-ABS-KEY (patriotism) OR (patriotic education) OR (teaching of patriotism).

Upon this search, 218 articles were accessed based on criteria sampling strategy. Two researchers simultaneously examined these articles according to their suitability for the purpose of this study. It was made sure that these articles were appropriate in terms of their topic and sample. Firstly, articles on patriotic education that were conducted with participants at pre-school, elementary school, secondary school, high school, and university levels were selected, and the rest were eliminated. In the second phase, studies which used teacher, student, faculty member, parent, or curriculum as a research object or participant were selected and other studies that were not suitable for this purpose were excluded. After this screening process, 110 articles were included in the study.

### Data Analysis and Credibility

The data analysis process started with the scanning of databases. The 218 articles accessed at the initial phase were exhaustively examined by the two researchers. During the examination process, it was aimed that related articles were in the scope of education / training and focused on patriotic education / training. As a result, 110 articles were found to be suitable for further analysis.



**Figure 1: Steps in Data Collection and Analysis Process**

The suitable articles were analyzed by transforming research questions into sub-questions and concretizing them (Table 1)

**Table 1: Transformed Use of Research Questions**

Q.1.	1.The number of studies focusing on patriotic education were analyzed. 2.The distribution of studies focusing on patriotic education by country was analyzed. 3.Studies focusing on patriotic education were analyzed comparatively according to transnational situation.
Q.2.	1.The years in which frequency of studies focusing on patriotic education in the last 20 years has increased were analyzed. 2.The years in which frequency of studies focusing on patriotic education in the last 20 years has decreased were analyzed.
Q. 3.	Aims of Studies focusing on patriotic education in the last 20 years were analyzed by purpose sentences.
Q. 4.	Problem statuses in the theoretical sections of the studies focusing on patriotic education were analyzed..

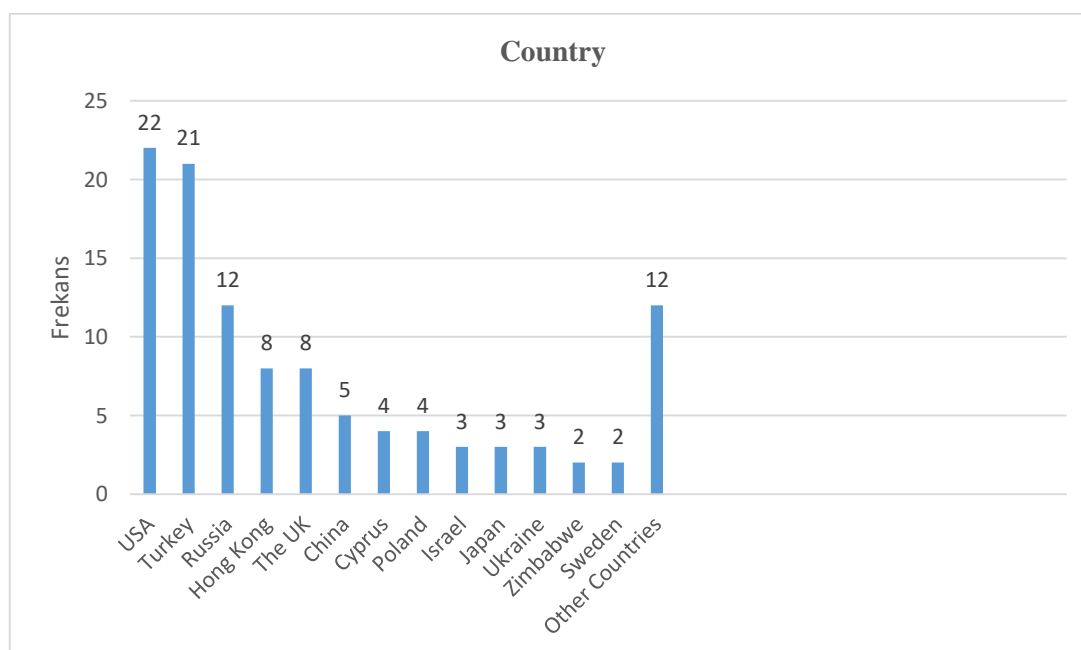
Two researchers conducted cross-examinations at different times to prevent data loss. For the research questions to be fully reflected in the analysis process, each research question was detailed and restated as sub-questions. In the analyses that were made by considering sub-questions, also it is ensured that the codes and themes reflect the situation in the text, and they are realistic. After the analysis was completed, an expert opinion was taken, and the codes and themes were finalized in the light of the expert opinion.

## FINDINGS

The articles examined within the scope of the study are presented under 4 titles: (I) articles distribution by country, (II) articles distribution according to years, (III) distribution of the objectives of the examined articles in the study by countries, and (IV) problem statuses of the examined articles.

### Article Distribution by Country

First, distribution of articles on patriotic education by country has been examined to answer the question of “What is the distribution of studies on patriotic education in different countries between 2000-2020?”. From this examination, 109 articles were selected, and their distribution is shown on Figure 2.

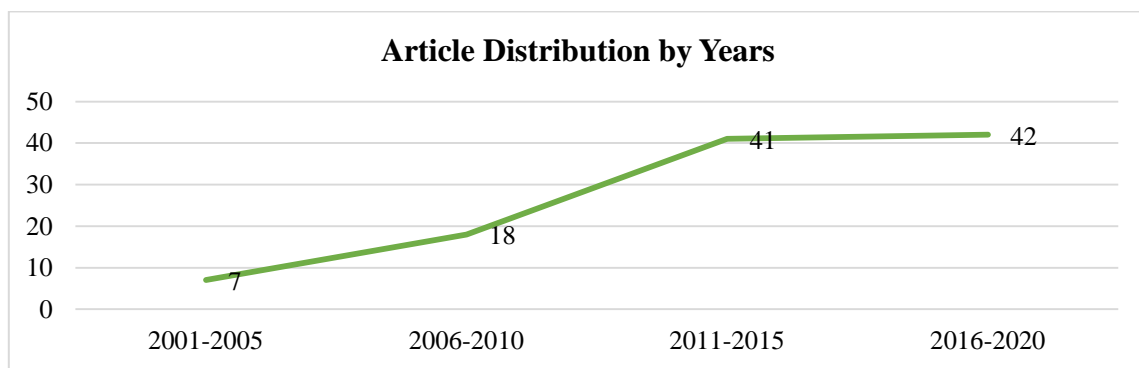


**Figure 2. Distribution of the number of articles on patriotic education by country**

When Figure 2 is examined, it can be seen that the majority of articles on the subject were published in the USA with 22 articles. Turkey comes in second with 21 articles. Since one of the inclusion criteria was to language of the paper (articles that are written only in turkish or english were examined), both USA based and Turkish based articles are numerous in terms of frequency. Distribution of articles by country and number is as follows: Russia with 12 articles, Hong Kong and England with 8 articles, China with 5 articles, Poland and Southern Cyprus with 4 articles, Israel, Japan, Ukraine with 3 articles, Zimbabwe and Sweden with 2 articles, Singapore, Canada, Malaysia, Pakistan, Romania, Slovenia, Jordan, Austria, Indonesia, Finland, Netherlands, Hungary with 1 article each.

### Article Distribution by Years

The articles published on patriotic education and training were examined within the scope of the second research question “What is the frequency distribution of articles on patriotic education between 2000-2020?”. Examined articles were classified according to a period of five years. The distribution of articles by years can be seen in Figure 3.



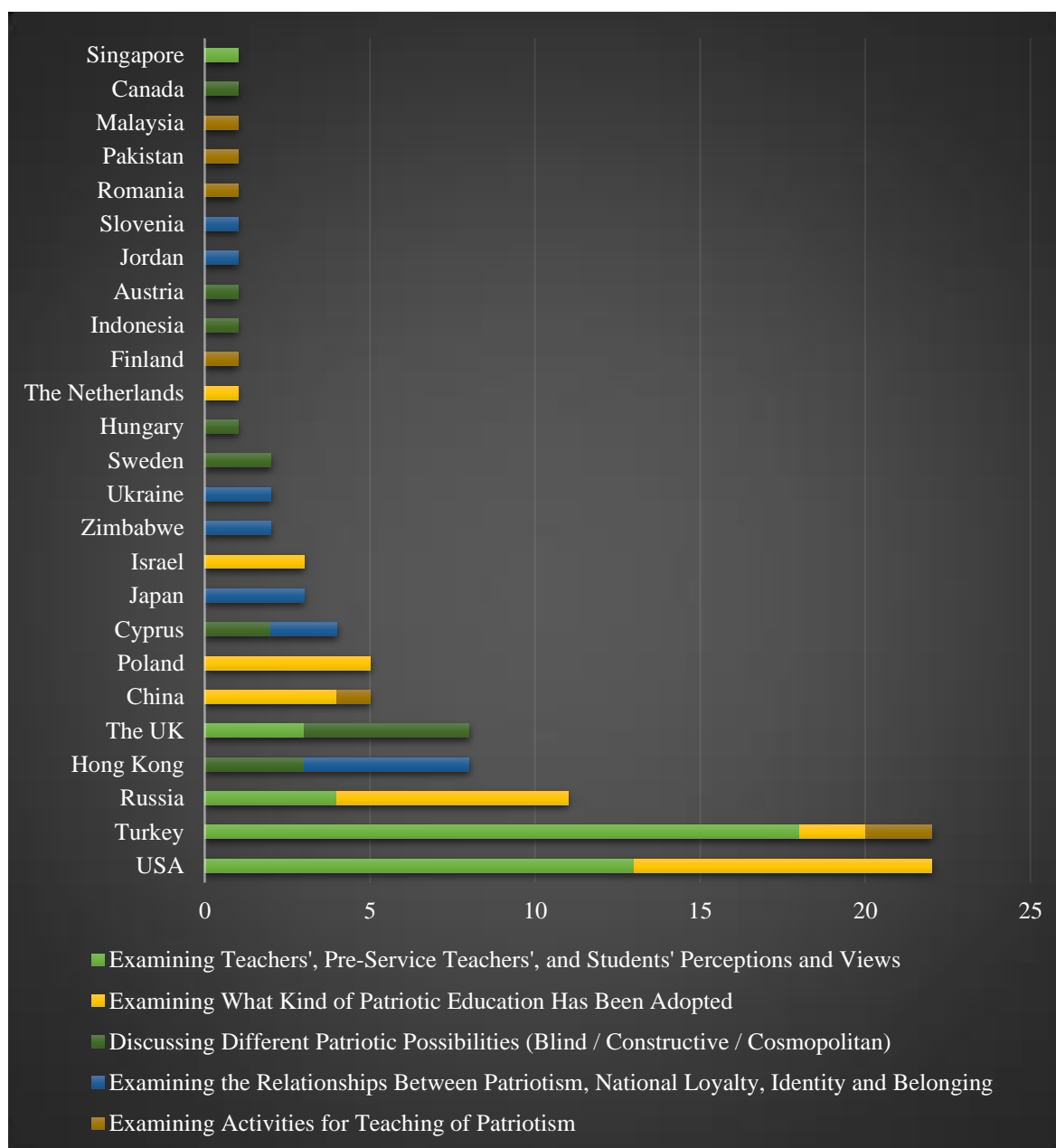
\* The numbers has differed since one of the examined paper was comparasion of two countries' context.

**Figure 3. The distribution of articles on patriotic education by years**

When Figure 2 is examined, every five-year distribution shows an increasing trend since the 2000s. Although it is not possible to make a definite interpretation about the reason or reasons for this increase, it can be said that there is a remarkable increase. In Figure 2, it is observed that there are 5 articles between 2001-2005, 18 articles between 2006-2010, 41 articles between 2011-2015, and 42 articles between 2016-2020.

### Distribution of Articles According to Their Objectives by Country

In this part, the researchers tried to answer the research question of “What are the objectives of the studies on patriotic education between the years 2000-2020?”. As a result of the content analysis conducted within the scope of the research question, the articles were collected under five research purposes according to the countries. These five research objectives can be seen in Figure 4.



**Figure 4. Distribution of the articles in the study by country according to research objectives / research questions**

When Figure 3 is examined, it can be seen that the articles and research produced in the context of patriotic education are grouped under five themes. Articles focusing on examining teachers', pre-service teachers', and students' perceptions and views have been the research question / objective of 39 articles in 5 different countries. The research objective of "what kind of patriotic education is adopted?" was investigated in 31 articles from 7 different countries. The studies that were carried out to discuss different patriotic possibilities (Blind / Constructive / Cosmopolitan) were reflected in 16 studies from 8 different countries. The studies that were conducted to examine the relationships between Patriotic Education, National Loyalty, Identity and Belonging are covered in 16 articles from 7 different countries. A total of 7 articles were published in 6 different countries to examine the Activities for Patriotic Education. It can be said that among the five research themes, perceptions and views of teachers, pre-service teachers, students were studied the most, and most of these articles came from Turkey and the USA, and the least number of articles came from Singapore.

It can be said that the articles published to determine what kind of patriotic education the countries are adopting were mostly studied in the USA, Russia, Poland, Israel, and China; and the least number of articles were published in the Netherlands. It is seen that the articles published for the purpose of discussing different patriotic possibilities (Blind / Constructive / Cosmopolitan) were mostly came from England, Hong Kong, Cyprus, and Sweden. It draws attention that no articles were published on this issue in Turkey. Most of the articles that were published to examine the relationships between patriotic education, national loyalty, identity, and belonging came from Hong Kong, Japan, Cyprus, Ukraine, and Zimbabwe, while the least number of articles were published Jordan and Slovenia. The greatest number of studies that were conducted to examine the activities for patriotic education came from Turkey, while the least number of studies came from China, Pakistan, Malaysia, and Romania.

### Problem Statements of Articles

Problem statuses of the articles were analyzed according to the question of: "What are the problem statuses of the studies on patriotic education between the years 2000-2020?". These articles were presented under two main headings. Table 2. covers descriptive articles. The descriptive articles investigated the views and perceptions of pre-service teachers and teachers, elementary, secondary, and high school students, and both students and teachers. In Table 3, theoretically based articles are taken into consideration and grouped under 6 reasons / problem statements.

**Table 2. The reasons for the studies that descriptively examine the participants' perspectives in the research**

Participants	Reason / Argument	F
Pre-service teachers and teachers	-- The responsibility of raising patriotic individuals rests with teachers and pre-service teachers. Therefore, it is necessary to examine their views. Thus, predictions can be made about what kind of patriotic education they will give.	14
	- Globalization and technology affect the perception of patriotism. Therefore, the perceptions and opinions of pre-service teachers should be examined.	3
	- It is necessary to examine the current perceptions of teachers and pre-service teachers to develop a constructive patriotic approach.	2
	- Since there is little work in the literature, contribution should be made to the field by examining pre-service teachers' views.	2
	- It is extremely important with which objective, content and approach the patriotism value is given.	2
	-American Pledge of Allegiance should be critically discussed and teachers should be prepared for this.	1
	- Teachers' views should be examined against the shift of patriotism to extreme nationalist tendencies.	1
Elementary, secondary, and high school students	-For an education designed to instill patriotic value in students, their perceptions and views should be examined.	6
	-In order to develop a patriotic education program that does not contradict a democratic citizenship approach, students' views and perceptions should be considered.	4
	-Globalization and technology affect the perception of patriotism. Therefore, students' perceptions and views should be examined	2
Students (Secondary School) and Teachers	-Patriotism should be taught as a controversial subject. Possibilities to achieve this should be sought in schools and classrooms.	1
	-A critical attitude should be created towards American Pledge of Allegiance.	1

**Table 3. Justification and arguments of theoretically-based studies in the study**

Themes	Reason / Argument	f
Raising National Awareness in Teaching of Patriotism	- The integration of themes such as special days, anthems, oaths, common fate-themed course materials, important people and events in history into patriotic education should be examined.	8
	-The national loyalty and patriotic feelings of students of different ethnic origins in heavily disciplined conditions such as military schools are worth examining for patriotism building.	4
Patriotic Education in the Globalization and Cosmopolitanism Debate	- Patriotic education should be discussed in the context of cosmopolitanism and globalization, and the views of the parties on the issue should be critically evaluated within the relationships of democratic citizenship, cultural values, and locality. (Rousseau, Naussman)	10
Identity, Belonging, Loyalty in the Local and Global Context	--Citizenship education creates a tension between local and central political authority in Hong Kong, where identity, belonging and loyalty have become a controversial issue. Therefore, a discussion should be set up, considering the context of globalization and locality.	5
	-In the examples of Russia, Ukraine, and Japan too, the ways in which local identities and national consciousness can be given together in the globalizing world should be investigated. Nations want to develop ways to protect themselves from the negative effects of globalization.	4
	-While the United Kingdom includes Fundamental British Values in her curricula, she seeks ways to match these values with both local and global values.	3
	-Patriotic education in Israel has problems in covering non-Jewish Arab communities. It is important to develop an alternative to this situation.	1
	-In a post-colonial Zimbabwe, what kind of citizenship and patriotic education was adopted to create a national identity is being discussed in the light of global and local facts.	1
The Relationship of Patriotism, Education, and Ideology	-It is necessary to reveal with a historical analysis how the discourse of legal authorities in education is constructed through educational programs and hidden curricula. Patriotism can also be used to produce this ideology.	8
	-It is necessary to examine the patriotic individual construction through values in the course and children's books.	5
	--The discourses of political authority in the course books should be presented within the framework of power and hegemony.	4
Strengthening Coexistence and Pluralism	- Patriotism and citizenship education provides political socialization of students. Therefore, in societies with a multicultural structure, an education policy should be adopted without excluding and marginalizing others. Instead of the discourse of one nation and common destiny, patriotism that is based on pluralistic citizenship should be established.	7
Strengthening Constructive and Critical Patriotism	-For the creation of a democratic and pluralistic society, a patriotic education that supports the development of constructive patriotism against ultra-nationalist tendencies is necessary. In this sense, careful education of patriotism, for example, patriotism as a civic value rather than a patriotism open to emotional agitation should be promoted.	9

When Table 2. is examined, it can be said that descriptive studies focus on the perceptions and views of the participants. The problem statements or research objectives of the articles that investigated pre-service and in-service teachers' perceptions and views revealed that the studies were mostly approached the issue with the mission of "raising individuals". In this way, the researchers tried to reveal what kind of individuals the teachers were trying to raise. Another reason for focusing on teachers' and pre-service teachers' views / perceptions is to analyze the reflections of globalization effects on teachers. Another point is that these studies tried to develop teachers' perceptions of constructive patriotism by investigating their current perceptions. These studies focus on producing solutions against extreme nationalist tendencies. Similar studies can be seen in the special case of the American Pledge of Allegiance as well. Finally, it aims to fill a gap with studies aiming to contribute to the field. In studies that examined students' perceptions and views, designing teaching programs for students was studied. Similarly, it has been tried to describe whether there are any traces of a change in the patriotic feelings of the youth with the effect of globalization.

When Table 3. is examined, it will be seen that the first theme is Raising National Awareness in Teaching of Patriotism. The studies that were carried out under this theme discussed the meanings

of symbols that contribute to the process of patriotism building in teaching environments and military schools. These symbols are special days, anthems, oaths, important people, and events in history.

The ongoing debates around the concepts of "Globalization and Cosmopolitanism" were discussed under the second theme. Under the globalization process, this theme centers alternative patriotic approaches with their positive and negative aspects and evaluates the concepts of democratic citizenship, cultural values, locality within the framework of discussion. Another theme is the theme of "Identity, Belonging, Commitment in the Local and Global Context". A two-dimensional discussion is made under the relevant theme. First, how will local and national values coincide with the globalization process? Thus, how can a patriotic education synthesize the two be formulated? Second, what kind of a patriotic education can be given by considering the communities living under political authorities whose citizenship statuses differ? Discussion of the authority struggle between Hong Kong and China in the context of patriotic education and citizenship has a special place within the scope of these questions. Under the theme of Patriotism, Education and Ideology, the construction of ideological discourse in education such as education programs, hidden curriculum, discourse in textbooks, power, hegemony, was discussed in relation to patriotism. Under the theme of Strengthening Coexistence and Pluralism, the possibilities of building an inclusive patriotism that allows us to live together without excluding differences were discussed. Therefore, a patriotism based on a pluralistic citizenship approach is suggested. Under the last theme, Strengthening Constructive and Critical Patriotism, the possibilities of the substitution of a constructive patriotism against blind and extreme patriotism and nationalist approaches were discussed. It was discussed that a patriotism model that is in harmony with the values of democratic society should be presented to societies.

## **DISCUSSION, CONCLUSION, AND SUGGESTIONS**

Teaching of patriotism is a significant field for social studies and citizenship education. Within the scope of this study, 110 articles that were published in the last 20 years (2000-2020) on patriotic education were analyzed and remarkable findings were obtained.

It is found that numbers of research on teaching of patriotism has increased considerably starting from 2000 to to present. The socio-political events that took place in the early 2000s (9/11, Iraq War, terrorist incidents) affected the educational environments (Wellenreiter, 2019). This might havemade the topic of patriotism a more popular subject of investigation over the years. This findings shows that both teaching of patriotism and social studies education is effected by social and political issues notably.

In other studies that coincide with the research results, it was seen that in Turkey (Faiz&Karasu Avcı, 2020), the USA (Gibbs, 2019), Russia (Sanina, 2019), Hong Kong (Chee, 2019), and the UK (Healy, 2019) patriotic education was examined more frequently, and it became a more popular research topic. Although this study has examined only articles in Turkish and English languages and this is a limitation, it can still be put forward that more studies have been found in aforementioned countries.

Examined research objectives and problem statementshows that there are two different trends in these countries. The studies that were conducted in Turkey, Russia, and the USA focused on participants' perceptions of patriotism and content of patriotic education. However, studies in the UK and Hong Kong are studies that problematize patriotic education and focus on its relationship with different concepts. This shows that the second group of studies has a more critical approach to patriotic education. The first group tends to emphasize the importance of patriotic education.

Examined research objectives and problem statementshows that there are two different trends in these countries. The studies that were conducted in Turkey (such as: Altıkulaç & Sabancı, 2017; Karabulut & Çelik, 2017; Türküresin, 2018; Faiz & Karasu Avcı, 2020; Emine Karasu Avcı, 2016; Öztürk Et Al., 2016; Ersoy & Öztürk, 2015; F. Yazıcı et Al., 2016); Yazıcı & Yazıcı, 2010; Eryilmaz, 2018), Russia (such as: Pronina, 2012; Mokeyevaa & Andreeva, 2016; Rapoport, 2012; Rapoport,

2016; Tartakovsky, 2011), and the USA (Chiodo et al., 2011; Martin, 2012; Busey & Walker, 2017; Martin et al., 2017a; Martin et al., 2017b; Wellenreiter, 2020; Bondy, 2014; Busey & Walker, 2017) focused on participants' perceptions of patriotism and content of patriotic education.

However, studies in the UK such as: Golmohamad, 2009; Schumann, 2016; Hand, 2011; Healy, 2019) and Hong Kong (Chee, 2019; Morris & Vickers, 2015; Fairbrother, 2003; Fairbrother & Kennedy, 2011; Leung & Print, 2002; Yam, 2016) are studies that problematize patriotic education and focus on its relationship with different concepts.

Especially in studies that were carried out in Turkey, the researchers have not been taking a critical approach towards patriotism. Overall trend is to examine quality of patriotic teaching or perceptions of stakeholders regarding the meaning of patriotism. As stated by Yavuz (2018), it is important to consider the concepts of human rights and respect for individual differences in teaching the concept of patriotism. It was observed that there are not enough studies in this direction. Similarly, Altıkulaç and Yontar (2019) suggested that the concepts of democracy and constructive patriotism should be discussed more in the literature. However, when the studies that are within the scope of this research is examined, it draws attention that there is a scarcity of research in Turkey that deals with democracy and patriotism together. Therefore, the scarcity of studies dealing with patriotism education / teaching as a controversial / multidimensional subject stands out. Similarly, alternative approaches to patriotism (such as critical, constructive, democratic patriotism) have been given little coverage in patriotic education / training research.

The research justifications of the articles that were examined within the scope of this study can be summarized in several points. Studies examining the perceptions and views of teachers, pre-service teachers, and students are aimed to predict what kind of patriotic individuals are being raised by looking at the current situation. The researchers aimed to reach this judgment based on the assumption that especially teachers' perceptions and views of patriotism will be reflected in education & teaching environments. Moreover, pre-service teachers were included in studies with the same assumption and the researchers aimed to determine their perception of patriotism. Another point that draws attention in the theoretical reasons is that it is based on the assumption that patriotism is built through education, and this process was tried to be analyzed and explained. Perceptions and opinions of stakeholders is significant without any doubt but it is also equally significant to discuss the patriotism in terms of current, public and global perspectives. Current, public and global perspectives dimensions of patriotism rarely discussed in teaching of patriotism literature.

The world's changing conditions affect patriotic education, and this brings up new discussions. Although changing world conditions are frequently mentioned in the theoretical parts of patriotism research, the effect of changing conditions on the perception of patriotism has rarely been reflected in research problems. Especially identity, belonging and citizenship are discussed only in specific contexts (UK, USA, Hong Kong). On the other hand, current issues such as teaching of patriotism during war (Ben-Porath, 2020), the nature of relationship between citizenship and democracy training (Kahn, and Middaugh, 2007), patriotism as a controversial subject (Hand, 2011) have almost never been touched on in the problem statement of studies that were conducted in Turkey or Russia.

Patriotism is among the important values in civic and social studies education. In other words patriotism both effects and is effected by civic and social studies education. Also type, aim or directions of research on patriotism varies from country to country based on the educational agenda. Yet, when studies on patriotic education globally are examined, it is not possible to say that necessary diversity in each context has been accomplished. Especially studying the concept of patriotism with regards to identity, human rights, globalization, democracy can contribute to the field. For example, the relationship between democratic values, critical thinking, human rights, cultural blindness, multiculturalism, war, peace prejudice and the concept of patriotism can produce important results. Comparative research also add to the fields by presenting social, cultural background of the concept



relatively. In this way, knowledge about teaching patriotism in a more effective and compatible way with the goal of democratic citizenship may emerge.

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## **Investigation of Teacher Candidates' Teaching Maths Anxiety and Teaching Maths Competencies**

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### **Abstract**

Considering the fact that teacher candidates' maths teaching anxiety levels and maths teaching competency levels will affect their maths teaching in future, the desired beliefs should be tried to gain teacher candidates. Therefore, a positive contribution will be made to achieve the desired gains in maths education. In the study, it is aimed to examine the competency levels of pre-school teacher candidates in maths teaching and their maths teaching anxiety levels in terms of various variables and to determine whether there is a relationship between the maths teaching anxiety of the candidates and their level of competency for teaching maths. The research is in relational scanning model. The "Maths Teaching Anxiety Scale" and "Maths Teaching Competencies Scale" were implemented to 104 pre-school pre-service teacher candidates studying in 2019-2020 academic year, which constitutes the sample of the study. As a result of the analysis, it has been found that while teacher candidates' maths teaching anxiety levels do not change by gender, female teacher candidates consider themselves more competent than male teacher candidates in maths teaching and 4th-grade teacher candidates have significantly less anxiety of maths teaching compared to 3rd grades. Besides, it has been determined that there is a statistically significant negative correlation between the maths teaching anxiety scores of the candidates and the average of the maths teaching efficacy scores.

**Keywords:** Maths Teaching Anxiety, Maths Teaching Competency, Teacher Candidates

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## INTRODUCTION

The level of maths achievement of students is effective in guiding their education life and career choices alike (Patkin & Yoram Greenstein, 2020). Maths anxiety has been recognized as an obstacle to maths achievement. Studies have been carried out to reveal how maths anxiety occurs in students and been found that many factors cause maths anxiety (Norwood, 1994; Steinberg & at. all. 1995; May, 2009; Uusimaki & Nason, 2004; Geist, 2010; Vinson, 2001; Puteh & Khalin, 2016). Teachers, one of these factors, have a significant effect on students' mathematical anxiety. Teachers, who fail in math class during their student years or are anxious, may pass their anxiety to the student (Norwood, 1994). Beilock, Gunderson, Ramirez. & Levine (2010) concluded in their study that the higher the teacher has math anxiety, the lower the success level of the students. Studies have revealed that there is a positive relationship between maths anxiety and maths teaching anxiety. In this context, maths anxiety in teachers may cause maths teaching anxiety (Unlu, Ertekin & Dilmac, 2017; Haciomeroglu, 2014). If maths anxiety turns into maths teaching anxiety, it may have a negative effect on students' ability to learn maths correctly (Hadley & Dorward, 2011). Serin (2017) states that anxiety towards teaching maths is effective in determining learning situations such as time planning, method-technique selection, activity selection, and application. It has been found that teachers having maths teaching anxiety spend less time in maths lessons, apply more traditional teaching methods, and allow for less for the activities such as group work (Swars et al., 2006). Such methods are insufficient to reach the level of students, to meet their expectations, to motivate them, to undertake teaching practices according to their interests and needs. Some teachers may even exclude some subjects from their curriculum because it causes them anxiety (Amato, 2004). Thus, teachers having higher maths teaching anxiety cause low achievement of students (Hadley & Dorward, 2011).

Teacher competency is another obstacle to maths achievement (Deringöl, 2018). According to social learning theorists, self-efficacy is a feeling of confidence regarding the fulfillment of certain tasks (Tran et al., 2012). Self-efficacy is defined by Bandura as the belief of individuals in their own abilities to do a certain job. These beliefs affect individuals' effort and the level of existence in their work thanks to struggles, the resilience shown when failed, and adapting to changes (Tran et al., 2012). Maths self-efficacy expresses beliefs in one's ability to do maths and often involves solving certain math problems, performing maths-related tasks, and evaluating one's own judgments about abilities to succeed in maths-related courses (Bates & at. all, 2011). Maths teaching competency refers to one's belief in the ability to teach maths effectively (Enochs, Smith & Huinker, 2000; Holzberger, Philipp & Kunter 2013 ; Tschannen-Moran & Hoy 2007 ). Teachers should have sufficient knowledge

about the development and training of students' maths skills, as well as having high competencies that they can apply. When the teacher has different efficacy beliefs, s/he can produce different results. For instance, it has been found out that among teachers who have the same content knowledge, those who see themselves as effective in teaching maths are more successful than those who see themselves as ineffective in teaching maths (Tran et al., 2012). Çelik (2017), in the study with preschool teachers, concluded that there is a significant relationship between teachers' self-efficacy levels in early maths education and teachers' self-efficacy when planning and applying maths activities. In this context, teachers' efficacy beliefs about teaching maths affect their efforts in preparing lesson plans, setting goals, choosing methods and techniques, and designing teaching practices and evaluations (Tschannen-Moran & Hoy 2007). Compared to teachers with low teaching self-efficacy, teachers with higher teaching competency use more advanced and flexible teaching methods, handle the subjects at a high level in-depth. They are less emotionally stressed, since they have lower levels of burnout, and more professional satisfaction, they continue their teaching profession for longer (Holzberger, Philipp & Kunter 2013; Granziera & Perera 2019). Besides, they encourage independent learning, improve their attitude towards learning increasing their students' achievement and motivation (Caprara et al. 2006; Holzberger, Philipp & Kunter 2013 ; Tschannen-Moran & Hoy 2007 ).

There is a strong negative relationship between maths anxiety and maths self-efficacy. Low self-efficacy in individuals is one of the strongest determinants of maths anxiety (Gonzalez-DeHass et al. 2013). Bates, Latham, & Kim (2011) claim that teacher candidates with maths anxiety can develop

maths teaching anxiety associated with their low teaching self-efficacy. In the interview with the 2008 primary-school teacher-candidate, Gresham concluded that teacher candidates with less maths anxiety are more qualified as a “maths teacher”, and found that maths anxiety is the basis of teaching efficacy beliefs.

Although there are many studies examining teacher candidates' maths anxieties and maths teaching competencies, most studies focus on teacher candidates in primary and secondary education (Deringöl, 2018; Başpınar & Peker 2016; Ural, 2015; Swars, Daane & Giesen, 2006; Uusimaki & Nason, 2004). Therefore, it is important to examine pre-school teacher candidates' maths teaching anxiety and maths teaching competencies. In this context, it has been considered that the results of this study will contribute to teacher training programs in terms of eliminating this deficiency in the literature.

### **Aim**

In the study, it was aimed to examine the pre-school teacher candidates' competency levels regarding maths teaching and their maths teaching anxiety levels in terms of various variables, and to determine whether there is a relationship between the maths teaching anxiety of the candidates and their maths teaching competency levels. In line with this general-aim, answers were sought for the following sub-problems.

Is there a significant difference between the maths teaching competency and maths teaching anxiety levels of pre-school teacher candidates according to the variables of gender, grade level, academic mark average, the reason for choosing the program, order of choice and type of high school graduated from?

Is there a relationship between pre-school teacher candidates' maths teaching anxiety and maths teaching competency levels?

## **METHOD**

The research is in a descriptive relational survey model being quantitative research. Among quantitative research, relational scanning models are research models aiming to determine the existence and/or degree of covariance between two or more variables. (Karasar, 2008).

### **Population- Sample**

The teacher candidates studying in the pre-school education program of a state university in the Western Black Sea Region constitute the study group of this research. Convenience sampling, one of the purposive sampling methods, was preferred for the research. The sample consists of a total of 104 teacher candidates studying in the 2nd, 3rd and 4th grades of the pre-school education department of a state university in the Western Black Sea Region.

### **Data Collection Tools**

In the research, a personal information form prepared by the researcher was used to obtain information about gender, grade level, and general academic grade point average of pre-school teacher candidates. In order to collect data related to the problems and sub-problems of the study, the "Maths Teaching Anxiety Scale" developed by Peker (2006) and the "Maths Teaching Competencies Scale" developed by Esendemir, Çırak, and Samancıoğlu (2015) were used.

### **The Maths Teaching Anxiety Scale**

The scale developed by Peker (2006) consists of 23 items and is in a 5-point Likert type. Each item was scored from "very adequate = 5" to "very inadequate = 1". In other words, it can be seen that

as the score increases, the maths teaching anxiety of the teacher candidates increases (Peker, 2006). In addition, the total scores to be obtained from the scale range between 23 and 115. For the content validity, it was examined by 1 teacher candidate, 1 teacher, and 2 faculty members from the subject area and field education experts and the necessary arrangements were made. Cronbach's alpha internal consistency coefficient for the scale was found .91. This value indicates that the scale is a reliable measurement tool.

### **The Maths Teaching Competencies Scale**

The scale developed by Esendemir & others (2015) consists of 20 items and is in a 5-point Likert type. For each item in the scale, there are "1 = Strongly Disagree", "2 = Disagree", "3 = Unsure", "4 = Agree", "5 = Strongly Agree" options. Therefore, the total scores to be obtained from the scale vary between 20 and 100. Confirmatory factor analysis was used for the construct validity of the measuring tool. It was determined that the fit index values ( $\chi^2 / df = 2.51$ ; NFI = 0.97; NNFI = 0.98; CFI = 0.98; RMSEA = 0.071; GFI = 0.88; RMR = 0.033; SRMR = 0.046) obtained as a result of Structural Equation Modeling were found to be at acceptable levels. Cronbach's alpha internal consistency coefficient for the scale was found to be .96. These values show that the scale is highly reliable.

### **Data Collection**

"General Information Form", "Maths Teaching Competencies Scale" and "Maths Teaching Anxiety Scale" were implemented to the teacher candidates in the sample group on a voluntary basis in January 2020.

### **Analysis of Data**

The scales from which the data were obtained, were checked before starting the analysis process. After the control, scales filled incorrectly or incompletely were not taken into consideration and 104 participant data were enumerated. After enumeration, the data was entered into the SPSS (IBM SPSS Statistics 22) program. Percentage, frequency, and arithmetic average analyzes of the data entered into the SPSS program were carried out. At the beginning of the statistical analysis in the study, the appropriate analysis type needs to be determined. Since the sample size is larger than 30, it has been predicted to use parametric methods for this study. The prerequisite for using parametric tests is to determine whether each factor has a normal distribution. The normal distribution of data has been determined using the single sample Kolmogorov Smirnov Test. As the results of the analysis, the data were found to be distributed normally, t-Test, Variance analysis, and Spearman Rank Difference Correlation test calculations were carried out.

## **FINDINGS**

In this section, the findings obtained from the analysis of the data are included.

**Table 1. Normality test results of pre-school teacher candidates' scores.**

	N	X	Skewness	Kurtosis	Kolmogorov-Smirnov Test
MTAS*	104	57,21	,272	,213	,069
MTCS**	104	76,36	,-163	1,375	,20

\*MTAS: Maths Teaching Anxiety Scale

\*\*MTCS: Maths Teaching Competencies Scale

When Table 1 is examined, it has been found that both the "Maths Teaching Anxiety Scale" score distributions and the "Maths Teaching Competencies Scale" score distributions were higher than the Kolmogorov-Smirnov Test  $p > 0.05$  as a result of the normality test and it was concluded that the data were distributed normally.

**Table 2. T-test results of the pre-school teacher candidates' opinions about the nature of maths related to the gender variable.**

Scale	Gender	N	$\bar{x}$	SD	t	p
MTAS	Female	87	56,1149	16,13347	-1,813	,081
	Male	17	62,8235	13,48256		
MTCS	Female	87	77,5287	12,54929	3,202	,003
	Male	17	70,3529	7,39038		

According to Table 2, while the maths teaching anxiety levels of pre-school teacher candidates do not differ significantly by the gender variable, their maths teaching competency levels differ significantly by the gender variable (MTAS)  $t(26) = -1,813$ ,  $p > 0,05$ , (MTCS)  $t(37) = 3,202$ ,  $p < 0,05$ ). The arithmetic averages of male teacher candidates obtained from MTAS and arithmetic average of female teacher candidates are higher. Male teacher candidates have higher anxiety levels than female teacher candidates. The arithmetic averages of female teacher candidates obtained from MTCS are higher than the arithmetic averages of male teacher candidates. Female teacher candidates consider themselves more efficient in teaching maths than male teacher candidates.

**Table 3. Variance analysis results of teacher candidates' opinions for the variable of grade levels of education**

Scales	G. Lev.	n	$\bar{x}$	sd	Var. C.	SS	fd	MS	F	p	Sign Dif.
MTAS	2	40	55,53	13,07	Between Groups	1878,78	2	939,39	3,95	.022	3-4
	3	39	62,39	16,7	Within Groups	24054,57	101	238,16			
	4	25	51,84	16,83	Total	25933,35	103				
	Total	104	57,22	15,87							
MTCS	2	40	77,30	11,06	Between Groups	416,038	2	208,01	1,43	,25	-
	3	39	73,87	10,94	Within Groups	14733,80	101	145,88			
	4	25	78,72	15,03	Total	15149,84	103				
	Total	104	76,36	12,13							

When Table 3 is examined, pre-school teacher candidates' maths teaching anxiety scores differ significantly according to the grade level variable  $F(2,101) = 3,95$ ,  $p < .05$ . As a result of the Tukey carried out to determine the source of the difference, it can be seen that the difference was between 3rd and 4th grades. When the arithmetic averages of the classes are examined, it can be seen that the anxiety of teaching maths for the 4th grades is significantly less than the 3rd grades. Pre-school teacher candidates' maths teaching competency scores do not differ significantly by the grade level variable.  $F(2,101) = 1,43$ ,  $p > .05$ .

**Table 4. Variance analysis results related to the variable grade point average of teacher candidates' opinions**

Scale	Ava. Mark	n	$\bar{x}$	sd	Var. C.	SS	df.	MS	F	p	Sig. Dif.
MTAS	100-90	6	63	13,74	Between Groups	1012,690	5	202,53	,80	,56	-
	89-85	14	56,29	18,10	Within Groups	24920,66	98	254,29			
	84-75	38	54,45	17,69	Total	25933,35	103				
	74-70	26	57,88	13,25							
	69-60	16	62,38	10,26							
	59-55	4	53	26,92							
	Total	104	57,21	15,87							
MTCS	100-90	6	73,67	12,11	Between Groups	1029,933	5	205,98	1,43	,22	-
	89-85	14	80,36	7,239	Within Groups	14119,9	98	144,08			



84-75	38	78,55	15,26	Total	15149,84	103
74-70	26	72,04	9,59			
69-60	16	74,75	9,088			
59-55	4	80	13,49			
Total	104	76,36	12,13			

According to Table 4, the scores of teacher candidates obtained from both MTAS and MTCS do not differ significantly according to grade point averages variable  $F(5.98) = .80$   $p > .05$ ,  $F(5.98) = 1.43$   $p > .05$ . Teacher candidates' maths teaching anxiety and maths teaching competency are not affected by their achievement levels.

**Table 5. Scale Score Average of Pre-School Teacher Candidates**

Variables	N	X	sd
MTAS	104	57,2115	15,86758
MTCS	104	76,3558	12,12789

The total scores to be obtained from the Maths Teaching Anxiety Scale vary between 23 and 115, and the total points to be obtained from the Maths Teaching Competencies Scale vary between 20 and 100. When Table 5 is analyzed, it can be said that teacher candidates' anxiety about teaching maths is low (57.2) and their maths teaching competencies (76.4) are medium level.

**Table 6. Spearman's Rank Correlation Coefficient test results of the relationship between "Maths Teaching Anxiety Scale" and "Maths Teaching Competency Scale"**

Variables	N	r	p
MTAS MTCS	104	,-658**	00

When Table 6 is examined, it can be seen that there is a negative and statistically significant relationship between pre-school teacher candidates' maths teaching anxiety levels and maths teaching competency levels. ( $r = -.658$ ,  $p < 0.01$ ). According to the finding, we can say that as the maths teaching anxiety levels of pre-school teacher candidates decrease, their maths teaching competency levels increase.

## DISCUSSION AND CONCLUSION

Since it has been considered that pre-service teachers' maths teaching anxiety levels and maths teaching competency levels will affect their maths teaching in future, it should be tried to gain the desired beliefs. In this way, a positive contribution will be made to achieving the goals targeted in maths education (Baydar & Bulut 2002). In this study, it is aimed to examine the competency levels of pre-school teacher candidates in maths teaching and their maths teaching anxiety levels by various variables and to determine whether there is a relationship between the maths teaching anxiety of the candidates and their level of competency in maths teaching. Based on the analysis, it was found that while the mean scores of the pre-school teacher candidates regarding their level of maths teaching anxiety were low and their mean scores for maths teaching competency levels were moderate. In many studies, it has been concluded that teacher candidates supporting this result have less anxiety about teaching maths (Bekdemir, 2007; Hacıömeroğlu, 2014; Tatar, Zengin, & Kağızmanlı, 2016; Ural, 2015). Bursal & Paz Nokas (2006) found that half of the 65 pre-service teacher candidates who enrolled in the maths methods course thought that they could not teach maths effectively. It has been found that students who define themselves as having high maths anxiety are less confident in their maths teaching abilities than students who describe themselves as having low or moderate maths anxiety. Maths teaching competency expresses one's belief in the ability to teach maths effectively (Bates, Latham & Kim, 2011). In this context, it can be said that pre-school teacher candidates participating in the study are confident in their maths teaching competency and have a positive opinion of their maths teaching competencies.

In the study, pre-school teacher candidates' scores on maths teaching anxiety and maths teaching competency levels were examined whether they differ by gender, grade level, and academic grade point averages. It has been concluded that pre-school teacher candidates' maths teaching anxiety levels did not differ significantly by the gender variable, while maths teaching competency levels differ significantly. By the grade level variable, it has been found that the maths teaching anxiety of the 4th-grade teacher candidates was found to be significantly less than the 3rd grades while the maths teaching efficacy scores did not differ significantly. By the grade averages variable, the scores of both scales do not differ significantly. Findings differ in the literature. Akinsola (2014), in the study with teacher candidates, has concluded that the gender of the candidates did not affect their maths teaching anxiety. Deringöl (2018), in the study examining the anxiety of classroom teacher candidates and their math teaching competencies, concluded that the anxiety of math teaching of female teachers was lower than that of male teachers and that there was no difference in their maths teaching competencies. Also, while the anxiety of teacher candidates for teaching maths did not change significantly by grade level, the change in maths teaching competencies was found to be statistically significant. Tatar, Zengin & Kağızmanlı (2016) and Başpınar (2015), in their study with teacher candidates, found that teacher candidates' anxiety for teaching maths did not differ by gender, however, there was a difference in their anxiety for teaching maths in terms of fieldwork education knowledge sub-dimension by grade level. In the study in which classroom teacher candidates' anxiety for maths and their anxiety for teaching maths were examined, Serin (2017) has found that 3rd-grades have more math anxiety and math teaching anxiety than 4th-grades. The source of the decrease in maths teaching anxiety of teacher candidates in the 4th-grades may be due to the teaching practice lesson and the increase in experiences of practical teaching. Göloğlu Demir (2011) and Hacıömeroğlu & Taşkın (2010) has found in their study that the self-efficacy beliefs of teacher candidates in teaching maths were not affected by their academic achievement scores.

Similarly, in the studies with classroom teacher candidates, Arseven, Arseven & Tepehan (2015) has concluded that their maths teaching self-efficacy beliefs were not affected by their academic achievement scores.

In the study, it has been determined that there is a statistically significant negative relationship between the pre-school teacher candidates' maths teaching anxiety scores and the average of maths teaching efficacy scores. According to this finding, as the maths teaching anxiety of pre-school teacher candidates decreases, their maths teaching competencies increase. The finding of the study is in parallel with other research findings.

Bursal & Paznokas, 2006; Gresham, 2008; Swars, Daane & Giesen (2006) has focused on maths anxiety related to maths teaching competency in their study and has found negative correlations between the two. Başpınar (2015) found a negative, moderate, and significant relationship between the anxiety levels of classroom teacher candidates for teaching maths and their beliefs in teaching and learning maths. In the study, Deringöl (2018) has concluded that as the classroom teacher candidates' competency in maths teaching increases, their maths teaching anxiety decrease.

### **Suggestions**

- Qualitative research can be carried out to examine maths teaching competency and maths teaching anxiety in depth.
- Longitudinal studies can be carried out to compare teacher candidates' maths teaching competency and maths teaching anxiety levels with their level of competency and anxiety when they take up their positions.
- Studies can be carried out to compare teachers' opinions on their math teaching competency and anxiety levels with their in-class practices.

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## **Factors in Preschool Period Affecting Reading and Writing Achievements of Turkish Children in the First Grade**

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### **Abstract**

This study's aim was to determine the factors affecting Turkish children's reading- writing achievements in the first grade in the preschool period. The prediction level of attention, visual perception (VP), rapid automatic naming (RAN), writing development (WD), and phonological awareness (PA) of the children in the preschool on their success in reading, reading comprehension (RC), and writing in the first grade was investigated longitudinally. In the preschool, 269 kindergarden students participated in the research, 187 out of those who proceeded to the first grade participated the second year of the study. The study was carried out in the screening design. As the result of research, it has been established that VP, PA, RAN, and WD predict the reading rate in the first grade, and that PA and RAN predict the reading accuracy. It has been found out that PA predicts RC and that VP, WD, and PA predict writing.

**Keywords:** Attention, Visual Perception, Phonological Awareness, Rapid Automatic Naming, Writing Development

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## INTRODUCTION

The transition from preschool to elementary school is a critical step in which children acquire basic knowledge and skills. Reading and writing, which are the most important basic skills in this step, are acquired in a developmental process and comprise of a versatile and complicated structure in terms of physical, mental, social, and emotional conditions they require (Gillon, 2004). There is a vast array of knowledge and skills that need to simultaneously come together for reading and writing. Early childhood years are seen as critical years for reading and writing skills, which have multiple interconnected sub-components (Scarborough, 2001; Wang, Yin & McBride, 2015). Being among the interconnected components of reading and writing and the determinant of the potential of being a competent literate, early literacy skills take their roots from the early years of life (Justice & Sofka, 2014).

If the acquisition process of reading and writing skills is to be compared to a pyramid, reading and writing would be located at the top, while early literacy skills would be at the base. Early literacy skills, which constitute the building blocks of reading and writing starting from the early years of life, refer to the prior knowledge, skills, attitudes, and behaviors of individuals pertaining to reading and writing in their preschool period (Gupta, 2009; Sulzby & Teale, 1991; Whitehurst & Lonigan, 1998). These skills are among the strong predictors of individuals' future reading, RC, and writing achievements along with their overall academic success. (Lonigan, Burgess & Anthony, 2000; McCardle, Scarborough and Catts, 2001; National Early Literacy Panel, 2008; Nelson, 2005; Skibbe, Montroy, Bowles & Morrison, 2019; Spira, Bracken & Fischel, 2005; Stevenson & Newman, 1986; Vellutino, Scanlon & Reid, 2003; Whitehurst and Lonigan, 2001).

In longitudinal studies on literacy skills of children at an early age and reading and writing achievements in later years, it is stated that children, who do not have the basic skills required for literacy, face reading and writing difficulties (Cabell, Justice, Konolda and McGinty, 2011; Goodman, Libenson and Wade-Woolley, 2010; Missall, Reschly, Betts, McConneil, Heistad, Pickart, Sheran & Marston, 2007). It is also indicated that deficiencies in these skills have an effect on children's literacy motivation and are determinant in exhibiting problematic behaviors (Spira, Bracken and Fischel, 2005).

According to Whitehurst and Lonigan (2001), early literacy skills are built on two interrelated fields: "inside-out" and "outside-in". While letter-sound relation, phonological awareness (PA), and writing skills constitute the inside-out field; the outside-in field consists of contextual and semantic units. The outside-in skills are skills that have effect upon comprehension after learning reading and writing (Lonigan, 2004). In the learning process of reading and writing, the letter-sound relation, PA, and writing skills constituting the inside-out field are at the forefront. In this process, children decipher the coding system that creates writing and notice that every letter has its own sound. In this context, it can be stated that the inside-out skills take on a great duty in the process of reading and writing acquisition.

There are multiple skills within the scope of early reading and writing skills, which form the basis of literacy starting from the preschool period. It can be indicated that visual and auditory perception, PA, knowledge of letter and alphabet, writing development, word and print awareness, attention, vocabulary, verbal language skills and rapid automatic naming (RAN) are among those skills (Adams, 1990; Akyol, 2018; Eurydice, 2009; National Early Literacy Panel, 2008; National Reading Panel, 2000; Oktay, 2010; Palmer and Bayley, 2008; Rakhlin, Cardoso-Martins & Grigorenko, 2014; Ryan, 2003; Scarborough, 2001). Among those, PA is defined as the recognizing and distinguishing the sounds in words, also as the ability to add and remove sounds for the words (Justice, 2006); while visual perception (VP) is defined as recognizing and distinguishing visual stimuli and interpreting those by associating them with foreknowledge (Frostig, 1964); RAN is defined as the fast and correct vocalization of the objects, colors, numbers, and letters given in a mixed way from left to right (Norton and Wolf, 2012). While A is a nervous system function among stimulants that enables orientation to what is appropriate for requests and needs (Kolb and Winshaw,

1996) writing development (WD) is defined as all the writing-oriented developmental characteristics of the child during the process in which s/he scribbles while starting to discover writing, creates letter-like shapes, draws lines, and writes down letters that make up her/his name (Griffith, Beach, Ruan and Dunn, 2008).

Studies on children's early PA (Levesque, Kieffer & Deacon, 2018; Wang, Yin & McBride, 2015), VP (Kenneth, 1982; Kaiser, Albaret & Doudin, 2009; Wang, Yin and McBride, 2005), RAN (Norton and Wolf, 2012; Wolf and Denckla, 2005), and WD (Matera, 2008; Pierce, 2003) show that these skills are related to future reading, RC, and writing skills.

McBride-Chang, Chung, and Tong (2011) investigated the relationship between the copying skills of Chinese children (3<sup>rd</sup> and 4<sup>th</sup> grade) with and without dyslexia in Korean, Vietnamese, and Hebrew words and their skills for reading and writing of Chinese word, rapid naming, morphological awareness, and orthographic processing. As a result of the study, they concluded that three copying skills were related to reading and writing of Chinese word, rapid naming, morphological awareness, and orthographic processing skills. In addition to this, they also found out that reading and writing of Chinese words and rapid naming differentiated between the groups. Wang, Yin, and McBride (2015) examined the predictors of word reading and writing skills in a study they conducted with 73 Chinese kindergarten students (age= 4;9-6,2). As a result of the study, they pointed out the presence of a relation between word reading skills and RAN, between semantic awareness and vocabulary, and between writing words down and visual orthographic copying. They determined that among these skills, semantic awareness is a predictor of word reading and writing.

In their longitudinal study, Inoue, Georgiou, Parrila, and Kirby (2018) examined the developmental relation between home literacy, early literacy, and reading skills (reading fluency and accuracy) through the model they created. As a result of the study, they established that parent teaching predicts the early vocabulary and PA of children, and the interactive book reading practices predict the rapid naming skills of the children. Additionally, they stated that parent teaching and interactive reading have an effect on the reading fluency and accuracy in the first grade while home literacy has impact on the RC in the second and third grades.

In the studies carried out in Turkey on the skills of the children have at their early ages and on the reading and writing achievements in the following years, although it was expressed that reading and writing are affected by some skills, there are limitations in studies in which their effect sizes and relationships are addressed in a holistic framework. Therefore, it is acknowledged that the sub-skills, which lay the groundwork for the literacy processes of Turkish children and that play a role in the flow of this process, should be determined and that having children acquired these skills would prepare them for literacy at an early age. This would not only enable Turkish children to reach the reading and writing maturity but also help them to start first grade with a fast and prepared state of mind. It is assumed that this study would also carry preschool education a further point through alternative teaching practices offered to those in the early childhood education programs.

Turkish, which is the mother tongue of Turkish children, besides many other languages of the world, is an agglutinating language in which the sound-letter relation can be easily established. In Turkish language, every letter is represented with a sound, and every sound is represented with only one letter. Not only does this situation accelerate the letter-sound pairing that brain performs during the word recognition process, but it also facilitates the initial reading and writing teaching process carried out in the first grades in Turkey. According to Dehaene (2007), who studies the neurology of reading, our brain first examines the letters of words and then converts these letters into sounds. Next, it creates syllables and words by combining the created sounds. When the functioning process of reading in the brain and the language features of Turkish are examined, it can be claimed that this process corresponds to the characteristics of Turkish language and is facilitated by the unique structure of the language. In this context, it could be asserted that, this study which has been carried out with Turkish native children is distinctive and particularly important since it takes the characteristics of



Turkish into account and differs from other studies conducted in languages with different structure and letter-sound relation.

Within the framework of these purposes, the relation between *attention*, *VP*, *WD*, *PA*, and *RAN* of children during preschool period and *reading*, *RC*, and *writing achievements* in the first grade was examined. Furthermore, the prediction levels of awareness, *VP*, *WD*, *PA*, and *RAN* in the preschool period on the reading, *RC*, and writing achievements in the first grade were identified. Thus, the following sub-problems have been identified within the scope of the study.

(1) What is the predictive attention, *VP*, *WD*, *PA*, and *RAN* in the preschool period on the fluent reading (rate and accuracy) achievements in the first grade?

(2) What is the predictive attention, *VP*, *WD*, *PA*, and *RAN* in the preschool period on the level of *RC* in the first grade?

(3) What is the predictive attention, *VP*, *WD*, *PA*, and *RAN* in the preschool period on the writing achievement in the first grade?

## METHOD

The study was carried out in the screening design. The correlation between children's preschool skills and reading and writing achievements in the first grade was investigated longitudinally. To examine the relation between children's preschool skills and their reading and writing achievement in the first grade, a linear correlation analysis was conducted (as it provides normality assumption regarding the variables). To determine the prediction level of preschool skills on reading and writing, multiple regression analysis was carried out.

### Participants

The research was conducted in 5 elementary schools at lower and middle socioeconomic levels in Istanbul province of Turkey between 2018-2020. The research started with 269 Turkish kindergarten students, 160 girls and 109 boys (5;0-6;0 age range), in the spring semester of the 2018-2019 academic year. Among these students who started their first year in the 2019-2020 academic year, some students had to be excluded from the study as they transferred to different schools. The study was completed with 187 students, 83 boys and 104 girls, in the spring semester of the first year.

### Procedure

Before the research was conducted, the necessary permissions were obtained from the relevant institutions and the necessary permission forms were obtained from the parents for their children to participate in the research. All applications were made individually in schools. The applications were carried out in two stages. The first phase was completed by measuring children's attention, *VP*, *WD*, *PA* and *RAN* skills in the spring semester of kindergarten. Measurements of attention, *VP*, *WD*, *PA* and *RAN* skills were completed within three months in the spring semester of the kindergarten periods. The second phase resulted in the determination of the students' reading, *RC* and writing achievements while they were first year students. The measurement of reading, writing and reading comprehension achievements of first-year students was carried out in the independent literacy phase of the first literacy teaching process. These measurements were completed within one month.

### Measurements

#### *Attention*

Children's attention skills were measured by the "Frankfurter Adaptive Concentration Test" (Raatz and Möhlig, 1971). Children were asked to find and mark as many *pears* as they can among the

*apple and pear pictures* (*apple* = 126; *pear* = 42) given to them mixed within 90 seconds. The number of pears marked at the end of 90 seconds constituted the attention raw score of the child. Since age and gender would affect the result, the calendar age on the day the child took the test was calculated from the corrected score table, and the correction score corresponding to this age was determined. By adding the correction score to the raw score, the attention score that allowed the attention level of the child to be compared with her/his peers was obtained.

#### *Visual perception*

The visual perception skills of the children were measured by the "Visual Perception Scale" (Kalkan and Arslan, 2015). The scale consisted of 3 sub-dimensions, namely "Pattern Discrimination", "Figure-Ground Perception", and "Matching", and 20 items in total. The highest score that could be obtained from the scale was 20. The test with 0.84 Cronbach's alpha reliability coefficient took an average of 15 minutes for each student to complete.

#### *Writing development*

The "Pre-Writing Skills Test" was used to determine the WD of children (Karaman, 2013). The reliability value of the "Pre-Writing Skills Subtests" test was KR-20= 0.77. The duration of the test with each student took an average of 10 minutes. Children were asked to cut a circle with scissors, write to a friend within a designated area, complete the dashes until the end of the line, remember the text shown and rewrite it, and write her/his name down.

#### *Phonological awareness*

Phonological Awareness Scale was used to measure PA of the children (Yangın, Yangın and Erdoğan, 2010). The reliability level of the scale was KR=0.74, and the highest score that could be obtained was 35. The subdimensions of the scale were "Recognizing that sentences are made up of words", "Recognizing that words are made up of syllables", "Recognizing that words can be rhymed", "Recognizing that words can start with same vowel", and "Recognizing that words can end with same vowel". The completion of the scale took 20 minutes on average.

#### *Rapid automatic naming*

The RAN of the children was measured through Turkish Rapid Automatized Naming Test (Babür and Bakır, 2018). The test consisted of 4 sub-dimensions: pictures, colors, numbers, and letters. In the lower dimensions of the test, children were required to name the symbols they saw quickly from left to right. At the end of the application, the evaluation was carried out by taking the time for students to complete each card and the number of symbols correctly named within that time into account. Given the fact that children do not receive a formal letter training in the kindergartens in Turkey, and hence there were children who did not recognize letters, the subdimension of the test regarding the letters were not used during implementation.

#### *Reading and reading comprehension*

In order to determine the reading achievement of students (rate and accuracy) and their RC level, two narrative texts (Little Salmon Fish and Kerem's Decision) prepared by researchers and then edited through asking experts for opinions were used at first grade level.

To determine the reading rate of the children, they were asked to read the narrative text called "Little Salmon Fish". The number of words read correctly within one minute was recorded as the reading rate. To determine the reading accuracy achievement, the number of words read correctly in one minute was proportioned to the total number of words read in one minute. The result obtained was referred as a percentage, and the reading accuracy achievements of the students were determined.

To determine the RC level of the students, they were firstly asked to read two narrative texts. Comprehension questions at simple and inferential level prepared for narrative texts were used to determine the level of comprehension of the students. After reading the texts, students were given comprehension questions in written form and asked to answer the comprehension questions as the same way. Reading Inventory developed by Ekwall and Shanker (1988) and adopted by Akyol (2012) was used to form the comprehension scores of the students. For the simple-level comprehension questions, unanswered questions were scored as "0", half answers as "1", and complete answers as "2". For the inferential-level comprehension questions, unanswered questions were scored as "0", half answers as "1", expected yet incomplete answers as "2", and complete and effective questions as "3". At the end of the implementations, total comprehension scores of the students from two different texts were created. The mean scores of the two texts were averaged, and the RC scores of the students were formed.

### *Writing*

To evaluate the writing achievements of the students mechanically, "Writing Achievement Evaluation Form" was used. The form consisted of 8 items: "Font Size, Line Writing, Writing Style of Letters, Writing Order, Spacing Between Words, Paper Layout, Spacing Between Letters, and Writing Cleanliness". The highest score that could be obtained from the form was 8, and the lowest score was 0. In determining the mechanical writing achievement of the students, what they wrote were used to be able to answer the comprehension questions.

## **RESULTS**

In this section, descriptive statistics, correlation, and multiple regression analysis results regarding the data are presented.

**Table 1. Descriptive statistics on variables in the preschool period and first grade**

N=187	$\bar{X}$	sd	Max. Value of the Test	Min. Value of the Test	Max. Value of the Students	Min. Value of the Students
1	32.50	6.16	48	0	44	10
2	15.01	2.62	20	0	20	8
3	5.84	1.50	9	0	9	0
4	17.34	6.65	35	0	32	0
5	69.47	22.77	-	0	169.24	0
6	29.55	12.26	113	0	70	10
7	93.14	8.04	100	0	100	57.14
8	6.23	3.29	13	0	13	0
9	4.34	2.11	8	0	8	0

1: Attention, 2: VP, 3: WD, 4: PA, 5: RAN (duration/second), 6: Reading rate, 7: Reading accuracy (%), 8: RC, 9: Writing success

Table 1 contains descriptive statistics on the variables in the preschool period and first grade. When average values on the skills of the students in the preschool period and first grade are compared with the maximum and minimum values that can be obtained from the test, it can be safe to assume that these skills of students are at a moderate level.

**Table 2. The linear correlation analysis results between variables in the preschool period and first grade**

N=187	1	2	3	4	5	6	7	8	9
1	1.000	-	-	-	-	-	-	-	-
2	.191**	1.000	-	-	-	-	-	-	-
3	.278**	.181*	1.000	-	-	-	-	-	-
4	.287**	.270**	.272**	1.000	-	-	-	-	-
5	-.299**	-.078	-.094	-.043	1.000	-	-	-	-
6	.305**	.334**	.326**	.361**	-.179*	1.000	-	-	-
7	.063	.198**	.135	.252**	-.109	.611**	1.000	-	-
8	.184*	.251**	.190**	.345**	-.092	.548**	.405**	1.000	-
9	.245**	.246**	.322**	.273**	-.043	.308**	.161*	.484**	1.000

1: Attention, 2: VP, 3: WD, 4: PA, 5: RAN (duration/second), 6: Reading rate, 7: Reading accuracy (%), 8: RC, 9: Writing success \* $p < .05$  \*\* $p < .01$

When Table 2 is analyzed, it is seen that there is a positive and moderate level significant correlation between the attention ( $r=.305$ ), VP ( $r=.334$ ), WD ( $r=.326$ ), and PA ( $r=.361$ ) of the students in their preschool period and their reading rate in the first grade ( $p < .01$ ). These results point out that children with high level of attention, VP, WD, and PA in the preschool period also have high level of reading rate in the first grade.

However, there is a negative low-level significant correlation between the RAN in the preschool period and reading rate in the first grade ( $r=-.179$ ;  $p < .05$ ). Since the naming success increases as the duration decreases in the rapid naming, this result obtained demonstrates that reading rates of the children who have low naming duration in the preschool period, and thus high naming success are high in the first grade.

It is observed that there is a positive low-level significant correlation between the reading accuracy of the students in the first grade and VP ( $r=.198$ ) and PA ( $r=.252$ ) in the preschool period ( $p < .01$ ). The result of this analysis marks that children with a high level of VP and PA in the preschool have higher reading rate in the first grade than others. In addition to that, there is a positive and moderate level significant correlation between the reading accuracy ratio and their reading rate ( $r=.611$ ,  $p < .01$ ).

There is a positive low-level significant correlation between the RC level of the students in the first grade and attention ( $r=.184$ ,  $p < .05$ ), VP ( $r=.251$ ,  $p < .01$ ) and WD ( $r=.190$ ,  $p < .01$ ) in their preschool period, and there is a positive and moderate level significant correlation between their PA ( $r=.345$ ,  $p < .01$ ). This result implies that children with high levels of attention, VP, WD, and PA in the preschool have high levels of RC in the first grade. Furthermore, it is observed that there is a positive and moderate level significant correlation ( $p < .01$ ) between RC in the first grade and the reading rate ( $r=.548$ ) and writing achievement ( $r=.405$ ).

It is observed that there is a positive low-level significant correlation ( $p < .01$ ) between the writing achievements of the students in the first grade and attention ( $r=.245$ ), VP ( $r=.246$ ) and PA ( $r=.273$ ) in the preschool period. There is a positive and moderate level significant correlation between the writing achievement in the first grade and WD in the preschool period ( $r=.322$ ;  $p < .01$ ). These results indicate that children with high level of attention, VP, PA, and WD in the preschool have high writing achievement in the first grade. Along with this, there is a positive and moderate level significant correlation between writing achievement in the first grade and the reading rate ( $r=.308$ ,  $p < .01$ ) and RC ( $r=.484$ ,  $p < .01$ ); and a positive low-level significant correlation with reading accuracy rate ( $r=.161$ ;  $p < .05$ ).

**Table 3. The multiple regression analysis result regarding the prediction of reading rate of preschool period on the skills in the first grade**

N=187	B	Std. Error	$\beta$	t	p
Stable	3.505	7.030	-	.499	.619
1	.186	.144	.093	1.289	.199
2	.701	.326	.150	2.151	.033*
3	1.340	.589	.164	2.276	.024*
4	.416	.131	.226	3.174	.002*
5	-.080	.037	-.149	-2.190	.030*
R <sup>2</sup> = 0.238		R = 0.488	F = 11.300	Durbin Watson: 2.019	p < .05

1: Attention, 2: VP, 3: WD, 4: PA, 5: RAN (duration/second) \*p < .05

Table 3 contains the results of multiple regression analysis on the prediction of reading rates of the students by their skills in the preschool period. According to the Durbin Watson coefficient (2.019) in the analysis results, there is no multi-collinearity between independent variables. When Table 3 is examined, it is observed that there is a statistically significant correlation between preschool skills of the students and their reading speed in the first grade ( $R = 0.488$ ,  $p < 0.05$ ). In addition to that, the skills of the students in the preschool period have a significant impact on the reading speed in the first grade. According to the  $R^2$  value, 23.8% of the total variance regarding reading rate of the students in the first grade is explained by their skills in the preschool period. And when the t test results regarding the significance of the regression coefficients are examined, it is seen that the VP, WD, PA, and RAN of skills in the preschool period predict the reading rate in the first grade.

**Table 4. The multiple regression analysis results regarding the prediction of preschool skills on reading accuracy achievement in the first grade**

N=187	B	Std. Error	$\beta$	t	p
Stable	86.021	4.851	-	17.731	.000
1	-.114	.100	-.088	-1.149	.252
2	.393	.225	.128	1.748	.082
3	.675	.406	.126	1.660	.099
4	.293	.0901	.242	3.235	.001**
5	-.059	.025	-.166	-2.326	.021*
R <sup>2</sup> = 0.157		R = 0.396	F = 6.731	Durbin Watson: 2.055	p < .05

1: Attention, 2: VP, 3: WD, 4: PA, 5: RAN (duration/second) \*p < .05 \*\*p < .01

Table 4 presents the results of multiple regression analysis on the prediction of correct reading achievements in the first grade by their skills in the preschool period. According to the Durbin Watson coefficient (2.055) in the analysis results, there is no multi-collinearity between independent variables. When Table 4 is examined, it is observed that there is a statistically significant correlation between preschool skills of the students and their reading rate in the first grade ( $R = 0.396$ ,  $p < 0.05$ ). In addition, the skills of the students in the preschool period have an important effect on their reading achievement in the first grade. According to the  $R^2$  value, 15.7% of the total variance regarding reading accuracy achievement in the first grade is explained by the skills in the preschool period. When the t test results regarding the significance of the regression coefficients are analyzed, it is seen that the VP, WD, PA, and RAN of preschool skills predict the reading rate in the first grade.

**Table 5. The multiple regression analysis result regarding the prediction of reading comprehension (RC) level of preschool period on the skill in the first grade**

N=187	B	Std. Error	$\beta$	t	p
Stable	1.023	1.971	-	.519	.605
1	.005	.040	.010	.134	.894
2	.163	.091	.130	1.790	.075
3	.174	.165	.079	1.053	.294
4	.142	.037	.287	3.858	.000**
5	-.013	.010	-.089	-1.254	.212
R <sup>2</sup> = .167		R = .409	F = 7.268	Durbin Watson: 1.576	p < .05

1: Attention, 2: VP, 3: WD, 4: PA, 5: RAN (duration/second) \*p < .05 \*\*p < .01

Table 5 shows the results of multiple regression analysis on prediction of RC of the students by their skills in the preschool period. According to the Durbin Watson coefficient (1.576) in the analysis results, there is no multi-collinearity between independent variables. When Table 5 is analyzed, it is seen that there is a statistically significant correlation between the preschool skills of the students and their RC level ( $R=0.409$ ,  $p<0.05$ ). In addition, the skills of the students in the preschool period have an important effect on RC in the first grade. According to the  $R^2$  value, 16.7% of the total variance on the RC in the first grade is explained by the skills in the preschool period. When the t test results regarding the significance of the regression coefficients are examined, it is seen that the PA of the skills in the preschool period predicts RC in the first grade.

**Table 6. The multiple regression analysis results regarding the prediction of preschool skills on writing achievement in the first grade**

N=187	B	Std. Error	$\beta$	t	p
Stable	-.893	1.237	-	-.722	.471
1	.018	.025	.054	.724	.470
2	.120	.057	.149	2.090	.038*
3	.373	.104	.265	3.599	.000**
4	.050	.023	.158	2.169	.031*
5	-.003	.006	-.032	-.460	.646
$R^2 = .205$		$R = .452$	$F = 9.320$	Durbin Watson: 2.086	$p < .05$

1: Attention, 2: VP, 3: WD, 4: PA, 5: RAN (duration/second) \* $p < .05$  \*\* $p < .01$

Table 6 displays the results of multiple regression analysis on the prediction of writing achievements in the first grade by their skills in the preschool period. According to the Durbin Watson coefficient (2.086) in the analysis results, there is no multi-collinearity between independent variables. When Table 6 is analyzed, it is seen that there is a statistically significant correlation between the preschool skills of the students and their writing achievements in the first grade ( $R=0.452$ ,  $p<0.05$ ). In addition to that, the skills of the students in the preschool period have a significant impact on the reading speed in the first grade. According to the  $R^2$  value, 20.5% of the total variance regarding writing achievement in the first grade is explained by the skills in the preschool period. When the t-test results regarding the significance of the regression coefficients are examined, it is observed that VP, WD, and PA of the preschool skills predict writing achievement in the first grade.

## DISCUSSION

In this study, the prediction level of attention, VP, RAN, WD, and PA of children in the preschool period on their success in reading, RC, and writing in the first grade of elementary school was investigated longitudinally.

PA is one of the preschool skills considered within the scope of the factors affecting the reading and writing achievements of Turkish children in the first grade. PA has an important place with respect to its relationship with the method used in reading and writing teaching in the first grade of Turkish primary schools. In the process of "Sound based first reading and writing teaching" conducted in the first grades, the main expectation from students is to be able to distinguish the sounds. Along with that, this process also includes skills such as being able to recognize the sound at the beginning and the end of the word, to syllabify the words or to combine the syllables, and realizing that words make up sentences which also constitute the sub-dimensions of PA. When the function of PA in establishing the letter-sound relation during the reading and writing acquisition and the act of reading is evaluated, it is assumed that Turkish children with PA skill acquired at early ages would have more effective reading and writing process in the first grade of primary school, and their RC levels would increase along with reading and writing. In line with the results obtained from the studies similar to the current study (Levesque, Kieffer & Deacon, 2018; Lonigan, Burgess & Anthony, 2000), it is safe to presume that students who are familiar with phonemes would substantially improve their word recognition skills during reading; therefore, automaticity and fluency would also increase. Hence, fluency increasing in accordance with PA is considered to have a feature that also allows students to be able to allocate more time for comprehension during reading.

It can be articulated that reading is a process of perceiving, distinguishing, and interpreting written symbols, while writing is the process of transferring the information created in the mind on the ground with symbols that are visually distinguished from each other. VP is one of the active preschool skills during the process in which eyes recognize and perceive letters and symbols on the ground and distinguish them from each other while reading. VP, which starts to develop in the preschool years, has an important role in daily lives of children, exhibiting developmental characteristics appropriate for their ages and expected academic performances during their school years. (Brown, Rodger & Davis, 2003). In the process of acquisition and use of literacy, which forms the basis of these academic performances, the child should be able to visually perceive and distinguish the figures and letters written on the paper (Razon, 1982). Additionally, s/he should also be able to comprehend the similarities/differences between symbols and use the visual location (right-left; up-down) that eye movements would need while performing acts of reading-writing (Ryan, 2003). This occurs with the VP skill that develops during the literacy development process in the preschool period. Eyes do not constantly move during reading; they perform jumping and pausing movements within the lines (Batemanazan, Jaafar and Salehuddin, 2014). These movements constitute the physiological dimension of reading. An individual performs long jumping movement for the known visual stimuli and short jumping movement for the stimuli that s/he has not encountered before. Visual stimuli perceived and recognized as a result of these eye movements are transmitted to the brain. These visual stimuli are written symbols on the page. Written symbols transmitted to the brain become meaningful through bringing previous experiences and prior knowledge together in individuals' minds. In this way, reading is performed successfully. Similarly, the symbols seen with the visual-textual copying skill are perceived and distinguished better; they can be successfully and accurately transferred to writing. As a result of this study, it has been determined that the VP skills of Turkish children in their preschool period are essentially related with their reading (rate and accuracy), RC, and writing skills in the first grade. In addition, it has been observed that the VP developing in Turkish children during preschool period is a skill that can predict the reading rate and writing achievements in the first grade at an early age. Based upon studies that are similar to the results of this research (Kaiser et al, 2009; Kenneth, 1982; Wang, Yin & McBride, 2015), it can be declared that the process of reading and writing, which are fundamentally visual and perception procedures, is influenced by the VP of individuals. It can be asserted that for the symbols (letters) used during writing to be physically produced correctly, the structure of the symbol should be perceived correctly first. Visually correct and complete perception of symbols would pave the way for their mechanically successful production during writing. In similar vein, it can be stated that individuals with good VP skills would be able to recognize, perceive and distinguish each symbol unit that makes up words more quickly and accurately during reading. It can be indicated that the increase in reading achievement (rate and accuracy), which is basically an act of understanding (Duke & Carliske, 2011), supports the development of comprehension skills. The connection between RC and VP can be explained in this way. In the same vein, as Barret (1965) argued, VP and discrimination are considered to have an important position especially upon the reading abilities of the first grade students.

One of the preschool developmental features that prepare children for writing practice from an early age is the WD of the children. During this period, children draw lines that cannot be described as writing and scribble by drawing letters and shapes. They attempt to imitate adult writing by pretending to write. All these elements have great importance for the developmental writing process of the child (Griffith et al., 2008). Drawing lines and scribbling enable children to master the use of written language, a complex and mental process, in compliance with its rules (Bodrova and Leong, 2007). According to Vygotsky's approach, these drawings and scribbles are characterized as sort of writing activity. According to Vygotsky, all kinds of drawings carried out by preschool children are expressed as prerequisites for writing in the later years. (Bodrova & Leong, 2007; Ceo, 2009). In this period during which gross motor activities used actively while scribbling and drawing take place, the groundwork is laid for fine motor skills that are used for writing process in the following years. Scribbles and drawings that are characterized as writing by children can be evaluated as initial acts for children to reach writing maturity by using writing tools effectively. As a result of this study, it has been observed that the WD of children in their early years is a strong predictor of the writing skills in the first grade of primary school. In his studies on children's early writing attempts, Clay (1975) points

out that activities supporting the WD, such as scribbling and drawing, have a critical role in exploring writing for children (cited in Griffith et al., 2008). In line with these results, as Matera (2008) and Pierce (2003) also states, it can be implied that in order for children to exhibit a successful mechanical writing performance in their elementary school years, their WD should be supported, and they should be prepared for formal writing in preschool period. Starting from early ages, it is thought that providing children experiences with paper and pencil, introducing them to the writing tools and guiding them to use these tools actively, establishing an environment where they can be occupied with writing activities and having writing materials in easily accessible places would support WD. In this way, children would be encouraged to write in the writing environment they are in through the writing materials (Vacca, Vacca, Gove, Burke, Lenhart & McKeon, 2006), and while realizing the relation between written language and spoken language (Griffith et al., 2008), they would also have a solid and fast start for the writing skill.

One of the preschool skills involved in the process of recognizing the letters that make up words during reading, transmitting them to the mind and perceiving them, and converting them into phonemes and then vocalizing is the RAN. In the process of RAN, symbols are recognized, perceived, and voiced from left to right as quickly as possible (Norton and Wolf, 2012). Rapid naming, which is similar to reading in terms of physical and mental process, is thought to be related to reading skills with respect to rapid recognition and correct vocalization function of the symbols. While establishing the connection between RAN and reading, Wolf and Denckla (2005) indicate that both skills have similar motor, linguistic, and cognitive stages. During the act of reading, while transforming visually received letters into sounds, the individual also carries out the voicing procedure for the visual symbols perceived in the rapid naming process. In this framework, reading achievement of individuals is considered to be related to the RAN. As a result of this study carried out with Turkish children, it has been determined that the RAN skills of children in their preschool period are significantly related to their reading rate in the first grade. The obtained findings are similar to the results of the studies in the literature conducted with children whose mother tongue is different (Norton and Wolf, 2012; Wang, Yin & McBride, 2015; Wolf and Denckla, 2005). The decrease in time for RAN indicates that naming achievement increases. Therefore, it can be indicated that individuals who can recognize and voice the symbols they see in a shorter period of time recognize the letters they see during reading faster and convert them into phonemes. In this respect, it can be indicated that the RAN skill is among the sub-skills that are actively used during the act of reading and working in the background of the mind. The results obtained from this study carried out with Turkish native children also reveals the function of the RAN not only in languages where a letter is vocalized with multiple sounds, but also in Turkish where each letter is vocalized with only one sound.

### **Limitations**

There are three different limitations of this study. The first is that the study was carried out with Turkish children. The findings may vary in children with different languages. The second limitation is that the study group consisted of 187 students at lower and middle socioeconomic levels. This may limit the generalizability of the findings to larger numbers and higher socioeconomic level children. The third limitation is that a total of eight different skills of children were measured; five being in the kindergarten, and three being in the first grade. In the process of taking measurements, these may have compelling tasks for those who have not developed literacy skills in the kindergarten and for students who have reading writing difficulties in the first grade.

### **Conclusion and Inferences**

The early years of life are critical times for children to prepare for later reading writing skills, and for them to acquire and develop their early literacy and other skills in the preschool period. In this longitudinal study, the relationship between reading, RC, and writing skills and preschool skills of the individuals has been determined. With the results obtained, the skills that should be prioritized in preschool education have been brought to the fore in order to be able to prepare for the next education steps. In addition to that, by determining the skills that children have starting from preschool period,



this study have indicated the way to determine the possible literacy difficulties that they may experience in the following years.

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## The Effects of Scientific Argumentation on High School Students' Critical Thinking Skills\*

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### Abstract

One needs higher order thinking skills in positioning perspectives for any kinds of problems that affect one's view of life in order to develop a fundamental scientific understanding. For this reason, science teaching requires thinking skills instruction to be included in classes. This study aimed observing the effects of student-centered activities, which were formed through scientific argument centered teaching method, on the critical thinking development of students, comparing it with those of traditional approach in chemistry classes. The research was conducted in two 11<sup>th</sup> grade classes of a high school in the city of Çankırı in Turkey. Classes were carried out with the teaching approach based on scientific argumentation in the experiment group with 17 students and with the conventional teaching approach in the control group with 17 students. The study lasted for 29 weeks with 11<sup>th</sup> grade students in two groups. In the experimental group, argumentation-centered instruction activities, which were based on Toulmin's argument model, were conducted. Data were obtained through Watson Glasser Critical Thinking Scale and achievement tests named Achievement Test 1: Reaction Rate, Achievement Test2: Chemical Equilibrium, Achievement Test 3: Solubility Product, Achievement Test 4: Equilibrium in Acid-Base Solutions were applied at the beginning and end of the instructions as pre-test and post-test. Wilcoxon test and Mann Whitney U test were used to analyze the data quantitatively. With regard to the results, critical thinking skills of experimental group and control group students made progress but there was a statistically significant difference between the two groups. Also, when students' answers in achievement tests are analyzed qualitatively in terms of critical thinking subskills, it can be seen that all critical thinking sub skills of the experimental group students have developed more than the control group.

**Keywords:** Scientific Argumentation; Critical Thinking; Science Education; High School.

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## INTRODUCTION

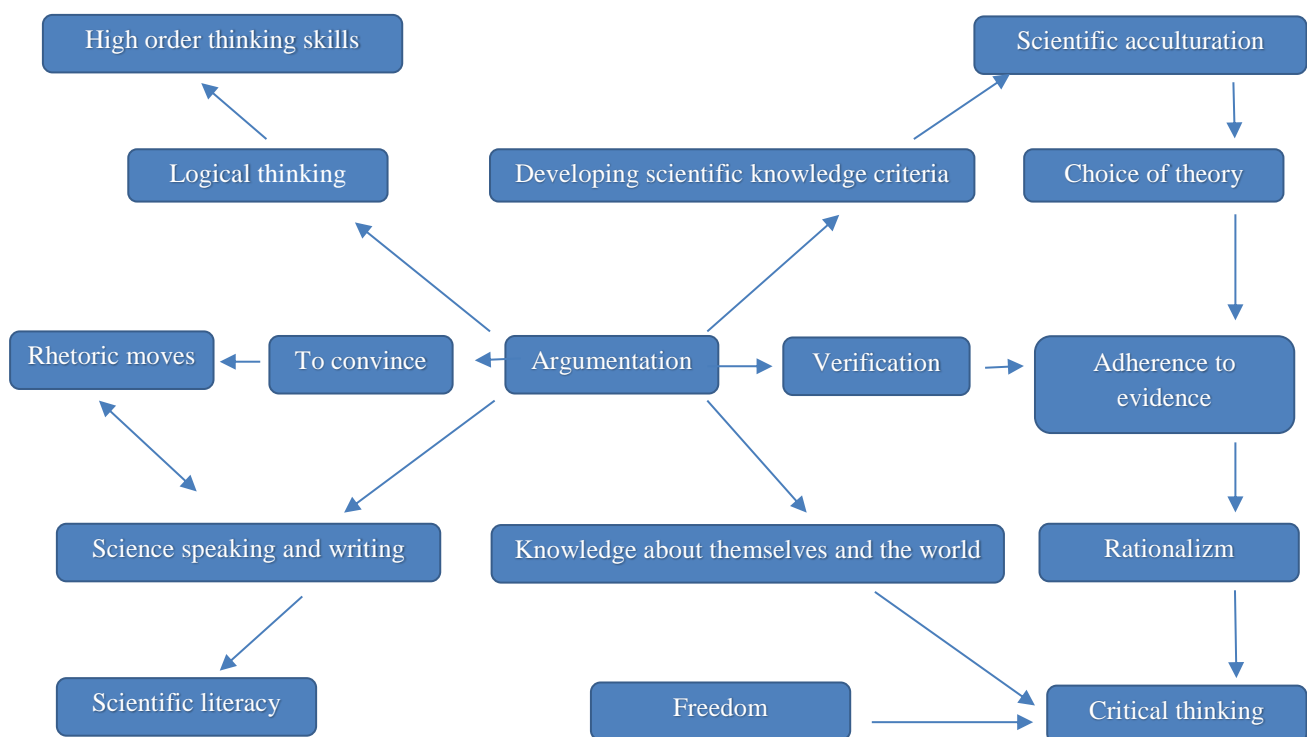
Thinking acts as an important instrument in preparing the required environment, and ensuring the continuity of it, in order for individuals and communities to attain secure and constant life styles. In parallel with this, one's effective thinking and decision making in the face of incidents or situations reflects his/her critical thinking aspect (Porter, 2002). In Bloom's taxonomy; more often, there are higher order thinking categories that focus on abilities such as analysis, synthesis and evaluation instead of lower order thinking categories that focus on critical thinking skills, knowledge, comprehension and practice skills (ten Dam & Volman, 2004). Critical thinking often plays a role in recognizing problems, finding viable tools for the solving of these problems, enumerating relevant information, recognizing unexpressed assumptions and values, interpreting data with accuracy, clarity and discrimination in understanding and using language, evaluating evidence and arguments, accepting the existence or absence of logical relationships between propositions, testing conclusions and generalizations and also conclusions and generalizations reached by individuals (Brown, S., 2009; Gábor, 2007).

There are many different ways to improve critical thinking. According to specialists, an individual can inspect and evaluate their own thinking process critically. They can question how to think more objectively and logically and understand the thinking processes and standards used by other individuals coming from a different field. Also, experience is of utmost importance for the acquisition of these skills (Güven & Kürüm, 2004). Critical thinking requires an active process and the instruction provided on higher order cognitive processes such as understanding, inference, analysis, synthesis, reflection and decision making which are intellectual skills of critical thinking, requires a complicated cognitive activity, as well (Meral, Şahin & Akbaş, 2021; Özdemir, 2005).

Learning to think critically is learning about the act of thinking itself. Vieira, Tenreiro and Matins (2011) present two main aspects of critical thinking in their study. One is the logical aspect of thinking, and the other is the cognitive aspect of thinking. The first is to teach the principles of logic, rhetoric and argumentation; and the other is to teach *teaching thinking* or *thinking skills* in a broader and more general way. Thinking critically encourages questioning, problem solving, decision making, discussing, criticizing, assessing, active learning techniques and similar critical thinking and it improves science education. According to National Science Education Standards, a relation between scientific thinking and a more comprehensive thinking in students' minds should be built in science teaching. So as to strengthen this relation, thinking environments that students participate in educational contexts should be situated in a more comprehensive content and conveyed beyond conventional science (Council of National Science Education, 1996 cited in Van Zee et al., 2001). Social interaction and group work are important class activities in teaching methods which have been suggested after considering all the theories that constructivist approach is based upon in a way to eliminate the drawbacks of the teaching methods prepared according to cognitive theories. Therefore, during classes, activities focus students' attention on studies. Small group argumentations ensure conceptual understanding, attitude, motivation, group membership and leadership skills (Cho & Jonassen, 2002; Hasnunidah, Susilo, Irawati & Suwono, 2020; Zohar, Weinberger & Tamir, 1994). At this very point, argumentation-based teaching method comes to the forefront.

When the constituents making up the argumentation are examined, it is observed that characteristics such as high-level cognitive skills, scientific acculturation, critical thinking, and scientific literacy are significantly affected by argumentation (Figure 1). Scientific argument method is very essential in terms of the interaction between students, bringing their mental models forward, using backing and evidence to defend their own models, rebutting and providing the development of students' cognitive skills as well as reasoning and inquiry skills. (Duschl & Osborne, 2002; Erduran, Ardaç & 2006; Lee & Ertmer, 2006; Osborne, 2002; Osborne, Erduran & Simon, 2004; Özdemir, 2005; Öztürk & Doğanay, 2019; Sampson & Walker, 2012; Simon, Erduran & Osborne, 2006; Ural & Gençoğlu, 2020; Von Aufschnaiter, Erduran, Osborne & Simon, 2008; Yerrick, 2000; Zohar & Nemet, 2002).

Psychologists are of the opinion that argumentation with valid justifications and rebuttals involve higher-level thinking skills (Iordanou, 2013; Nussbaum & Sinatra, 2003). Scientific argumentation builds a framework that develops students' scientific thinking skills critically, for instance being able to distinguish between theory and data, organizing data, and coordinating theory and data (Driver, Newton & Osborne, 2000). Likewise, students stating their thoughts and opinions in written form become cognitively active. Written statements give students the opportunity for defining the problem, reasoning, making inferences, and expressing themselves better (Doğanay & Ünal, 2006). Moreover, considering the strong relationship between language and thinking and that the first stage of critical thinking education should be language education (Lee & Ertmer, 2006), it can be said that critical thinking skills develop more effectively in learning environments where scientific argumentation-oriented teaching approach is used. Using language skills in activities enables students to improve their thinking skills. Critical thinking, as one of the thinking skills, evolves correspondingly with the language efficiency that is used during discussion.



**Figure 1. Argumentation Concept Map (Erduran & Aleixandre, 2007)**

Expression of ideas in the classroom environment allows the student to move from the inner psychological field (mind) and rhetorical discussions to the outer psychological field (class) and dialogic discussions. Students develop both themselves and their friends by having quality discussions as a result of being of the same opinion for the benefit of the discussion. Students' interactions in personal and social areas enable them to develop their shared knowledge, values and beliefs. Students need to have a say, to be listened, to be taken seriously, to be able to make their own choices, to express those choices and to defend their rights in the learning process. These needs of students can be granted in an environment where scientific discussion takes place (Aslan, 2010). Discussions make students curious and active. Creating explanations to ensure in-depth understanding encourages them and provides students with the opportunity of examining the mistakes thoroughly and resolve them (Kaya, 2005).

The learning environment should support students' acquisition of critical-thinking skills as a tool that students use to construct their understanding (Grabinger & Dunlap 1995). In classes where

scientific discussions take place, the student approaches the subject in the way a scientist thinks, instead of memorizing it, and tries to correctly configure concepts in his mind (Ardaç, D. & Yakmacı-Güzel 2006; Simon, Erduran & Osborne, 2006). In addition, students' critical thinking also develops, since understanding the relationship between the claim and the evidence in discussions is an understanding of the claim and the reasoning. Jacob (2012) stated a significant relationship between critical-thinking skills and conceptual understanding. Students who are skilled in critical thinking have higher cognitive learning outcomes than those who are not, and critical thinking has a significant influence on academic success (Beaumont Walters & Soyibo, 2001; Wiles, Allen & Butler 2016). Researches show that there is a significant relationship between concept structuring and students' development levels and higher level thinking skills. Accordingly, students who score higher than their peers in terms of scientific reasoning achieve higher scores compared to students who score low on structuring theoretical concepts (Cavallo, 1996, Kwon & Lawson, 2000) Skills that are learnt and developed in class can be used in similar subject areas and in similar situations outside the class (Seferoğlu & Akbıyık, 2006). The subject knowledge that a person has affects his or her reasoning about the events that he/she encounters. When the same event is interpreted using different subject knowledge, different inferences are reached. For instance, in the first observations that were done with magnetism, the inference of the objects with magnetic properties carrying mystical powers was an inaccurate reasoning made in subject knowledge (Ateş, 2004).

During the argumentation, the students submit their claims and support these claims using evidence. Students know that they are right if they can support their claims with scientific evidence but if they can't, then they need to change their claims. Throughout this process students learn both the scientific concepts and apply scientific methods (Driver, Newton & Osborne, 2000). The goal is to enable science students to think critically about scientific concepts, to support their evidence-based claims, and to take on the role of an individual who explains and researches, questions and discusses their ideas rather than just conveying only a number of known phenomena (Taasobshirazi & Hickey 2005). In this way, students in science education can develop their critical thoughts throughout argumentation (Rayner & Papakonstantinou 2018).

According to Schafersman (1991) critical thinking" is the *scientific method or scientific thinking* utilized in everyday life. Critical thinking matches with the skills used in obtaining scientific knowledge. Both critical thinking skills and scientific thinking processes include hypothesizing, testing and evaluation, experiment planning (including the control of variables) and coming to valid and reliable conclusions. Critical thinking is closely related with skills of choosing the right option among alternatives and constantly considering various alternatives. Students are ensured to think critically in science classes at the stage of determining variables when designing experiments and producing new experiments through changing those variables and developing hypotheses, when using new instruments in every new experiment or finding new ways of using those instruments, at the stage of presenting and assessing data (Koray, Koksall, Özdemir & Presley, 2007). Laboratory practices conducted with this purpose resulted in a significant effect on students' critical thinking in the development of skills. The literature indicates that argumentation – based laboratory practices had positive effects on students' critical thinking skills (Hasnunidah et al., 2020; Sönmez, Memiş, Yerlikaya, 2021; Stephenson & Sadler-McKnight 2016).

Argumentation involves evaluating claims, citation evidence to justify claims, and using decision-making strategies with opposing positions. Students need to learn the reasons and ponder the evidence. In other words, they need to develop their skills by engaging in discussion (Maloney & Simon, 2006). It is now a common view that scientific practices such as discussion help young people learn scientific theory and concepts and enable them to engage in scientific discourse, learn the functionings of scientific initiatives, and embed scientific concepts and practices in decision-making processes in daily life. Discussion has a *competing theories* activity in which students have to evaluate how to decide between competing claims (Bricker & Bell; 2008; Erduran, Ardaç & Yakmacı-Güzel, 2006). In the process of structuring the scientific knowledge, the skills of decision making about the strength and validity of evidence, thinking scientifically and reasoning are required. In order for these skills to develop in students and for them to be appreciative about the importance of evidence, it is a



necesssity to expect them to use the evidence to justify their own judgments and decisions. For this, students need to engage in activities in which they can explore and examine different points of view that will enable them to understand how evidence is used to convince someone to change a specific point of view (Maloney & Simon, 2006). These activities, on the other hand, can be carried out in an environment where there is scientific argumentaiton. Discussion in learning environments should be created for students by directing students to criticize or question the already framed information, with critically comparing evidence by making predictions and observations (Longino, 1990), and this will naturally challenge students' thoughts by inviting critical questions (Osborne, Erduran & Simon, 2004).

Haynes and Bailey (2003) emphasized that it is important to ask accurate questions in order to improve students' critical thinking skills. Hemming (2000) stated that learning environments should be supported in order for students to demonstrate and practice their critical thinking skills, and this will be done by integrating classroom discussion and questioning techniques. Critical thinking skills of students can be developed with these questions: *“What do you think about it?, Why do you think like that, and what is your knowledge based on?, What explains it, what leads to it, what are its links? Is it possible to view it with different perspectives?”*. By questioning whether students think about all the other alternatives, whether they are aware of the reason of them thinking that way or in short, by questioning their thinking process, students can be made to think about their own thinkings (Snyder & Snyder, 2008). In the convention of critical discussion, both trying to refute and criticism have a dominant role. The qualification of criticism is probably that it deosn't leave knowledge to personal opinions, but to method, discussion and exchange of ideas (Kökdemir, 2003).

At this point, Cohen (1993) highlights the importance of having students do argumentation practices that they can think upon and see what other viewpoints are, instead of just one specific viewpoint of the teacher. This way, students learn as they discuss and question subjects (cited in Kökdemir & Demirutku, 2000). In consideration of these data, the research questions investigated in the study were: Is there a significant difference between the experimental group students and control group students in terms of critical thinking? This study aimed at investigating the effects of student-centered activities based upon scientific argumentation in chemistry classes on the critical thinking skill development of students.

## METHODOLOGY

### *Implementation*

In this experimental study, semi-experimental design with unequated control group was employed in pre-test and post-test. It was assumed that the experimental and control group students had similar backgrounds and were of the same age and experienced similar changes in their behaviors through which they achieved similar levels of cognitive and psychological maturation. Participants did not differ significantly from each other in terms of their ages and cognitive levels, experiences and socioeconomic characteristics. There were four classes in the 11th grade in the school where the study was conducted. While choosing the groups to be included in the study, it was assumed that similar experiences were going to be acquired, and also whether the same branch teachers attended the classes and volunteering were taken into consideration. Students in both classes were eager to get involved in the study. The researcher randomly selected one of the two groups of students of the same age group with similar academic characteristics as the control and the other as the experimental group. The study was carried out with the participation of an experimental group of 17 students who were taught through instruction based upon argumentation and a control group of 17 students who were taught through conventional instruction. The study was conducted with 11<sup>th</sup> grade students and continued for the two successive terms within the same educational year. The sample of the study was selected with an exam that was held in the last year of primary education, and among the students who had high-level thinking skills; who were curious, studying, questioning, interested in environment and social issues, interested in different areas such as history of countries and religions, literature, technology, space sciences and who had a high intellectual level as of their age. As the researcher conducted the

implementation process in control and experimental groups, he spent a good time with participants in the research environment. The researcher met with the students in both groups before the implementation process and interacted with them until the end of the implementation.

To ensure the validity of the qualitative leg of the research, procedures such as making long-term observations in natural environments proposed by Creswell and Miller (2000) and monitoring the research process by an outside science researcher were adopted. The courses in both the control and experimental group were monitored by a researcher, who had a doctoral dissertation on argumentation, for one day in monthly periods. At each stage of the study, the researcher constantly interacted with two experts in chemistry education, and took their evaluations and opinions into account.

Argumentation activities were prepared that enabled the interaction of students individually or in small groups, explained the concepts and relations between concepts of the 11th Grade Chemistry Curriculum content, included critical thinking skills appropriate for the nature of educational targets for the experimental group students. Thirteen activity applications for reaction rate unit, eight activity applications for chemical equilibrium unit, five activity applications for solubility equilibrium unit, ten activity applications for acids and bases unit were carried out. In the experimental group, the courses were conducted in accordance with the philosophy of the constructivist approach in accordance with argumentation-based activities.

Students studied individually in the first 1-2 minutes of each activity. After this, each student formed a duo with another student in their group. These two students were encouraged to discuss their individual work with each other, sharing and comparing it, especially when they had different thoughts. The purpose of this activity was to enable students to reach a common decision as a result of their discussions based on the reasons of their thoughts. However, they were not necessarily required to make a joint decision. They were asked to share their decisions with the other duo, who had reached a common decision in their group within the same process, and how and why they reached this decision, and ultimately discuss and make another small group decision. In each activity where individual differences were tried to be determined, the required environment was prepared for small groups to make a decision within themselves, and the researcher did not interfere in small group discussions unless necessary. But the researcher made some attempts to get students involved in the discussion where necessary. The researcher asked encouraging questions like “*Why do you think that?*”, “*What is your reasoning?*”, “*What is your proof?*”, “*How do you refute that claim?*”, and “*What is your argument?*” Discussions conducted by small groups within themselves allowed to reveal and analyze new ideas, reveal the inaccuracy or accuracy of ideas through promoters and rebuttals, evaluate the weaknesses and strengths of ideas and allowed students to think and detail knowledge in depth. Below are two examples of the way activities are processed.

- a. *Theories that compete with ideas and proof:* In an activity called *Rusty Pipes*, whether there was a difference with the thickness of the rust in the hot water and cold water pipes in the plumb system of a house was asked and there were different statements regarding the claims' reasonings. Students were asked to support their claims by making appropriate choices from the statements of evidence. Students evaluated each evidence statement through small group discussion and identified evidence statements that supported their chosen theory. Decision made in small groups was moved to larger group discussion and a joint decision was reached.
- b. *Experimental design:* After the *Rusty Pipes* activity, the students were asked to design an experiment regarding the effect of temperature on reaction rate. Students designed the experiment in groups of four. Blackboard of the classroom was divided into sections by the number of groups. A spokesperson for each group wrote important elements like the hypothesis to be tested, dependent/independent/controlled variables, and design of the experiment onto the section given to them on the board. Each group's spokesmen discussed the appropriateness of the experiments they designed in front of the classroom. Other students were able to have a say when they wanted. Experimental designs that contained appropriate, inappropriate or missing elements were identified. The completion

of experimental designs with missing elements was determined by a large group discussion.

In the control group, an approach was adopted in which the teachers played an active role with their teaching position and the students were passive with their listening position. Before coming to the classes, the teacher determined how to explain the subject, how much time it would take and what examples to give. Students were informed about which topic to discuss in the next class, and they were allowed to come prepared for the class. At the beginning of each class, the teacher started by giving examples from current issues related to the subject in order to draw student's attention to the subject. After the subject was covered, the teacher asked the students if there was any point they didn't understand. The points that were not clearly understood by the students were explained again by the teacher. Afterwards the students were asked various questions to find the accurate answers. The course-book and worksheets containing open-ended and multiple-choice questions at all levels of Bloom's taxonomy were used as sources. At the end of the class, the connection between subjects was built by making a general review. Experiments with the same content as the experimental group were conducted according to the chemistry textbook. For the experiment, students were divided into groups of three and four, and all the necessary materials, procedures, templates of tables and graphs that they were required to draw were prepared and given to each group. In the control group, though rarely, the class spontaneously turned into a discussion class and continued in this way.

### Measuring Tools

#### *Critical Thinking Skills Measuring Test (CTSMT):*

Watson Glaser Critical Thinking Skill Scale (WGCTSS) was used as data collection tool. Instead of the complete Watson-Glaser Critical Thinking Skill Scale (WGCTSS), an adaptation scale, which was developed through alterations that would not change the question content, was applied. Two educators' opinions were received in terms of language and research suitability. As a result of a study conducted with 120 students for the reliability of the test, the reliability of the test was found to be  $\alpha=0.65$ .

The five subsets are as follows (Watson & Glaser, 1964): Test 1: Inference (CTS1, 10 items), samples ability to discriminate among degrees of truth or falsity of inferences drawn from given data. Test 2: Recognition of Assumptions (CTS2, 6 items), samples ability to recognize unstated assumptions or presuppositions which are taken for granted in given statements or assertions. Test 3: Deduction (CTS3, 7 items), samples ability to reason deductively from given statements or premises, to recognize the relation of implication between propositions, to achieve necessary inference from given premises. Test 4: Interpretation (CTS4, 6 items), samples ability to focus on evidence and to distinguish between (a) generalizations from given data that are not warranted beyond a reasonable doubt, and (b) generalizations which, although not absolutely certain or necessary, do seem to be warranted beyond a reasonable doubt. Test 5: Evaluation of Argument (CTS5, 6 items), samples ability to distinguish between arguments which are strong and relevant and those which are weak or irrelevant to a particular question at issue. The highest score that can be obtained from the WGCTSS is 40. The application time of the test is set to be 45 minutes.

*Achievement Tests (Reaction Rate Achievement Test RRAT, Chemistry Equilibrium Achievement Test CEAT, Solubility Equilibrium Achievement Test SEAT, Acid/Base Equilibrium Achievement Test, ABEAT)*

Determining the effect of a scientific discussion-based teaching approach on students' critical thinking skills step by step was also covered by the study. Restricted and unrestricted open ended questions, multiple choice questions, paper and pencil performance assessment questions were included in the tests. Achievement tests were prepared in a multi-format structure to measure critical thinking skills. The test questions were developed by the researcher by examining the basic achievements predicted by 2008 Secondary School Chemistry Course Curriculum, 11th grade chemistry textbooks and especially the misconceptions of the same age group students in literature

(Çakmakçı, Donnelly & Leach, 2005; Petrucci, Harwood & Herring, 2002, Trans: Uyar & Aksoy). RRAT and ABEAT tests consisted of six questions, CEAT test seven questions and SEAT test five questions. The time limit for each test was set to be 45 minutes. The content and structure validity of each achievement test was evaluated by three chemistry teachers and two science education specialists and the research was decided to be suitable for its goal.

To determine the reliability of results from achievement tests the intracoder and intercoder reliability were examined. Intracoder reliability is whether the encoder can achieve the same result when the encoding process is repeated (Stemler 2000). Intercoder reliability is expressed as the ability to encode the same text in the same way as different people (Weber 1990). The researcher developed encodings of the critical thinking sub-skills of each unit's achievement test. Evaluation of the tests in terms of the use of critical thinking sub-skills was carried out by two science education researchers. In the first encodings, Inter-encoder reliability was about 60% for RRAT, 60% for CEAT, 70% for SEAT, and 80% for ABEAT. For situations in which there was no match between the researchers' codes, the opinion of the other researcher who was involved in certain stages of the study was consulted. The final version of the assessment was reached after at least two researchers' joint decision. In order to evaluate the reliability of the intra-coder, this process was repeated by the researcher to evaluate the post-tests at the end of each unit and the pre-tests of the next unit. Intra-evaluator reliability was achieved at about 70% for RRAT, 80% for CEAT, 80% for SEAT, and 80% for ABEAT. And this rate can be said to be sufficient (O'Connor & Joffe, 2020, p.9). Students' responses are encoded in the following way: CTS1 for each valid inference skill not explicitly stated based on evidence and logic, CTS2 for each unstructured correct assumption that can be deduced from a given situation, CTS3 for any valid conclusion, a given implication, or any necessary inference that can be drawn within the entire set of advanced propositions / successive logical propositions by referring to a formula, law, or a premise, CTS4 for every unsuspecting correct description of information components leading to a conclusion, CTS5 for each correct evaluation of the strength of an argument.

Prior to a course to determine knowledge baseline, a pre-test was administered in order to determine the students' pre conceptions about the subject and the skills they previously had about scientific and critical thinking processes. A post-test was administered to determine both the conceptual change and the acquisition of critical thinking skills in students at the end of the learning process. The study dealt with data on changes in students' critical thinking skills and interpretations of data. The content of the achievement tests is summarized in Table 1.

**Table1. Evaluation of Achievement Tests in terms of Critical Thinking Skills**

Unit	Questions	Subjects	Critical Thinking Subskills
RRAT	1	Enthalpy of Reaction- Activation Energy	CTS1, CTS3, CTS4
	2	Factors Affecting Reaction Rate	CTS1, CTS4
	3	Factors Affecting Reaction Rate	CTS1, CTS3, CTS4
	4	Factors Affecting Reaction Rate	CTS1, CTS2, CTS3, CTS4, CTS5
	5	Factors Affecting Reaction Rate	CTS1, CTS2, CTS3, CTS4
	6	Factors Affecting Reaction Rate	CTS2, CTS3, CTS4
CEAT	1(1-8)	Le Chatalier Principle	CTS1, CTS2, CTS3, CTS4, CTS5
	2	Interpretation of Equilibrium Constant	CTS2, CTS3, CTS4
	3	Le Chatalier Principle	CTS2, CTS3, CTS4
	4	Le Chatalier Principle	CTS2, CTS3, CTS4
	5	Le Chatalier Principle	CTS1, CTS2, CTS3, CTS4
	6	Le Chatalier Principle	CTS2, CTS3, CTS4
	7	Le Chatalier Principle	CTS2, CTS3, CTS4
SEAT	1	Solubility Equilibrium, Dissolution Rate	CTS2, CTS3
	2	Common Ion Effect on Solubility Equilibrium	CTS2, CTS3, CTS4
	3	Temperature Effect on Solubility Equilibrium	CTS3, CTS4
	4	Relation Between Dissolution and Solubility	CTS1, CTS2, CTS3, CTS4
	5	Selective Precipitation of Ions	CTS1, CTS2, CTS3, CTS4

ABEAT	1	Neutralization reactions	CTS1, CTS2, CTS3, CTS4
	2	Properties of Acidic Substances	CTS1, CTS2, CTS4
	3	Properties of Acidic Substances	CTS1, CTS3, CTS4
	4	Acid Base Strength	CTS1, CTS2, CTS4
	5	Acid Base Strength	CTS1, CTS2, CTS3, CTS4
	6	pH of Extremely Dilute Acid Solutions	CTS1, CTS2, CTS3, CTS4

## RESULTS

### Quantitative Analysis

Repeated t-test was applied to the WGCTSS pre-test score averages of the experimental and control groups and there was no significant difference between the score averages of the two groups ( $\bar{X} = 22.59$  for the experimental group,  $\bar{X} = 22.41$  for the control group,  $SD = 32$ ,  $t = 0.15$ ,  $p > 0.01$ ). Although the WGCTSS pre-test scores of experimental and control group students showed normal distribution, Wilcoxon test analysis was applied to the WGCTSS<sub>pre</sub> and WGCTSS<sub>post</sub> test scores in both groups, since the WGCTSS<sub>pre</sub> test scores did not show normal distribution. A statistically significant difference was found between the groups' WGCTSS score averages before and at the end of practice (for the experimental group, WGCTSS<sub>pre</sub> test score average = 5.00, WGCTSS<sub>post</sub> test score average = 8.73,  $Z = -3.26$ ,  $p < 0.01$ , for the control group, WGCTSS<sub>pre</sub> test score mean average = 2.57, WGCTSS<sub>post</sub> test score average = 9.87,  $Z = -3.96$ ,  $p < 0.01$ ). According to these results, critical thinking skills of experimental and control group students developed all research round.

Since the WGCTSS<sub>post</sub> test scores of the experimental and control group did not show normal distribution, the Mann Whitney U test analysis was applied to the WGCTSS<sub>post</sub> test score averages. It was observed that there was a statistically significant difference between the average critical thinking skill scores of experimental and control group following the research. When the score averages of the experimental and control group are taken into account, this difference appears to be in favor of the experimental group. The results are given in Table 2 below.

**Table2. U-Test Results of WGCTSS Post Test Mean Scores**

Scale	Group	n	Score Averages	Sequence Sum	U	p
WGCTSS <sub>post</sub>	Experiment	17	23.11	398.00	44.00	0.000
	Control	17	11.59	197.00		

In other words, the score average of 23.11 of the experiment group students is higher than the score average of 11.59 of the control group students, and the difference is statistically significant ( $p < 0.01$ ). According to these results, the teaching approach based on scientific argumentation is more effective in developing students' critical thinking skills than the teaching approach in which the teacher's narrative is at the center.

### Qualitative analysis

Critical thinking can be developed depending on the subject area. Trainings focused only on critical thinking, independent of the subject area, are insufficient to acquire critical thinking skills (Seferoğlu & Akbıyık, 2006). In this research on the experimental group, with the said situation taken into account, the development of critical thinking skills was carried out together with the content of the course.

In Table 3, the total critical thinking skills of the students in the experimental and control groups were determined in the pre and post achievement tests applied in each unit.

**Table 3. Total critical thinking skills in pre and post achievement tests of experiment and control groups**

Achievement Tests	Experimental Group	Control Group
RRAT <sub>pre</sub>	29	34
RRAT <sub>post</sub>	261	213
CEAT <sub>pre</sub>	62	54
CEAT <sub>post</sub>	332	308
SEAT <sub>pre</sub>	8	15
SEAT <sub>post</sub>	141	97
ABEAT <sub>pre</sub>	24	23
ABEAT <sub>post</sub>	335	287

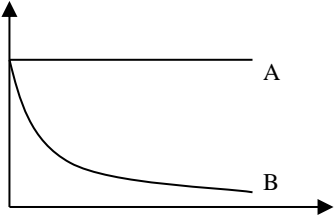
The total critical thinking skills in the pre and post achievement tests of the critical thinking skills of the experimental and control group students during the practice are as shown below.

*Experiment Group: Pre - test-N: 123 CTS; post - test-N: 1072 CTS*

*Control Group: Pre - test-N: 126 CTS; post test-N: 905 CTS*

A sample of the two questions applied in the test and an example of how the evaluation was performed are given in Table 4. As a result of the implementation, the reason why the critical thinking skills of the students in the experimental group developed more than the students in the control group is because the courses in the experimental group are processed with a scientific discussion oriented teaching approach. Critical thinking, a complex and comprehensive process that requires high-level cognitive skills, can be better developed in discussion environments where frequent questions, growing tension, unexpected results, and active learning are present.

**Table4. Sample questions from achievement tests and sample coding for evaluation**

Questions	Students' Answer and Measured Skills
	<u>Student 1C (Control Group)</u>
ABEAT 5. The graph below shows the change of the ionization percentage of A and B in water depending on the concentration. What kind of substances (acid/base) can A and B be?	Water is evaporated (CTS1) or acid or base is added (CTS1, CTS2). Strong acids ionize 100%. A is a strong acid (CTS3), A is already completely ionized (CTS1). In strong acids, the percentage of ionization does not change depending on concentration. Because they are already completely ionized. They are strong, anyway. The reason of them being strong is because the percentage of ionization does not change (CTS4), pH does not change (CTS3, this answer was not accepted accurate).
	
A: .....Because, B: .....Because, How does the pH value of A and B change? Explain the reasoning according to your answer to Section A of the question. A: decreases () increases () does not change () because; A: decreases () increases () does not change () because;	As there is no fully ionization, B is either a weak acid or base (CTS2, CTS3). There is equilibrium in solution B (CTS1) which shifted to those which entered the equilibrium so that the percentage of ionization decreased. B is either weak acid or base (CTS1). As the ionization percentage of B decreases, the equilibrium shifts to the reactants, the concentration of hydrogen ions decreases (CTS4 was not evaluated because the associations were not established correctly), the pH increases (CTS3).
	<u>Student 1E(Experimental Group)</u>
	Temperature is constant. More concentrated acid or base solution was added (CTS1). Strong acids ionize 100% in water, so a strong (acid or base) (CTS2, CTS3) is a one-way reaction (CTS1). The percentage of A did not change. It became more concentrated (CTS4), while the acid decreased in pH, and the base increased in pH (CTS2).
	Ionization of weak acids is not 100%. B can be weak acid or base (CTS2, CTS3). As the concentration of the acid increased, the percentage of ionization decreased, the ionization of weak B (acid or base) (CTS4), is an equilibrium reaction (CTS1). Temperature is constant (CTS2). $HB + H_2O \rightleftharpoons H_3O^+_{(aq)} + B^-_{(aq)}$ when the equilibrium shifts to the left, the reduced hydrogen must be less than the added amount (CTS1) so that the ionization constant does not change (CTS2). If $K_a = x^2/A = y^2/B$ (CTS2), $y$ is $y > x$ , since $y/x = \sqrt{B/A}$ is $B > A$ . Hydrogen concentration increases (CTS3). pH decreases. If it's acid, the pH decreases because its acidity is increased. If it's base, the pH increases (CTS3).

SEAT1: There are the solubility constants ( $K_{sp}$ ) values of some salts below. What kind of information can be obtained from this data?					The solubility at the same temperature (CTS2) can be found (CTS3). The ions concentration at equilibrium can be calculated (CTS2, CTS3). Data about ionization percentages can be reached (CTS3). (This judgment was not accepted because there is no data about the concentration of solutions.).	In saturated solutions (CTS2) at the same temperature (CTS2), ion concentrations can be calculated (CTS3). The solubility of these can be compared (CTS3). The boiling point of $Ag_2SO_4$ solution, which contains the most ion concentration, is the highest, and the boiling point of $AgI$ solution is the lowest (CTS3).
$AgCN$	$AgIO_3$	$AgI$	$Ag_2SO_4$	$Ag_2CO_3$		
$AgCN$		$K_{sp} = 1,2 \times 10^{-6}$				
$AgIO_3$		$K_{sp} = 3,0 \times 10^{-8}$				
$AgI$		$K_{sp} = 8,5 \times 10^{-17}$				
$Ag_2SO_4$		$K_{sp} = 1,4 \times 10^{-5}$				
$Ag_2CO_3$		$K_{sp} = 8,5 \times 10^{-12}$				

Discussion activities implemented on the experimental group were conducted based on writing and speaking about science. This may have contributed to the development of students' critical thinking skills. Likewise, being able to write their thoughts and opinions makes students cognitively active (Doğanay & Ünal, 2006). Written statements give students the opportunity for defining the problem, reclaiming, reasoning, making inferences, and expressing themselves better. There is a strong relation between language and thinking. Also the first stage of critical thinking education should be language education (Levy, 1997 cited in Kökdemir, 2003). Therefore, it can be said that critical thinking skills develop more effectively in educational environments where scientific argumentation approach is used.

## DISCUSSION

One of the most important skills that scientifically literate individuals are expected to possess is critical thinking skills. In order to find a way to the problems experienced today and make sound judgement, it is necessary to have individuals with critical thinking skills. Science education has an important responsibility for students to acquire and develop critical thinking skills because critical thinking is an important power that supports the gaining of knowledge. In this regards, the teaching approach to be used in science education should be carefully selected to acquire thinking critically. Critical thinking is a complex and comprehensive process that requires high level cognitive skills. It can be developed better in an environment of frequent questions, growing stress, unexpected results and active learning.

Critical thinking can be improved depending on the subject. Skills that are learnt and improved can also be used with other similar subject and situations in/outside the class. Trainings focused only on critical thinking, independent of the subject, are insufficient to acquire critical thinking skills (Seferoğlu & Akbıyık, 2006). In the implementation of this study on the experimental group, with the said circumstance taken into consideration, the development of critical thinking skills was carried out together with the content of the course.

Experience that individuals obtain through their lives is very important with regard to education. And this experience gives rise to certain changes in topics such as getting information about facts and skill improvement. Studies on the acquisition and development of critical thinking skills have indicated that the school type affects the results of the study (Beaumont Walters & Soyibo, 2001). The students in this study consist of students with overachievement. Both traditional and argumentation teaching that have been suggested have contributed to students' critical thinking skill improvement. The students in both groups participated actively. In the control group, especially in the courses where chemical equilibrium and acids and bases units were taught, students took an active role in their own learning rather than being passive learners. Courses in which teaching was conducted with a traditional approach were mostly learning environments in which students asked high-level questions about problems they faced during or after the course, and other students thought about and commented on these questions as well. Students in both groups had extensive information webs for each class during research period and hence their cognitive development increased and their learning and life experiences enriched. That open-ended questions were asked in written exams and in-class activities, computer animations and experimental activities, designing suitable class environments in which students could ask questions and express themselves freely, following thinking processes and

class activities in which knowledge patterns were created, students' questioning their own concepts and constructing their concepts correctly and meaningfully instead of providing them with facts to memorize supported critical thinking in both groups. However, in the argumentation activities based on causal hypothesis, students' defending their claims with reasoning, supporting their claims with strong evidence, building patterns between concepts, listening to different claims and defenses critically, rebutting opposite views made greater contributions to experimental group students' skills of determining variables, interpreting data scientifically using reason-result relation more than those of control group.

As scientific argumentation is a process of using evidence and presenting necessary argumentations, it is related with problem solving skills and problem solving includes argumentation. During problem solving activity, more than one viewpoint and idea should be identified, a logical solution should be found and that solution should be supported with data and evidence. Argumentation has positive effects on students' problem solving processes and skills (Cho and Jonassen, 2002). The written exam question content for both groups, achievement tests applied at the beginning and end of each unit, students' solving high level problems after class hours and solving the unsolved questions during class hours may have supported the critical thinking skills of both group students. Besides, the sample of the study was constituted by students who were chosen by an exam in their senior years of elementary school, mainly had higher level thinking skills, had high capacities in science and mathematics, were curious, read a lot, questioned a lot, took interest in issues related with their neighborhood and society, had different interests, had high intellectual levels compared to their ages. It was difficult at times to conduct argumentation-based activities with students at these levels; in that, as students reached conclusions in a short time and hence arguments came to an end before long, the role of the activities on the development of students' higher order thinking skills was very little. Moreover, the students experienced more anxiety for university entrance examination as they viewed that their knowledge attainments were not sufficient at the end of these activities. Besides, control group students' attendance to certain classes was high. In these classes, they played an active role in their own learning instead of being a passive receiver of knowledge. The students asked high level questions for the questions and problems they encountered during or after classes and searched for answers with their classmates. This may have been the reason for significant difference in terms of critical thinking sub skills of control group between pre and post tests.

The key of understanding a subject is understanding the language of that subject, and almost everything we habitually call knowledge is language. A doctrine (discipline) is a way of knowing, and everything known cannot be separated from the symbols (mostly words) in which knowledge is codified. For example, what is biology but words? If all the words used by biologists were removed from the language, there would be no biology (Osborne, 2002). Students may be asked to explain the concepts, terms, models and phenomena that scientists have come up with in a social context by reaching a common view. For this, students should be introduced to the ways in which scientists perceive the world and to the scientific tools of that culture. Learning and using the language of science allows students to define, depict and portray the world in completely new forms. Recent studies have emphasized that courses conducted with scientific discussion are useful in developing a better understanding of scientific ideas for students (Aslan, 2010).

Discussion activities implemented on the experimental group were conducted based on writing and speaking about science. This may have contributed to the development of students' critical thinking skills. Students in the experimental group explained the reasons for their responses to achievement tests in detail, either using mathematical links or at the molecular level. There is a strong relation between language and thinking (Levy, 1997 cited in Kökdemir, 2003). Therefore, it can be said that critical thinking skills develop more effectively in educational environments where scientific argumentation approach is used. Experimental group students' critical thinking skills improved more than those of control group students because they defended their claims with reasoning in argumentation activities based on causal hypothesis, supported their claims with strong evidence building patterns between concepts, listened to various claims and reasoning critically, rebutted opposite views. This result corresponds to the results of other studies in literature (Lee & Ertmer;



2006; Özdemir, 2005; Simon, Erduran, Osborne, 2006; Yerrick, 2000). The discussion level was high in the activities where students commented and made inferences about a graph or a chemical event (Reaction Mechanism, Le Chatalier's Principle, Percentage of Ionization), and where the students had solution suggestions for a given problem (precipitation conditions). Students' activeness and interest in such discussions were really high, as the activities containing table of statements summarized the concept and the relationships between the concepts in the activity and also required students to support their decision regarding the accuracy of the statement with strong evidence. As a matter of fact, according to Zohar, Weinberger and Tamir (1994), critical thinking matches with the skills applied in obtaining scientific knowledge. Methods, tools and materials were not given to the student directly in the laboratory activities, but a problem situation was given to the students, and the students were asked to formulate a hypothesis for the solution of this problem or the students were given a hypothesis, and they were asked to design an experiment to determine the accuracy of this hypothesis, record the obtained data, evaluate and interpret the findings. In the activities where teaching was continued with this approach, students became more active in evaluating their existing scientific models, observing, interpreting data, and creating new scientific models. Similarly, during the activities, students were not given some of the necessary data directly, and they were asked to determine the information they would need to solve the problem and find it from sources. For example, in the *reaction of metals with acids and bases* activity, students were not given the atomic numbers of the metals used directly and were expected to use the existing periodic table in the laboratory. They were in a laboratory setting in which students, through argumentation activities, can pass on their own ideas and their friends' ideas through lenses of reliability, accuracy, validity, and competence, as well as practice to this end (Sönmez, Memiş & Yerlikaya, 2021). Meanwhile, the students identified variables, developed a hypothesis and determined a method. It can be stated explicitly that students' writing down their claims on activity papers with reasoning made great contributions to their skills of expressing their experiments and hypotheses written and orally during argumentation activities. According to Schaferman (1991), writing activities promote organizing thinking and thinking critically. Scientific process skills and problem solving skills that students employed in these stages may have contributed to the development of critical thinking skills.

Critical thinking skills of each person improve gradually but continually when used successfully. Sudden improvement of critical thinking skills without effort is unexpectable. Therefore, from the first school years, students should be directed towards dealing with problems that they can employ their rational skills at their levels and be successful at these levels (Kuhn, 1986 cited in Zohar & Nemet, 2002).

The concepts of equilibrium were explained with analogies. Thinking scientifically, of course, can be taught through analogies. Scientists often use analogies to discover new laws and explain natural phenomena. Huygens used water wave model (motion) to understand the phenomenon of light; Kepler developed the concepts of Earth motion by looking at the way a clock works. By transferring these mind habits of scientists to students at all levels, students' descriptions of the mind can be embodied. If the student gets a clear idea of the basic and target concepts, then the knowledge qualities will come in more systematic and meaningful models (Ganguly, 1995).

Engaging students in argumentation is not a target of curriculum in science classes. Therefore, teachers scarcely hearten their students to discuss. In their study in which they tried to identify how 12 elementary school teachers employ argumentation in their classes, Simon, Erduran and Osborne (2006) stated that before employing this method the teachers were not sure about explaining alternative concepts to students as they might strengthen concepts inconsistent with scientific truth or feel puzzled but they became comfortable after employing argumentation method. Actually it signifies the fact that teachers do not know about argumentation. As a matter of fact, it is no surprise as very few newly-graduates have studied argumentation. More and more studies are mentioning the advantages of argumentation in science education. Therefore, argumentation classes should be taught at universities for future teachers. Yet, the number of studies which will lead the way for teachers and educators are not many. As such studies increase, educational literature will attain favorable contributions.

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## Self-Compassion as a Mediator Between Perfectionism and Life-Satisfaction Among University Students

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### Abstract

Using a correlational method, this study investigates the mediation role of self-compassion in the relationship between perfectionism dimensions and life satisfaction among university students. A sample of 246 students (171 females and 75 males,  $M = 21.40$  years,  $SD = 2.02$ ) from several universities participated in the study. Turkish versions of the Almost Perfect Scale-Revised, the Self-Compassion Scale, and the Satisfaction with Life Scale were used as data collection tools. Using structural equation modeling, the results show that self-compassion fully mediates the relationship between maladaptive perfectionism and life-satisfaction. On the other hand, there is no significant relationship between adaptive perfectionism and life-satisfaction. The Bootstrap Method that was used to assess the magnitude of the indirect effects indicates that the indirect effect of self-compassion on the relationship between maladaptive perfectionism and life-satisfaction is significant. The implications of these findings for research and practice are discussed in line with the related literature.

**Keywords:** Life-Satisfaction, Perfectionism, Self-Compassion, Structural Equation Modeling

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## INTRODUCTION

Perfectionist individuals are defined as those who have standards that are difficult to achieve, who force themselves towards impossible goals without a break and who base self-values entirely on their productivity and success levels (Burns, 1980). Hollander (1965) defines perfectionism as an individual's demand for higher quality performance for himself or others than the current situation requires. According to Horney (2006), the individual believes that his self must reach the idealized self, in other words, his image of perfection. For this, the individual should forget himself and be able to endure everything, understand everything, love everyone, and always be productive. Horney sees these internal commands as the reason for the high goals that perfectionist individuals have set for themselves and their efforts to reach these goals. When the first theoretical explanations concerning perfectionism are examined, it is observed that a negative and one-dimensional perspective, based on neuroticism, has been adopted. It is understood that the one-dimensional perspective towards perfectionism (Burns, 1980; Hollander, 1965) has been replaced by a multi-dimensional perspective, which draws attention to the social environment of the individual and her/his positive characteristics, as well as negative ones (Frost et al., 1990; Hewitt and Flett, 1991; Slaney et al., 2001) in the historical process.

In the current literature on perfectionism, it can be seen that a two-dimensional approach, that focuses on the adaptive and maladaptive aspects of perfectionism called positive strivings and negative evaluation concerns, has been adopted. According to this approach, a positive strivings dimension indicates the adaptive aspect of perfectionism that motivates the individual, while a negative evaluation concerns dimension indicates a maladaptive aspect that may cause an individual to exhibit various pathological symptoms and is based on the evaluations of others (Stoeber and Damian, 2016). In this study, the strivings dimension is called adaptive perfectionism and the concerns dimension is called maladaptive perfectionism.

In the related literature, while it is stated that many researchers accept the idea that perfectionistic strivings are less harmful than perfectionistic concerns (Molnar et al., 2016), findings revealing the different relationships between the dimensions of strivings and concerns of perfectionism and psychological symptoms are contradictory. For example, one particular meta-analysis study reveals that perfectionist strivings are less associated with psycho-pathological symptoms than perfectionist concerns (Limburg et al., 2017). Additionally, it has been determined that perfectionistic concerns have positive and moderate relationships with anxiety and depression, while perfectionistic strivings have negative and low-level relationships with them (Gnilka and Broda, 2019). In another meta-analysis study, it was found that perfectionistic concerns cause an increase in the level of depression through social disconnection and stress. However, perfectionistic strivings cause an increase in the level of depression only through social disconnection (Smith et al., 2020). On the other hand, it is stated in another particular meta-analyses study that perfectionistic concerns and strivings both have small effects on follow-up depressive symptoms when baseline depression and neuroticism are controlled (Smith et al., 2016). The findings support the contradictory approach to the psycho-pathological impacts of perfectionistic dimensions.

### Perfectionism and Well-being

The positive psychology approach advocates that, instead of the symptoms of the mental health problems and their treatment, mental health professionals should focus on supporting the positive qualities of individuals (Seligman and Csikszentmihalyi, 2000). One important concept introduced into the literature using this approach is subjective well-being. Diener (2009) states that subjective well-being is comprised of emotional and cognitive dimensions. In this regard, well-being is the individual's presence of positive emotions, absence of negative emotions and cognitive judgment of the individual's life satisfaction (Duckworth et al., 2005). Moreover, Pavot and Diener (2008) define life-satisfaction as a cognitive and global judgment of an individual's quality of life. In other words, life-satisfaction represents the cognitive aspect of subjective well-being (Diener et al., 1999). In



addition, life satisfaction, as a cognitive aspect, is accepted a more stable component of subjective well-being than mood and emotions (Eid and Diener, 2004).

It seems important to examine the well-being levels of individuals with perfectionist traits within the scope of the perspective adopted with a positive psychology approach, where the absence of psychopathological symptoms does not automatically indicate the well-being of individuals (Ryff and Singer, 1998). It is indicated that the adaptive and maladaptive dimensions of perfectionism differ in their relationships with psychopathological symptoms, as well as with variables, such as subjective well-being, life satisfaction and happiness, which are considered within the scope of the positive psychology approach. For example, it was found that, adaptive perfectionism has a positive relationship with subjective well-being (Erol-Öngen, 2009; Perrone-McGovern et al., 2015), whereas maladaptive perfectionism has a negative relationship (Erol-Öngen, 2009). Similarly, it has been stated that maladaptive perfectionists have lower life satisfaction levels than adaptive perfectionists (Ashby et al., 2012). Moreover, while no significant relationship between subjective happiness and adaptive perfectionism was found, a significant negative relationship with maladaptive perfectionism was found (Suh et al., 2017). The findings indicate that an increase in the maladaptive perfectionism levels of individuals results in a decrease in their subjective well-being, life-satisfaction and subjective happiness levels.

### **Perfectionism and Self-compassion**

Self-compassion means the individual's openness to his pain, his desire to approach himself compassionately by alleviating this pain, instead of avoiding or breaking away from his pain. It involves the individual grasping his pain, inadequacies and mistakes without judgment and thus seeing these experiences as part of wider human life (Neff, 2003a). The concept of self-compassion consists of three components; self-kindness, common humanity and mindfulness (Neff, 2003a; Neff 2003b, Neff, 2016). When the individual faces pain or personal failure, self-compassion causes these three basic components. In this regard, self-kindness means an understanding approach to the individual instead of him criticizing himself ruthlessly, common humanity, sees the experience as part of larger human experience rather than isolating it, while mindfulness refers to addressing painful feelings and thoughts with a balanced awareness, rather than identifying them (Neff, 2003a).

In the related literature, it is emphasized that self-compassion provides self-affect and self-acceptance to individuals (Neff et al., 2007). This situation might ease the university experiences of students. Thus, it was found that when students had failed in a midterm exam, self-compassionate students coped with this failure in more adaptive ways (Neff et al., 2005). In addition, a large effect size was documented in the relationship between self-compassion and psychopathology (MacBeth and Gumley, 2012). It seems that self-compassionate students have some advantages in terms of problem-solving and mental health. Although findings emphasizing the relationship between perfectionism and psychological symptoms are frequently encountered in the literature, it has been determined that self-compassion has a mediator role in this relationship. For example, it is stated that the strength of the relationship between maladaptive perfectionism and depression decreases with self-compassion (Mehr and Adams, 2016; Ferrari et al., 2018). Similarly, for individuals with bipolar disorder, it has been reported that self-compassion has a partial mediating role in the relationships between maladaptive perfectionism and depression, anxiety, and emotion regulation difficulties (Fletcher et al., 2019). At the same time, self-compassion mediates the relationship between maladaptive perfectionism and body image dissatisfaction among college women (Barnett and Sharp, 2016). In the literature, it is indicated that self-compassion has a mediating role, not only in the relationship between perfectionism and psychological symptoms, but also in the relationship with subjective well-being (Stoeber et al., 2020), considered within the scope of the positive psychology approach. The findings reveal that self-compassion has an effect on the emotional states of perfectionists.

## Self-compassion and Well-being

In a pioneer study conducted by Neff and McGehee (2010), it was found that self-compassion is strongly associated with increasing levels of connectedness, maternal support, family functioning, and secure attachment. Moreover, it is also associated with decreasing depression, anxiety, insecure attachment, and personal fable among adolescents and young adults. The researchers interpret the findings as a strong association between self-compassion and well-being.

In the current literature, findings can be seen which indicate a positive association between self-compassion and positive psychology variables; such as subjective well-being (Ge et al., 2019), life-satisfaction (Booker and Dunsmore, 2019; Demirci et al., 2019; Shin, 2019; Wayment et al., 2016), happiness (Booker and Dunsmore, 2019; Wilson et al., 2020), and optimism (Grevenstein et al., 2016) among university students from various cultures. In a meta-analyses study which investigated the relationship between self-compassion and well-being, it is shown that these variables are relatively closely related with an  $r = .47$  (Zessin et al., 2015). This result supports the idea that an increase in self-compassion levels results in an increase in well-being levels of individuals.

In a recent study, the link between self-compassion and life-satisfaction was investigated among Chinese adults who were self-quarantined residents during the COVID-19 pandemic. The findings reveal that self-compassion and life-satisfaction are positively correlated. Moreover, positive coping has a partial mediator role on this relationship for men, but not for women (Li et al., 2021). The finding shows that self-compassion has a protective role for mental health, not only in predictable life conditions, but also in crises.

## The Present Study

This study was designed as a correlational study to investigate the relationship between adaptive perfectionism, maladaptive perfectionism, self-compassion and life satisfaction. Apart from studies investigating the mediator role of self-compassion in the relationship between perfectionism and psychological symptoms, there is one study, which investigates the mediator role of self-compassion in the relationship between perfectionism and well-being (Stoeber et al., 2020). In this study, the self-oriented, other oriented and socially prescribed dimensions of perfectionism are analyzed. In addition, the mediator roles of self-compassion and compassion for others are tested together in the same model. On the other hand, perfectionism is measured with a two-dimensional approach and the mediating role of self-compassion alone is analyzed in this study. Therefore, in the current research, the aim is to investigate the mediator role of self-compassion in the relationship between adaptive and maladaptive dimensions of perfectionism and life-satisfaction. Considering that the data was collected during the pandemic conditions related to Covid-19, by taking into consideration the potential emotional effect of this process on individuals, it was decided not to include the emotional components of subjective well-being in the research, studying only life-satisfaction, and the cognitive dimension of well-being. The hypothetical research model is presented in Figure 1.

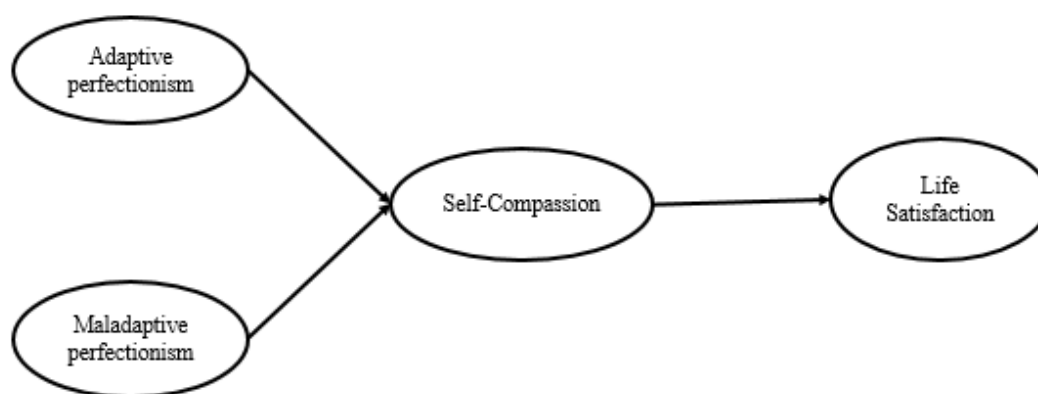


Figure 1. The hypothetical model.

## METHOD

### Participants

The snowball sampling method was used in the current study. Before carrying out the model test, power analyses was conducted to clarify the adequate number of participants. The analyses indicated that a sample of 138 would be adequate to detect mediate effect and assess the measurement model given 4 latent and 14 observed variables (Soper, 2020). A total of 268 university students completed the data collection tools. The Mahalanobis distance was calculated and twenty-two cases were omitted. The final participants of the study consisted of 246 university students [171 (69.5%) females and 75 (30.5%) males] of several universities from different cities of Turkey. Among the participants, eight (3.2%) were studying at English Preparatory School, 44 (17.9%) were freshmen, 69 (28%) were sophomores, 44 (17.9%) were juniors, and 58 (23.6%) were seniors from different faculties. Moreover, 23 (9.4%) were fifth, and sixth class students enrolled in the Faculty of Medicine. The ages of the students ranged from 18 to 33 years, with a mean age of 21.40 (SD= 2.02).

### Measures

*Almost Perfect Scale-Revised (APS-R; Slaney et al., 2001)*: The scale, which includes twenty-three items, is a seven-point Likert type with three subscales mentioned; High Standards, Discrepancy and Order. The Turkish adaptation of the scale was conducted by Ulu (2007). Within the two-dimensional approach of perfectionism framework (Stoeber and Otto, 2006), the high standards subscale of the APS-R was used to measure adaptive perfectionism, and the discrepancy subscale was used to measure maladaptive perfectionism in the present study, with the Cronbach's alpha values being calculated as .81 and .94, respectively.

*Self-Compassion Scale (SCS; Neff, 2003b)*: The scale, which includes twenty-six items, is a five-point Likert type with six subscales; Self-kindness, Common Humanity, Mindfulness, Self-judgment, Isolation, and Over-identification. The Turkish adaptation of the scale was conducted by Akın et al. (2007). In the present study, a three subscales version of the SCS was used as in previous studies (Joeng and Turner, 2015; Yang et al., 2016) and Cronbach's alpha values of the subscales are calculated as .91 for Self-Kindness, .74 for Common Humanity, and .84 for Mindfulness.

*Satisfaction with Life Scale (SWLS; Diener et al., 1985)*: The scale is unidimensional with five items; a seven-point Likert type. Higher scores indicate greater levels of life satisfaction. The Turkish version of the scale was conducted by Dağlı and Baysal (2016) as a five-point Likert type. The Cronbach's alpha value of the scale is calculated as .85 in this study.

### Procedure

After the approval of the ethics committee was obtained, data was collected online by way of Google forms on July, 2020. The participants were accessed by sharing the study link with certain explanations on a few social media accounts, which university students follow, such as the National Medicine School Students' Facebook group or the Whatsapp (a message communication application) group of peer counselors involving students from various faculties, and requested to share the link with their friends.

### Data Analyses

Firstly, skewness and kurtosis values of the observed variables were computed. The hypothetical model was then tested via Structural Equation Analysis with latent variables, and the analysis was run by IBM SPSS Amos 21.0 and the Maximum Likelihood Method was applied as an estimation method. The linearity relationship between variables was evaluated and it was determined that all the correlation values of the latent variables were below .71. Path coefficients in the model were assessed by *t* values. Chi square difference test ( $\chi^2$ ), Akaike Information Criterion (AIC), and

Expected Cross Validation Index (ECVI) were used to determine the final model. The significance of indirect effects was examined via the Bootstrapping method. Additionally, a nested model method was used for the mediation test.

## FINDINGS

As preliminary analyses, skewness and kurtosis values were computed for the observed variables. It was found that skewness values ranged from -.88 to .39, and kurtosis values ranged from -.98 to .70. Therefore, all values were in normal distribution limits (Tabachnick and Fidell, 2013). Mean and standard deviations and bivariate correlations between the observed variables were also computed (see Table 1). The results show that the highest correlation was computed as -.64 between one of the observed variables of maladaptive perfectionism (CONCERN3) and self-compassion (HUMANITY). The result shows that there is no multicollinearity problem among the observed variables.

**Table 1. Descriptive statistics and bivariate correlations between observed variables**

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.STRIVE1	-													
2.STRIVE2	.50**	-												
3.STRIVE3	.61**	.67**	-											
4.CONCERN1	.25**	.49**	.54**	-										
5.CONCERN2	.15*	.42**	.44**	.83**	-									
6.CONCERN3	.20**	.46**	.51**	.86**	.88**	-								
7.KINDNESS	.07	-.12	-.24**	-.58**	-.59**	-.57**	-							
8.HUMANITY	.01	-.18**	-.22**	-.63**	-.64**	-.63**	.80**	-						
9.MINDFUL	.05	-.11	-.19**	-.51**	-.51**	-.52**	.77**	.72**	-					
10.LS1	.18**	.09	.08	-.23**	-.35**	-.26**	.24**	.31**	.18**	-				
11.LS2	.14*	.05	.05	-.14*	-.20**	-.14*	.11	.19**	.01	.57**	-			
12.LS3	.18**	.02	.00	-.32**	-.38**	-.32**	.38**	.44**	.30**	.62**	.58**	-		
13.LS4	.20**	.06	.11	-.21**	-.24**	-.20**	.28**	.35**	.22**	.63**	.53**	.66**	-	
14.LS5	.08	-.06	.01	-.21**	-.23**	-.20**	.24**	.35**	.24**	.39**	.40**	.53**	.50**	-
M	17.40	9.87	10.87	16.02	14.74	16.00	31.90	24.65	25.97	3.39	2.95	3.18	3.22	2.50
SD	2.87	2.75	2.56	6.33	5.98	6.36	9.06	5.81	6.64	1.08	1.11	1.23	1.18	1.25

Note. N=246. \* $p < .05$ , \*\* $p < .01$ . STRIVE1–STRIVE3=three parcels of adaptive perfectionism; CONCERN1–CONCERN3=three parcels of maladaptive perfectionism; MINDFUL=Mindfulness and Over-identification; HUMANITY=Common humanity and Isolation; KINDNESS=Self-kindness and Self-judgment; LS1–LS5=five items of life-satisfaction.

The two-step approach was adopted for testing the structural model. Therefore, the measurement model was applied in the first step. The model includes four latent variables (adaptive and maladaptive dimension of perfectionism, self-compassion, and life-satisfaction) and fourteen observed variables. The fit values of the measurement model are acceptable and are indicated by the following goodness of fit statistics:  $\chi^2/df$  (154.31/71) = 2.17; RMSEA = .069 [90% C.I. = .054, .084]; CFI = .96; TLI = .95; AIC = 222.309; ECVI = .907. Standardized factor loadings of the observed variables range between .60 and .94 signifying that all the latent factors are well represented by their respective observed variables. When the measurement model was tested, correlation values among the latent variables were obtained. The obtained values are presented in Table 2.

**Table 2. Correlations among the Latent Variables**

Latent Variables	1.	2.	3.
1. Adaptive perfectionism	-		
2. Maladaptive perfectionism	.57*	-	
3. Self-compassion	-.22*	-.71*	-
4. Life-satisfaction	.10	-.36*	.43*

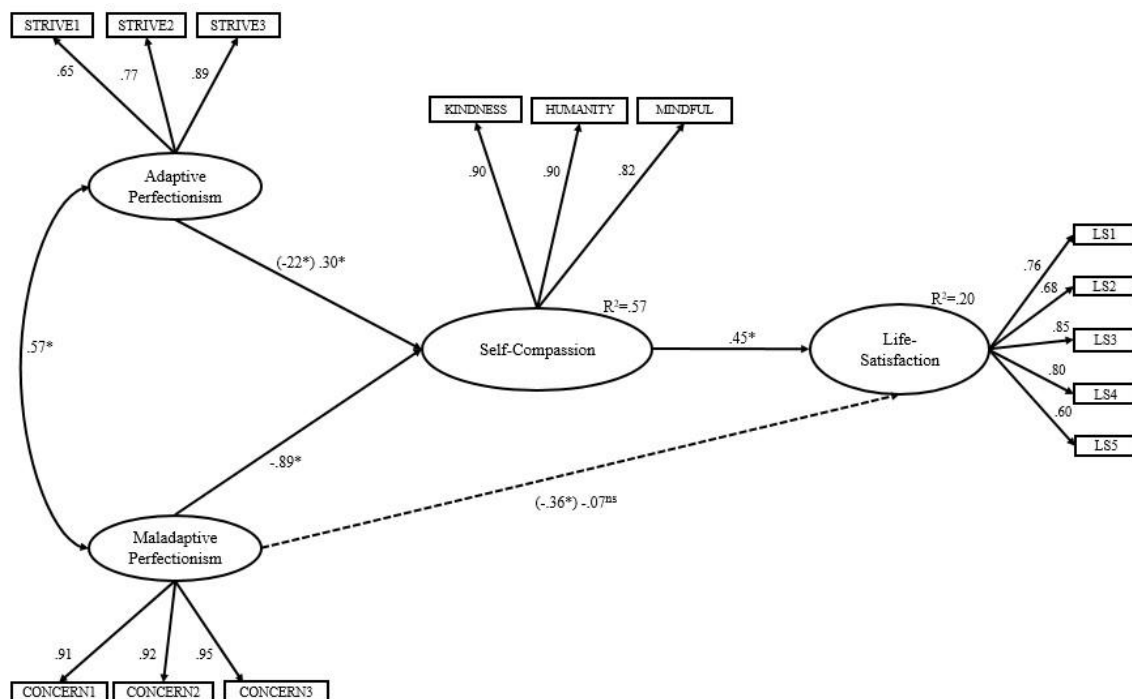
\* $p < .00$

When the correlation values, presented in Table 2, are examined, it can be seen that except for the link between adaptive perfectionism and life-satisfaction, all the correlations are statistically

significant. While the highest significant correlation between latent values is observed between maladaptive perfectionism and self-compassion ( $r = -.71, p < .00$ ), the lowest significant correlation is observed between adaptive perfectionism and self-compassion ( $r = -.22, p < .01$ ).

Because the correlation between adaptive perfectionism and life-satisfaction was determined to be statistically non-significant in the measurement model test, the path from adaptive perfectionism to life-satisfaction in the structural model test was discarded. After this, the mediating role of self-compassion on the relationship between perfectionism dimensions and life-satisfaction was tested (Model 1). The results suggest good fit to the data:  $\chi^2/df (173.70/72) = 2.41$ ; RMSEA = .076 [90% C.I. = .062, .090]; CFI = .96; TLI = .95; AIC = 239.704; ECVI = .978. Maladaptive perfectionism is negatively associated with self-compassion ( $\beta = -.88, p < .001$ ), adaptive perfectionism is positively associated with self-compassion ( $\beta = .29, p < .001$ ) and self-compassion is positively associated with life-satisfaction ( $\beta = .39, p < .001$ ). After accounting for the mediating effect of self-compassion, the direct effect of maladaptive perfectionism on life-satisfaction is no longer significant ( $\beta = -.07, p > .05$ ). In order to test the fully mediated model, the direct path from maladaptive perfectionism to life-satisfaction was removed (Model 2). The model reveals good fit to the data:  $\chi^2/df (174.15/73) = 2.39$ ; RMSEA = 0.075 [90% C.I. = 0.061, 0.090]; CFI = .96; TLI = .95; AIC = 238.151; ECVI = .972. A significant chi square difference is obtained between the models,  $\Delta\chi^2 (1, N = 246) = .45, p > .001$ , along with smaller AIC and ECVI for Model 2. These leads us to decide that Model 2 is more satisfactory.

The final model is presented in Figure 2:



**Figure 2.** The final model (Model 2) *Note.* N=246; \* $p < .01$ ; ns=non-significant; STRIVE1–STRIVE3=three parcels of adaptive perfectionism; CONCERN1–CONCERN3=three parcels of maladaptive perfectionism; MINDFUL=Mindfulness and Over-identification; HUMANITY=Common humanity and Isolation; KINDNESS=Self-kindness and Self-judgment; LS1–LS5=five items of life-satisfaction. Values on arrows represent standardized beta coefficients; the value shown in parenthesis is the direct effect of adaptive perfectionism on self-compassion and maladaptive perfectionism on life-satisfaction.

According to the results of the structural model test, maladaptive ( $\beta = -.89, p < .001$ ) and adaptive ( $\beta = .30, p < .001$ ) perfectionism predict self-compassion and self-compassion predict life-

satisfaction ( $\beta = .45$ ,  $p < .001$ ) significantly. In addition, self-compassion is a full-mediator in the relationship between maladaptive perfectionism and life-satisfaction. It is interesting to note that, the negative relationship between adaptive perfectionism and self-compassion obtained in the measurement model turns positive in the structural model test. This change could be explained by the suppression effect of the relationship between maladaptive perfectionism and self-compassion (Shrout and Bolger, 2002). It is also determined that maladaptive perfectionism and adaptive perfectionism explain 57% of the self-compassion variance and maladaptive perfectionism, and that adaptive perfectionism and self-compassion variables explain 20% of the life-satisfaction variance.

A bootstrapping method was performed to test the significance of indirect effects of self-compassion on the relationship between maladaptive perfectionism and life-satisfaction. The results from 1000 bootstrap samples are reported in Table 3.

**Table 3. Parameters and 95% CI for the paths of the acceptable model**

	Estimated	95% CI		
		Lower	Upper	p
<i>Model 2</i>				
Adaptive P. →Self-compassion	.296	.139	.439	.003
Maladaptive P. →Self-compassion	-.886	-.993	-.772	.002
Self-compassion →Life-satisfaction	.446	.308	.563	.003
Maladaptive P.→ Self-compassion →Life-satisfaction	-.395	-.521	-.255	.002

The indirect effect of maladaptive perfectionism on life-satisfaction mediated by self-compassion is significant (Shrout and Bolger, 2002).

## DISCUSSION

This study is designed to investigate the mediator role of self-compassion in the relationship between the adaptive and maladaptive dimensions of perfectionism and life-satisfaction. The findings indicate that adaptive perfectionism has a positive relationship with self-compassion, while maladaptive perfectionism has a negative relationship with it. In addition, there was no significant relationship between adaptive perfectionism and life-satisfaction. This non-significant relationship is consistent with previous research conducted with different samples, including English (Stoeber et al., 2020) and Canadian university students (Smith et al., 2017), black female college students (Chang et al., 2004), and Chinese high school students (Wang et al., 2009). On the other hand, the findings of a study conducted by Ashby et al. (2012) indicate a positive association between the variables discussed among female American university students. In brief, the relationship between adaptive perfectionism and life-satisfaction seems contradictory among various age groups and cultures. Adaptive perfectionism forces people to achieve positive aspects of having high standards without the concerns of evaluations of other people (Slaney et al., 2001). When the individualistic culture of Americans is taken into consideration, the positive association makes sense and the non-significant relationship of this research can be explained by the collectivistic culture of the participants. In addition to cultural background, findings show that maladaptive perfectionism positively relates to psychological symptoms such as depression, anxiety, and stress. On the other hand, adaptive perfectionism has inconsistent results. These findings support the non-significant relationship found in this study.

Despite a lack of association between adaptive perfectionism and life satisfaction, maladaptive perfectionism is negatively associated with life satisfaction. This negative relationship is consistent with a previous result (Erol-Öngen, 2009). Subjective happiness, one of the other indicators of positive affection, also has a negative relationship with maladaptive perfectionism (Suh et al., 2017). Furthermore, there is a positive relationship between maladaptive perfectionism and depression, which represents negative affection (Mehr and Adams, 2016; Ferrari et al., 2018). In summary, maladaptive perfectionism has a negative relationship with the indicators of positive affection and has a positive relationship with negative affection. Moreover, it is indicated that individuals who maintain maladaptive perfectionism evaluate their lives as non-satisfactory. This may be explained by the effect

of negative evaluations of the differences between actual and ideal selves, and the unmet perfectionistic life purposes of maladaptive perfectionists.

While the relationship between adaptive perfectionism and self-compassion is negative in the measurement model, it turns positive in the structural model. The negative relationship is in accordance with a previous finding (Stoeber et al., 2020). It seems that an increasing adaptive perfectionism level causes a decrease in the self-compassion level of individuals. When the controversial findings on the effects of adaptive perfectionism are considered, this negative relationship supports the negative effects. On the other hand, the relationship changes to positive in the structural model when tested with maladaptive perfectionism. This change could be evidence of the agreed-upon negative effects of maladaptive perfectionism on positive affection. The strong negative path from maladaptive perfectionism to self-compassion of the current model seems to support this idea. Moreover, Linnett and Kibowski (2020) also emphasize the inconsistent findings between adaptive perfectionism and self-compassion. In conclusion, it seems that the dimensions of perfectionism have an effect on each other and that they effect self-compassion in opposing directions.

The association between maladaptive perfectionism and self-compassion is negative. This result is also in accordance with previous research demonstrating that higher levels of maladaptive perfectionism are related to lower levels of self-compassion (Barnett and Sharp, 2016; Ferrari et al., 2018; Mehr and Adams, 2016; Neff, 2003b; Stoeber et al., 2020). This negative relationship can be explained by the approach to failures. It was reported that self-compassionate individuals approach their mistakes with a nonjudgmental understanding (Neff, 2003). When it comes to maladaptive perfectionists, failures seem unacceptable experiences.

Consistent with previous findings (Demirci et al., 2019; Neff, 2003b; Stoeber et al., 2020; Yang et al., 2016), higher levels of self-compassion are related to higher levels of life satisfaction in this study. It seems that, opposite to maladaptive perfectionism, self-compassion has a supporter role from the point of life satisfaction levels. The universal humanity dimension of self-compassion might lead to accepting the failures as a general experience rather than a personal inadequacy for perfectionists. In addition to these findings, the current study analyzes self-compassion as a mediator between perfectionism dimensions and life-satisfaction. The hypothesis is partially supported, which indicates that self-compassion only mediates the relationship between maladaptive perfectionism and life-satisfaction fully. That is, how life-satisfaction level is not directly influenced by the levels of maladaptive perfectionism, but indirectly through the levels of self-compassion.

Maladaptive perfectionists have a tendency toward self-criticism (Sherry et al., 2016; Erol-Öngen, 2011; Smith et al., 2016), rumination (Kaap-Deeder et al., 2016; Macedo et al., 2017), and self-comparison (Stoeber and Damian, 2016). In addition, they have difficulty in emotion regulation (Juliana et al., 2016). These relationships show that maladaptive perfectionists might have a problem with accepting themselves and their experiences. On the other hand, based on theoretical explanations regarding self-compassion, it can be stated that self-compassionate people accept and respect themselves as they are. In this context, maladaptive perfectionism and self-compassion seem contradictory traits, having opposite relationships with life-satisfaction. A judgmental approach of maladaptive perfectionism reduces life-satisfaction, and a non-judgmental approach of self-compassionates increases it. The full mediation role of self-compassion shows that, maladaptive perfectionist university students could be trained on self-compassion with the intent of enhancing their life-satisfaction level.

The results of this study show that counselors could consider focusing on ways to increase the self-compassion levels of maladaptive perfectionists in order to increase their life-satisfaction levels. When the high negative association between maladaptive perfectionism and self-compassion is considered, it seems that the characteristics of maladaptive perfectionists, such as self-criticism and rumination, retain them to approach themselves in a compassionate way. Additionally, maladaptive perfectionists tend to set unrealistically high standards for themselves in their daily lives. Therefore, it seems that maladaptive perfectionists may benefit from intervention aimed at an increase at the self-

kindness, mindfulness and common humanity levels. For this aim, counselors could try to transform the unrealistic beliefs of perfectionistic clients and teach them how to be self-compassionate humans. Counselors may also benefit from online mindfulness exercises by assisting these clients in using these platforms. Finally, counselors may organize or benefit from group programs to increase the self-compassion level of maladaptive perfectionists.

The present study has certain limitations that should be noted. The most important limitation of the study concerns the period of data collection. The data was collected during the first summer of the Covid-19 pandemic process. Further research should be conducted at a time, when the emotional effects of the pandemic have subsided. In addition, two factors of the APS-R were used to measure the perfectionism dimensions. In the relevant literature, there are other perfectionism scales and further research could reply to test the model using these scales. For example, socially prescribed, self-oriented, and other-oriented dimensions of perfectionism might be used. Furthermore, as Turkish culture holds collectivistic values, further research could be designed to obtain data in a cross-cultural design and researchers could compare the models between cultures. This type of research could enhance our knowledge regarding the cultural factors on the variables.

To exhibit the individual mediator roles of self-compassion dimensions, an additional analysis using six factors was conducted. However, the data does not support the six-factor CFA model. Future research could try to test the model with six-factors. The results could guide practitioners in trying to focus more on the targeted factor, which has a greater effect than other self-compassion factors on life-satisfaction. In addition, the relationships between the dimensions of perfectionism and positive and negative dimensions of self-compassion could be revealed in more detail.

Finally, yet most importantly, the effects of any demographic variables, such as gender, income or religious belief that would have had an effect on the self-compassion or life-satisfaction levels of the participants, were not checked. Further studies are needed to test whether these demographic variables could act as suppressors on the study variables.

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## **Reflections of National Education Councils on School Administration: Should the Councils Be on the Agenda again?**

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### **Abstract**

The aim of this research is to examine the National Education Councils (NECs) in the context of school management and to reveal the NECs' reflections on today's education system. The documents within the scope of the study (19 NECs and 14 official documents) were analyzed through descriptive analysis. As a result of the analysis, decisions regarding school administration were made in 12 of the councils. In addition, 4 dimensions came to the fore in terms of school administration. These are (i) personal rights, (ii) training needs, (iii) duties and responsibilities, and (iv) management style. According to the research findings, decisions regarding school administration have important reflections on today's education system. Therefore, NECs can be considered as an implementation of governance and educational planning. As a result, it will be beneficial to continue the NECs to effectively solve the problems of today's education system with the participation of stakeholders.

**Keywords:** National Education Council, Governance, Educational Planning, School Administration

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## INTRODUCTION

The participation by subordinates in the administration of educational organizations can be achieved by including the opinions of stakeholders in the decision-making processes (Bouwman et al, 2017; Ezenwaji et al, 2019; Ngussa & Gabriel, 2017). In this respect, participation of teachers, students and school community in national education systems is important (Tampio, 2017). Making educational decisions with stakeholders facilitates new initiatives in education systems (Taymaz, 1995). On the other hand, rapid changes occur in the structure of societies in social, political and economic aspects. For this reason, permanent and qualified solutions must be implemented in order to overcome educational problems (Turan & Şişman, 2000).

The solution of the problems in the Turkish National Education system has been realized through the council mechanism for many years. The National Education Councils (NECs) are meetings with important functions in which representatives of Ministry of National Education, scientists and educators participate in discussions to find solutions for various problems of education (Aydın, 2009). Ensuring stakeholders' participation in solving educational problems is a crucial feature of the NECs (Karataş, 2012). In this respect, the NECs are seen as an effective public policy actor that guides the Turkish National Education System (Çakır, 2017). Unfortunately, the councils have not been held for a long time. Instead of this, some innovations are announced and planned in Turkey's Education Vision 2023. However, these are not sufficient at the point of solving the existing problems (Ertürk, 2020).

### Governance and National Education Councils

The collaborative and communication-oriented transformation in the field of management is known as governance (Dunsire, 1995; Fidan, 2011). Governance is a management approach based on an interaction and cooperation of administrative, economic and social factors (Ekşi-Uğuz, 2010, p.289). Effective responses to the rapid transformation and problems arising with globalization can only be responded with an understanding of governance (Özer, 2006). Therefore, governance is an effective process used by policy makers in decision-making processes to meet social expectations (Peters & Pierre, 1998). The NECs, which are one of the best examples of governance, have undertaken important functions in the planning of Turkish education system (Adem, 1997).

The NECs are considered as a structured solution resource, which is held every four years. The first NEC was convened in 1939 and a lot of recommendations for decision processes were taken in the councils that met on different dates thereafter (Çoruk, 2019). These recommendations affected the policies and practices regarding different educational problems (Aydın, 2009). Therefore, the NECs have an important role in determining education policies (Çakır, 2017). Although the last one was convened in 2014, a new council has not been held until 2021.

### Educational Planning

Planning processes are carried out to lead a series of change processes determined by policy makers (Pijl & Frissen, 2009). Planning is carried out to identify important problems and needs and to set goals (Adams, 1988). The first planning needs in Turkey have emerged under the influence of the world economic crisis (Erat & Arap, 2017). Turkey has implemented educational planning processes since the beginning of 1960, along with Western countries (Adolescent, 2013). On the other hand, in parallel with the changes in the world, market-based economic policies played an important role in shaping educational planning in the 1980s (Hesapçioğlu, 2001). Educational planning is accepted as a separate area of expertise. Although the effects of centralized structures continue, educational planning has a strategic importance at national, regional and institutional levels (Gümüş & Şişman, 2012).

Educational planning is also a process that allows public authorities to guide educational development and identify priority interventions (Caillods, 2015). The aim of educational planning is to increase productivity and to train sufficient number of qualified work force to take part in production

in every field in the country (Ünal & Özsoy, 2010). Moreover, educational planning also plays an important role in promoting education and ensuring equality among individuals in benefiting from educational services (Küçüker, 2012). In addition, since education and training are used as a tool in meeting social needs and making the social structure sustainable (Ergun, 2005), educational planning is important in terms of meeting the needs of stakeholders at different levels of education, using the resources effectively (Argon, 2004; Kellevezir, 2017). For this reason, educational goals should be put forward rationally in the realization of the planning of education (Hesapçioğlu, 1993). On the other hand, educational planning has started to be used frequently in the form of strategic planning in the fields of education and school management. Schools need continuous planning to keep up with the changing world (Gümüş & Şişman, 2012). In this context, NECs have important functions in planning and improving educational processes (Adem, 1997).

### **School Administration**

School is a unit where educational services are produced and delivered. With the rapid change of today, the problems that arise in schools have made it necessary to restructure the school (Şişman, 2010). However, the changes to be made in the education system must be processed in a human-oriented way that focuses on the interests, expectations and concerns of all segments of the society. In addition, the functions that schools should have in the 21st century and the expectations of the society from the school have gained importance. The extent to which schools can respond to the educational needs of individuals and how to ensure the continuous development of school staff leads school management and politicians to constantly ponder on various ways to improve school (Özdemir, 2012). Therefore, in order for school administration to be successful, they must see the future and make the necessary preparations. The success of school administration is hidden in the vision of their leaders and their capacity to solve problems that may arise in the future (Ertürk, 2020; Rini, Sukanto, Ridwan & Hariri, 2020). In this context, school administrators are expected to have a potential to foresee and manage educational change (Aslanargun & Bozkurt; Banoğlu & Peker, 2012). In addition, effective leadership behaviors of school administrators are important in creating an environment of collaboration and trust in the school staff (Korkmaz, 2008). In summary, there is a need for school administrations that can adapt to new situations and plan together with the stakeholders in line with changing conditions and objectives.

The NECs are one of the main national actors in finding solutions to educational problems in schools that arise due to different changes in society (Aydın, 2009; Çakır, 2017). The NECs have a very important place in terms of establishing and developing the Turkish Education System and producing solutions to the problems (Aydın, 2009). However, there is a serious gap in the literature regarding ensuring the participation of stakeholders in solving the problems in school administration and making effective decisions. The effects of the councils on the school administration were not sufficiently included in the studies in the national thesis center. Since 1990, 24 theses on National Education Councils have been made. Only 1 of these was related to school administration (Uysal, 2008). Uysal's (2008) study was limited only to the 17th NEC. The context of the other 23 theses were related to curriculum (Efendioğlu, 2013; Kayalıoğlu, 2018; Yılmaz, 2019); education policies and philosophy (Aslaner, 2008; Deniz, 2001; İşler, 2016) and education policies' reflections on practice (Dinç, 1999; Ekinci, 2000; Eriş, 2006). Considering the importance of the school administration in education (Aslanargun & Bozkurt, 2012) the number and scope of the researches are insufficient. In the light of these reasons, there is a dearth of research in context of the NECs and school administration.

### **Purpose**

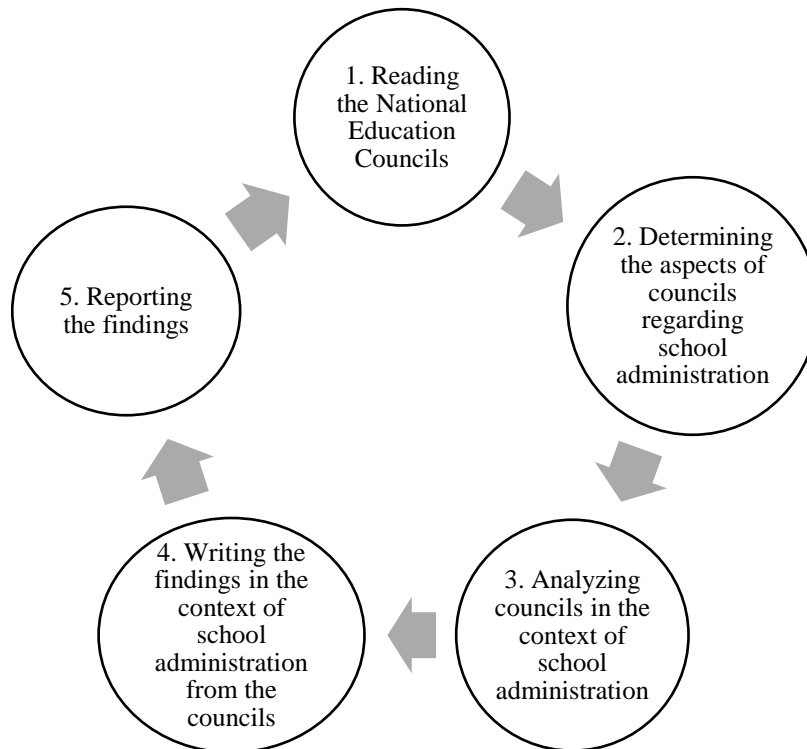
The aim of this study is to examine the NECs in the context of school management. For this purpose, the following questions were sought.

1. What are the prominent issues in terms of school administration in the NECs?

2. What are the effects of the NECs on today's education system in terms of school administration?

## METHOD

In this study, qualitative research method was used as it was aimed to infer meanings from the NECs in the context of school administration. The purpose of a qualitative research is to derive new meanings by analyzing the research subject (Merriam, 2015, p.14; Neuman, 2006, p.233). In this study, in order to derive new meanings in the context of school administration, all of the NECs (19) and 14 official documents (legislation, plans) that are available on the website of the Ministry of National Education ([www.meb.gov.tr](http://www.meb.gov.tr)) were examined. The 14 documents examined were chosen because they contain issues related to national education school administration policies. In qualitative research, official reports can be analyzed as documents (Patton, 2014, p. 4) so descriptive analyzes were made in the study. The purpose of descriptive analysis is to ensure that the reader is involved and to help discover some focal points in the research (Yıldırım & Şimşek, 2011, p. 224). In the study, the topics related to the research were directly quoted from the decisions taken in the councils in the context of school administration, and shown in tables. Based on these analyzes, inferences were made in the context of school administration. The process is shown in Figure 1.



**Figure 1. The Examination Process of NECs in the Context of School Administration**

The process indicated in Figure 1 was carried out with a cyclical approach. For the reliability and validity of the study, the reflectivity of the researcher, expert examination and supervision strategies were used (Christensen et al., 2015, p. 405). In the study, reflectivity was achieved by showing the quotations from the councils in Table 1. In addition to this, expert examination was conducted by taking the opinions of two academicians. Finally, the supervision strategy was implemented by taking into account the opinions of two academicians and a language-expression expert. Abbreviations are used when expressing the National Education Councils. In the text, for example, 7th NEC, means 7th National Education Council.



## FINDINGS

The National Education Councils (NECs) were examined in terms of school administration and the results are shown in Table 1.

**Table 1. Examination of National Education Councils in terms of School Administration**

NEC	Date of the council	Decision numbers related to school administration
7	February 05-15 1962	Decision number: 2
8	September 28- October03 1970	Decision number: 12
9	June 24 - July 04 1974	Decision numbers: 7, 9, 10, 12-15, 27-28, 41, 52, 59, 75, 109, 131
10	June 23-26 1981	Decision numbers:13, 34
11	June 08-11 1982	Episode 1 C. Suggestions: Decision number: 7 Episode 4 G. Application Principles: Decision number: 18 Episode 5 B-4/3-h, l, n
12	June 18-22 1988	Subject 3: Teacher training: Decision number: 26
14	September 27-29 1993	Decision numbers: 4, 5, 11, 12
15	May 13-17 1996	Primary Education and Orientation:Decision numbers: 35, 64, 71-76 Turkish National Education System Secondary Education Model Principles and Recommendations: Decision numbers: 25, 27, 30, 52, 53 Financing the Education System: Decision number: 8
16	November 13-17 1999	Vocational Training and Employment in Schools and Businesses: Decision number :52 Training Teachers and Managers for Vocational and Technical Education: Decision numbers: 28, 41, 50, 52-59
17	November 13-17 2006	Lifelong Learning: Decision number: 15 Quality in Education: Decision numbers: 73, 77, 85, 92
18	November 01-05 2010	Teacher Training, Employment and Professional Development: Decision number: 32 Educational Environments, Corporate Culture and School Leadership: Decision numbers: 25, 26, 30, 32-38, 41, 43-47, 49-50 Sports, Art, Skills and Values Education: Decision number: 24 Psychological Counseling, Guidance and Guidance: Decision number:30
19	December 2-14 2014	Increasing the Quality of Administrators; Selection Criteria for Educational Administrator Candidates: Decision numbers: 1-10 First Appointment to Educational Administration: Decision numbers: 1-13 Reassignment to Educational Administration: Decision numbers: 1-8 In-Service Training: Decision numbers: 1-8 Other Matters: Decision numbers: 1, 3-5 School Safety; Ensuring Physical Safety at School: Decision number: 18

(The National Education Councils were accessed from [www.meb.gov.tr](http://www.meb.gov.tr).)

According to Table 1, it is seen that decisions regarding school administration were made in 12 out of a total of 20 NECs. Since the 15th NEC, the decisions taken on school administration were explained in detail under headings. This manifested itself clearly especially in the 18th and 19th NECs. In the last NEC, more focus was on school administration than other NECs.

### Examination of NECs in terms of School Administration

In the 7th NEC, in the 2nd decision taken regarding primary education, it was decided to issue the “Regulation of National Education Directors and Primary Education Principals”. In this way, the regulation regarding the duties of school principals was taken as basis.

In the 8th NEC, the 12th decision is about the school administrator. This decision was expressed as “The school administrator writes this recommendation in the student's school file”. Therefore, this decision points to the administrative role of the school administration in directing the student to the appropriate program at the high school level.

In the 9th NEC, decisions were taken regarding the duties and responsibilities of the school principal, training needs, school management, and personal rights. The 7th, 9th, 10th, 12th-15th,

27th, 28th, 41st, 52nd, 75th decisions are related to the school administrators' duties such as elective courses, curriculum and teacher assignment. For example, in the 7th decision, this was revealed as "The school principal decides on the days, hours and places of the elective courses to be included in the school program in the weekly course schedule at the beginning of each academic year." In addition, the training need of school administrators was stated in the 109th decision with the statement "... administrators and teachers of selected schools should be provided with in-service training". In this way, it was aimed to ensure that the school administrator performs his duties better. It is also seen in the council that decisions (59th and 131st decisions) were made regarding how the school should be managed. This decision is "Students, teachers, administrators, parents and other interested parties should participate in the evaluation work". This decision is a good example of the school management-environment interaction, which can be shown as one of the modern school management principles. 109th decision regarding the personal rights of the school principal was taken as "The scientific commission will be consulted in the appointment and transfer of the administrators and teachers to be assigned to the pilot schools".

In the 10th NEC, decisions regarding school administration were taken (Decisions, 13-14) . 34th decision, "Providing in-service training of teachers, administrators and experts", is about the training needs of the school administrators.

In the 11th NEC, in chapters 1, 4 and 5, there are decisions regarding to school administration. The first and the fourth chapters include the training need while the fifth chapter contains the decisions about school administration. For example, in the 7th decision in the part of the proposals for training need in the first chapter, it is stated that "... the faculties, colleges and units of universities that focus on teacher and specialist training should collaborate with state schools and their staff in order to make research." In addition, the fifth chapter is about how school administrators will do their duties: "Education of school administrators should be given importance; It is decided that the administrators should acquire the qualifications that can create a peaceful and productive environment, collaboration between students and parents".

In the 12th NEC, decisions are taken on a topic basis. The 26th decision on topic 3 (teacher training) is related to school administration. The decision taken is: "Adoption of education administration as a branch and training of candidates for education administrators to be selected through examination in long-term in-service training courses to be determined by the Ministry; the institutionalization of this situation ". The decision is based on the personal rights and training needs of the school administrators. This shows that different aspects of school administration are taken into consideration in the councils.

In the 14th NEC, one of the agenda items is educational administration. Especially the 4th, 5th, 11th and 12th decisions are related to school administration. The statement "Specialization, hierarchical progress and promotion will be based on educational administration; and the powers of administrators will be increased " is related to the personal rights and duties of school administrators. The 5th and 11th decisions both emphasize in-service and post-graduate education of school administrators. In the 5th decision, these issues can be read as follows: "Education administrators will be trained in cooperation with universities; Those who have the qualifications required for being administrators will be included in the education management programs.". The 12th decision is about the management style of school administrators. In this decision, the importance of managing the school sensitive to the environment and technology was emphasized. This decision is as follows: "Guidance, by making use of expertise services and new technologies; It will start from the second level of primary education in collaboration with students, teachers, family and school administration".

In the 15th NEC, it is possible to group the decisions taken about school administrators under three headings. Under the heading of primary education and orientation, the 35th and 73rd decisions are related to the education of the school administrators. For example, in the 35th decision, the importance of education for the school administrator is stated as "For the family and the school to recognize the child and for the child to know himself, the teacher, administrator, students and parents

must be educated first.” The 64th, 72nd and 73rd decisions are related to the personal rights of school administrators. For example, the 64th decision is “Career, merit, success should be sought in executive appointments, transition to upper levels should be based on success, according to a certain system.” In addition, the 71st, 74th, 75th and 76th decisions are about the management style of the school administrator. For example, the 71st decision is read as follows: “Educational administration should be perceived as a science, the administrator should be accepted as an educational leader that ensures the realization of organizational goals; it should be known that school management requires expertise, and education management should be made a profession”. Another striking issue in the 15th NEC is the decision taken regarding the authorities and responsibilities of school administrators (74th decision). This decision is stated as “The balance of authority and responsibility of the school administrator must be achieved”.

Regarding school administrators, it is seen that the second heading is about restructuring in secondary education. Under this heading, there are decisions regarding the personal rights (25th, 27th and 30th decisions) and duties (52nd and 53rd decisions) of school administrators. For example, in the 25th decision, “Problems regarding personal rights of education administrators and teachers should be resolved; salary and additional course fees should be made adequate and equal”. Similarly, regarding the duties of the administrators, it was stated in the 52nd decision that “... the efficiency of the management in orientation should be increased”. The other topic with regard to school administrators is the financing of the education system. In the 8th decision, “In terms of using the resources in place, local structuring should be initiated in education, the participation of administrators, teachers, students, parents, unions and professional organizations in education management should be ensured” attention was drawn to the efficient use of resources by all stakeholders.

In the 16th NEC, it is seen that decisions are taken under two headings for school administrators. 1) The 52nd decision under the title of vocational training and employment in schools and enterprises is related to the duties of the school administrator. The relevant decision was expressed as “School administrations should be strengthened with local contributions in order to adapt vocational education to the developing conditions”. 2) Under the heading of training teachers and managers in the field of vocational and technical education some decisions were taken on the following subjects: (i) school administrators’ personal rights (28th, 41st, 51st, 56th, 57th, 58th decisions), (ii) the need for training (50th, 53rd, 54th, 55th decision), (iii) task-authority (52nd decision) and (iv) management style (59th decision). Some examples are as follows: Concerning the personal rights, the 41st decision is as follows: “Performance evaluation criteria of teachers and administrators should be developed, existing registry reports should be arranged according to these criteria and should be transparent”; 53rd decision regarding training need is as follows: “Pre-service and in-service training of managers should be made planned and continuous in cooperation with universities and other organizations”; 52nd decision regarding duty and authority is as follows: “The qualifications of the administrators at all levels and all types of vocational and technical education should be determined and their job descriptions should be made”; Regarding the management style, the 59th decision is as follows: “School administrators should participate and contribute to school administrations by employer and employee representatives as well as parents, teachers, students and local administrators”. As a summary, all decisions aimed to improve school administration from different aspects.

In the 17. NEC, the 15th decision “Wages should be paid to administrators and auxiliary staff in courses and seminars to be held on weekends and evenings in all educational institutions” is about the personal rights of the school principal. There are also decisions regarding the duties of school administrators and the management styles they will use while performing these duties. These can be seen in the 73rd, 77th, 85th and 92nd decisions. For example, in the 77th decision focuses on collaboration at school: “In order to increase the frequency of meetings between parents, teachers and administrators, to make the relations warm and at the same time to ensure the positive approach of the student, social activities within and outside the school should be given wide coverage; teacher, student, administrator and parents should frequently participate in common activities”.

In the 18th NEC, decisions focused on the management style of school administrators. These decisions draw attention to the leadership aspect of the school administrator. The following decisions are taken for educational environments, corporate culture and school leadership: (25.-26., 30., 32.-38. and 41., 43.-45., 47.-48., 50. Decisions). Leadership qualities of school administrators are emphasized in these decisions. The leadership characteristics of school administrators were evaluated together with their management style at school. For example, the 25th decision is read as “School principals should be provided with competencies related to cultural leadership”. The training needs of school administrators are also discussed here. In the 46th, 49th decisions and the 30th decision was about psychological counseling and guidance. These decisions were taken regarding the educational needs of the school administrator in various fields. For example, in the 30th decision, the need for training was stated as “In order to establish an adequate and common understanding of guidance for school administrators and teachers, in-service training should be focused on new models and approaches in the field of psychological counseling and guidance”. The 32nd decision defending the effect of the education received on personal rights is similar. The decision envisages the professional development of teachers. This was stated as “Graduate education should be taken as a basis in the appointment of school administrators, ...”. It is possible to see the regulation regarding the duties of school administrators in the 24th decision regarding sports, arts, skills and values education. The relevant decision was expressed as “The approval of the school principal should be sufficient for extracurricular activities”.

In the 19th NEC, the concepts of educational administrator and school administrator are defined: “When it comes to educational administrators, it refers to the administrative ranks of the district, province and ministry. When it comes to school administration, it refers to the principals and assistant principals at schools”. In the 19th NEC, decisions were taken regarding the personal rights and educational needs of school administrators. The election criteria for education administrator candidates (10 decisions), first assignment as a education administrator (13 decisions), reassignment as a education administrator (8 decisions) are related to the personal rights. As an example, decision 2 explains the criteria for selection: “Success of school administrators in the written exam held centrally” In this council, there are 8 decisions for school administrators, especially on in-service training. For example, in the 7th decision, the quality of the training was expressed as “Establishing guidance (mentoring) mechanisms in ensuring the professional development of education administrators”. School administrators’ educational needs and personal rights were handled together. For example, in the 8th decision on reassignment, “The Ministry of National Education's personnel will receive master’s degree and Phd Education with a protocol to be made between the Ministry of National Education and the legal arrangements to facilitate access to education in this context” indicates this situation. In this council, decisions on other issues (1st, 3rd-5th decisions) and the 18th decision taken to ensure physical safety in the school are related to the duties of school administrators. As an example of this situation, 1st decision can be shown: “setting up the school / institution budget by allocating a share from the general budget, legal assurance of all income and expenditures that will ensure its effective use by the school / institution administration”.

### **Reflections of NECs on Today’s School Administration**

Four points came to the fore in the decisions taken by the school administration in the National Education Councils. These are personal rights, training needs (in-service and postgraduate), duties and responsibilities and management style. Since the points specified in the NECs come to the fore, these dimensions were examined whether they have reflections on today’s education system. In the councils, whether these dimensions related to school management have reflections on the education system was examined based on 4 groups of documents. These are the legislation of the Ministry of National Education, the Ministry of National Education Strategy Plan (2019-2023), Turkey’s Education Vision 2023 and the 11th Development Plan (2019-2023).

**Table 2. Reflections of NECs on Today's School Administration**

Related document	Reflection Areas of National Education Councils in terms of School			
	Personal rights	Training need	Duties/Responsibilities	Management Style
National Education Basic Law No. 1739 (June 24, 1973)	Article 50/A	Articles 48-49		
Primary Education Law No. 222 (January 12, 1961)	Article 87	Article 80	Article 14., 48., 53.	
Regulation for assignment of Administrators of Ministry of National Education Educational Institutions' (5 February 2021)	Articles 5-7			
Regulation for Social Events (June 8, 2017)			Articles 6.,10.-14.	Article 5
Ministry of National Education Secondary Education Institutions Regulation ( September 7, 2013)	Article 20/A	Article 20/A	Article 12.,15., 16., 20/A, 23., 25., 26., 28., 45., 76., 83., 84/B, 86., 91., 94., 109., 128., 137., 144., 146., 151., 157., 158., 163., 169., 183., 191., 192., 196., 200.-203.	Articles 17, 19
Norm of Administrators and Teachers Regulation Regarding Staff (June 18, 2014)	Article 4-14			
Ministry of National Education Preschool Education and Primary Education Institutions Regulation ( July 26, 2014)			Articles: 10, 14, 26, 32, 34, 36, 39, 41, 45, 49, 50, 56, 58, 60-62, 67, 68, 73.	
Ministry of National Education School-Parent Association Regulation (February 9, 2012)			Articles 9, 13, 17, 18, 19, 27	Article 13
Scientific Meetings Participation Regulation (November 19, 2019)		Articles 1, 4, 5, 6		
Ministry of National Education Regulation on School boards (August 25, 2017)				Articles 6.- 2 (c), 7 (5), 12- (1, 4, 7), 13 (6). maddeler
Regulation on the Training Process for Candidate Teachers (March, 2016)			Articles 4, 5, 7, 10, 11.-13.	
Ministry of National Education 2019-2023 Strategy Plan (2019)	Table 3 (Fields of Activity and Products and Services)	Table 3 (Fields of Activity and Products and Services) and purpose 2		Table 3 (Fields of Activity and Products and Services) Internal analysis, Table 7 (SWOT Analysis), Purpose 2
2023 Education Vision (October, 23 2018)				Purpose 1 and 2
11th Development Plan (2019-2023) (July 15, 2019)		Articles 553, 553.3.		Articles 554.2., 556

(Documents were retrieved from [www.meb.gov.tr](http://www.meb.gov.tr))

In the documents examined in Table 2, the reflections on the duties and responsibilities of the school principal are more intense than the other dimensions. In addition, there are also regulations for other dimensions. Table 2 shows that the decisions taken in the councils for school administration have reflections on different documents.

### **Reflections of National Education Councils on the Personal Rights of School Administrators**

The reflections of NECs on the personal rights of school administrators can be seen in the legislation of the Ministry of National Education and in the MoNE 2019-2023 Strategy Plan. Regarding personal rights, for example, article 50/A of the National Education Basic Law No. 1739 states that “ School principals and vice principals use their leave in order, on the condition of arranging and organizing school work during the holidays”. Again, in the 87th article of the Primary Education Law No. 222, there are regulations regarding the personal rights of school administrators, such as “ The houses built for teachers and principals in or around city and town schools cannot be given to anyone other than teachers and principals working in the same school”. In the regulation on the Selection and Assignment of Administrators to the Education Institutions of the Ministry of National Education, the conditions for the appointment of school administrators (Articles 5-7) are laid down. These regulations aim at the personal rights in the professional life of school administrators.

### **Reflections of NECs on Training Needs of School Administrators**

The reflections of NEC on the personal rights of school administrators can be seen in the Ministry of National Education legislation, MoNE 2019-2023 Strategy Plan and the 11th Development Plan. Regarding the training needs, for example, it is seen that 48th article of the National Education Basic Law No.1739 is about the regulations for in-service training; and the 49th article are is about domestic and abroad trainings. Again, in the 8th article of the Primary Education and Education Law No. 222, the Ministry of National Education is responsible for meeting the education needs of its employees. Human resources management is one of the fields of activity included in the 2019-2023 Strategy Plan of the Ministry of National Education. In addition, the 11th Development Plan's 553.3. article, the need for training is emphasized as follows: “School administratorship will be professional profession and an accreditation structure for administrators’ education will be established”. The mentioned documents show that the training needs of school administrators are taken into consideration.

### **Reflections of National Education Councils on the Duties and Responsibilities of School Administrators**

Regulations regarding the duties and responsibilities of school administrators are more intense compared to other fields. Duties and responsibilities are mostly found in regulations. Article 53 of the Primary Education Law No. 222 points out the duty of the school administration as “The reasons for absenteeism of the students who do not attend school are investigated by the school administrations and primary education inspectors and the material and moral reasons that prevent the continuation must be eliminated”. 39th-41st of the regulation on Pre-School Education and Primary Education Institutions of the Ministry of National Education (seventh chapter) mentions the duty, authority and responsibility of the school principals and assistant principals as follows:

#### *The duty, authority and responsibility of the school principals*

Article 39 - (1) Pre-school education and primary education institutions are managed by the principal together with other employees in accordance with the provisions of the relevant legislation. Administrator; students, all kinds of education and training, management, personnel, accrual, movable property, correspondence, educational and social activities, boarding, scholarship, bussed education, security, nutrition, care, protection, cleanliness, order, public relations and so on. It ensures the fulfillment of the duties assigned by the

ministry and provincial /district national education directorates and other duties specified in the job description.

The 10th article of the Ministry of National Education Regulation on Social Activities of Educational Institutions, "Education institution management; It takes all kinds of precautions to make the trip healthy and safe, examines all the documents included in the travel file and evaluates its suitability" indicates the duty of the school administration during the trips.

### **Reflections of NECs on School Administrators' Management Style**

It is seen that there are regulations regarding the management style that should be in the school administration. Article 7(5) of the Regulation on the School Boards is as follows: "In the school boards, the subjects deemed necessary by the principal and in the other boards, the subjects that are decided to be on the agenda with the suggestion of the majority of the board members are discussed and resolved." In addition, the 1st and 2nd goals determined in the Education Vision 2023 are about the management style. For example, in Goal 1, this is expressed as "processes will be improved within the framework of data-based management approach and bureaucratic workload will be reduced in all management levels, especially in our schools". In the documents, a more flexible, collaborative and environmentally friendly approach prevails in schools as a management style.

## **CONCLUSION AND DISCUSSION**

In the Turkish Education System, one of the platforms that can be considered as a governance and education planning process in terms of education, where the opinions of subordinates are received, various issues in the education system are discussed is the NECs. A total of 19 NECs were held between 1939-2014. It is seen that in 12 out of 20 NECs, decisions regarding the school administration were taken. It is noteworthy that in the last 2 sections, school administration is discussed more intensely with its different aspects. Several decisions on school administration have been taken in these councils. Therefore, decisions taken on school administration can be grouped in 4 groups. These are the personal rights of the school administrator (salary, appointment, status, etc.); the need for both in-service and postgraduate education to develop knowledge skills and attitudes; the duties, authorities and responsibilities of the school administrator, and the understanding of what and how the school management style should be. The importance of NECs stem from its contribution to the Turkish education system in terms of its scope and organization (Erdoğan, 2017, p. 125). NEC is an advisory board where current problems are discussed, and decisions are made on improving the quality of Turkish National Education (Serin, 2018, p. 153). According to researchers, NECs are considered as an application of governance. Governance refers to a process that takes time, an effort that requires the change of management style (Curry et al, 2016). The concept is also accepted as a management approach based on information, interaction and consensus among stakeholders in the organization. The basis of the concept is to voluntarily participate in assigned tasks, to share authority-responsibility and to be open communication-centered and reliable (Gündoğan, 2013, p.17). In addition, transparency, accountability, reliability, autonomy, justice, participation, effectiveness and efficiency can be considered as concepts related to governance (Memduhoğlu, 2010; Ismara et al, 2020; Suksen, Sanrattana & Suwannoi, 2020). The reason why governance is so important is due to the benefits it provides to the organization. Governance can pave the way for democratic practices. It can allow different stakeholders to explain their views. In school, it can facilitate the work of school management, provide values-based education, ease bureaucratic procedures and allow dynamism (Naidoo, 2005; Mwinjuma et al, 2015). In other words, the more governance is put into practice, the more its contribution to education and the benefit obtained from education will increase (Gerger & Elheddad, 2020; Kopric, 2013).

Another contribution of NEC is in terms of education planning. In addition to the contribution to education and school (Kaya, 2015, p. 406), educational plans can enable the training of qualified people who shape the future (Parfitt, 2017). Therefore, educational planning has a holistic structure that can address both formal and informal aspects of education (Douse & Uys, 2018). Educational

planning should also be open and flexible (Koksal, 1995). In terms of benefiting from educational planning, the school administration should be conscious and receive adequate training and support (Arslan & Küçük, 2015; Bayram, 2019). NECs are an example of the implementation of governance. Similarly, educational planning by taking the opinions of all parties can also be seen in NECs. It is a platform where opinions of all parties, both formal and informal, can contribute to decisions in NEC.

It is understood from the 14 documents examined that NECs have reflections on school administration in the Turkish education system. Notable among these documents are the legislation of the Ministry of National Education, the Ministry of National Education 2019-2023 Strategy Plan (2019-2023), Turkey's Education Vision 2023 and the 11th Development Plan (2019-2023). It is seen that the duties and responsibilities of school administrators are given more place in the documents. Also the documents include regulations that support NECs. It is for sure that NECs have serious contributions to the Turkish Education System.

### Limitations and Recommendations

The examination regarding the reflection of the NECs on the school administration are limited to four groups of documents specified in the findings section. Considering that various topics related to education are discussed with different stakeholders in the councils, the importance of such meetings can be understood better. In addition, the specified four groups of documents show that NECs have reflections on today's education system and these reflections are still valid. In addition, it is thought-provoking that an important consultation meeting, which is a special application of Turkish National Education, is not continued, although it is frequently stated that it is the center of critical decisions. For this reason, the NECs should be maintained. Therefore NECs should be put on the agenda again so that the decisions that will be taken can be the basis for the arrangements for the practitioners. For future research, researchers can examine the councils from different aspects. Studies can be done with different methods by taking the opinions of the groups that have participated in the councils before. In this way, the reflections of NECs to the Turkish Education System can be better demonstrated.

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## **The Effect of Tales on the Development of Turkish Language Skills: A Meta-Analysis Study**

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### **Abstract**

The purpose of the current study is to determine the effect of tales on the development of the Turkish language skills of students from different grade levels in Turkey. To this end, a meta-analysis of the studies investigating the effect of tales on the development of the Turkish language skills was conducted. 5 studies were included in the current meta-analysis study. The total sample size of the studies included in the meta-analysis is 256 students; 126 in the control groups and 130 in the experimental groups. The studies included in the meta-analysis are heterogonous. In addition to result of the funnel scatter plot related to publication bias, absence of the publication bias was confirmed with Orwin's Safe N Analysis, Duval and Tweedie's Trip and Fill and Egger's regression analysis. Effect sizes were calculated according to the random effects model. In the calculations of the effect sizes, Cohen's d coefficient was used. In the current study, moderator variable effect of the variables of grade level, type of publication and skill area on the effect sizes calculated according to the effect of tales on the development of the Turkish language skills was also examined. In the determination of the moderator variable effect, Q test and p significance coefficient were used. In the current study, tales was found to have a high level of effect on the development of the Turkish language skills. When the results of the moderator variable analysis were examined, it was found that for grade level, type of publication and skill area moderator variables, the between-studies variance is not significant in terms of the development of the Turkish language skills. In light of the current meta-analysis study, it was concluded that tales are an effective method to be used to develop students' Turkish language skills. Thus, tales can be used to support the development of students' language skills in mother tongue education. According to results, it can be argued that tales have a positive effect on the development of all the Turkish language skills in all the Turkish language skill areas. It has been observed that applied research on the use of tales as a learning tool in Turkish language education is quite limited. Therefore, the number of applied studies that examine the effects of tales on the development of Turkish language skills as well as on academic achievement, student motivation, and the retention of the learned information in Turkish language education can be increased.

**Keywords:** Turkish Language Education, Turkish Language Skills, Tales, Meta-Analysis

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## INTRODUCTION

Basic language skills are divided into two groups as comprehension (listening / watching and reading) and expression skills (speaking and writing). The main goal of Turkish language education is to improve students' basic language skills and to impart the love for and awareness of language to them. When the Turkish curriculum is examined, it is seen that the objectives of the curriculum are stated as follows; "developing students' listening/watching, speaking, reading and writing skills, enabling them to use Turkish consciously, accurately and meticulously in line with the rules of speaking and writing, helping students to gain the pleasure and awareness of language use, enriching their worlds of emotions, thoughts and imaginations and getting them to recognize and adopt aesthetic and artistic values through the works of art produced in the world and Turkish culture" (Milli Eğitim Bakanlığı [MEB], 2019). The development of language skills in students helps them to gain the following competences "expressing and interpreting concepts, thoughts, views, feelings and phenomena both orally and in writing (listening, speaking, reading and writing) and getting involved in linguistic interactions in any type of social and cultural environment such as educational and work, home and recreational environments in a creative and appropriate manner" within the basic competence of "communication in mother tongue" (MEB, 2019). In this connection, the selection of materials that can address the development of all basic language skills in Turkish lessons is an important factor for the conduct of a healthy mother tongue education. One of the educational materials that can be preferred in this context is tales. Tales which can be defined as attractive and impressive narratives that attract the attention of children, keep their curiosity alive and enrich their imaginations (Kaya & Erol, 2020) are widely used in the teaching of reading, listening, speaking and writing skills and grammar knowledge as an educational material (Bağcı-Ayrancı, 2017). It can be said that tales are among the literary genres that can be preferred when creating a learning environment in Turkish language education because they have a flexible language structure and they develop the imagination of students and foster the pleasure and interest of reading in them (Özkaya & Altuntaş, 2021). In addition to nurturing the imagination and emotional power of the child, tales are also an important factor in the language development of the child, with the ease and entertaining dimension involved in their way of narration; therefore, tales should be used in mother tongue education (Arıcı & Bayındır, 2015; Boratav, 2009; Dilidüzgün 2018). Effective use of tales in mother tongue education and instruction has a positive effect on the development of the child's basic language skills as well as the development of vocabulary, emotional worlds, dreams and thoughts (Türkben, 2018). The child, who is fed from tales through listening / watching and reading, which are called receptive skills, can use what he/she has gained from these tales in his/her verbal and written expressions through his/her speaking and writing skills, also known as productive language skills (Yemenici, 2019). It can be said that the child can express his/her feelings, thoughts and dreams in an aesthetic way as a result of transferring various language structures and rich speeches from tales to his/her vocabulary, and correspondingly, his/her oral and written expression will develop.

There are many studies investigating the role of tales in values education and value transfer (Coşkun & Çiftçi, 2019; Kılıç & Yılmaz, 2018; Kavaklı, 2019, Özbaşı, 2020, Temizyürek & Vargelen, 2016); in the development of vocabulary knowledge (Aslan, 2017; Baş, 2012; Çetinkaya, 2020; Kaçmaz, 2018; Sever & Karagül, 2014); in the use of educational materials (Arıcı & Bayındır, 2015; Bağcı-Ayrancı, 2017; Bozkırlı, 2018; Çiftçi & Kaya, 2020; Gedik, 2020); readability (Tekşan et al., 2020); children's literature (Kılıçaslan, 2019; Saltık, 2016; Yasa, 2012) bibliotherapy (İpek-Eğilmez & Erdemir, 2016), teaching Turkish to foreigners (Bayraktar, 2016; Özdin, 2020) within the context of teaching Turkish. It is seen that the studies on tales are generally descriptive studies. Within the context of teaching Turkish, there is a limited amount of applied research focusing on the effects of tales on the conceptual development of children (Akın, 2018), their academic achievement and attitudes (Çinici, 2019), Turkish language skills (Bilgiç-Yıldız, 2019; Çetinkaya & Sönmez, 2019; Oğuz, 2017; Onarıcıoğlu, 2011; Öztürk, 2018; Urhan, 2016; Yemenici, 2019). Each of these studies in the literature examining the effect of tales on Turkish language skills has concluded that tales are effective on the development of language skills. However, considering the fact that the effects of fairy tales on the development of Turkish language skills reported in these studies seem to be different from each other, a meta-analysis study is needed in order to evaluate and generalize the results of the studies

as a whole. As a result of a literature review, no meta-analysis study on the effect of tales on the development of Turkish language skills could be found.

The purpose of the current study is to determine the effect of tales on the development of Turkish language skills of students in different levels of education in Turkey. To this end, a meta-analysis of the studies examining the effect of tales on the development of Turkish language skills was conducted. In this connection, it was also attempted to determine whether the effect values vary significantly depending on the moderator variables of publication type, education level of the participants and skill area. The research questions are:

1. What is the effect size of the tales on the development of Turkish language skills of students at different educational levels in Turkey?

2. Are there any significant difference in the effect values according to the moderator variables (publication type, education level of the participants and skill area)?

## METHOD

In the current study, it was aimed to determine the general effect sizes of tales on the development of students' Turkish language skills with the meta-analysis method. Meta analysis is a quantitative method that provides a general result by combining quantitative results obtained from more than one primary study on a topic (Kanadlı, 2021; Şen & Yıldırım, 2020). Meta analysis, also called quantitative research synthesis, is a powerful approach to summarizing and comparing results from empirical literature (Card, 2011). In addition to making it possible to obtain a overall effect size by combining the results of the related studies, meta-analysis also allows them to be examined in terms of variables such as publication type, the place where the research was carried out and / or the age, gender, education level of the study groups. When the literature is reviewed, it is seen that there are different studies examining the effect of tales on the development of students' Turkish language skills. However, in the studies reached, it is seen that the effect sizes of tales on students' Turkish language skills differ and it is necessary to express the research results in a holistic manner. This holistic expression is possible by combining the results obtained from different studies by subjecting them to a meta-analysis and reaching a general effect size. In this connection, within the scope of the current study, the studies designed to examine the effect of tales on the development of Turkish language skills were examined and a general effect size was tried to be reached with the meta-analysis method. Moreover, it was investigated whether the effect sizes calculated for the effects of tales on the development of Turkish language skills vary significantly depending on the moderator variables of education level, publication type and skill area.

### Data collection procedure

The data of the study were collected in February 2021. By using the key words “masal, dil becerileri, Türkçe eğitimi” and their English translations, a search was conducted in Google Academia, Council of Higher Education Thesis Centre, ULAKBİM TR Dizin, ProQuest and indices in the ISI database (SCI, SCI Expanded, SSCI, AHCI and ESCI), and ERIC and Education Full Text (H. W. Wilson, EBSCOhost) databases. In this connection, a total of 94 studies were reached, including 32 articles and 62 graduate theses on the use of tales in Turkish language education and in the development of Turkish language skills. It was observed that the studies reached were conducted between the years 1997 and 2020. In this direction, criteria were determined for the studies obtained to be included in the meta-analysis. These criteria are: (1) The studies should be graduate theses completed or articles published in reviewed journals between the years 1997 and 2020, (2) The studies should be focused on the determination of the effects of tales on the development of Turkish language skills (listening/watching, speaking, reading and writing), (3) The studies should be semi-experimental studies with experimental and control groups, (4) The participants in the experimental groups should be engaged in teaching practices with tales and the participants in the control groups should be engaged in practices conducted with traditional methods, (5) In the studies, data collection tools



aiming to determine the effects of tales on the development of Turkish language skills should be used, (6) The number of the participants in the experimental and control groups should be stated, (7) Arithmetic means, standard deviations, p values or the statistics required to calculate the effect size should be reported in the studies. These criteria were also used as the exclusion criteria. When the articles produced from the graduate theses were found, not the articles but the theses were included in the meta-analysis on the basis of the assumption that they include more data and that publication bias is relatively lower in them.

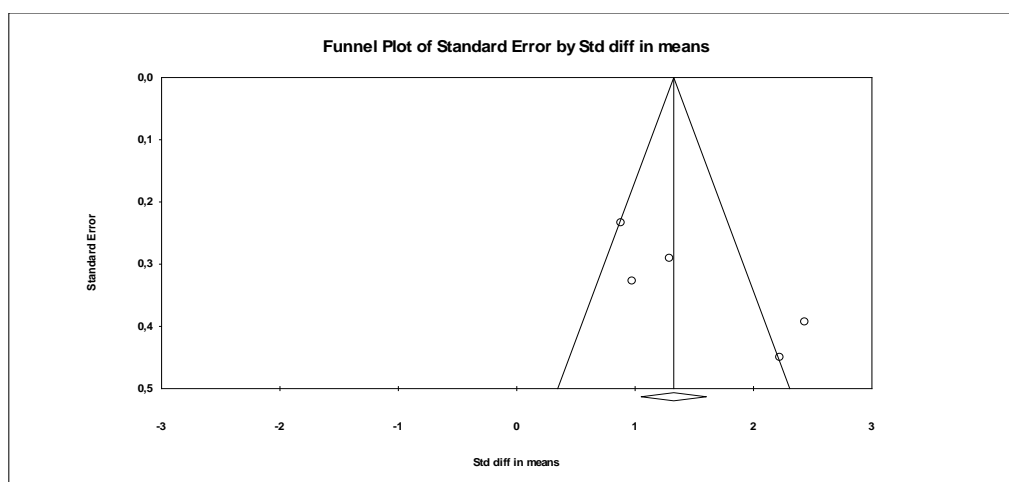
When the studies were evaluated in line with the criteria for inclusion in the meta-analysis study, it was seen that most of the studies were designed with qualitative research methods. Seven experimental studies examining the effect of tales on the development of Turkish language skills were identified. Two of these studies were not included in the meta-analysis since the required values for the necessary calculations were not reported. As a result, a meta-analysis was conducted with 5 studies that met the inclusion criteria. The total sample size of the studies included in the meta-analysis consists of 256 participants, 130 participants in the experimental group and 126 participants in the control group.

### **Data coding**

In line with the criteria for inclusion in the meta-analysis determined, a coding form was created for the studies to be included in the study. The name of the study, author (s), publication year, skill area, education level, publication type, number of experimental and control group participants, posttest arithmetic mean, standard deviation, and p values were coded in this form. In order to ensure the reliability of the coding, two field experts other than the researcher coded the research data, and it was observed that full consensus was achieved on the codings as a result of the consensus meetings.

### **Publication bias**

Publication bias in meta-analysis studies can be defined as the inadequacy of the studies included in a meta-analysis to represent all the studies on that subject. Publication bias is an important factor that threatens validity as it adds systematic error to the research (Dwan et al., 2013; Şen & Yıldırım, 2020). The reasons for publication bias are that studies with high effect sizes are easier to publish than studies with low effect sizes, and that generally, publications with such high effect sizes are included in the meta-analysis (Bakioğlu and Göktaş, 2018). Similarly, Rust et al. (1990) drew attention to this situation and stated that printed publications such as articles and books are deemed more suitable for publication if they have a strong effect or statistical significance, and stated that this may be a problem in terms of publication bias in meta-analysis studies. For this reason, before determining the effect sizes, the status of publication bias in the studies included in the meta-analysis was determined. In the current study, the status of publication bias was examined by funnel scatter plot, Orwin's Safe N analysis, Duval and Tweedie's Trim and Fill analysis and Egger's regression test. In this context, the funnel scatter plot showing the possibility of publication bias in this meta-analysis study is shown in Figure 1.



**Figure 1. Funnel scatter plot regarding the effect of tales on the development of Turkish language skills**

When the funnel scatter plot in Figure 1 is examined, it is seen that the studies are generally gathered in the middle and distributed symmetrically towards both sides of the vertical line showing the combined effect size. The symmetrical distribution of the studies included in a meta-analysis around the effect size axis and their gathering in the middle part of the standard error axis indicate the low probability of publication bias. However, the results produced by the funnel scatter plot, which visually presents the possibility of publication bias, are limited. Therefore, in addition to the result of the funnel scatter plot regarding the publication bias, the possibility of publication bias was also examined with Orwin's Safe N analysis, Duval and Tweedie's Trim and Fill, and Egger's regression analysis. The findings obtained are presented in Table 1.

**Table 1. Reliability tests regarding the possibility of publication bias**

Orwin' Safe N ( $\pm .01$ S.O.F) Required Studies*	Duval and Tweedie		Egger Test (p)
	Trimmed	Observed/Added	
659	1	1.501(1.288)	.056

\*The number of studies required for Cohen's  $d$  value to reach a value outside the range of  $\pm .01$

According to Table 1, the high number of studies to be reached as a result of Orwin's Safe N analysis indicates the lowness of publication bias. This shows that there is no need to add a new study to the meta-analysis in order to bring Cohen's  $d$  coefficient to a value outside the range of  $\pm .01$ , which is considered to be "insignificant". The result of the Duval and Tweedie test shows that the effect values resulting from the exclusion of the studies that negatively affected the publication bias from the meta-analysis or the addition of their symmetrical equivalents to the meta-analysis do not differ significantly from the observed values. Additionally, the fact that the result of Egger test is insignificant ( $p > .05$ ) confirms that there is no publication bias in the study.

### Model selection

In order to calculate the effect sizes in meta-analysis studies, it is first necessary to determine the model through which the effect sizes will be calculated. These models are divided into two as fixed effects model and random effects model. While calculating the general effect size, the fixed effects model is used in homogeneous distributions of effect sizes, and the random effects model is used in heterogeneous distributions (Cooper, 2017). Especially in meta-analysis studies conducted in social sciences, it is recommended to choose the random effects model based on the assumption that the effect size may change due to the differences in the characteristics such as the age and education level of the participants (Borenstein et al., 2009). The use of the random effects model was deemed appropriate in the current study because of the differences seen in the scopes of the studies combined in this meta-analysis study and the characteristics of the participants. Heterogeneity tests were used to provide evidence that the combined studies are heterogeneous.

## Heterogeneity

Heterogeneity tests were conducted to determine whether the effect sizes show a heterogeneous distribution or not in the current study. Q value is generally used to determine the heterogeneity of the effect sizes of the studies included in a meta-analysis (Dinçer, 2021). However, the Q test only gives information about whether there is heterogeneity or not but cannot determine the degree of heterogeneity (Huedo-Medina et al., 2006). For this reason, Q value was used to determine heterogeneity and  $I^2$  value was used to determine the size of heterogeneity.  $I^2$  is the percentage of variance resulting from the heterogeneity between effect sizes. An  $I^2$  value of 25% or less indicates a low level of heterogeneity, 50% indicates a medium level of heterogeneity and 75% and above indicates a high level of heterogeneity (Pigott, 2012). Accordingly, the Q value was calculated as 16.639 ( $sd(Q)=4$ ;  $p=.002$ ). These values show that the studies included in the meta-analysis are heterogeneous. The  $I^2$  value was determined to be 75.961. This value confirms that the studies included in the meta-analysis are highly heterogeneous. Due to the high level of heterogeneous structure of the studies included in the meta-analysis, the need to examine the differences between effect sizes arose. In this connection, the differences in the effect sizes calculated according to the studies on the effect of tales on the development of Turkish language skills were examined through the moderator variables.

## Calculation of effect sizes

In the current meta-analysis study, Cohen's d coefficient was used in the effect value calculations and the confidence level was accepted as 95% in all the calculations regarding the effect value. A Cohen's d coefficient of  $d<.20$  indicates a low level of effect, a Cohen's coefficient in the range of  $.20\leq d<.50$  indicates a medium level of effect, and a Cohen's coefficient of  $.50\leq d$  indicates a high level of effect (Cohen, 1988). While evaluating the effect sizes, these value ranges were taken into consideration.

In the current study, the moderator variable effect of the variables of education level, publication type and skill area on the effect values calculated according to the effect of tales on the development of Turkish language skills was also examined. Q test and p significance coefficient were used to determine the moderator variable effect.

## RESULTS

### Results regarding the properties of the studies included in the meta-analysis

Results regarding the properties of the studies included in the meta-analysis are presented in Table 2.

**Table 2. Descriptive information about the studies included in the meta-analysis**

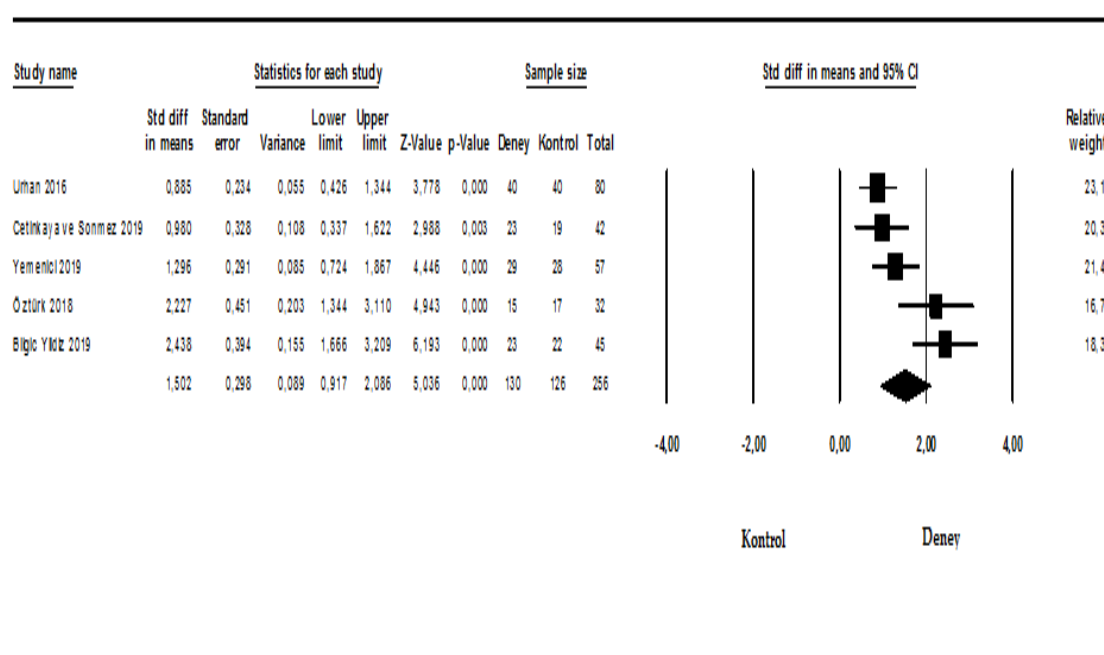
Author name/ Publication year	Skill area	Education level	Publication type	$\bar{X}$ experimental	S experimental	n experimental	$\bar{X}$ control	S control	n control	p	Cohen's d	s hata
Bilgiç-Yıldız (2019)	Listening	Primary school	Master's thesis	16.690	1.960	23	9.400	3.780	22	-	2.438	.394
Öztürk (2018)	Listening	Middle school	Master's thesis	83.956	10.091	15	49.050	19.274	17	-	2.227	.451
Urhan(2016)	Writing	Middle school	Master's thesis	25.680	6.350	40	20.450	5.430	40	-	.885	.234
Yemenici (2019)	Listening	Middle school	Doctoral dissertation	79.820	18.248	29	61.600	7.583	28	-	1.296	.291
Çetinkaya and Sönmez (2019)	Speaking	Primary school	Article	-	-	29	-	-	19	.003	.980	.328

$\bar{X}$ : Arithmetic mean; n: Sample size; S: Standard deviation;  $p<.05$ ; Cohen's d: Effect size;  $S_{error}$ : Standard error

As can be seen in Table 2, a total of 5 studies; 1 doctoral dissertation (20%), 3 master's theses (60%) and 1 article (20%), were included in the meta-analysis. Of these five studies, 2 were conducted on primary school students (40%) and 3 were conducted on middle school students (60%). When the distribution of the studies across the years is examined, it is seen that 1 of them (20%) was published in 2016, 1 of them (20%) was published in 2018 and 3 of them (60%) were published in 2019. When the studies included in the meta-analysis are examined in terms of skill areas, it is seen that 3 of the studies (60%) were conducted on listening skill, 1 of them (20%) was conducted on speaking skill and 1 of them (20%) was conducted on writing skill.

### Results related to the effect of tales on the development of language skills

The purpose of the current study is to determine the effect of tales on the development of Turkish language skills. In this connection, the forest graph regarding the effect of tales on the development of Turkish language skills is presented in Figure 2, and the statistics for the effect size are presented in Table 3.



### Meta Analysis

Figure 2. Forest graph regarding the effect of tales on the development of Turkish language skills

Table 3. Results of the analysis regarding the effect of tales on the development of Turkish language skills

k	n	EBmean	p	z	Serror	EBlower	EBupper
5	256	1.502	.000	5.036	.298	.917	2.086

k: the number of studies included in the meta-analysis; n: Sample size; EB<sub>mean</sub>: Mean effect size; S<sub>error</sub>: Standard error; EB<sub>lower</sub> – EB<sub>upper</sub>: Lower and upper limits of the effect size

As can be seen in Figure 2, in all the studies included in the meta-analysis, there are positive effects in favour of the experimental group. In addition, the study weights included in the analysis are close to each other. This similarity in terms of study weights shows that the contribution of the combined studies to the overall effect size is similar. When the effect sizes of the studies included in the meta-analysis are examined, it is seen that the study with the highest effect size belongs to Bilgiç-Yıldız (2019), and the one with the lowest belongs to Urhan (2016).

When Figure 2 and Table 3 are evaluated together, it is seen that the effect value of tales on the development of Turkish language skills is 1.502 ( $p > .05$ ), and the standard error of the effect size is .298, according to the results of the meta-analysis made with 5 studies. These values show that the overall effect size is positive and at a high level. The findings of the meta-analysis study show that the development of Turkish language skills of the experimental group students instructed with tales is higher than the development of Turkish language skills of the control group students instructed with traditional methods.

#### **Results related to the effect of tales on the Development of Turkish language skills according to the moderator variables**

In line with the general purpose of the current study, it was examined whether the effect of tales on the development of Turkish language skills varies significantly depending on education level, publication type and skill area. The findings obtained are presented in Table 4.

**Table 4. The results of the analysis conducted to determine whether the effect of tales on the development of Turkish language skills varies significantly depending on the moderator variables**

Moderator variable	Level of moderator variable	k	EB <sub>mean</sub>	EB <sub>lower</sub>	EB <sub>upper</sub>	sd	Q	p
Education level	Primary school	2	1.692	.264	3.121	1	.152	.697
	Middle school	3	1.379	.709	2.048			
Publication type	Doctoral dissertation	1	1.296	.724	1.867	2	1.692	.429
	Master's thesis	3	1.808	.709	2.907			
	Article	1	.980	.337	1.622			
Skill area	Listening	3	1.940	1.175	2.706	2	5.597	.061
	Speaking	1	.980	.337	1.622			
	Writing	1	.885	.426	1.344			

When the results of the moderator analysis given in Table 4 are examined, it is seen that the effect of tales on the development of Turkish language skills does not vary significantly depending on the moderator variables of education level (primary school, middle school), publication type (doctoral dissertation, master's thesis, article) and skill area (listening, speaking, writing) ( $p > .05$ ). This finding shows that tales are effective on the development of all the Turkish language skills (listening, speaking, writing) and on all the levels of education (primary school, middle school) regardless of the publication type of the studies included in the meta-analysis (doctoral dissertation, master's thesis, article).

## **DISCUSSION AND CONCLUSIONS**

In this meta-analysis study aiming to determine the effect of tales on the development of Turkish language skills of students from different levels of education in Turkey, a total of five studies were included and the effect sizes of the studies were calculated. The total sample size of the studies included in the meta-analysis consists of 256 participants; 130 participants in the experimental group and 126 participants in the control group. The fact that no meta-analysis study investigating the effect of tales on the development of Turkish language skills of the students from different levels of education could be found in the literature reveals the importance of the current study. In the current study, a meta-analysis of the studies examining the effect of tales on the development of Turkish language skills was conducted. Within the context of the current study, it was also determined whether the effect values differ according to the moderator variables of publication type, education level of the participants, skill area.

According to the results of the meta-analysis conducted with 5 studies, tales have a high level of effect on the development of Turkish language skills. When the effect values and forest graphic are evaluated together, it is seen that the development of Turkish language skills of the experimental

group students instructed with tales as a learning tool is higher than the development of Turkish language skills of the control group students instructed with traditional methods. This result shows that tales are effective in the development of students' Turkish language skills. In many studies in the literature (Arıcı & Bayındır, 2015; Gedik, 2020; Karatay, 2007; Lüle-Mert, 2012; Türkben, 2018), it is stated that tales are a teaching material that can be used in mother tongue education by drawing attention to the effect of tales on the development of language skills. All these studies support the finding of the current study.

In line with the general purpose of the study, it was also examined whether the effect of tales on the development of Turkish language skills varies significantly depending on education level, publication type and skill area. When the results of the moderator analysis are examined, it is seen that the effect of tales on the development of Turkish language skills does not vary significantly depending on the moderator variables of education level (primary school, middle school), publication type (doctoral dissertation, master's thesis, article) and skill area (listening, speaking, writing). The fact that there is no significant difference between the variances in terms of publication type shows that the studies included in the current study can represent the general. As a result of the publication bias analysis conducted before starting the meta-analysis, it was determined that there was no publication bias. In the related studies, it was stated that printed publications such as articles and books are considered to be worth for publication if they have a strong effect or statistical significance, and it was stated that this could be a problem in terms of publication bias in meta-analysis studies (Bakioğlu & Göktaş, 2018; Dwan et al., 2013; Rust et al., 1990). Considering this situation in this meta-analysis study, when the articles produced from the graduate theses were found, not the articles but the theses were included in the meta-analysis on the basis of the assumption that they include more data and that publication bias is relatively lower in them.

When the results related to the moderator variable of skill area (listening, speaking, writing) are examined, it is seen that the fact that the variance between skill areas is not significant in terms of the development of Turkish language skills indicates that tales have a positive effect on the development of all language skills. When the literature was examined, applied studies that determined that tales have an effect on the development of Turkish language skills of students were reached (Bilgiç-Yıldız, 2019; Çetinkaya & Sönmez, 2019; Oğuz, 2017; Onarıcıoğlu, 2011; Öztürk, 2018; Urhan, 2016; Yemenici, 2019). The results obtained from these studies support the finding of the current study showing that tales have a positive effect on the development of language skills. Although there is no significant difference between the variances in terms of skill area (listening, speaking, writing), it is seen that the effect size on listening skill is higher than the effect sizes on the other skill areas. One of the basic language skills, listening skill is the first skill used by the individual in the language acquisition process. Taking this situation into consideration in the Turkish Curriculum, listening / watching skill is given the first place in the ordering of skill areas (MEB, 2019). Listening skill is the basis for the development of other language skills. Acquisition of listening skill is followed by speaking, reading and writing skills. For the development of expression skills, first of all, comprehension skills need to be developed (Bozorgian, 2012; Egamnazarova & Mukhamedova, 2021; Emiroğlu & Pınar, 2013; Yemenici, 2019). Tales appeal to listening skill of individuals, which is the primarily receptive skill, with their rich vocabulary content, richness and flexibility in narration, and arousing language taste by being constructed with extraordinary features that will enrich the imagination. As a result of the transfer of various language structures and rich expressions in tales by the individual to his/her vocabulary through listening skill, the individual can express his/her feelings, thoughts and dreams in an aesthetic way, so that other language skills can also be developed. This shows that the effect of tales on other language skills may increase parallel to the development of listening skill.

When the results obtained in relation to the moderator variable of education level (primary school, middle school) is examined, it is seen that the effect of tales on the development of Turkish language skills does not vary significantly depending on education level, which indicates that tales positively affect the development of Turkish language skills regardless of the level of education. The fact that the effect sizes of the studies included in the current study at primary and middle school

levels are close to each other may indicate that tales have similar effects at both education levels. When the literature was examined, it was seen that applied research examining the effect of tales on the development of Turkish language skills was carried out at primary and middle school levels (Bilgiç-Yıldız, 2019; Çetinkaya and Sönmez, 2019; Oğuz, 2017; Onarıcıoğlu, 2011; Öztürk, 2018; Urhan, 2016; Yemenici, 2019). It is thought that the effect of tales on the development of Turkish language skills has been investigated at primary and middle school levels because of the conviction that tales are suitable for the language development levels of children in young age groups, and that they may attract more attention at primary and middle school levels compared to other levels of education. In the context of teaching Turkish, although there are studies examining the effect of tales on students' conceptual development (Akin, 2018), academic achievement and attitudes (Çinici, 2019), no applied research examining the effect of tales on the development of Turkish language skills of students at both secondary and higher education levels has not been found. In this context, instead of making a generalization that tales are effective on the development of Turkish language skills of students at all education levels, it can be said that they are effective at primary and secondary school levels, based on the results of the current study.

In light of the current meta-analysis study, it was concluded that tales are an effective method to be used to develop students' Turkish language skills. Thus, tales can be used to support the development of students' language skills in mother tongue education. According to results, it can be argued that tales have a positive effect on the development of all the Turkish language skills in all the Turkish language skill areas and different grade levels. Thus, tales can be used in every age group in the development of Turkish language skills. But, it has been observed that applied research on the use of tales as a learning tool in Turkish language education is quite limited. Therefore, the number of applied studies that examine the effects of tales on the development of Turkish language skills as well as on academic achievement, student motivation, and the retention of the learned information can be increased. Conducting these applied studies at all education levels from pre-school period to higher education will provide healthier results in terms of the education level-dependent effects of tales. Therefore, the number of studies examining the effects of tales on the development of students' Turkish language skills at high school and undergraduate levels, as well as in younger age groups, can be increased. Also, in the light of current study, there is no significant difference between the variances in terms of publication type shows that the studies included in the current study can represent the general. In this meta-analysis research, if the articles produced from the postgraduate theses were accessed while the data were collected, the postgraduate theses were included in the meta-analysis. Thus, more reliable results were tried to be obtained. In order to reduce publication bias while collecting data in meta-analysis studies, if articles produced from postgraduate theses are accessed, postgraduate theses can be included in the meta-analysis with the foresight that they contain more data and the probability of publication bias is relatively low.

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## **Physical Education, Art and Music Pre-Service Teachers' Life Satisfaction and Automatic Negative Thought Perception**

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### **Abstract**

The purpose of this study is to examine the life satisfaction and automatic negative thoughts perception of physical education, art and music pre-service teachers. Students (n=387) who training in physical education and sport, art work and music departments participated in this study. Results showed that physical education teacher candidates' life satisfaction scores were significantly higher than those of art and music teacher candidates. On the other hand, the automatic negative thought perceptions of the art and music pre-service teachers were found to be higher than the physical education teacher candidates. Life satisfaction levels of the physical education pre-service teachers are found to be high, negative thought levels were low. Current findings emphasize the importance of participating in sports activities in order to increase the life satisfaction levels of pre-service teachers and decrease their negative automatic thinking levels.

**Keywords:** Student, Teacher Candidate, Negative Feeling, Happiness, Subjective Well-Being

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## INTRODUCTION

University period is a critical period when young people step from adolescence to adulthood, causing a series of significant changes in their lives (Hiçdurmaz, Inci & Karahan, 2017). During this period, young people who leave family environment with which they are familiar become more open to many external factors (Mazıcıoğlu & Öztürk, 2003). In addition to making new friends in this period, young people (Mazıcıoğlu & Öztürk, 2003) who have started to make their own free choices are faced with many problems such as habituation, budget and time management, financial problems, fear of loneliness and future business anxiety (Burris, Brechting, Salsman & Carlson, 2009; Cashmore, Green & Scott, 2010; Patel, Flisher, Hetrick & McGorry, 2007). Young people interacting with people from different cultures in the new social environment have to meet their families' expectations in an effort to manage their own budgets and fulfill their academic responsibilities. In addition, young people who have to face many vital complexities in physical, cognitive, social and emotional terms (Tümekaya, Çelik & Aybek, 2011) have to find solutions to the problems on their own. Young people are often negatively affected and may have negative feelings and thoughts due to extreme stress.

Automatic negative thoughts emerge quickly when confronted with stressful life events that disturb the person and are cognitions that the person accepts as accurate without any pre-assessment (Beck & Newman, 2005; Free, 2007). Automatic thoughts lead to negative evaluations of the person himself, the outside world and the future (Beck, 1964). Automatic negative thoughts are a way of perceiving, understanding and interpreting the social stimuli that affect the psychological power and the social skills of the individuals, which enable them to impose on people and at the same time overcome the problems (Ellis, Wolfe & Moseley, 1966). During the demonstration of these social skills, positive or automatic negative thoughts can affect individuals' emotions, behaviors, and life satisfaction (Tümekaya et al. 2011). Negative thoughts generally show these effects by preventing individuals' life satisfaction and effective participation in society (Ellis et al. 1966).

Life satisfaction is a way of evaluating one's own life, satisfaction or dissatisfaction according to the criteria one chooses (Diener, Emmons, Larsen & Griffin, 1985; Schimmack, Radhakrishnan, Oishi, Dzokoto & Ahadi, 2002). In other words, life satisfaction consists of cognitive evaluations and judgments about life in general, which arise from the comparison of the individual's expectations from life and the real situation in which one lives (Suldo & Huebner, 2006). Life satisfaction also includes the emotional reactions of individuals to life in school, at work and in leisure time. Therefore, life satisfaction provides important information about subjective well-being and quality of life of individuals (Vara, 1999).

Physical education, art and music teachers' candidates continuously participate in various social, cultural and sports activities such as exhibitions, concerts, competitions, music programs and sports competitions due to the characteristics of their departments throughout their education. On this occasion, they find the opportunity to visit the touristic places of the regions they visit. Therefore, they may be more advantageous than students of other departments in coping with the difficulties of life. For, findings suggest that artistic and cultural activities (Kapıkıran & Yağcı, 2012) and participation in physical activity (Gökçe, 2008) influence positively life satisfaction.

The relevant literature examined, it is obvious that there is a good many studies evaluating separately the concepts, life satisfaction of the university students (Ardahan, 2014; Chow, 2005; Dilmaç & Ekşi, 2008; Gökçe, 2008; Işık & Koçak, 2014; Kiralp & Bolkan, 2016; Özyayın, 2011; Serin & Aydınoglu, 2011) and automatic negative thoughts (Aysan & Bozkurt, 2000; Hiçdurmaz et al. 2017; Serin & Aydınoglu, 2011; Şirin & İzgar, 2013; Tümekaya & İflazoğlu, 2000) while very few researches (Aysan & Bozkurt, 2004; Serin & Aydınoglu, 2011) have been reported to evaluate automatic negative thoughts and life satisfaction together. In addition, there are studies reporting a decrease in automatic negative thought and its avoidance (Aysan & Bozkurt, 2004) as teachers' life satisfaction increases and suggests that the pre-service teachers have low life satisfaction and higher depression scores (Gündoğar, Sallan, Gül, Ersin & Diljin, 2007), who stated that they chose the department they study in in order not to be unemployed.

## Aim of the Study

There are many studies that investigated physical education (Ardahan 2014; Dinç, Dikici & Özdemir, 2019), art (Doğan, 2012) and music pre-service teachers' (Özaydın, 2011) negative emotions and life satisfaction separately. Considering the fact that participation in artistic and cultural activities (Kapıkıran, Ş., & Yağcı, U. (2012)) and physical activity (Rodriquez (2006) as cited by Gökçe, H. 2008) positively affects life satisfaction, it may be more appropriate to evaluate the life satisfaction and automatic negative thought perceptions of the physical education, art and music teacher candidates together. Because, while pre-service teachers studying in art and music teaching departments perform more artistic activities such as painting and individual instrument training as per the curriculum, pre-service physical education teachers mostly perform physical and sportive activities. For this reason it is thought that determining and comparing the life satisfaction and automatic negative thought perceptions of pre-service teachers who do different kinds of activities, including artistic and sportive, will make an important contribution to the literature.

The aim of this study is to investigate the life satisfaction and automatic negative thoughts perception of physical education, art and music pre-service teachers.

## MATERIAL AND METHOD

### Research Design

The research was designed as descriptive survey model. In this model, the case, which is the subject of the research, is observed without changing the present situation as the individual or object exists within its own conditions (Büyüköztürk, Çakmak, Akgün, Karadeniz & Demirel, 2019; Karasar, 2012).

### Participants

The study was carried out in 2018-2019 academic year with pre-service teachers studying in the department of Physical Education and Sports Education at the Faculty of Education, Art and Music Education programs in the department of Fine Arts Education and Physical Education Department of Erzincan Binali Yildirim University School of Physical Education and Sports. The research group consists of the students selected from the students studying in these departments by convenience sampling, non-probability sampling method. A total of 387 pre-services teachers, 187 women ( $\bar{x}_{age} = 21.51 \pm 3.08$  years) and 200 men ( $\bar{x}_{age} = 22.5 \pm 3.19$  years) voluntarily participated in the research.

**Table 1. Demographic Characteristics of Pre-services Teachers Participating in the Research**

Tables	Groups	Frequency (n)	Percentage (%)
Gender	Female	187	48.3
	Male	200	51.7
	Total	387	100.0
Department	Physical Education	147	38.0
	Art Education	94	24.3
	Music Education	146	37.7
	Total	387	100.0

When Table 1 is examined, it is seen that 48.3% (187) of the teacher candidates are female and 51.7% (200) are male. Pre-service teachers' participating in the study, 38% (147) are studying in Physical Education, 24.3% (94) Art and 37.7% (146) Music Departments.

### Data Collection Tools

To collect the data “Life Satisfaction Questionnaire” and “Revised Automatic Thought Questionnaire (ATQ-R)” are used.

### **Life Satisfaction Questionnaire (LSQ)**

Life satisfaction levels of individuals were evaluated by means of "Life Satisfaction Questionnaire" developed by Diener et al. (1985) and adapted to Turkish by Yetim (1993). The scale consists of 5 items and is prepared in 7-point Likert type. The highest score that can be obtained from the questionnaire is 35. In this study, Cronbach Alpha internal consistency coefficient calculated on the collected data was determined as 0.85.

### **Revised Automatic Thought Questionnaire (ATQ-R)**

Automatic negative thoughts of the individuals were determined by Automatic Thought Questionnaire- Revised developed by Kendall, Howard and Hays (1989). The first version of the questionnaire, Automatic Thoughts Questionnaire ATQ-30, was developed by Hollon and Kendall (1980). The validity and reliability of the first questionnaire consisting of thirty items was realized by Aydin and Aydin (1990). The number of items of the Automatic Thoughts Questionnaire, which was developed by adding 10 positive sentences to the ATQ-30 was increased to 40. The validity and reliability of the ATQ-R in Turkish used in this study was conducted by Bozkurt (1998). In the evaluation of the questionnaire, the numerical values of the negative expressions were added and the numerical values of the 10 positive expressions in the questionnaire were reversed and scored. As a result, the sum of the scores obtained from positive and negative items gave us the total score. The lowest and highest scores obtained from the questionnaire are 40 and 200, respectively. A high score indicates that automatic negative thoughts associated with depression are high. In the questionnaire, 10 positive expressions scored in reverse are questions 3, 7, 10, 13, 16, 20, 24, 28, 32 and 37. In the reliability test of the questionnaire conducted with high school students, Cronbach Alpha internal consistency coefficient was found 0.92. The internal consistency coefficient of Cronbach Alpha calculated based on the data collected in this study is 0.95. The high scores of the questionnaire indicate high level of negative thought (Bozkurt, 1998; Hiçdurmaz, Inci & Karahan, 2017 ).

### **Procedure**

Prior to the study, the participants were informed about the aims of the research, the confidentiality of the answers and all the procedures related to the research. In addition, it was explained to the participants that they have the freedom to stop participating in the research at any time. A signed informed consent form was obtained from the participants indicating that they agreed to participate in the study of their own free volition. This study was conducted in accordance with the principles specified in the Turkish Psychological Association Ethical Regulation.

### **Data Analysis**

IBM SPSS 22 package program was used for data analysis (IBM Corp. Released 2012. IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp.). Descriptive statistics of continuous variables were summarized and mean and standard deviation (SD) values were also given. The analysis of pre-service teachers' automatic negative thoughts and life satisfaction scores according to gender and department variables was examined with the MANOVA test. Before starting to analyze the data, the assumptions of normality, homogeneity of variances and covariance matrices of MANOVA were examined. Univariate normality and multiple normality assumptions were met for the groups. Equality of covariance matrices was examined with Box's M statistics and homogeneity of variances was examined with Levene's Test. The results of these analyzes are given in Table 2 for each variable.

**Table 2. Analysis results for assumptions (MANOVA)**

	Levene's Test of Equality of Error Variances				Box's M Testi				
	F	df1	df2	p	Box's M	F	df1	df2	p
Life Satisfaction	0.878	5	381	0.496	17.994	1.182	15	327803.752	0.277
Automatic Negative Thoughts	1.378	5	381	0.232					

When Levene's Test and Box's M statistics for assumptions were examined, it was found that error variances and covariance matrices were equal for each of the dependent variables ( $p > .05$ ). Wilk's Lambda value was interpreted to determine the common effect and the significance level was determined as .05 in all analyzes. When the difference between the groups was significant, Tukey test was used as the mean significance test according to the variance homogeneity.

To find out if the data are to ensure the assumptions of parametric tests, Skewness and Kurtosis (normal distribution of data) values and Levene (equality of variance) test results are examined (Büyüköztürk, 2008). In order to determine the reliability of the questionnaire, Cronbach Alpha coefficient was calculated (Table 3).

**Table 3. Distribution of questionnaire scores**

	Item	Mean	Sd	Skewness	Kurtosis	Min.	Max.	Cronbach's $\alpha$
LSQ	5	4.15	1.42	-0.06	-0.64	1.00	7.00	0.852
ATQ- R	40	2.22	0.69	0.78	1.06	1.00	5.00	0.950

The arithmetic mean of the total scores of the participants in the study obtained from Life Satisfaction Questionnaire (LSQ) was 4.15 and the standard deviation was 1.42, whereas the arithmetic mean of the total scores obtained from the Revised Automatic Thoughts Questionnaire (ATQ-R) was 2.22 and the standard deviation was 0.69. When skewness (LSQ = -0.06, ATQ-R = 0.78) and kurtosis (LSQ = -0.64, ATQ-R = 1.06) values of the scales were examined, it is obvious that the data show normal distribution (Kline 2005). Reliability analysis results show that the reliability of both scales is high (LSQ Cronbach's  $\alpha$ : 0.852 and ATQ-R Cronbach's  $\alpha$ : 0.950).

## RESULTS

The comparison of pre-service teachers' automatic negative thoughts and life satisfaction scores according to gender and department variables is presented in Table 4.

**Table 4. Pre-service teachers' life satisfaction and automatic negative thought perceptions in terms of gender and department (MANOVA)**

Effect	$\lambda$	F	Hypothesis df	Error df	p	$\eta^2$
Intercept	0.027	6855.021	2	380	0.000	0.973
Gender	0.99	0.261	2	380	0.770	0.001
Department	0.922	7.856	4	760	<b>0.000</b>	0.040
Gender*Department	0.955	4.380	4	760	<b>0.002</b>	0.023

According to the results of the MANOVA analysis; It was observed that the gender variable did not have a significant effect on the automatic negative thoughts and life satisfaction scores of teacher candidates ( $\lambda=0.99$ ,  $F(2)= 0.261$ ;  $p>.05$ ). However, it was determined that the department variable had a significant effect on automatic negative thoughts and life satisfaction scores ( $\lambda=0.92$ ,  $F(4)=7.85$ ,  $p<.05$ ). In addition, it was observed that the joint effects of gender and department variables on automatic negative thoughts and life satisfaction scores were significant ( $\lambda=0.95$ ,  $F(4)=4.38$ ,  $p<0.05$ ). When partial eta square values are examined, it is seen that the value related to gender is insignificant ( $\eta^2 =0.001$ ) and weak according to Wilk's lambda test. The value for the



department was determined to be weak ( $\eta^2 = 0.04$ ) and significant. In addition, the value for the joint effect of gender and department variables ( $\eta^2 = 0.023$ ) was found to be weak.

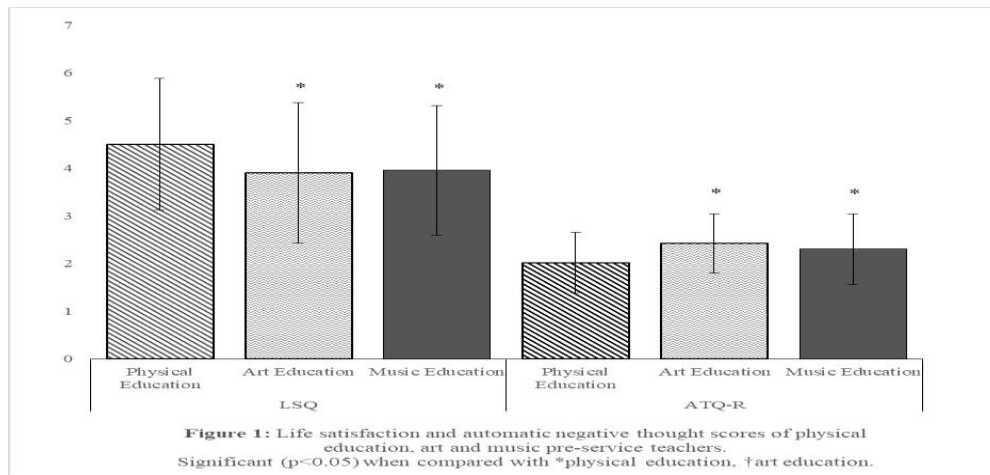
Table 5 presents the descriptive results according to the gender variable of the pre-service teachers' scores from the LSQ and ATQ-R.

**Table 5. Descriptive statistics of pre-service teachers' life satisfaction and automatic negative thought perceptions in terms of gender**

	Female ( <i>n</i> =187)		Male ( <i>n</i> =200)	
	Mean	Sd	Mean	Sd
LSQ	4.12	1.44	4.17	1.40
ATQ- R	2.24	0.71	2.20	0.67

The arithmetic mean of the total scores of the female pre-service teachers in the study obtained from the LSQ was 4.12 and the standard deviation was 1.44, whereas the arithmetic mean of the total scores obtained from the ATQ-R was 2.24 and the standard deviation was 0.71. It is seen that the mean scores of male teacher candidates' satisfaction with life and automatic negative thoughts are quite similar to the mean scores of female teacher candidates (4.17 and 2.20, respectively).

The difference between the LSQ and ATQ-R scores of the pre-service teachers studying in the department of Physical, Art and Music Education is presented in Figure 1.



**Figure 1. Life satisfaction and automatic negative thought scores of physical education, art, and music pre-service teachers**

There were significant differences among LSQ and ATQ-R scores of teacher candidates studying in the Physical Education (PE), Art Education (AE) and Music Education (ME) Departments. Teacher candidates studying in the Physical Education Department had the highest perception of life satisfaction (PE vs.AE  $p = 0.003$ , PE vs.ME  $p = 0.002$ ). On the other hand, no significant difference was found between the life satisfaction perceptions of teacher candidates studying in Art and Music Education Departments (AE vs.ME  $p > 0.05$ ).

When the automatic negative thought perceptions of the teacher candidates were compared, the ATQ-R scores of the physical education teacher candidates were found to be significantly lower than the scores of the Art and Music teacher candidates (PE vs.AE  $p < 0.001$ , PE vs.ME  $p = 0.001$ ). There was no significant difference between the automatic negative thought perceptions of art and music teacher candidates (AE vs. ME).

## DISCUSSION

This study was carried out to determine the life satisfaction and automatic negative thoughts of physical education, art and music pre-service teachers in terms of gender and department. The findings of this study were showed that the scores of male and female teacher candidates obtained from LSQ and ATQ-R were similar.

Life satisfaction includes individuals' emotional reactions to life, and these reactions are affected by many factors, one of which is gender (Akyol, 1993; Myers & Diener, 1995; Vara, 1999). The effect of gender on life satisfaction varies. In many studies, while life satisfaction levels of women are found to be higher than men (Aydiner, 2011; Bulut & Yıldız, 2020; Dost, 2006; Gencay, 2009; Keser, 2005; Toker, 2012; Tepeli Temiz & Ulusoy Gökçek, 2020) there are studies reporting that men have higher life satisfaction than women (Altın, İlter & Gül, 2021; Gandelman & Piani, 2013; Korkut Owen, Demirbaş Çelik & Doğan, 2018; Zappulla, Pace, Cascio, Guzzo & Huebner, 2014). On the other hand, there are studies showing that life satisfaction does not differ according to gender (Chow, 2005; Çivitci, 2009; Barut, Demir, Ballıkaya & Çiftçi, 2019; Della Giusta, Jewell & Kambhampati, 2011; Gündoğar, et al, 2017; Güngör, 2011; Tümkaya et al. 2011; Yaşartürk & Bilgin , 2018). In present study, life satisfaction levels of the pre-service teachers did not differ according to gender. Because life satisfaction has a dynamic structure, it is thought why life satisfaction of physical education, art and music teacher candidates does not differ according to gender may be related to activity theory. According to this theory, happiness stems from behavior, in other words, the individual's own activity. In activity theory, if one's skill level is sufficient, he / she will achieve pleasure, love and satisfaction while performing activities. If the activity is too easy, it will cause boredom and if it is difficult and above the skill level, it will cause anxiety (Yetim, 2001). In this study, the fact that female and male teacher candidates were under similar conditions in terms of social, academic activity and taking similar responsibilities could be effective in showing similarity of life satisfaction according to gender.

In this study, the results obtained in terms of automatic negative thought from female and male teacher candidates show similarity. These results were confirmed, by Aysan and Bozkurt (2000) and Tümkaya et al. (2011) who explained that automatic negative thought of high school students did not differ according to gender. The fact that the automatic negative thoughts of pre-service teachers did not differ according to gender may be due to the increasing similarity of roles and responsibilities associated with female and male in society.

This study revealed that the physical education teacher candidates' life satisfaction is significantly higher than that of the candidates in both Music and Art Education Departments and their automatic negative thought scores are significantly lower. On the other hand, the scores of pre-service teachers studying in Art Work and Music Education Departments are similar to each other. When the literature is considered, no study has been reported in which life satisfaction levels of physical education, art and music teacher candidates jointly have been examined. However, in independent studies, physical education teacher candidates' (Ardahan, 2014), music education pre-service teachers' (Özaydın, 2011) and art education students' (Güngör, 2011) life satisfaction average scores were lower than score obtained in our study.

Art is described as a way of expressing the emotion that a person has once experienced, by connecting it with movement, sound, line, color or words in order to be able to pass on and feel the same emotion to others (as cited by Ersoy, 1983). As understood from this description of art, artistic activities appeal to people's soul and emotions. However, physical activity enables the development of complete physical, emotional, social and spiritual well-being. Regular physical activity contributes to more efficient functioning of various body systems, maintaining body weight and improving quality of life in general (Malina, 2001). All these results show that, regular physical activity brings about an increase in life satisfaction (Altın, İlter & Gül, 2021; Barut et al. 2019; Öztürk, 2020; Uğraş & Güllü, 2020). The high life satisfaction scores of physical education teacher candidates can be explained by the fact that their physical activity levels are higher than those of art and music teacher candidates.

Additionally, physical activity reduces emotional tension, depression and anxiety (Mollaoğulları & Uluç, 2019; Satman, 2018), increases serotonin level (Satman, 2018), provides good feeling (Mumcu, 2019; Satman, 2018; Uğraş & Güllü, 2020), increases psychological endurance level (Seçer & Yıldızhan Çakmak, 2020) and improves individual's tolerance of daily stress (Mumcu, 2019; Satman, 2018). Aydın and İmamoğlu (2001) in their group study conducted to improve stress coping skills stated that the stress level of the individual could be controlled by developing effective coping skills. Additionally, they was found that effective coping with stress affects individuals' cognitive processes and automatic negative thoughts positively. In this context, physical activity can be a more effective tool in coping with stress than artistic activities such as painting and music. In addition, the effect of the common interaction of gender and department on life satisfaction and automatic negative thinking was also found to be significant. It can be said that this result is due to the difference between the departments.

The results in the present study show that physical education pre-service teachers' life satisfaction level is high while automatic negative thought is low. Furthermore, music education and art education pre-service teachers' automatic negative thought and life satisfaction levels are similar. According to these findings, we can conclude that physical activity increases the life satisfaction and decreases automatic negative thoughts of individuals.

There were some limitations in this study take into consideration. One of them concerned the small sample size of research group. This research is limited to teacher candidates studying only in departments that admit students based on a talent exam at Erzincan Binali Yıldırım University. Another limitation was related to there was a lack of knowledge of stress, anxiety and physical activity levels that may be affected the life satisfaction and automatic negative thought perceptions of pre-service teachers. Therefore, in future studies, teacher candidates' life satisfaction and automatic negative thought perceptions can be examined according to their stress, anxiety and physical activity levels. In addition, physical education, art and music teacher candidates' life satisfaction and automatic negative thought perceptions can be compared with teacher candidates studying in different departments.

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## **An Investigation on the Relationship Between Learner's Skills and Perceptions to Use Information and Communication Technologies (Ict) and 21<sup>st</sup> Century Skills (C21 Skills) in Education**

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### **Abstract**

This research was conducted to reveal the relationship between learner's skills and their perceptions of efficacy in using ICT and C21 skills in Education. Research data were collected from 456 teacher candidates studying at a state university in 2021. As the data collection tools, C21Learner Skills Usage Scale and The Efficacy Perception Scale of Using Information and Communication Technologies were used. As a result of the research, it was highlighted that the scores of the candidate teachers from both scales are medium-high. A moderately positive ( $r=509$ ) relationship was found between the scales. In addition, ICT Usage Competencies in Education predicts C21 learner skills at ( $R=259$ ) level.

**Keywords:** C21 Skills, Information and Communication Technologies, Teacher Candidates

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## INTRODUCTION

From past to present, the world has been changing and developing. The discovery of the power of scientific knowledge, starting from the Renaissance period, led to the Industrial Revolution. With the Industrial Revolution, the importance of education was well understood, and the period called the Information Age began. On the one hand, developments in ICT in the last 30-40 years have accelerated global competition. On the other hand, this situation made cooperation necessary in order to be successful in this competitive environment. In order to have a word in the Information Age integrated with technology, individuals are expected to have various skills. These skills, which are also called C21skills, include the cognitive features required by the age. C21 skills include the blending of knowledge and expertise, the skills needed to be successful in daily life and business life (Ledward & Hirata, 2011). OECD (The Organization for Economic Cooperation and Development) defines C21 skills as the skills and competencies that young people need to be effective workers and citizens in the C21information society. Similarly, the Partnership for C21 skills (P 21) defines the content, knowledge, special skills, expertise and literacy that students need to acquire in a blended way to be successful in business and life.

The P21 formation revealed C21 skills as follows:

- Learning and innovation skills
- Information, media and technology skills
- Life and career skills.

Furthermore, topics, in other words the basic disciplines, on which these skills are based, interdisciplinary cooperation, interdisciplinary themes, measurement and evaluation of skills were also revealed by P21 (Gelen, 2017).

Similarly, AASL (American Association of School Librarians, 2017) puts C21 skills as 81 different skills under 4 main headings. The main headings are as follows:

- Research, critical thinking and acquiring knowledge (25 sub-standards)
- Identifying results, making decisions, adapting knowledge to new situations and creating new knowledge (17 sub-standards)
- Ethical and productive participation, sharing of knowledge as a part of a democratic society (19 sub-standards)
- Learners' use of skills, resources and tools for personal and aesthetic development (20 sub-standards)

In 2003, the North Central Regional Educational Laboratory (NCREL) examined C21 skills in four groups with a new perspective in the light of recent historical events, globalization and digital age, after completing a two-year study.

- Digital Age Literacy: basic, scientific, economic and technological literacy, visual and information literacy, multicultural literacy and global awareness
- Creative Thinking: Adaptability, coping with complexity and self-management, curiosity, creativity, risk taking, high-level thinking and valid reasoning
- Effective Communication: Team, cooperation and interpersonal adaptation skills, personal, social and social responsibility, effective communication

- High Efficacy: Ability to prioritize, planning and dealing with results, using real-world tools effectively, creating relevant and high-quality products.

Furthermore, similar to the abovementioned definitions, the Assessment and Teaching of C21 skills (ATC 21) group classified C21 skills into four subgroups (Binkley et al., 2010):

1. Ways of thinking; creativity and innovation; critical thinking, problem solving and decision making; metacognition or learning to learn
2. Ways of working; communication and cooperation or teamwork
3. Tools for studying; information literacy and information and communication technology (ICT) literacy
4. Life in the world; citizenship, life and career skills, personal and social responsibility.

In line with the abovementioned definitions of C21 skills, it can be said that the emphasis on technology stands out. It is possible to claim that technology-related skills are among the most basic skills that today's people need to acquire. Information and communication technologies have also been the common point of almost all humanity in the context of technology. UNESCO (2017) defines ICT as technologies used to transmit, store, create, share or exchange information. ICT is a concept that is constantly developing, and it has already become a part of people's daily lives in all areas of society.

Particularly, with the Covid 19 pandemic, ICT has taken part an indispensable place in all areas of life. One of these areas is undoubtedly the field of education. UNESCO (2017) stated that information and communication technologies are general competences for all teachers. In addition, teachers have the most important role in both providing students with basic skills related to ICT and effectively integrating technology into the learning-teaching processes of different courses (Şad & Nalçacı, 2015). In the light of abovementioned research, teachers need to be equipped with the knowledge of productivity applications, web, communication, presentation softwares and management applications along with basic hardware and software skills. Teachers are also expected to be educators and leaders to adapt ICT-enriched learning environments and innovations to their schools; meanwhile, they also need the knowledge and skills to use technology and gain pedagogical knowledge that will support their professional development (Gökçearslan, Karademir Coşkun, & Şahin, 2019).

On the other hand, with the integration of ICT into the educational environment, numerous contributions have been made to teachers, students and the learning-teaching process. Though it was predicted that the use of ICT applications in education would be beneficial before the pandemic period (Şengül, 2017), nobody would think of a pandemic period in those days. Educational activities have been carried out entirely through ICT applications during the pandemic period. For months, teachers have been broadcasting lessons on TV or on the internet, and students from all levels followed the lessons. Thus, ICT applications have become an integral part of education. It is expected that ICT applications will continue to be implemented in an integrated way with face-to-face education in the post-pandemic period. Therefore, ICT applications have become an indispensable part of life recently. In this respect, it is thought that there is a relationship between C21 skills and ICT applications. Based on this main purpose, this study tried to answer the following questions:

1. What is the level of C21 Learner Skills of candidate teachers?
2. What is the level of perception for candidate teachers' competence in using ICT in education?
3. Do pre-service teachers' scores on the C21 Learner Skills Scale differ according to gender and year of study?

4. Do pre-service teachers' perceptions of using ICT in education differ according to gender and grade level?

5. Is there a relationship between candidate teachers' C21Learner Skills and Perceptions of Using ICT?

6. Do Perceptions of Using ICT in Education predict C21Learning Skills?

## METHOD

### Research Model

The present study, which examines the relationship between teacher candidates' C21Learner Skills and their perceptions of using ICT in Education, was conducted in the relational survey model that is one of the quantitative research methods. In the relational survey model, the aim is to reveal the relationship between two or more variables (Karasar, 2003).

### Participants

The data of the research were collected from teacher candidates studying at a state university in the 2020-2021 Spring semester. 477 pre-service teachers participated in the research. As a result of the normality test, the data of 21 candidates outside the normal distribution were extracted, and the analyses were made on 456 data. Information about the participants in the research is presented in Table 1.

**Table 1: Participants**

	1 <sup>st</sup> year	2 <sup>nd</sup> year	3 <sup>rd</sup> year	4 <sup>th</sup> year	Total
Female	81	72	121	62	336
Male	32	34	37	17	120
Total	113	106	158	79	456

According to the data presented in Table 1, it can be said that when the gender distribution of the participants is examined, 336 (73.7%) of the participants are female, and 120 (23.6%) are male. When the grade level is examined, the distribution is 113 (24.8%) for the 1<sup>st</sup> year, 106 (23.2%) for the 2<sup>nd</sup> year, 158 (34.6%) for the 3<sup>rd</sup> year and 79 (17.3%) for the 4<sup>th</sup> year.

### Data Collection Tools

The first data collection tool of the research was developed by Orhan-Göksün (2016). It was collected by using the Learner Skills Usage Scale developed by the author, and the second data collection tool "The Efficacy Perception Scale of Using Information and Communication Technologies" was developed by Şad and Nalçacı (2015).

C21Learner Skills Usage Scale was developed by Orhan-Göksün (2016). The scale consists of 31 items on four factors: cognitive skills, autonomous skills, cooperation and flexibility skills and innovation skills. The cognitive skills chosen for the first factor describe the processing and coding of information in mental processes and being aware of the products that occur as a result of the processes taking place in mental processes. Autonomous skills describe autonomous learning skills that emerge with the integration of self-management, self-control and ability to work individually or in groups. Collaboration and flexibility skills indicate the success of collaborative activity and making learning environments flexible by expanding them. On the other hand, innovation skills are used in terms of adapting to new technologies. As the scores obtained from the scale increase, it can be said that C21learner skills of candidate teachers increase. The total explained variance of the scale was

calculated as 34.75%, and the internal consistency coefficient as .892 (Orhan-Göksün, 2016). For the study, the internal consistency coefficient was calculated as .817.

The Efficacy Perception Scale of Using Information and Communication Technologies was developed by Şad and Nalçacı (2015) to measure pre-service teachers' competencies in using ICT in education. The scale consists of one dimension. The total explained variance of the scale is 48.03%. The Cronbach Alpha internal consistency coefficient calculated for the overall scale was calculated as .962. It is possible to assert the idea that when the scores obtained from the measurement are high, the pre-service teachers' perceptions of efficacy in information and communication technologies defined within the scope of General Competencies for Teaching Profession are also higher. As the scores decrease, the efficacy perceptions also decrease.

### Data Analysis

Research data were collected over the internet and analyzed with the SPSS 23 Package program. The data were first subjected to normality analysis, and 21 data outside the normal distribution were extracted. After that, the analyses were started after the conditions of normality were met. Descriptive statistical analysis was applied to find out the average scores obtained from the scales and sub-dimensions. In terms of the other numerical data, the t-test was used to measure whether the gender variable made a difference in the scores obtained from the scales. For the study year of the student variable, ANOVA test was used. Correlation analysis was used to understand the relationship between the variables, and regression analysis was used to grasp the level of prediction.

## FINDINGS

Findings related to the research questions are presented in this section.

**Table 2: Teacher Candidates' 21st Century: Average Scores from the Learner Skills Use Scale and the The Efficacy Perception for using ICT in Education**

	N	$\bar{X}$	Ss.
Cognitive Skills	456	4,22	,40
Autonomous Skills	456	3,54	,53
Collaboration and Flexibility	456	3,50	,57
Innovation	456	3,78	,73
Usage of C21 skills	456	3,81	,58
Efficacy Perceptions Regarding Using ICT in Education	456	3,76	,42

Examining the data presented in Table 2, it can be understood that the average score they got from the Learner Skills Use Scale was ( $\bar{x}$ =3.81) for teacher candidates' C21skills. Hence, it can be said that the usage skills are at medium-high level. Furthermore, when the sub-dimensions of the scale are examined, it was revealed that the sub-dimension with the highest average is Cognitive Skills (( $\bar{x}$ =4.22). Other sub-dimensions are Autonomous Skills ( $\bar{x}$ =3.54), Collaboration and Flexibility ( $\bar{x}$ =3.50) and Innovation. ( $\bar{x}$ =3.78).

The scores of the pre-service teachers from the scale “The Efficacy Perception for using ICT in Education” are similarly at medium-high level ( $\bar{x}$ =3.76). Therefore, the scores of the pre-service teachers from both scales are close to each other and at the middle-high level.

The t-test results a significant difference according to gender, and the results are presented in Table 3.

**Table 3: T-test Results of Candidate Teachers According to the Scores They Get and Gender**

Obstacles for Career	Gender	N	$\bar{X}$	Sd	T	df	p
C21Learner Skills Usage Scale	Female	336	3,74	,43	-1,545	454	,123
	Male	120	3,81	,40			
Efficacy Perceptions Regarding Using ICT in Education	Female	336	3,78	,57	-1,701	454	,090
	Male	120	3,88	,62			

\*P<0.05

According to the results of the t-test conducted to find out whether the gender variable made a difference in the scores of the teacher candidates from both scales, it was revealed that the gender variable did not make a significant difference for both scales. Much as the mean scores of male teacher candidates in both scales were higher than female teacher candidates, the difference was not statistically significant.

ANOVA test was conducted to find out whether the scores of the pre-service teachers made a difference according to the year of the student. The results are presented in Table 4.

**Table 4: ANOVA Results of Pre-service Teachers' Scores According to Year of Study Variable**

	Year of Study	N	$\bar{X}$	Ss	df	F	p	Meaningful Difference
C21Learner Skills Usage Scale	1 <sup>st</sup> year	113	3,75	,43	3-452	3,457	,016	2 <sup>nd</sup> year and 3 <sup>rd</sup> year 2 <sup>nd</sup> year and 4 <sup>th</sup> year
	2 <sup>nd</sup> year	106	3,66	,40				
	3 <sup>rd</sup> year	158	3,83	,39				
	4 <sup>th</sup> year	79	3,79	,47				
Efficacy Perceptions Regarding Using ICT in Education	1 <sup>st</sup> year	113	3,79	,62		5,308	,001	2 <sup>nd</sup> year and 3 <sup>rd</sup> year
	2 <sup>nd</sup> year	106	3,64	,55				
	3 <sup>rd</sup> year	158	3,93	,55				
	4 <sup>th</sup> year	79	3,79	,60				

\*P<0.05

According to the results of the ANOVA test conducted to grasp whether there was a significant difference according to the year of study in the scores of the pre-service teachers from both scales, it was found out that there is a significant difference between the scores of the 2nd grade students ( $\bar{x}$ =3.66) and the 3rd grade ( $\bar{x}$ =3.83) and 4th grade students ( $\bar{x}$ =3.79) in favor of the 3rd and 4th grade students for C21Learner Usage Skills Scale.

The Learner Skills Usage Scale scores of 3rd and 4th year students are higher than the 2nd year students. Similarly, when the scores of candidate teachers from Efficacy Perceptions Regarding Using ICT in Education are examined, there is a significant difference between the 2nd year students ( $\bar{x}$ =3.64) and the 3rd year students ( $\bar{x}$ =3.93) in favor of the 3rd year students. In addition, correlation analysis was applied to examine the relationship between the scores they received from the C21Learner Skills Usage Scale and the Efficacy Perceptions Regarding Using ICT in Education scale. Correlation analysis results are exhibited in Table 5.

**Table 5: Correlation results showing the relationship between C21Learner Skills Usage Scale and the Efficacy Perceptions Regarding Using ICT in Education Scale**

	1	2	$\bar{X}$	Ss.
C21Learner Skills Usage Scale	1	509**	3,81	,58
Efficacy Perceptions Regarding Using ICT in Education scale	509**	1	3,76	,42

When Table 5 is taken into consideration, it can be said that there is a moderately positive ( $r$ =509) significant relationship between candidate teachers' C21Learner Skills and their competency in using ICT in Education. As their usage of C21 skills increases, their proficiency in using ICT in education also increases. The results of the regression analysis conducted to test the extent to which

pre-service teachers' competencies in using ICT in Education predict their C21Learner skills are illustrated in Table 6.

**Table 6: Prediction Level of the scales**

Variable	C21Learner Skills Usage Scale			
	B	SH	B	T
Efficacy Perceptions Scale for Using ICT in Education	,366	,029	,509	12,588
	R=,509	R <sup>2</sup> =0,259		
	F=158,456			
	p<,05	(,000)		

In accordance with the findings of the regression analysis conducted to measure the extent to which pre-service teachers' Perceptions of Efficacy in Using ICT in Education predict their C21Learner Skills, it is possible to assert the idea that their competencies in using ICT in Education predict C21Learner Skills ( $R^2=0.259$ ). 25 percent of C21learner skills can be explained by proficiency in using ICT in education.

## DISCUSSION AND CONCLUSION

C21 skills, such as "Technological competencies, innovative thinking, cooperation, problem solving, critical thinking, creativity, information and communication technologies, effective communication", might be named as the main components of education (Wagner, 2008; Voogt & Roblin, 2012; Wilborn, 2013; Yalçın, 2018; Silber-Varod, V., Eshet-Alkalai, Y., & Geri, N., 2019). Due to the pandemic period, individuals are going on their learning processes with online education, and one of the main keys for individuals to be successful in this process is having these skills. In order to make individuals acquire these skills, teachers who guide them may also need to have the specified competencies. As Önal & Çakır (2015), Ansong Gyimah, (2017) and Harris, Mishra & Koehler (2009) stated, teachers should have technological skills and know that these skills will be used functionally and efficiently in the classroom environment if they want to create a meaningful learning environment. For this reason, ICT competencies related to the integration of technology should be added into curriculum in the education process of teacher candidates and 21st century. It is possible to claim that it is important for them to have the skills of education in order to achieve the purpose of education (Akgün, 2020). In this respect, with the present study, the aim was to find out the C21usage skills of teacher candidates and their perceptions of proficiency in using ICT in education. Another aim was to find out whether the gender and class variable created a statistically significant difference. In addition, the relationship between pre-service teachers' C21usage skills and their perception of efficacy in using ICT in education and the level of their perception of using ICT in education to predict C21Learning Skills were tried to be found out.

As a consequence of this study, it was concluded that pre-service teachers' C21usage skills are at medium-high level. Among the previous studies from the literature, Erten (2019), Yılmaz & Tanrıseven (2019), Yalçın (2018), Başar (2018), Kozikoğlu & Altunova (2018), Kan & Murat (2018) concluded that teacher candidates had a high level of C21 skills proficiency perceptions, and similar results were found out with this study. However, Orhan-Göksun and Kurt (2017) concluded that the use of C21 skills by candidate teachers was not at a high level, and they obtained a different result from this study.

The scores of the pre-service teachers from the scale "Efficacy Perceptions of Using ICT in Education" are at medium-high level. Akgün (2020), Murat & Erten (2018), Çelik & Karamustafaoğlu (2016) and Şad & Nalçacı (2015) highlighted that the ICT proficiency levels of the pre-service teachers were at the "adequate" level, and their results are consistent with the study. However, in the study of Saraç & Özarslan (2017), half of the teacher candidates were self-sufficient in the effective use of ICT in the field of education, while the remaining half of the them did not consider themselves sufficient, and they obtained a different result.

According to the results of the t-test conducted to display whether the gender variable made a difference in the scores of the teacher candidates from both scales, it was revealed that the gender variable did not make a significant difference for both scales. Gökbulut (2020), Erten (2019), Kozikoğlu & Altunova (2018) found that the C21 skills proficiency perceptions of teacher candidates did not create a significant difference in terms of the gender variable, and they reached similar results. However, Kan & Murat (2018), Başar (2018), Göksün (2016) found that the C21 skills proficiency perceptions of pre-service teachers changed according to the gender of the candidate teachers, and there was a significant difference in favor of female students. Therefore, their results are contradictory with this study. On the other hand, Akgün (2020), Murat & Erten (2018), Göldağ & Kanat (2017) found that the gender variable did not make a significant difference in the ICT competencies of candidate teachers and obtained similar results with this study.

It has been revealed that there is a significant difference in favor of 3rd and 4th year students in the C21Usage Skills scale. However, Gökbulut (2020) & Başar (2018) obtained a different result from the study by finding that the C21 skills proficiency perceptions of pre-service teachers did not make a statistically significant difference according to the year of study at university. When the scores of the teacher candidates from the scale "Efficacy Perceptions of Using ICT in Education" are examined, it has been highlighted that there is a significant difference in favor of the 3rd year students. In the study of Murat & Erten (2018), it was concluded that the ICT usage levels of the pre-service teachers created a significant difference in terms of class level and that as the class level increased, their ICT skills also increased, which is consistent with this study. This may suggest that pre-service teachers actively use ICT as the time they spend in education faculties, and the time they take courses increase.

A positive and moderately significant relationship was found between candidate teachers' C21Learner Skills and their proficiency in using ICT in Education. As the C21Usage Skills of teacher candidates increase, their proficiency in using ICT in education also increases. Furthermore, it is possible to claim that proficiency in using ICT in Education predicts C21Learner skills in the study ( $R^2=0.259$ ). This situation can be explained by the proficiency in using ICT in Education, which composes 25 percent of C21learner skills.

The C21 skills Cooperation Society (P21) deals with information and media technologies within the scope of C21 skills in the theoretical framework they have prepared. Voogt, Erstad, Dede & Mishra (2013) emphasize information and communication technologies at the center of C21 skills and stated that ICT is a prerequisite for acquiring other C21skills. A study in a similar vein, Karakoyun & Lindberg (2020) found in their study that the majority of teacher candidates in Turkey associate C21 skills with technology. In the light of this information, it can be considered as an expected result that there is a positive and moderately significant relationship between the C21Learner Skills and the competencies of using ICT in Education. Almerich, Suárez-Rodríguez, Díaz-García, & Cebrián-Cifuentes (2020) in their study concluded that there is a positive and statistically significant relationship between higher-order thinking and cooperation among the ICT competencies they have addressed in the context of C21 competencies. In another study, Erten (2019) also put forward the idea that the majority of teacher candidates' views on gaining C21 skillscenter around activities aimed at gaining "knowledge, media and technology skills". Furthermore, Sang et al. (2018) found a positive relationship between teachers' use of information and communication technologies and other C21learning competencies. In that sense, the abovementioned studies from the literature and the results of the study confirm that there is a relationship between C21Learner Skills and ICT use in education.

As another voice from the numerous studies conducted in the literature, UNESCO (2011) emphasized that ICT proficiency is a basic feature that all teachers should have. In another study, Valtonen et al. (2017) stated that teachers play a key role in transferring C21 skills to students. In the light of this information, efforts should be made to provide teacher candidates with the necessary skills related to ICT within the scope of C21skills. The reason is that Kirschner, Wubbels, and Brekelmans



(2008) emphasized that one of the basic criteria of teacher training programs is to provide pre-service teachers with ICT skills.

On the other hand, Kumar and Vigil (2011) and Valtonen et al. (2017) found that teacher candidates have low level of knowledge, skills and experience on how to use ICT. For this reason, using ICT in education-teaching processes within the scope of C21 skills should be taught to candidate teachers in a practical way in Education Faculties. In this context, working environments that will allow pre-service teachers to use new technologies can be created, and within this scope, they might be asked to work on projects/activity/digital materials.

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## **Use of the Web Adventure Method in Teaching Turkish as a Foreign Language (Example of A2 Level)**

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### **Abstract**

In this study, a three-week sample application for the use of the WebQuest method in Turkish language teaching was developed, and the effectiveness of the application was tried to be determined through a "achievement test" and students' views. The study employed the mixed methods design, in the quantitative stage of the study, experimental and control groups of 28 people each with similar Turkish language levels were formed randomly among foreign students studying Turkish at Alaaddin Keykubat University. The WebQuest method was used in the experimental group while the traditional teaching method was used in the control group. A "achievement test" was applied to the groups as a pre-test and post-test, and the results were analyzed with the SPSS 25 software. In the qualitative stage of the study, the control group's views on the teaching process were obtained through interview forms, mails, and focus groups, and the obtained data were subjected to content analysis in the Nvivo 12 software to reveal codes and themes. To increase the content validity of the theme achievement test, more than one expert was consulted. The study found that the Turkish teaching process involving the use of the WebQuest method was more effective.

**Keywords:** Language, Education, Technology

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## INTRODUCTION

### Computer Technology Assisted Language Teaching

Traditional teaching with chalk and blackboard is getting richer and different teaching opportunities arise with the introduction of technology in our lives. With the development of computer and software technology, new ways have been opened in the field of language teaching and many innovations have been offered to teachers and learners in order to ease the learning process. Computer, tablet, smart board and smart phone technology have been very effective in the language teaching process today (Djamaa, 2020; Lee, 2020; Tozcu, 2008). Those tools directly affect the quality of the language teaching process and bring innovations in language teaching for teachers and students. It is possible to say that mobile programs, videos, games, subtitle technology used for the purpose of remembering the word, providing retention and reinforcement in language teaching are increasingly effective (Behbahani & Shahbazi, 2020; Fievez et al., 2020; Sato et al., 2020). In addition, speaking skills and word pronunciation are supported by technological tools (such as podcasts) and offer serious convenience to learners (Machovikova, 2002; Mario, 2020). Reading texts can be transferred to the digital environment and designed in a more dynamic and interactive manner by making voiceovers and visualizations; student writing samples can be recorded in electronic media and easy and fast feedback can be provided to the learner about the mistakes (Ebadi & Rahimi, 2019; Huang, 2015; Pennington, 1996; Tsenk, 2015). Along with technological developments, smart board technology emerges as an effective tool in the language teaching process (Schmid, 2006; Aydinli & Elaziz, 2010; Tozcu, 2008). In this way, the learning and teaching environment is becoming more different and it also gets easier. For example, applications called second life, offer a virtual language teaching environment and brand new opportunities in terms of learning environment (Hassan 2016; Gaukrodger & Atkins, 2013; Peterson, 2010; Wang et al., 2009; Hislope, 2008). In this way, a language learning environment is constructed based on the principle of augmented reality free from the classroom or location. It is possible to talk about many similar technological tools in language teaching. Thanks to these tools, language learning and teaching is strengthened in many areas from speaking to writing, reading to listening, and lots of ground are covered. The Webquest method, which is used in language teaching and designed with computer support, comes forward with its flexible, effective and motivating aspects, and can be applied in many subjects (Abadi and others, 2018; Kobylinski C., 2018; Awada and others, 2020).

### WebQuest Method and Language Teaching

The model was first introduced by Bernie Dodge of San Diego State University in 1995. Dodge (1995) defines WebQuest as “an inquiry-oriented activity that comes from internet resources and where students interact with each other, sometimes using video conferencing and presenting some or all of the information”.

According to March (2003), the WebQuest provides a scaffolded learning structure by using the links from the internet. It is emphasized that this structure is composed of real tasks that develop the researcher side of the students, support individual development and include them in the group work process. This approach ensures a high level of learning and transition of information into more. A well-designed WebQuest inspires students to show more complex thematic relationships, facilitates real learning, and leads to reflecting individual metacognitive processes.

It is essential that the student is motivated, given the opportunity to work together; a full assessment is conducted and technology is used. In general, the method has an encouraging approach towards the student. Teacher informing the student is not the goal, rather the main purpose is to encourage the student to use the information with the teacher guiding. In WebQuest students are not on their own on the internet, the opportunity to analyze, synthesize and evaluate are provided with in-depth knowledge, the students are presented with a structured learning environment with the effective use of technology. WebQuest is an effective guiding way of helping students gain new knowledge in the learning environment and chaotic internet resources (Patterson & Pipkin, 2001). WebQuest is an

activity that encourages a higher order of thinking by building a number of information around interesting and doable tasks. It requires critical or creative thinking; provides problem-solving, reasoning, analyzing and synthesizing. These tasks should be more than questions with simple answers that appear on the screen. Ideally, they should be a similar and scaled-down version of what adults do at work or outside school walls (As cited in Starr, 2000).

This method was not originally designed to teach language, however, with the contributions of research about its use in language teaching it has been gradually employed as an effective language teaching method (Kasper, 2000; Koenraad, 2002; Luzón, 2002; Simina & Hamel 2005; Richards, 2005; Torres, 2018).

The use of WebQuest in language teaching offers significant benefits to teachers and learners. Many reasons can be given for using the method in language teaching (Dudeney & Hockly, 2007):

- It enables teachers to integrate internet and language teaching, and does not require any specific technical knowledge
- Helps to communication and information sharing by providing group activities
- It can be used as a simple linguistic tool and allows interdisciplinary work
- It supports critical thinking skills; gives the abilities to compare, classify, make inferences, analyze errors, support, summarize, analyze in depth. Learners not only have access to simple knowledge, but can also adapt what they have learned to different tasks.
- It provides motivational, authentic tasks. It increases students' willingness and shows them learning through activities is real and useful. Thus, students focus on the subject more and show more effort.

In the light of all these reasons, it is concluded that the method is important for language teaching. In order to use the method effectively, it is crucial to have a defined plan. Following steps are noted based on Dodge (2001) and other researchers' studies (Abbit & Ophus, 2008; Brito & Baia, 2007; Drew & Ausband, 2009; Kelly, 2000; Renau & Pesudo, 2016; Strickland, 2005; Trajkoska & Dimov, 2013) for these stages:



**Figure. 1. WebQuest stages**

These steps should be as follows:

*Introduction:* The part necessary to prepare and motivate the learners. Various information is given to introduce the course. This is also where the main purpose of all the tasks are specified. They can be explained in one or more paragraphs, figures or tables.

*Task:* Students' tasks are specified. The points to be considered while doing these are indicated. Information regarding the activities is revealed.

*Process:* The steps in this section are explained one by one. The students are supported with information. During these processes, students can access the web addresses mentioned in the resources section. Activities should be explained in detail and clearly.

*Evaluation:* This is where the criteria that students can evaluate themselves are presented. Criteria should be clear. They should be able to measure performance or a project, and include group work. Graded scoring guides (rubrics) that allow self-assessment can be used.

*Conclusion:* An overall summary is made and the results are stated. Students are reinforced for the tasks they have accomplished. Further learning is encouraged.

*Web Resources:* All kinds of supportive, constructive, and guiding internet addresses that students can use during their WebQuest tasks are predetermined and presented by the teacher in this section. When planning WebQuests, above steps most definitely should be included. The stages in question are quite important for creating effective tasks. For the WebQuest tasks to be successful, effective and qualified, it is necessary to pay attention to some factors (Dodge, 2001):

1. A good website should be either created or found
2. Resources and learners should be organized
3. Learners should be encouraged to think
4. Agents or tools should be used
5. A learning structure must be scaffolded to realize high expectations

## METHOD

The present study employed the mixed methods design, in which quantitative and qualitative methods are used together (Brannen, 2005; Creswell, 2003; Cooksey, 2020; Lin & Breslow, 1996; Morgan, 2018; Tashakkori & Teddlie, 1998). In the quantitative stage of this mixed-methods research, the model with pre-test and post-test control group, one of the experimental designs, was used. In the qualitative stage, students' views were collected.

### Research Focus

Many teaching methods are used in language teaching. These teaching methods have been known for many years and are widely used in language teaching. However, research has revealed that it is not correct to stick to only one method in language teaching and that a mixed approach (selective) incorporating different methods is increasingly preferred (Albayati, 2020; Howard, 2001; Kumar, 2003; Kumar, 2013; Laser, 2011; Wali, 2009; Weideman, 2001). Consistent with current research on language teaching, the development and application of various language teaching methods in the field of Turkish teaching emerge as an important need. In parallel with the developments in technology, the search for alternative teaching methods has gained momentum and, as a result, new teaching methods have emerged. One of these methods, the WebQuest method, has recently been very popular among educational researchers, teachers, and students engaged in language teaching (Dodge, 2001; Ebadi &

Rahimi, 2018; Ginaya et al., 2018; Irafahmi, 2016; Liang & Fung, 2020; Ruschoff, 2009; Shutenko et al., 2019). Taking these as a starting point, the present study aims to use the WebQuest method in Turkish language teaching and to test whether the method will be effective in teaching Turkish to foreigners. To this end, answers to the following questions were sought:

1. How effective are Turkish lessons taught using the WebQuest method?
2. What do students think about the use of the WebQuest method in Turkish lessons?

### **Participants**

Participants consist of 58 students who take A2 level (Beginner level) Turkish lessons at Alanya Alaaddin Keykubat University Turkish and Foreign Language Teaching Application and Research Center (ALKU TOMER). The students were evenly randomized into two groups as the experimental group and the control group (Gravetter, & Forzano, 2011; Shorten & Moorley, 2014; Yin, 2003). There were 13 girls in the experimental group and 15 girls in the control group. The countries of origin of the students in the experimental and control groups were Burkina Faso, Iraq, Syria, Afghanistan, Algeria, Somalia, Tunisia, Mali, Turkmenistan, Tajikistan, Russia, Mongolia, and Iran. Students were in the 18-41 age range. Most of the students were in Turkey for undergraduate education (N=45). Care was taken to ensure that the demographic characteristics and readiness levels of the experimental and control groups consisting of 58 students in total were similar.

### **Data Collection Tools**

The data collection tools were as follows: “Student Information Form” (consists of eight questions about the demographic characteristics of the students), “Theme Achievement Test” (consists of forty questions about subjects such as making suffix (-lı,-sız), noun making suffix (-lık), obtative case (-e, -a), imperative case, Turkish preposition (ile) etc. to measure both groups’ prior knowledge levels before the teaching process and to determine their learning levels at the end of the teaching process), and “Student Opinion Form” (consists of four open-ended questions to collect the experimental group’s views on the language learning process with the WebQuest method). Furthermore, voice recordings obtained during focus groups and e-mails sent by students to the researcher throughout the process were also included in the data set.

### **Teaching Process**

Before the quantitative data collection stage, the students were evenly randomized into two groups (experimental and control groups), and the “Theme Achievement Test” was administered to both groups. After this stage, the teaching process continued differently in two groups.

- *The teaching process in the experimental group:* For the experimental group, a set of contents that could be adapted to online teaching and that included the subjects of “Adjective making suffix (-lı,-sız), noun making suffix (-lık), obtative case (-e, -a), imperative case, Turkish preposition (ile), simple past tense (noun sentences), comparison (gibi, kadar), future tense” determined by consulting experts was developed. The contents were enriched by the researcher with multimedia components such as animations, images, sounds, games, and quizzes and adapted to the WebQuest technique. The content package in question was presented to students in the form of online and offline tasks in a three-week period. The process consisted of six stages (introduction, tasks, evaluation, conclusion, internet resources, sharing area) and various tasks. At the end of the first week, focus groups were held with five students, and at the end of the process, interviews were re-held with five different students (Fern, 2001; Krueger & Casey, 2000). All the interviews were audio-recorded, transcribed verbatim, and included in the data set during the analysis stage. Throughout the process, the students exchanged e-mails with the researcher about the problems they encountered. At the end of the



process, these e-mails were also included in the data set. Also, at the end of the teaching process, a “Student Opinion Form” was sent to the students, and the process was completed once their opinions were received.

- *The teaching process in the control group:* In the same three-week period, the same contents “Adjective making suffix (-lı, -sız), noun making suffix (-lık), oblique case (-e, -a), imperative case, Turkish preposition (ile), simple past tense (noun sentences), comparison (gibi, kadar), future tense” were taught to the control group with the traditional teaching method. When the teaching process was completed, the students were re-administered with the “Achievement Test,” and the results were evaluated.

### **Data analysis and coding**

The quantitative data of the study consisted of the results of the “Achievement Test” applied to the experimental and control groups before and after the teaching process. The data were analyzed in the SPSS 25 software. Before the experimental process, in order to reveal whether both groups performed similarly in the achievement test, the independent-samples t-test was performed first. Before performing the independent-samples t-test, the Shapiro-Wilk test ( $28 < 50$ ) and Skewness and Kurtosis values of each group were examined to see if the data was normally distributed. Shapiro-Wilk test results of the experimental group and the control group were found to be 0.115 and 0.350, respectively, and it was seen that this value met the assumption ( $p > 0.05$ ). Skewness and Kurtosis values of the experimental and control groups were found to be (-0.16, -1.373) and (0.094, -1.044), respectively, which were in the range of -1.5- +1.5, as stated by Tabachnick (2013). In order to check the homogeneity of the variance the Levene test was performed ( $n=28$ ), and it was determined that the variances were homogeneously distributed according to the test results ( $p=0.929$  and  $p>0.05$ ). After these procedures, independent-samples t-test analyses were performed to determine the difference between the pre-test results of the groups, and it was found that there was no significant difference between the two groups ( $p = 0.403$   $p > 0.05$ ) (Table 1). The above procedures were also applied for the results of the post-test, and it was observed that the data were normally distributed (Shapiro-Wilks=0.463;  $0.065 > 0.05$ ), and the variances were homogeneously distributed (Levene test = 0.484  $> 0.05$ ). Then, an independent-samples t-test was used for the results of the post-test. The test revealed that the post-test results of both groups differed significantly from each other ( $p=0.015$   $p < 0.05$ ). Table 1 presents the independent-samples t-test results of the post-test scores.

The analysis of qualitative data was made using the Nvivo 12 software. Focus groups held with the experimental group, e-mails, and student opinion forms comprised the qualitative data of the research. In qualitative research, data analysis is very important. Because this stage is a stage in which researchers organize their data and make inferences based on the content they analyze and report them (Bogdan and Biklen, 1992). In this study, the content analysis method, which has an important place in the qualitative research approach, was used for data analysis. Content analysis allows for the objective, systematic, and quantitative description of the manifest content of the communication (Berelson, 1952). In this context, using the software, the data were first classified and made suitable for reading, then the codes were determined after the researcher read and re-read the data. Similar codes were collected under categorical titles, and these titles were merged to obtain themes (Glesne, 2014; Hickey & Kipping, 1996; Krippendorff, 2004; Mayring, 2000; White & Marsh, 2006).

### **Reliability and validity**

Johnson (2015, p. 110) argues that “the three main components in establishing accuracy and reliability in any research project are validity, reliability, and triangulation.” More than one expert was consulted to determine the comprehensibility, suitability for the student level, and relevance of the items of the *Achievement Test* because the agreement or disagreement between expert opinions provide the researcher with a criterion for content validity. For this, we used Lawshe’s (1975) item statistics calculation method based on determining the content validity, which helps to decide whether an item should be on the scale. First of all, an expert group consisting of seven people was formed

(three people with doctoral degrees in the field and four teachers with at least five years of experience in teaching Turkish to foreigners), and the 48-item Achievement test was submitted to the experts' evaluation and approval. In order to calculate the content validity of the scale, scoring was made as "the item is appropriate" (3), "the item is appropriate but should be edited" (2), and "the item should be removed" (1) (Yesilyurt & Capraz, 2018). After receiving feedback from the experts, Content Validity Ratio (CVR) values were calculated, and the final test items were obtained. CVR is an item statistic based on content validity to decide whether an item should be on the scale or not, and it is calculated according to the following formula:

$$CVR = \frac{n_e - N/2}{N/2}$$

where "ne" indicates the number of experts who say "the item is appropriate" and "N" represents the total number of experts expressing their opinion on the item. CVR takes a value in the range of -1 (absolute rejection)- +1 (absolute acceptance). CVR values of the items are shown in Table 2. As a result, those with CVR values close to absolute rejection (8, 22, 35, 46) were removed from the scale, some items were corrected, and a final test consisting of forty items was obtained.

In the qualitative stage, various data collection tools (student interview forms, focus groups, and e-mails) were used to increase the validity of the study (Ezzy, 2002; Licoln & Guba, 1985; Mills, 2003; Patton, 1990, Strauss, 1990). For the reliability of the codes obtained as a result of the content analysis, the coding process was performed by another researcher, and Cohen's (1960) Kappa coefficient, a statistic that is used to measure inter-rater reliability, was calculated. Cohen's kappa coefficient measures the agreement between two raters who each classify "N" items into "C" mutually exclusive categories.

$$\kappa = \frac{\text{Pr (a)} - \text{Pr (e)}}{1 - \text{Pr (e)}}$$

where K is the rate of agreement, Pr (a) is the total proportion of observed agreement for the two raters, and Pr (e) is the hypothetical probability of chance agreement. Kappa value can range between (-) 1 and (+) 1. As a result of the separate evaluation made for the two categories, the agreement rate was found to be (K) = 0.7861, which represents a significant degree of agreement according to Landis and Koch (1977). The agreement rates for the codes are presented in Table 3.

## Ethics

Prior to the study, all participants were given information in many languages about the research, and approval was obtained from the participants

## FINDINGS AND DISCUSSION

**Table 1. Independent-Samples T-Test Results of Pre-Test and Post-Test Scores**

Groups		N	Mean	Std. Deviation	Std. Error Mean
pre_test	Experimental Group	28	20,4643	5,84670	1,10492
	Control Group	28	21,8214	6,19470	1,17069
post_test	Experimental Group	28	79,8929	7,40040	1,39854
	Control Group	28	74,5357	8,47428	1,60149

		Levene's Test for Equality of Variances	Sig.	t-test for Equality of Means	df	Sig. (2- tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
		F		t					Lower	Upper
pre_test	Equal variances assumed	0,008	0,929	-0,843	54	0,403	-1,35714	1,60977	-4,58454	1,87025
post_test	Equal variances assumed	0,496	0,484	2,520	54	0,015	5,35714	2,12619	1,09438	9,61990

The mean pre-test scores of the experimental and control groups were  $m=20.46$  and  $m=21.82$ , respectively. Since the independent-samples t-test yielded a significance at the  $p=0.403$  level, which is  $p>0.05$ , it can be stated that there was no significant difference between the groups in terms of pre-test scores. Regarding post-test scores, both groups' mean post-test scores differed significantly from their mean pre-test scores, with the experimental group having a mean score of  $m=79.89 (+59.43)$  and the control group having a mean score of  $m=74.53 (+52.71)$ . The independent-samples t-test yielded a significant difference in favor of the experimental group ( $+5.36$ ) ( $p = 0.015$   $p < 0.05$ ). This result indicates that the teaching process applied to the experimental group was more effective.

**Table 2. Content Validity Ratios (CVR) of the Sample Scale Based on Expert Opinions**

number of question	appropriate		should be edited	should be removed	CVR	number of question	appropriate	should be edited	should be removed	CVR
1	6		1	0	0,71	25	6	1	0	0,71
2	7		0	0	1,00	26	6	1	0	0,71
3	5		2	0	0,42	27	7	0	0	1,00
4	6		1	0	0,71	28	7	0	0	1,00
5	6		1	0	0,71	29	7	0	0	1,00
6	6		1	0	0,71	30	6	1	0	0,71
7	6		1	0	0,71	31	5	2	0	0,42
8	2		2	3	<b>-0,42</b>	32	7	0	0	1,00
9	6		1	0	0,71	33	6	1	0	0,71
10	7		0	0	1,00	34	7	0	0	1,00
11	6		1	0	0,71	35	3	4	0	<b>-0,14</b>
12	7		0	0	1,00	36	7	0	0	1,00
13	6		1	0	0,71	37	6	1	0	0,71
14	6		0	1	0,71	38	7	0	0	1,00
15	7		0	0	1,00	39	7	0	0	1,00
16	6		1	0	0,71	40	5	1	1	0,42
17	6		1	0	0,71	41	6	1	0	0,71
18	7		0	0	1,00	42	7	0	0	1,00
19	6		1	0	0,71	43	6	1	0	0,71
20	5		2	0	0,42	44	5	2	0	0,42
21	6		1	0	0,71	45	7	0	0	1,00
22	2		5	0	<b>-0,42</b>	46	3	1	3	<b>-0,14</b>
23	5		2	0	0,42	47	6	1	0	0,71
24	6		1	0	0,71	48	7	0	0	1,00

When the CVR values indicated in the table are examined, it is seen that items 8, 22, 35, and 46 had negative values. Since these items had negative values, they were removed from the scale, which was in line with the feedback from the experts. Also, the scoring of the items was made as “the item is appropriate,” “the item is appropriate but should be edited,” and “the item should be removed.”

**Table 3. Kappa Values of Codes**

Themes and Codes			Kappa Coefficients
<b><i>Positive Opinions</i></b>			<b>0,7935</b>
motivation			0,9251
collaborative activity			0,9045
flexibility			0,8137
affordability			0,8401
reading skills			0,7651
method differences			0,8047
creativity and discovery			0,7488
attribute of learning			0,7574
effect on psychology			0,6622
measurement and evaluation			0,6814
pronunciation			0,8255
<b><i>Negative Opinions</i></b>			<b>0,7788</b>
internet requirements			0,90271
hardware requirements			0,8447
communication			0,7211
software requirements			0,7885
learning process			0,7891
informativeness			0,8271
usefulness			0,8056
impact on health			0,6456
vapidity			0,6852

Kappa value can range between (-) 1 and (+) 1. As a result of the separate evaluation made for the two categories, the agreement rates were founded (K) = 0.7935 and 0.7788 which represents a significant degree of agreement according to Landis and Koch (1977).

F\_G : Focus Group (1, 2)

M\_R : Mail Records

[S1], [S2], [S3] ... The people who were asked about their opinions (students studying Turkish and participating in webquest activities) and notable answers (number of words, sentences or paragraphs). For the students who may have difficulty in expressing themselves in Turkish, when being asked about their opinions, English was presented as an alternative language.

**Table 4. The List of Themes and Codes Formed within the Scope of the Control Group's Answers**

Themes and Categories	Number of sources	Number of codes
<b><i>Positive Opinions</i></b>	<b>28</b>	<b>198</b>
motivation	28	35
collaborative activity	20	29
flexibility	25	27
affordability	18	23
reading skills	14	20
method differences	16	16
creativity and discovery	14	14
attribute of learning	9	11
effect on psychology	9	9
measurement and evaluation	6	7
pronunciation	7	7

<b>Negative Opinions</b>	<b>25</b>	<b>153</b>
internet requirements	24	35
hardware requirements	23	27
communication	20	21
software requirements	19	19
learning process	9	15
informativeness	11	11
usefulness	8	10
impact on health	7	8
vapidity	7	7

When the answers given by the students were examined, it was understood that they mostly put emphasis on the motivation factor and they were quite satisfied with this issue. It is possible to conclude from the comments that "they were not bored," "they enjoyed the lesson," and that "they wanted the lessons to be this way." Students stated that the course was not boring and being active throughout the course is one of the prominent positive sides of webquest tasks. *"Everything is in turn; it is good for me"* [S7]. *"It was real cool"* [S19] *"my motivation was so amazing"* [S5]. They could give focus on the lesson due to the voiced, colourful and moving content *"I liked to play games again and again to get better score than the others. At the same time, I was learning!"* [S16], *"it happens in turn, it's easy to understand and there is action all the time."* [F\_G\_2\_1]. *"One task was over and I rested, but then I started another task, which is positive"* [S4]. They also stated that the courses to be taught in this way will be more effective than the other courses. *"We have games, videos, pictures. I'm so glad to these lessons type"* [S14] *"I was very pleased that the lessons online could be such pleasurable"* [F\_G\_1\_4] *"it will prevent us from getting bored in class"* [S27]. *"Using different methods and having pictures, video and voice parts better than classic lessons"* [S3].

The second issue that they are observed to be pleased to share homework pictures and make comments on these pictures and work together. *"visualized and voiced content are important parts of the process"* [S8] *"Being in a group and to be connected with the teacher and classmates is great, we improved our Turkish and solve our problems with the help of our group friends"* [M\_R\_S\_5]. *"It was very good to ask my group friends some points"* [S5]. Besides, students were most satisfied with was the communication and sharing something with each other in the sharing field in the webquest tasks. They liked the opportunity to compare the test results because it created an enjoyable competition. *"I came the third so I want to participate in another contest"* [S3]. They were pleased to share their comments on the lessons and assignments. *"The comments are very funny and nice"* [S6] *"well in order to be able to communicate with everybody"* [F\_G\_1\_4].

It was stated flexibility of lessons being outside the classroom allowed for a comfortable learning atmosphere. *"That's very comfortable action"* [S7], *"I can drink coffee on web lessons"* [S15] *"No stress, no questions, lots of time"* [S4]. It is understood that the students liked to be able to repeat the lessons and they considered its likelihood of happening as advantageous... *"it is very useful to revise; this is good for me"* [S4] *"Many revisions are advantages for us..."* [S14] *"It's very nice to study again whenever I want"* [S1].

They stressed that the courses taught by this method would not require buying bus tickets and paying tuition fees, and thus it would be possible to learn Turkish even at home. In this respect, it was often emphasized that it is economical. *"Knowledge is free"* [F\_G\_2] *"There's no obligation to go to the course, it's very comfortable"* [S4] *"I can go home because I have a course in this way"* [S16] *"no need to wait for the bus..."* [S1].

It is seen that students give important feedbacks about reading and pronunciation. It was emphasized that the exercises had positive effects on their reading in a short time. *"Now, I can read better than before"* [S10]. It was also stated that the activities had a positive effect in the reading-comprehension process. *"It positively affects my comprehension capacities and my attention during my reading"* [S12]. It was stated that the reading activity in the first part was useful *"I will say that my*

*reading was so much higher than before*” [S6] *“Especially the first part (reading video) was useful”* [S5].

When the most disturbing subjects are examined, it is seen that students draw attention to the negative aspects of doing such courses over the internet and complain about this situation. *“I couldn’t be connected to the internet at the beginning”* [S10] *“I have no internet in dormitory”* [S9] *“Not all students can participate in these kinds of lessons with us because not everyone has internet....”* [S12], *“If I haven’t got internet something I couldn’t...”* [S26] *“So I will write negative ideas first and important and necessary in lessons but not so much”* [S15] *“some friends don’t have internet”* [S13], *“Only the school’s garden has internet”* [S1].

The second aspect that students were not satisfied with was the hardware requirements for the course. *“Phone activity is very difficult”* [S10]. *“I should get a new laptop it is very slow”* [S17] *“Some classmates couldn’t do because of iPhone or laptop”* [S6] *“Everyone haven’t got smartphone”* [S24] *“computer repairing requires a lot of money.”* [S1]. *“we need to webcams, keyboard, laptop...”* [M\_R\_S\_16].

It was stated that it would be difficult to get to know each other in courses taught in this way *“We can’t know each other lesson if every lesson is taught in this way”* [F\_G\_1\_2] that friendship would become difficult *“Web quest friendship will be hard”* [S18] *“Speaking is an obligation for friendship”* [S9], that it is necessary to talk face to face for friendship *“...it’s very important to see”* [S17] were emphasized.

In addition, it was stated that computer-based courses had difficulty in use by saying that *“Flash player wasn’t downloaded”* [S22] *“My computer is very slow I need to reset and having some software...”* [S16]. *“some movies don’t open...”* [M\_R\_S11].

## DISCUSSION AND CONCLUSION

It is extremely necessary and important for teachers and students to adapt to the developing technology in the twenty-first century, and to transfer the technological innovations into educational activities. It is certain that language teaching activities using web tasks will increase the quality of teaching. Because webquest tasks contain content that supports high level cognitive skills (Farenga & Ness, 2005; MacGregor & Lou, 2005). Through activities based on high-level skills such as classification, sorting, analysis, merging, making inferences, being critical, etc., persistency and functionality in language learning will increase. When the positive opinions of the students are examined within the scope of the research, it is seen that motivation is the most emphasized issue and this result is closely related to the use of technology. The students stated that as a result of the opportunities offered by technology, the teaching enriched with visual and audio content was effective in learning. It was viewed that they emphasized that they were not bored for that reason, that they enjoyed the lessons, that the lessons should be taught this way, that their interest increased due to the audio-coloured and moving contents and that these courses were more effective than the other courses. It is possible to mention numerous studies expressing such similar positive aspects of webquest. Leung & Zuhail (2013) conducted a survey of 596 students on webquest tasks in the website “ZUNAL webquest Maker”. As a result of the research, there was a consensus that web adventure tasks were fun and motivating for students, improved computer literacy and critical thinking skills, encouraged learning and met different learning needs. The “motivating” aspect, which is among the results was strongly emphasized by the students. It is understood that this result is similar to our research. It is possible to say as supported by some researches that web adventure language tasks increase students’ motivation levels. (Aldalalah et al., 2015; Averkiev et al., 2015; Jung & Won, 2018; Lasaten 2017; Littlejohn, 2003; Sumtsova et al., 2016; Yenmez et al., 2017). Therefore, it can be stated that the method increases the willingness and interest of the students by the use of technology, makes learning fun, and thus develops a positive attitude towards learning.

The topic of cooperative work and interaction with the group appears to be another mostly emphasized highlight. Students were pleased to be able to communicate with each other, share and learn together in the sharing area of the webquest tasks. It was observed that the students had the opportunity to compare the results, shared the comments about the lessons and homework, and also stated that it was pleasing to share the pictures of the handicraft activity given in the form of homework. One of the strengths of the webquest method is that it promotes learning based on cooperation and allows for increasing sharing (Lacina, 2007; Lara & Leparaz, 2007; Mentxaka, 2004; Lin et al., 2016). Tasks structured by the teacher beforehand are presented to the students, independent of time and space, and the students are given the opportunity to work together in interaction. In this way, students get in contact with the group or create different working groups through tasks and find an opportunity to share.

The study also showed that students provided important feedback on reading skills and pronunciation. It was emphasized that the exercises were effective on reading in a short time. It was stated that the activities had a positive effect on the reading-comprehension process and that reading activities in the first part were beneficial. The fact that the webquest method included in the research results is effective in transferring reading skills, which is one of the areas of language learning to students, is another issue emphasized by other researchers (Alshumaimeri & Almasri, 2012; Chou, 2011; Kim et. Al, 2020; Tuan, 2011). Because, that the texts are supported with audio-video and pictures, that they provide correct examples of pronunciation, allow instant correction and provide reading levels in accordance with individual differences that contribute directly to the development of reading skills.

Another important point that stands out among the research results was the flexibility of the lessons taught using the WebQuest method. The ability of students to access courses as they wished, especially in terms of time and space, was an important element that increased the quality of the teaching process. As is known, the traditional classroom-based teaching process may sometimes be boring for students, which, in turn, has a negative effect on students and their learning process (Anderson & Walberg, 2003; Cheng, 2013; Fraser & Fisher, 1982). Therefore, it can be said that the ability of this method to distance students from the negative effects of the learning environment and to offer students flexibility in terms of time and space has a positive effect primarily on the motivation of the students and indirectly on the quality of the learning process.

Despite the positive results of the research, it is seen that there are some negativities. It is observed that one of the most frequently complained subjects is that the courses are conducted via the internet and are complained about this situation. Because for many student's internet access may be chargeable and in some of the dormitories there is no internet connection. In addition, some hardware and software requirements forced the students financially. Some of them are observed to complain about not being able to buy a laptop, headphones, speakers, etc. and some others complained about not being able to install some necessary programs (flashplayer). It can be said that the method involves some difficulties regarding this aspect. In this context, it is not possible to say that technology is always effective and renders traditional methods dysfunctional. Burke et al. (2003) performed a model application where the webquest method and the traditional method were used together. At the end of the study, no significant difference was found in the effectiveness of the methods in terms of learning. However, it was emphasized that the most significant difference occurred in student motivation and that teaching with webquest task stands out with this aspect. Therefore, it should be noted that using web tasks does not mean solving all problems in teaching (Leite, 2017) and that it can involve some problems. It is also thought that preparing the web tasks can be quite time consuming for the teacher but this problem can be solved by gaining experience. It might be emphasized that one of the disadvantages of the method is that it requires an uninterrupted internet connection and literacy. In other words, it is very difficult for teachers and students who are deprived of information technologies literacy to use this method.

It is thought that the WebQuest method, whose effectiveness has been revealed in the study, should be used by teachers as an alternative method in teaching Turkish to foreigners. Based on that research, it can be stated that the WebQuest method will be effective in teaching Turkish to foreigners.

### Recommendations

- Students and teachers who will teach Turkish through webquest method should be literate with computer skills and information technologies. It is an obligation to support those who lack knowledge about computer technologies.
- Students' financial situation should be taken into consideration, as well as whether everyone is able to access the internet.
- Web tasks must be used at the beginner level (A1-A2). Because the issues caused by students not understanding the teacher will be eliminated in an environment that provides a broad time frame and dictionary use.
- When preparing web tasks, the content of vocabulary should include colour and movement in order to provide tangibility and permanency.
- It is necessary to keep the communication channels open where the student can ask questions about the issues that he/she does not understand, and that provide access to the teacher.
- The teacher must plan the content before preparing the tasks.
- Internet resources should be sorted according to their subjects and government resources such as Turkish Language Institution should be suggested to the students as reliable resources.

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## The Emergency Remote Teaching: A State University Experience

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### Abstract

Due to the COVID-19 pandemic, emergency remote teaching in higher education institutions across Turkey in 2020 has become mandatory as of March. Emergency remote teaching practices added new applications for most of the instructors such as virtual classroom, online teaching, distance evaluation; those revealed different opinions based on experience on the positive and negative aspects and quality of the applications. This research was conducted to evaluate all these experiences held at a state university with a distance education center and a distance education database system but having only limited experiences on online courses before the emergency remote teaching in Turkey. The data set of the study was composed of the opinions of a group of instructors who participated in the distance teaching process for the first time and the official correspondence and reports made to organize, manage and evaluate the process during the first period of emergency remote teaching. The research is a qualitative case study where data obtained from different data sets are analyzed comparatively, inductively, and deductively. The results of the research show that within the scope of emergency remote teaching, the regulations regarding the application content in different faculties of the university should be differentiated, and this can be partially met during the emergency distance education process. In the context of effective and efficient use of the emergency remote teaching process, positive/negative situations have been experienced in terms of adapting to the database used in the teaching process, adapting existing teaching approaches, measuring and evaluating learning outcomes, and ensuring the participation of students in all these. Although instructors generally consider distance education as more student-centered practices and find the opportunities, it will provide positive in this context, but the effect of compulsory emergency remote teaching on learning outcomes was uncertain. Some suggestions are presented for the efficacy, effectiveness, and efficiency of the implementation.

**Keywords:** Emergency Remote Teaching, Adoption to Emergency Remote Teaching, Efficacy-Effectiveness-Efficiency of Emergency Remote Teaching

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## INTRODUCTION

The COVID-19 epidemic, which has affected the whole world, forces people to rearrange all their vital relationships that they have built as civilizations until then. While trying to control the spread with "mask, social distance, hygiene", UNESCO called for the temporary closure of schools at all education levels in March 2020 to prevent the spread of COVID-19. Some countries responded to the call by continuing face-to-face education, some by partially closing their schools, some by suspending education, and some countries, including the Republic of Turkey by ending face-to-face education (UNESCO, 2020a). Thus, there are four types of practices in the context of education and training services worldwide (UNESCO, 2020b). The effects of this COVID-19 epidemic on education, in the context of its own dynamics, in the context of differing country education policies, require quantitative and qualitative research processes in terms of teachers and learners from elementary to higher education. The Presidency of Turkey announced on March 13, 2020, that schools at all education levels were closed, and face-to-face education was suspended. While the Ministry of National Education (MoNE), which manages compulsory education and non-formal education in the country, announced that it would switch to distance education within a week, the Council of Higher Education (CoHE), to which universities are affiliated, announced that education was suspended for three weeks as of March 16, 2020 (CoHE, 2020a). The transition process regarding the remote management of teaching activities by 189 higher education institutions in Turkey lasted until April 6, 2020: 121 (64%) of 189 universities were on March 23, 41 (21.6%) were on March 30, 25 (13.2%) have switched to distance education as of April 6, 2020 (CoHE, 2020b).

### Epidemic and Education

COVID-19 is not the first time that the epidemic and education have been discussed together. SARS in 2002, H1N1 Flu in 2009 affected many people around the world and caused a break in face-to-face education in countries such as China, Bulgaria, France, the United Kingdom, and the USA in the relevant years (Cauchemez et al., 2014). For extraordinary situations such as epidemics, natural disasters, and wars that require a break-in face-to-face education, UNESCO in 2015, in the Education Action Plan Incheon Declaration created for 2030 education, provided all countries in the world with "alternative learning and education forms" that they can use in crisis and emergencies, during periods of not going to school. It was also stated that they should "keep the equivalent and bridge programs and practices ready" that would enable them to continue their education (UNESCO, 2015, Target 4.1., Article 34, p. 38). Today, it is unclear to what extent the countries of the world are able to take this message into consideration for all education levels. However, it is known that the epidemic process affects students in the compulsory education period more negatively in developing countries than those in developed countries (UNESCO, 2020c). In fact, UNESCO estimates that after the COVID-19 epidemic, a total of 23.8 million children and young people from preschool to higher education are at risk of not returning to school (UNESCO, 2020d).

The COVID-19 pandemic has negatively affected every level of education. Regarding the negative effects of the epidemic for the higher education system, the International Association of Universities (IAU) affiliated with UNESCO has prepared a research report. According to the IAU report, which was completed in the light of the data collected on 25 March-17 April 2020, more than half of the respondents from five different continents, 109 countries, and 424 universities stated that "all campus activities at universities stopped" in the relevant period. Although almost all universities have an infrastructure in which they communicate with their students and staff, they reported that they had "difficulties in effective communication flow in the COVID-19 epidemic". According to expectations, the COVID-19 epidemic will negatively affect the enrollment numbers in the new academic year, causing a "financial problem" at the higher education level in the coming years, especially in private universities. In terms of education, "COVID-19 affects teaching and learning"; it has been reported that there are difficulties in the transition from face-to-face education to distance education. These difficulties mainly stemmed from "access to technical infrastructure, necessary qualifications for distance education and pedagogy" (Marinoni et al., 2020, p.11). These results can be interpreted as the higher education system has/will experience some inadequacies in terms of having



equivalent applications that will replace face-to-face education in order not to be interrupted in extraordinary situations and putting them into action in crisis situations.

### **Distance Education**

Distance education, which UNESCO recommends being implemented at various teaching levels in many countries around the world, was actually included in education systems many years ago to replace or strengthen face-to-face education around the world. In its simplest definition, "distance education" or "distance learning" is "the education of students who are not physically present at school" (Kaya, 2002). During the 300 years it has been in practice, both its content, presentation, and the technology used have changed and diversified (Adıyaman, 2002; Battenberg, 1971 & Delling, 1966 cited in Holmberg, 2005, pp. 13-14). In Turkey, it has gained legal ground with Articles 5 and 12 of the Higher Education Law No. 2547; with the Distance Education Regulation prepared in 2001, many universities in Turkey have provided distance education operating systems (Ozbay, 2015).

Currently, distance education has hybrid or blended applications that are offered entirely remotely or combined with face-to-face applications. Distributed learning, e-learning, m-learning, online learning, virtual classroom, etc., today constitutes the current terminology of distance education. Incorporating all these changes, distance education is defined as "a multimedia-based, interactive, planned and programmed application" (Barker et al., 1989). While distance education provides the learner with initiative, responsibility, and flexibility with interactive learning applications, it requires the teacher to create an effective learning ecology. The teacher must carefully plan and design the educational process, and the learning objectives must be clearly identified. The platform, which is also used for learning and teaching, should be flexible and accessible (Hodges et al., 2020). At this point, Bozkurt and Sharma (2020) report that "due to the COVID-19 epidemic, what is in practice differs from distance education". This one is urgent and compulsory, so "it should not be equated with distance education". What is in practice today is "shifting face to face courses to alternate or online delivery modes, to provide instruction during a crisis situation until it has abated." (Bawa, 2021). It is known that the practice called Emergency Remote Teaching (ERT), which emphasizes that it should be considered separately from distance education, produces different results in teaching and learning (see: Bao, 2020; Bawa, 2021; Drane et al., 2020; Mishra et al., 2020; Sumardi and Nugrahani, 2021). The aim of this research is to describe the substitute of face-to-face education and its place in distance education of ERT, which was put into mandatory practice due to the COVID-19 epidemic. In this context, the transition to ERT, the experiences during the process, and the first period of ERT are analyzed within the scope of the practices of a state university in Turkey. The research sought answers to the following questions:

#### **1. Regarding the *efficacy* use of ERT:**

- a. How was the database system to be used during ERT introduced to the users, and to what extent did the users feel competent in using the system?
- b. How are users placed in ERT database system?

#### **2. Regarding the *effective* use of ERT:**

- a. Did ERT requires changes in teaching strategies? Which of the teaching resources (discussion forms, chat rooms,...) offered in the database system could be used more?
- b. How did the student achievements in ERT be evaluated? Are the gains obtained in ERT equivalent to the targeted gains for the course?
- c. During ERT, were the competencies that were not possessed until then acquired? If acquired, what are these competencies?

d. What are the views on the continuation of using ERT? Are there aspects of the application that need to be developed, and if so, what are they?

### **3. Is ERT application efficient?**

Based on the results of the analysis, a list of suggestions has been created regarding the *efficacy, effectiveness, and efficiency* of the process, in particular higher education institutions, in case of emergency transition to distance education for similar or other reasons.

## **METHOD**

The research covered the spring semester of the 2019-2020 academic year, when ERT was implemented for the first time. The data set of the research consisted of face-to-face interviews with a group of lecturers who participated in ERT in the relevant period, official correspondence at the university to organize the process, and reports evaluating the relevant period. In this context, the research is a case study in which the findings obtained from two different data sets (interview transcripts and official documents) are analyzed as deductively, inductively, and comparatively by researchers (Creswell, 2007; Guler et al., 2013). "The case study is one of the dominant research approaches used in qualitative research." (Seggie & Yildirmis, 2015, p. 27). The approach "provides a deep understanding of phenomena, events, people or institutions" (Jensen & Rodgers, 2001, p. 237), "requires multiple methods and data sources for analysis" (Berg & Lune, 2015, pp. 354-355), in its application "focused questions, observations, audio-visual recordings, written sources or documents" can be used as a data source and that enables "to create and interpret patterns with in-depth descriptions, logical inferences on the thematic basis" (Paker, 2015, p. 119). The case study is preferred in cases where "why and how" questions about a social phenomenon are investigated "to examine current but manipulated or uncontrollable phenomena." (Yin, 2003 cited in Turkoglu, 2015, p. 43). In this study, ERT is analyzed in line with the practices of the state university in Turkey as a *manipulated and uncontrollable phenomenon*.

### **Setting: Status of the University at the Time of Transition to ERT and Research Permit**

The data in the research were collected with the official permission of the state university in Turkey, dated 22.05.2020 and numbered 55447807-044-E.23090. There are three institutes, 13 faculties, six colleges, and 13 vocational colleges affiliated with the relevant university. In the Spring Semester of the 2019-2020 Academic Year, the university included a total of 26,687 students; 11,249 at the pre-graduate, 13,966 at the undergraduate, and 1472 at the graduate level (master = 1317, doctorate = 155). 1039 of the students are foreign nationals. There are 868+ instructors (85 professors, 93 associate professors, 348 assistant professors, 342 lecturers, and research assistants who have Ph.D.) participating in ERT at the university.

"Distance Education Application and Research Center (DEC) was established in 2013" (SRQ, p.2). A distance education database system was purchased for the center in 2016. Since 2016, some courses (foreign language, Turkish Language, History of the Revolution of the Republic of Turkey, and postgraduate courses in distance campuses of the university) at the university have been offered by distance teaching in different years. DEC defines its mission as "ensuring the continuation of education and training activities with distance education technologies, providing equal opportunities,.. increasing the efficiency of education and training programs with developing technology" (SRQ, p.2).

On March 16, 2020, after four weeks of face-to-face education, activities at the university were suspended, and the Distance Education Commission was established. At the second meeting of the Distance Education Commission on March 20, 2020, it was decided to switch to distance education in theoretical courses in all units of the university, except for sixth-year students of the medical faculty. The relevant academic unit has been authorized on how to present internships and practical courses. During this period, 100 virtual classrooms were rented, and virtual classrooms provided via Adobe Connect were made available through the database system called E-Courses

managed by DEC. According to the course load, the virtual classrooms were divided among the academic units affiliated with the university, and a program was prepared for each academic unit to use the virtual classrooms, and it was shared with the public on the official internet address. As a result of all these preparations, ERT has been started as of April 6, 2020.

### **Data Collection Tools and Working Group**

Two data sets were used in the study. The first data set of the research was composed of official documents sent to academic units in order to organize and manage ERT at a state university in Turkey. In this context,

1. *Correspondence* within the unit: It is the correspondence made within the academy unit (faculty). Since it is not possible to reach the relevant correspondence based on each unit, the correspondence of the education faculty of the university was analyzed. Correspondences with the content of ERT sent from 16 March 2020 to 12 September 2020 are included. These correspondences are coded as *CR1-14*.

2. *Senate decisions* taken in line with the opinions of the distance education commission: Five senate decisions were taken in the relevant period to manage the process. It is coded as *SD1-5*.

3. Reports prepared by the university's Distance Education Center (DEC): In this context, there are two separate reports that include lecturers (instructor+lecturer) and students. The instructor report was coded as *LR*, and the student report as *SR*.

3. *Supplementary Report on Quality Assurance in Distance Education*, prepared under the coordination of the University's Accreditation, Academic Evaluation and Quality Coordinatorship and DEC in line with the Quality Assurance Criteria and Evaluation Guide in Distance Education 2020 (CoHE, 2020b) of the Higher Education Quality Board and shared with the public via the university's official website: This report in the following sections of the text were coded as *SRQ*.

4. *The University's 2020 Strategic Plan Monitoring Report*: The report prepared by the Strategy Development Department with the data of 2020 is coded as *MR*.

As second data set, interviews were conducted to evaluate the experiences of the instructors who participated in the first term of ERT. A semi-structured interview format was adopted for the interview, which is frequently used to collect data in qualitative research (Fraenkel & Wallen, 2006); an interview draft form was created by the researchers. For the draft published research texts (for example, Erfidan, 2019; Kaya et al., 2017) reviewed. The form, which was prepared in line with the opinions of two experts, was made ready for application. In the document, there are 13 questions asked under the sections of "personal view, application, evaluation and general evaluation of the whole system". Questions "Evaluation section Question 10: Do you think your students were able to acquire the gains they needed to gain from the course thanks to the distance education system? If yes, how did the system contribute? If no, why do you think they did not achieve the gains you were aiming for?" format. In the interview form, there are also questions for demographic information such as "academic unit, whether or not they have participated in distance education before,...".

Appropriate sampling (Maxwell, 1996; Patton, 2002) was preferred in determining the instructors. Interviews were held with 11 instructors working in different faculties who participated in ERT, volunteered to answer the questions in the interview form, preferably did not participate in previous distance education applications of the relevant university. Three of the participants are professors (Pr.), four are associate professors (Assoc.), and four are assistant professors (Assist.) (Table 1). They have been participating in teaching activities in higher education institutions for at least three and at most 15 years as instructors. The technology use level of most of the participants is "moderate" (n=8). The lectures offered by more than half (n=6) are practical (laboratory, practice, clinical). Six of them have administrative duties in the relevant period (such as institute director,

chancellor or vice-dean, department chair). Most of them offered (n=6) applied course content (like laboratory, practice). Six of them have administrative duties in the relevant period (such as head of the institute, the vice-chancellor/dean, the head of the department).

**Table 1. Participant Group**

Code* (n=11)	Title	Academic unit (Faculty of..)	Seniority (as instructor)	Course type	Technology use level	Administrative duties
E1	Assoc.	Education	12	Theoretical+Laboratory	Moderate	Yes
E2	Pr.	Education	13	Theoretical	Moderate	Yes
E3	Pr.	Education	9	Theoretical+Staj	Advanced	Yes
E4	Assoc.	Education	8	Theoretical+Staj	Moderate	Yes
S5	Assist.	Science	3	Theoretical+Laboratory	Advanced	No
F6	Assist.	Fine Arts	10	Theoretical+Practice	Moderate	Yes
C7	Pr.	Communication	15	Theoretical	Moderate	No
En8	Assist.	Engineering	5	Theoretical	Moderate	No
M9	Assoc.	Medicine	7	Theo.+Clinical Practice	Moderate	Yes
M10	Assoc.	Medicine	8	Theoretical	Moderate	No
VC11	Assist.	Voc. College	7	Theoretical	Advanced	Yes

\* Participants are coded with their academic unit. E: Education, F: Fine Arts, S: Science, C: Communication, M: Engineering, T: Medicine faculties, VC: Vocational College.

Only one of the instructors in the study participated in an application that can be evaluated within the scope of distance education as a student (E4). Thus, ERT is the first experience of the instructors. Except for E1, S5, C7, and VC11, others attended the video conference on virtual classroom practices organized by DEC officials during the preparation period for the transition to ERT.

### Creating the Data Set

The official correspondence used within the scope of the research was obtained as an electronic file from the university's editorial office and the data processing unit of the education faculty. The reports were obtained from the official website of the university. For the data obtained through face-to-face interviews, within the scope of the research, 11 instructors who allowed voice recording were interviewed in their own offices (E1, E2, E3, E4, F6, C7) or in places they deem appropriate (S5, En8, M9, M10). Four of the participants (S5, F6, En8, VC11) requested that the interview questions be shared with them before the interview. All participants were informed about the purpose of the research, how the interview would take place, the importance of taking a voice recording, and they were assured about the security of their personal information. The shortest interview lasted 28 minutes and the longest 52 minutes. The interview contents were transcribed as Word documents by the researchers and shared with the participants before the analysis for their checking.

### Analysis of Data

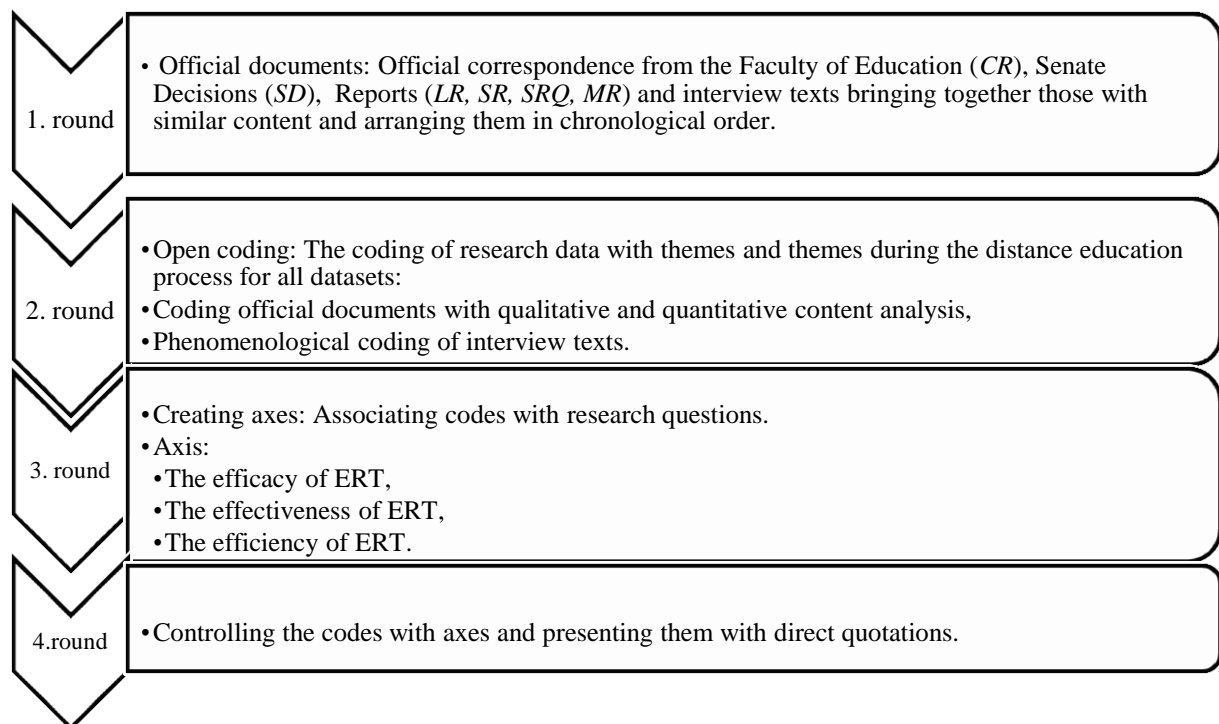
In the research, the data obtained from official documents were analyzed with qualitative and quantitative content analysis, and the interview texts were analyzed with phenomenological coding. Content analysis involves “generating logical patterns and meaningful categories from raw data; thus, it is an “analytical” tool that enables the data to be examined in a holistic manner (Julien, 2008, p.120; Guclu, 2019, p. 167). Content analysis was applied in this study with both qualitative and quantitative content. Qualitative content analysis for the “theme, meaning and emphasis” of the messages (contents) conveyed through official documents (Guclu, 2019, p. 177); quantitative content analysis was used in the analysis of the numerical values in the data sets used. Subjective data obtained from qualitative content analysis were tried to be supported by objective (repeatable and verifiable) data obtained from quantitative content analysis. Interview texts, on the other hand, are phenomenologically coded to reach the common essence, as they include the experiences of the instructors (Fraenkel & Wallen, 2006) during the ERT. Phenomenological coding, “cascading and phenomenological reduction; describing units of meaning; clustering semantic units to form themes;

summarizing, verifying and modifying each interview; It is the analysis that takes place in the stages of “preparing a combined summary by extracting general and original themes from the whole interview” (Hycner, 1999, pp. 148-152). Thus, the data in the study were analyzed in four rounds. In the first round, similar contents in different data sets were brought together and ordered chronologically. In the second round, the documents were coded with qualitative content analysis, and the interview texts were coded with phenomenological coding. Thus, the researchers identified the prominent, repeated, emphasized themes and categories in the data sets used in the research with the codes they created in the first two rounds. In the third round, the axes were formed by associating the codes with the research questions. The data sets used while creating the axes are presented in Table 2.

**Table 2. Data Sets Used for the Questions**

Axes	Question	Correspondence: <i>CR</i>	Senate Decisions: <i>SD</i>	Reports: <i>LR, SR, SRQ, MR</i>	Interview texts
<i>Efficacy</i>	1.	a.			x
		b.	x	x	x
<i>Effectiveness</i>		a.		x	x
	2.	b.	x		x
		c.			x
		d.		x	x
<i>Efficiency</i>	3.	x		x	x

Finally, the entire data set was reviewed in the last round with *the axes determined by the researchers as the efficacy, effectiveness, efficiency* of ERT. The data analysis process applied within the scope of the research is summarized in Figure 1.



**Figure 1. Data Analysis Process**

Thus, the data obtained during the analysis were analyzed together in comparative, inductive, and deductive processes. In the findings, the axes and themes obtained are presented with direct quotations from the datasets used.

### **Validity and Reliability Studies**

The credibility, portability, reliability, and verifiability used in qualitative research literature correspond to the concepts of internal validity, external validity, reliability, and objectivity in quantitative research (Marriam & Tisdell, 2016). In this context, the researchers informed the participants in detail about the research process before the interview and clearly stated that they had the opportunity to leave the research whenever they wanted, allowing only voluntary participants to participate in the research (Shenton, 2004). For reliability, triangulation was used in the research, and as a debriefing and member checking process, each researcher submitted the codebooks they made to the control of the other researcher (Creswell, 2012). In order to ensure credibility, the data obtained from the interviews were confirmed by the participants (Creswell, 2014; Marriam & Tisdell, 2016). An external audit of the research was carried out by another state university faculty member with a doctoral degree in program development and assessment and evaluation to supervise the findings (Christensen et al., 2014; Creswell, 2007; 2014). The direct quote strategy was used to ensure credibility (Christensen et al., 2014).

### **The Role of Researchers**

In qualitative research, the researcher is not passive. While the participant tries to understand their experience, the researcher and the participant produce the data together. For this reason, the researcher should "clearly express his personal history" while "forming his interpretations based on research findings" (Creswell, 2014, pp. 187-188). One of the researchers is a computer and instructional technology specialist who has been a lecturer for 17 years and also works in the DEC unit. The other is an educational administration specialist and has been working as a faculty member for more than eight years and has completed studies in the field with qualitative research methods. Both researchers participated in the ERT activity during the period when their data were collected and offered theoretical, practical, and internship courses.

In qualitative research, the researcher is expected to be aware of his feelings and thoughts about his own experiences and to bracket his prejudices (epoché) (Creswell, 2012). Recognizing that their own experiences may create bias, the researchers discussed their prejudices before the study started and included direct quotations from interview texts and official documents in the transfer of findings to ensure objectivity.

## **FINDINGS**

In this section, the sub-themes obtained according to the three axes determined in the fourth-round analysis of the research data: *efficacy*, *effectiveness*, *efficiency*, and direct quotations related to these themes are presented with the axis titles.

### **Findings Regarding the *Efficacy* of ERT**

The efficacy is related to the correct implementation of the ERT in order to achieve the desired or intended results. Under the efficacy axis, the data were associated with the use of the ERT database system, technology requirements, and planning of teaching time.

#### **Use of ERT database system**

The use of the database system was introduced to users through online meetings and informative videos prepared by DEC. The questions submitted via the Complaint-Comment-Suggestion Form created on the DEC official site were resolved by DEC (SRQ, p. 12).

In terms of database use, the instructors felt competent over time:

M9: *"We were given an introductory lesson in the form of ERT. Of course, I couldn't understand all of them... I went to him.. he told me again. At that time, I took a video. I can say that I reinforced it while using it."*

C7: *"I will relate the process to my learning to swim. My father threw me into the sea to learn by myself. This is how I learned ERT."*

*There remains a need to learn about database usage:* According to the results of the Teaching Staff Distance Education Survey completed by DEC with 351 lecturers, almost all of the participants (98%) visited the official website of DEC. About one-third (27%) of respondents requested information (or reported problems) from DEC via e-mail; nearly half (41%) stated that they needed in-service training to be able to use the ERT platform (LR, pp. 2, 6).

According to the results of the Distance Education Process Evaluation Form, which was answered by 6454 students (24% of the total number of students) applied for ERT evaluations, almost all students (98%) who answered the questionnaire applied to the official web pages, watched videos of DEC to learn how to use the system. It was determined that more than half (65.4%) of the students who responded to Form were "satisfied" with the informative resources provided. About one-fifth (19%) of the students emailed DEC for information or reported a problem. More than half were satisfied with the adequacy of the answers (66.7%) and the response speed (64.3%) (SR, pp. 4, 5).

### **Technology requirements of the ERT database system**

The E-Course system used necessitates having an uninterrupted internet connection, a computer, or a mobile phone with a personal data assistant (PDA) system.

### **The technological infrastructure of the users is insufficient:**

M10: *"We repeated our lessons in the form of questions and answers.. they had connection problems..."*

VC11: *"Those who do not have a computer in their village, cannot attend any classes because they cannot access the internet..."*

E1: *"My wife is a teacher. I also have a son. Everyone is schooled. During class, everyone is in one room. The internet is slow."*

E3: *"I had problems because I don't have internet at home."*

In the results of the survey, there are findings showing that the students do not have the necessary technological infrastructure: "lack of sufficient internet access, not having a computer" (SR, p. 18) negatively affected the ERT process.

### **Planning of teaching time in ERT**

In the university, the transition to emergency distance education was completed in three weeks (SDI): the adequacy of the database system was checked, 100 virtual classrooms were rented (SRQ, p. 8; MR, p.18). Virtual classrooms are divided into academic units (44 for faculties, 9 for colleges, 30 for vocational schools, 17 virtual classrooms for units affiliated to institutes and chancellorate) according to the course density and number of students (MR, s. 18 ).

### **The time allocated for teaching in face-to-face education is not equal to the time planned for ERT:**

VC11: *"..the biggest disadvantage is that a virtual classroom cannot be given to every classroom and therefore the weekly curriculum is very tight and fragmented."*

C7: *"Time was running out in the virtual classroom until we said we started, we were connected."*

E4: *"It was said that it was enough to do virtual lessons for four weeks, but until the end of the semester, I did all my lessons on time. I started at the beginning of the hour and closed it at the 59th minute. If you say that the two-hour weekly lesson could be done in 59 minutes, it is a bit suspicious."*

M10: *"It was not possible to run the course programs in our faculty. We have boards. We are seven or eight lecturers in each board. The virtual classroom was assigned to one person from that board. I recorded all my lessons asynchronously at night."*

M9: *"We looked at the patient simultaneously. It was not possible to conduct the lessons according to the schedule."*

### **Findings on the Efficiency of ERT**

The success of ERT in producing the desired results and its effect on students' learning outcomes were evaluated under the axis of effectiveness. In this context, the axis of effectiveness has been associated with sub-themes: *arranging the teaching content, applying the teaching content, evaluating the learning outcomes, and sustainability of ERT.*

#### **Arranging the teaching content in ERT**

The arrangement of the teaching content in ERT is left to the initiative of the instructors (SD1).

*Contents prepared for face-to-face education were also used in ERT:*

M10: *"..I have presentations. .. there is not in.. I have written the important points."*

E4: *"I normally use a powerpoint presentation in class. Since I uploaded those presentations to the system as a resource during this process, I filled out the content of each slide... I thought maybe they would read the slides."*

E2: *"I gave a summary of a lesson we did in face-to-face education."*

M9: *"Our Dean's Office asked DEC to make a presentation about how their content should be prepared for the E-Course. They did. However, our instructors asked questions about the use of the database system in general. Most of them did not attend."*

*ERT required a review of course outcomes:*

E2: *"Do the same outcomes have to be given at the same rate in ERT? In other words, it is meaningless to dry today's laundry in the sun of yesterday."*

E1: *"We had to apply the summary of the lesson there.. without going into details.. in a way that makes the student think more and directs them to search."*

#### **Implementing the teaching content in ERT**

Lessons in virtual classrooms are placed in the program with the name of the responsible lecturer (MR, p. 18; CR6-8), from 9.00 in the morning to 11.00 at night, including weekends, and the program is shared on the official websites of the academic units. According to the new academic calendar prepared for ten weeks, it was requested that the lessons be held for a minimum of 10 minutes and a maximum of 50 minutes and that at least 40% of them should be held and recorded in the virtual classroom. "The camera/webcam is on during the lesson" is compulsory for the instructors.



On the other hand, students were informed that "since there may be conflicts in the program, they can watch their lessons asynchronously and this will not be a problem". "A minimum of one source every week – word document, pdf, .."; lecturers were asked to "at least three weeks of forum/question-answer, homework/practice (individual/group) and at least one hour of student-lecturer communication per week (via the system - using messaging or chat feature)" (SD1, CR6).

***In the ERT process, the instructors used the teaching methods they used in face-to-face education and tried to maintain the sameness:*** Database system used offers: discussion forums, chat rooms, synchronous/asynchronous videos, essential concept videos of course content, presentations, follow-up exams, assignments, feedback via private message system, live online activity with students, seminar-workshop, external links/adding resources. The total number of courses conducted in 100 virtual classrooms in the relevant period is 5628. It has been determined that the course materials uploaded to the E-Course system mainly consist of virtual course records, written sources (pdf, PowerPoint) (SRQ, p. 8). Lecturers reported that they primarily included "virtual classrooms, written resources, homework and presentations they prepared" in their teaching processes (LR, p. 8). Students stated that "written resources, virtual lessons, assignments" were beneficial in their learning (SR, p. 6).

E1: "Normally, I teach the lesson. In remote I also."

S5: "Normally, I teach the lesson by drawing on the board. Here I wrote on the slides that I showed on the board."

***The physical space and teaching materials offered in the virtual classroom are not compatible with the regular classroom used in face-to-face education. Incompatibility has made the teaching of numerical science courses more difficult:***

S5: "Normally, I teach the lesson by writing and drawing on the board... I could never use that white page opened in the system."

M10: "While I was explaining on the figure, there was one arrow here. The arrow was huge. It was covering up what I wanted to show."

F6: "We do graphic design. It is possible to draw and show what is possible on that white page that opens."

En8: "There are applied courses in engineering education. It takes place in a laboratory environment. It is not possible to give in a virtual classroom."

***It has not been possible in ERT to offer practical (laboratory) courses properly:*** In the first academic planning for the applied courses offered in various programs within the scope of the university (especially Fine Arts, Education, Medicine, Communication, Health Sciences Faculties, Conservatory and Foreign Languages and Vocational Schools), with the thought that the epidemic will disappear, they will be held on 15 June -17 July 2020 with intensive face-to-face summer programs (SD1-2, CR7). When it was realized that this application could not be made, the courses considered in this context were reintroduced to the ERT program as of May 2020 (SD3).

F6: "In the first place, we planned to organize an intensified face-to-face program in the summer; frankly, we postponed it."

M9: "The application must be at the bedside. Your instructor shows something, says something at that moment. I still remember that information."

E1: "The student will take the slide, the coverslip, take a section from the sample; cut off hand if necessary. This is not possible here."

S5: *"Ankara University, METU... made the contents of some of its courses accessible. I uploaded videos of experiments made in the laboratory at METU every week for my applied course. I uploaded pdf documents explaining how those experiments were done."*

***Doing practical training in ERT could not be realized:*** Completion of the theoretical parts of the practical training through ERT (SD1), and within the practice part, following the decision of the relevant boards of the academic unit was deemed appropriate (SD2). To the academic units: "Assess what has been done so far, taking into account that the students have received practical training in businesses for 5-6 weeks; completing the rest in the form of lectures, assignments, projects, application files in distance education; preparing homework, project and application files for the internship content; simulation training, projects, case studies, etc., through ERT, for students who are at the graduation stage in nurse and midwifery programs.. " (SD2-3; SRQ, p. 8). Thus, it is possible to make different applications for practical training in academic units (SD2-4, CR9). In this context:

***Not grading the practical training application, making an oral exam:***

M9: *"We have decided that the final report cards of our 4th and 5th term students will not be evaluated provided only this year, the final exams will be made verbally and recorded via the ERT platform, with live connection and audio and video."*

***Considering the 5-6-week practical trainings that have been done until that day, the remaining part be completed with distance courses, homework, projects, application files, etc.:***

E4: *"They had gone to teaching practice for four weeks. The MoNE said enough internships. My students prepared an event."*

***Evaluation of learning outcomes in ERT***

The decision regarding the examinations of the 2019-2020 academic year "to be determined by the academic units, on the condition that they are transparent, auditable, measurable and documentable, by using alternative methods such as homework, projects, questions, and answers" has been announced to all academic units (SD3-4, CR10).

***Course outcomes in ERT were mostly evaluated with assignments:***

S5: *"I gave assignments. I gave it a few days. It was like a research paper."*

E4: *"I even gave more than one assignment."*

***Reliability could not be ensured in the evaluation of student outcomes in the ERT process:***

S5: *"I prepared the exam for the final. I uploaded it in the morning. I gave it about 12 hours. ..multiple choice, fill in the blanks.. It is very easy to access information on the internet, they can reach the information immediately when they write."*

M10: *"The exam has been canceled and requested again. I prepared 150 questions. ..the questions are already in the hands of the students. By communicating with each other in an interactive way. We will have a very serious problem as the questions are in the hands of the students."*

M9: *"We could not control the students during the exam."*

E4: *"I gave assignments. Enough to read someone's. They learned how to copy and paste."*

VC11: *"I think the measurement and evaluation could not be done completely."*

***Evaluation could not be completed within the stipulated time:*** Exam schedules had to be constantly updated throughout the university (SD3-4), and in this context, the announcement of final grades was delayed (CR14).

***It is unclear to what extent the targeted outcomes are realized in ERT:***

M10: “The grades do not reflect their level of knowledge.. They form a group and communicate during exams. ”

E1: “In this system, you cannot say to the student: pick mushrooms, collect lichens.. They cannot go out anyway. We evaluated them with what they could find on the computer or on the internet. The outcomes we wanted did not happen.”

**Sustainability of ERT**

There are positive/negative aspects of distance education partially experienced within the scope of ERT.

***ERT is an application made out of desperation:***

C7: “It was a crisis process. Was there any other solution?”

E2: “ERT decision was changing my order. I didn't like it. We had to.”

***ERT has protected from contagion in the epidemic:***

F6: “We were in contact in the same studio.. masks wouldn't protect us. This needed.”

En8: “Health comes first. It was a very good decision.”

***ERT has enabled technology-assisted teaching applications to experience:***

M10: “Yes, ERT allowed us to be more intertwined with technology.”

***ERT required unlimited access to learning resources:***

E1: “A presentation file, a slide, a synchronous, asynchronous course, the internet... they do not constitute the main learning resource. The main source is the book. Was there open access to our library?”

***Distance education is an opportunity for student-centered teaching:***

M9: “We have been looking for ways to provide student-centered teaching in medical faculties for a long time. .. we recently found the department of medical education. In this we saw that there is such a field, that there is an alternative that can be shaped in line with the needs of the student.”

F6: “I exemplified virtual exhibitions, how they can visit, how they can exhibit their own works there... the student can create own space, learning space in this system.”

***Distance education eliminates space and time constraints:***

E2: “My group was very satisfied. I have a working graduate group. They wished that it would always be treated like this in the future.”

### **Findings on the *Efficiency* of ERT**

Within the scope of *efficiency*, the *functional use of resources* used for ERT (amount of learning resources, their adequacy, access to resources, use of correction mechanisms,..) and *participation* were associated with sub-themes.

#### **Functional use of resources**

While the number of courses offered by the university with distance education was only four until that time, this number reached 5628 in the first period of ERT (MR, p. 22).

***It is unclear whether enough resources are shared for teaching:*** The number of course materials uploaded to the E-Course system in the relevant period is 59,444. This shows that approximately 11 materials per lesson are shared through the system (SRQ, p. 8; MR, p.22). Considering that the remaining 10-week teaching plan of the university was completed remotely as of April 6, 2020; this number, which shows all materials uploaded to the system, especially virtual course records, written resources (word, pdf, PowerPoint), URL (external resources), can be considered to be quite insufficient.

#### ***It is unclear to what extent students have access to shared resources:***

VC11: “*The fact that the E-Course system is more suitable for desktop use caused our students to have problems watching the course videos afterward.*”

En8: “*The biggest disadvantage for the student; It was a necessity to have a fast internet network, computers where they were.*”

E3: “*Most of them could not access the resources I uploaded; for example, they could not download the course recordings. There is no need to save it somewhere and watch it later. .. most of their lines had a quota.*”

***It was not possible to process user feedback into the system:*** Feedback on educational processes (course, lecturer of the course, education environment, diploma program, service, and general satisfaction level, etc.) at the relevant university is received at the end of each semester or year. This application was also carried out in ERT, and the notifications received but they were not used in decision-making processes for improvement (SRQ, p. 13).

#### **Participation**

In the spring semester of the 2019-2020 academic year, 26,687 students and 868+ lecturers used the E-Course system.

#### ***Only some of the students were able to participate in learning activities simultaneously:***

E3: “*The students did not come, did not attend. We had lessons with two or three..*”

S5: “*I opened a chat session for one hour each week... There was not much participation.*”

E4: “*Most of the students did not come to the live lessons. I did some lessons myself.*”

***It is unclear how much lecturers participate in teaching activities:*** In ERT, the time allocated for face-to-face education could not be matched with the time in the E-Course system. This situation required the additional course fees paid to the lecturers to be discussed and decided separately by the university senate (SD5).

## CONCLUSION, DISCUSSION SUGGESTIONS

It can be considered highly significant that *education* is among the human activities that cannot be postponed during the epidemic period in Turkey, besides health and production. In this study, the first period of ERT, which was put into practice out of “desperation” according to the participants of this research, in order to eliminate the effects of the negative impact of the epidemic on higher education, was analyzed in line with the experiences of the state university in Turkey. Before the epidemic period, an infrastructure for distance education was established in the relevant university, and this structure was experienced in the presentation of some courses in a limited amount; this first ERT experience of the university shows that there are issues to be considered in the future applications.

It has been determined that there are some problems related to the *efficacy* of ERT, including the introduction of the database system, having the necessary technology for the system, and equalizing the teaching time with that in face-to-face education. Although the establishment of a systematic and accessible infrastructure in order to manage the ERT process in the relevant university is rapidly provided the limited distance teaching and learning experiences of the users made it challenging to adapt to the system. In the literature, “creating and sharing quality content in an appropriate language, having hardware and internet access for exchange” is defined as “digital equality” (Willems et al., 2019). It is understood that there are some problems with digital equality in the university evaluated within the scope of this research. Digital (in)equality negatively affected distance education, especially in developing countries (Khlaif et al., 2021). It has been determined that the lack of continuous internet connection is the biggest obstacle to the transfer of the current pedagogical strategy to ERT (Sumardi & Nugrahandi, 2020).

In the study, the effect of ERT on learning outcomes was evaluated as effective; it was understood that the teaching staff continued to use the teaching methods they used in face-to-face education in ERT, and they shared the teaching resources they prepared for face-to-face education over the database system. In the presentation of the practical and laboratory courses, the previously recorded course practices were shared with the students; internship contents could not be adequately realized. At this point, Gares and colleagues (2020) found that the active learning components (interactive seminar, small-group problem-solving sessions, think-work together-share), especially in practice and laboratory courses in ERT increase both participation and learning outcomes. Leung and Chu (2020), on the other hand, report that active learning components are even more critical for students in their first year of higher education, especially in numerical sciences.

The technology-supported teaching area in the virtual classroom used for ERT is not compatible with the teaching area and materials used in the classroom in face-to-face education. This has made it challenging to present the content of the lessons that are written, drawn, and shown on the blackboard, especially in practice-based lessons. Callaghan and colleagues (2009) reported that the virtual learning environment to be provided, especially for engineering education should support advanced social network connections: three-dimensional, where participants can communicate and even socialize.

Despite the efforts to preserve the sameness, the ERT necessitated the revision of the learning outcomes on a course basis and the evaluation criteria to be stretched. This is also emphasized in the research that Gelles and colleagues (2020) completed with data collected from an engineering faculty in the USA. Participants in the study reported that they had to stretch the existing curriculum and evaluation criteria during the transition to ERT.

In the evaluation of learning outcomes in emergency distance education, there have been problems with the reliability of the ones applied for evaluation (assignment or exam). Thus, it is unclear to what extent the learning outcomes targeted for the course are achieved by the students. At this point, Osman (2020) states that alternative evaluation applications (electronic portfolio, research

reports, student presentations...) in ERT should be used together with classical evaluation applications such as homework and exams.

Despite its negativities in teaching and evaluation, ERT has reduced the risk of getting sick due to the epidemic. In terms of instructors, it is a critical gain to have experienced distance education, which is technology-supported, without time and space restrictions, and which is predicted to be student-centered, even with ERT. Kocoglu and Tekdal (2020) determined that the benefits of distance education are its accessibility, flexibility, and resource sharing. According to another study completed in Ireland, ERT is nevertheless positive as it ensures academic continuity. However, the expectation for student achievements in ERT has decreased. This has put pressure on the sustainability of ERT, which is structured on an unplanned construct (Egan & Crotty, 2020).

When the functionality of the application is evaluated in the context of the efficiency of ERT; Although it was determined that the learning and teaching parties could not participate properly, a minimal amount of resources could be shared, and there were some essential deficiencies in the system, it was understood that the necessary corrections or improvements could not be processed instantly into the system. According to Jingrong Xie and colleagues (2021), institutional support and resources should be increased in order for ERT to fulfill the expected role; distance education should be made a compulsory part of the professional development of instructors, and digital equality should be provided for both learners and instructors.

Erhan and Gumus (2020) reported that the impact of the epidemic on education was “chaotic” (p. 198). As a matter of fact, it can be evaluated that there is confusion in the university within the scope of this research. With the findings obtained from the research, the following points should be considered in order to make the application *efficant*, *effective* and *efficient* in case of ERT or continuation of ERT:

1. Digital equality should be provided for ERT. In this direction, readiness should be tested. The technology to be used in ERT should be decided by considering the country, university, users: internet connection, its speed, technology use skills of the users, and having the relevant technology.

2. All academic units of the university should have learning programs that continuously improve the technology and digital skills of teaching staff and students.

3. ERT should be included in the emergency management plans of all universities with functionality that can be activated immediately when needed.

4. Depending on the university's emergency management plan, all academic units affiliated with the university should have their own emergency plans. Academic units should decide for themselves which technological platform they will use in accordance with their teaching processes to be used in emergencies.

5. All academic units should keep the materials and teaching resources (course notes, resource books, virtual courses, laboratory records, etc.) that they will use in ERT ready and up to date so that they can switch to distance education at any time. Academic staff and students of the academic unit should be able to access these resources at any time.

6. The minimum learning criteria for each course and the minimum time to be allocated for learning should be determined by the lecturers of the course. Both lecturers and students should be made responsible for completing these criteria.

7. Whether the course outcomes are acquired properly in ERT should be ensured by measurement and evaluation methods that are supported by alternative evaluation methods, whose validity and reliability are provided, and which can be monitored and audited.

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## **Determining Self-Efficacy Perceptions of Pre-Service Turkish Language Teachers Towards Critical Reading\***

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### **Abstract**

This study aims to reveal the self-efficacy perception levels of pre-service Turkish language teachers towards critical reading and to determine whether these levels vary by various variables. This study draws on a general survey model, which is one of the descriptive research methods. The study group of this research consists of a total of 210 freshman, sophomore, junior, and senior level pre-service Turkish language teachers studying at the Department of Turkish Language Education in the faculty of education at a state university. To collect data, “The Critical Reading Self-Efficacy Perception Scale” developed by Karabay (2013) is used. The findings of this study indicate that the self-efficacy perception levels of the pre-service Turkish language teachers towards critical reading are moderate. Furthermore, the pre-service Turkish language teachers’ self-efficacy perception levels towards critical reading do not significantly vary between the groups in the total score and in the sub-dimensions by variables of gender and academic achievement. Yet, there is a significant difference between the groups in the total score and in the sub-dimensions by variables of grade level and reading frequency. Based on these findings, this study also offers some insights and suggestions for researchers and teaching staff.

**Keywords:** Critical Reading, Self-Efficacy Perception, Pre-Service Turkish Language Teachers

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## INTRODUCTION

The age we live in today is referred to by various names such as technology, informatics, and information age. This age does not require people to make a tremendous effort to reach information. On the contrary, the people of this age are subjected to, so to speak, an “information bombardment.” Rapidly-generated information is presented to people’s service without wasting any time. People need to have certain skills in an environment where access to information is so easy. This entails the ability to question the information obtained and to reach the reliable information required. For that reason, people of this age need to develop critical thinking skills.

Critical thinking is the art of thinking intellectually in a disciplined manner (Paul, 2005, p. 28). According to Kazancı (1989), critical thinking is the whole of behavior, knowledge, and skill processes in judging and evaluating according to scientific, cultural, and social standards based on consistency and validity criteria in the face of a problem. Scriven and Paul (1987) argue that critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action. Critical thinking, which entails questioning and reflection, undoubtedly makes the act of learning more conscious. From this standpoint, Norris (1985) believes that critical thinking, which he describes as an integral part of education, serves as a motor that enables movement in knowledge production.

It is expected from educational institutions and teachers to lead the development of critical thinking skills. Thus, the Strategy Paper for Teachers, which guides the training and employment of teachers in Turkey between 2017-2023, considers one of the ultimate goals of education to create free individuals who are capable of doing research, questioning and critical thinking (MEB, 2017, p. 1). According to Ennis (1991) as cited in Aybek and Çelik (2007, p. 103), the key factor in teaching critical thinking skills is the teacher himself/herself. Teaching aids, including pre-written texts, workbooks, pre-arranged curricula, are used; however, they alone are insufficient to enable learners to develop thinking skills.

The development of critical thinking skills depends on the effective use of understanding skills. Inquiry-based listening/watching and reading skills considerably contribute to the development of critical thinking. “Just as thinking affects language skills, language skills affect thinking. We think through language. Language is the means of thinking. Critical reading is considered a prerequisite for critical thinking” (Aydin, 2020, p. 77).

Since people in the 21<sup>st</sup> century are exposed to written and visual stimuli more than ever before, reading skills have become one of the most essential ways of understanding. Due to the abundance of stimuli, “it is almost a must for individuals to approach texts critically, rather than receiving them without questioning. Therefore, learning the ways to choose and evaluate ideas needs to be an integral part of education in general and reading education in particular” (Ateş, 2013, p. 42). Approaching texts with a critical perspective ensures maximum benefit from the information presented. One may come to wrong conclusions when s/he receives and accepts the information without filtering through information to reach a logical and reasonable decision. In this regard, through critical reading skills, individuals draw on mental skills, such as judgment, comparison, questioning, decision-making and choice-making. Thus, they take an important step in reaching accurate and reliable information.

Critical reading, in its simplest form, is a form of reading based on inquiry. “It is possible to say that critical reading is beyond constructing meaning; it is about making meaning and reacting through questioning” (Ateş, 2013, p. 42). According to Çifçi (2006, p. 56), critical reading means “one’s efforts to find the better and more accurate by filtering through what they read and evaluating what they learn through reading based on their own knowledge and experiences; one’s activities to produce better and more accurate mind products through their readings.” Critical reading allows readers to delve into and make more use of the text. “Critical reading is one’s efforts to understand and

use texts thoroughly. If one is able to make inferences about the content and formal consistency of the text as well as the messages of the author and to decide whether the text is written successfully or not, then s/he has acquired the critical reading skill” (Özpinar et al., 2017, p. 132 as cited in Özden, 2018, p. 305). To be able to do critical reading, a person must be equipped with certain prerequisite skills, which includes:

- Knowing the meaning of the words in the text: It is necessary to know the meaning of the words, as it is not possible to make any criticism without full understanding.
- If a word has multiple meanings, guessing its meaning from the context.
- Distinguishing between the literal and figurative meanings of words.
- Identifying the main idea in the integrity of the text and understanding the development of the main idea and its enrichment with supporting details.
- Describing the text in his/her own words.
- Establishing and comprehending the relationship between parts of the text.
- Understanding the purpose of the author and the target audience.
- Realizing the contradictory, unclear or omitted points, if any, in the text (Özsoy & Akçamete, 1996 as cited in Nas, 2003).

The items listed above are the steps to allow an in-depth understanding of a text. Achieving to follow these eight steps, one acquires competence to read critically. Without a full understanding of the text, one cannot evaluate it with a critical approach.

“The purpose of critical reading is to interpret the work correctly, to grasp the messages of the author and, more importantly, to adopt the right approach towards the text and to free oneself from the guidance of the author and the text” (Çifçi, 2006, p. 57). Critical skill in reading requires one to question a text considering the author’s point of view, the purpose of the text, whether the content is correct, whether the text contradicts itself, whether it contains different opinions, etc., instead of taking the words at face value (Özden, 2018, p. 305).

It is pivotal for individuals to be equipped with critical thinking and critical reading skills, as well as to have an awareness and belief in these skills. Here, it is relevant to mention the concept of self-efficacy.

While explaining the “Social Cognitive Theory” (SCT), Albert Bandura mentions self-efficacy, which refers to one’s considering himself/herself as competent, as one of the premises of his theory. Bandura defines the concept of self-efficacy, which is included in Bandura’s Social Learning Theory for the first time, as beliefs about people’s productive abilities (Bandura, 1994, p. 2). According to Bandura, self-efficacy is one’s belief in one’s own capacity to achieve the required levels of learning and behavior (Bandura, 1977a, 1977b, 1986, 1993, 1997, as cited in Shunk, 2011, p. 105). That is, it is an individual’s judgment about and belief in himself/herself about how successful s/he will be in overcoming potential difficulties in the future (Çakır, 2007, p. 419). Senemoğlu (2011, p. 230) reports that self-efficacy is “not a function of one’s skills. It is a product and an outcome of one’s judgments about what s/he can do using his/her skills.” According to Arseven (2016, p. 63), self-efficacy is an individual’s self-belief or self-judgment to perform an action successfully.” In light of these definitions, self-efficacy can be defined as one’s awareness about his/her ability to solve potential problems in life, to overcome a situation or a task.

Self-efficacy, which expresses the state of individuals seeing themselves as competent in a subject, is the belief in oneself in being able to do a job. This belief positively contributes to one’s

motivation and performance. It is thought that a person's self-efficacy belief will positively affect their ability to cope with problems and develop new strategies. "Self-efficacy beliefs affect the goals individuals set for themselves, how much effort they spend and how long they can face with the difficulties to achieve their goals, as well as their reactions to failure." (Hazır-Bıkmaz, 2004, p. 295).

"The social cognitive theory assumes that self-efficacy beliefs are the most basic motivational structure behind the actions of individuals. Increasing self-efficacy beliefs enhances one's determination and commitment, and allows higher performance." (Kurt, 2012, p. 197). Researchers have ascertained in various studies that self-efficacy is a key factor that increases success (Bandura, 1993; Multon, Brown, & Lent, 1991; Pajares, 1996, 1997; Schunk, 1989, 1991; Schunk & Pajares, 2005; Valentine, DuBois, & Cooper, 2004, as cited in Schunk, 2011, p. 106). Accordingly, students with low self-efficacy may not want to participate in learning activities; instead, they may prefer activities that they think would be successful. It has been reported that students with high self-efficacy outperform different academic tasks compared to other students (Schunk, 2011, p. 107).

Teachers, who are expected to equip students with critical thinking skills, need to have knowledge on, skills and attitudes related to critical thinking. They also need to prioritize students' acquisition of critical thinking skills and be able to apply the necessary methods and techniques to achieve this (Önal & Erişen, 2019, p. 70). Teachers must provide their students with the knowledge, skills and behaviors required by the age. In this regard, it is among a Turkish language teacher's critical duties to develop students' critical reading skills and enable them to acquire critical reading habits. One cannot be expected to help someone else to acquire a skill that s/he does not possess himself/herself. From this perspective, teachers are the ones who first need to acquire critical reading skills so that it could be later acquired by students. Therefore, it is significant to explore the beliefs and judgments of pre-service Turkish language teachers about their critical reading skills and their level of awareness on this.

The literature on the self-efficacy perception towards critical reading presents experimental studies (Çelik et al., 2017; Özbay & Kaldırım, 2015) and descriptive studies as well. These descriptive studies on the self-efficacy perception towards critical reading seek to determine the self-efficacy perception of university students studying outside the faculty of education (Gündüz, 2015; Özden, 2018; Tümen Akyıldız, 2019), of teachers (Küçüköğlu, 2013; Murathan et al., 2017), of pre-service teachers (Akdan, 2016; Aşılıoğlu & Yaman, 2017; Aybek & Aslan, 2015; Bağcı, 2019; Çam Aktaş, 2016; Eskimen, 2018; Karabay et al., 2015; Karasakaloğlu et al., 2012; Kösem, 2020; Küçüköğlu, 2008; Özdemir, 2018; Özden, 2018; Şahin, 2019; Topçuoğlu Ünal & Sever, 2013; Ulu & Avşar Tuncay, 2019) towards critical reading. Among the studies performed with pre-service teachers, the studies by Şahin (2019), Topçuoğlu Ünal and Sever (2013), Akdan (2016) and Özdemir (2018) are carried out only with pre-service Turkish language teachers. Although there are many studies intended to determine the self-efficacy perception of pre-service teachers studying in the various departments of education faculties or receiving pedagogical formation training, research on only pre-service Turkish language teachers is limited. The secondary school level is one of the most important stages for students to develop critical reading skills at an early age. Therefore, Turkish language teachers must acquire this skill in order to provide education in the best possible way. Thus, it is of great importance to determine the current reading skills of pre-service Turkish language teachers by the teaching staff of the field in order to compensate for the skills they lack and train qualified teachers.

### **Research Purpose**

The aim of the study is to determine the self-efficacy perception levels of the pre-service Turkish language teachers towards critical reading and identify whether their perception varies according to certain variables. To that end, this study aims to answer the following questions:

1. At what level are the self-efficacy perceptions of the pre-service Turkish language teachers towards critical reading?

2. Do the scores of the pre-service Turkish language teachers on the Critical Reading Self-Efficacy Perception Scale and on its sub-dimensions vary by gender?
3. Do the scores of the pre-service Turkish language teachers on the Critical Reading Self-Efficacy Perception Scale and on its sub-dimensions vary by grade level?
4. Do the scores of the pre-service Turkish language teachers on the Critical Reading Self-Efficacy Perception Scale and on its sub-dimensions vary by academic achievement?
5. Do the scores of the pre-service Turkish language teachers on the Critical Reading Self-Efficacy Perception Scale and on its sub-dimensions vary by reading frequency?

## **METHOD**

### **Research Model**

To determine the self-efficacy perception levels of the pre-service Turkish language teachers towards critical reading, this study draws on general survey model, which is one of the descriptive research methods. Survey models are research approaches intended to describe a past or present situation as it exists (Karasar, 2012, p. 77).

### **Study Group**

The study group of this research consists of 210 freshman, sophomore, junior, and senior level pre-service Turkish language teachers studying at the Department of Turkish Language Education in the faculty of education at a state university. 148 of the participants are female, whereas 62 are male. Among them, 57 students are freshmen; 51 are sophomores; 53 are juniors, and 49 are seniors. Convenience sampling was used while determining the study group. "A convenience sample is a group of individuals who (conveniently) are available for study" (Fraenkel et al., 2012, p. 99). In this study, the research was conducted with Turkish teacher candidates studying at the university in the province where the researchers are located.

### **Data Collection Tool**

"The Critical Reading Self-Efficacy Perception Scale" developed by Karabay (2013) was used for data collection. This 5-point Likert-type scale with 41 items consists of 3 sub-dimensions: visual, research-investigation and evaluation. The Cronbach's Alpha internal consistency coefficients of the dimensions are, respectively, .69, .78 and .91. The Cronbach's Alpha coefficient calculated for the whole scale is .91. And the Cronbach's Alpha coefficient calculated for the whole scale in this study is .86. The Cronbach's Alpha coefficient calculated for the sub-dimension of evaluation is .79, for the sub-dimension of research-investigation it is .78, and for the sub-dimension of visual it is .60.

### **Data Collection**

Data were collected by the researchers from 210 freshman, sophomore, junior, and senior level pre-service Turkish language teachers studying at the Department of Turkish Language Education in the faculty of education at a state university. The pre-service teachers were informed during the data collection process performed in the classroom. The average time for each student to respond to the scale was 10-15 minutes.

### **Data Analysis**

The data collected were analyzed through the SPSS 22.00 package software. Prior to the tests, normality tests were carried out for each variable on the data. Parametric tests were conducted for the cases where a normal distribution was identified; in other cases, square root and logarithmic

transformations were used. Also, nonparametric tests were performed in cases where normality could not be ensured through these transformations. Based on the variables identified in this study, the following analyses were carried out:

Descriptive statistics were used to determine the pre-service Turkish language teachers' self-efficacy perception levels towards critical reading. Mann-Whitney U test was performed on the total score of the scale as well as its sub-dimensions to find out whether the scores of the pre-service Turkish language teachers on the scale vary by gender. Kruskal-Wallis H test was used for the total score for the variables of grade level, academic achievement and reading frequency whilst One-Way ANOVA and Kruskal-Wallis H tests were conducted for its sub-dimensions depending on normal distribution. To determine the intervals of reading frequency, the frequency asserted by Yılmaz (2004) referring to American Library Association (1978) was followed in this study.

Wherever a difference was found between the groups, further analyses were carried out to determine which group/groups lead to such difference and for which group. To that end, in the cases where normality could not be achieved, pairwise comparisons through Mann-Whitney U test were made to identify the groups between which there was a difference. In the cases where normality was achieved, Post Hoc analyses were conducted for multiple comparisons. Tukey test was performed when variances were equal; further, when this test failed to identify the difference, LSD test was carried out. Also, Tamhane's T2 test was applied in cases where variances were not equal.

## FINDINGS

Below are the findings regarding the self-efficacy perception levels of the pre-service Turkish language teachers towards critical reading and on whether their self-efficacy perception levels varied by gender, grade level, academic grade point average, and book reading frequency or not.

### Findings on the Self-efficacy Perception Levels of the Pre-service Teachers

This study first attempted to determine the self-efficacy perception levels of the pre-service teachers on critical reading. The results of the descriptive statistical analyses performed for this purpose are given in the table below:

**Table 1. Results of Descriptive Statistical Analyses on the Self-efficacy Perception Levels of the Pre-service Teachers**

	N	Min.	Max.	$\bar{X}$	Ss
Total	210	96	218	160.14	19.68
Valid N (listwise)	210				

Table 1 shows that the average of the scores of the pre-service teachers regarding their self-efficacy perception levels on critical reading is 160.14. That is, the self-efficacy perception levels of the pre-service teachers on critical reading are moderate.

### Analyzing the Self-efficacy Perception Levels on Critical Reading by Variable of Gender

Findings on whether the pre-service Turkish language teachers' scores on the Critical Reading Self-Efficacy Perception Scale varied by gender or not are presented below.

**Table 2. Results of Independent Samples t-test on the Self-efficacy Perception on Critical Reading by Variable of Gender**

Gender	N	$\bar{X}$	S	df	t	p
Female	148	160.56	19.98	208	.49	.63
Male	62	159.11	19.04			



Table 2 indicates that the self-efficacy perception levels of the pre-service teachers on critical reading did not significantly vary between the groups by gender ( $t_{(208)}=.49$ ,  $p>.05$ ).

Findings on whether the pre-service Turkish language teachers' scores on the sub-dimensions of the Critical Reading Self-Efficacy Perception Scale varied by gender or not are presented below:

**Table 3. Results of Mann-Whitney U Test on the Sub-Dimensions of Critical Reading Self-Efficacy Perception Scale by Variable of Gender**

Sub-dimensions	Gender	N	Mean Rank	Sum of Ranks	U	p
Evaluation	Female	148	106.69	15790	4412	.66
	Male	62	102.66	6365		
	Female	148	102.54	15175.50	4149.50	.27
	Male	62	112.57	6979.50		
Research-Investigation	Female	148	108.57	16069.00	4133	.25
	Male	62	98.16	6086.00		

As observed in Table 3, there was no a significant difference between female and male students in all three dimensions ( $p>.05$ ).

#### Analyzing the Self-efficacy Perception Levels on Critical Reading by Variable of Grade Level

Findings on whether the pre-service Turkish language teachers' scores on the Critical Reading Self-Efficacy Perception Scale varied by variable of grade level or not are presented below.

**Table 4. Results of Kruskal-Wallis H Test on the Self-efficacy Perception on Critical Reading by Variable of Grade Level**

Grade Level	N	Mean Rank	sd	X <sup>2</sup>	p	Significant difference
Freshman	57	84.09	3	14.30	.00	(1-3), (1-4), (2-3)
Sophomore	51	98.74				
Junior	53	122.40				
Senior	49	119.17				

Table 4 demonstrates that the self-efficacy perception levels of the pre-service teachers on critical reading significantly varied between the groups by variable of grade level ( $X^2_{(3)}=14.30$ ,  $p<.05$ ). The results of Mann-Whitney U-tests, which were performed to trace the source of this difference, show that this difference was between 1<sup>st</sup>-3<sup>rd</sup> (freshman-junior), 1<sup>st</sup>-4<sup>th</sup> (freshman-senior) and 2<sup>nd</sup>-3<sup>rd</sup> (sophomore-junior) grade levels.

Findings on whether the scores of the pre-service Turkish language teachers on the sub-dimensions of the Critical Reading Self-Efficacy Perception Scale varied by grade level or not are presented below:

**Table 5. Results of One-Way ANOVA Test on the Dimensions of Evaluation and Research-Investigation of Critical Reading Self-Efficacy Perception Scale by Variable of Grade Level**

Sub-dimensions	Sources of Variation	Sum of Squares	Sd	Mean square	F	P	Significant difference
Evaluation	Between groups	1586.65	3	528.88	2.78	.04	(1-3),(1-4)
	Within groups	39247.27	206	190.52			
	Total	40833.92	209				
Research-Investigation	Between groups	883.92	3	294.64	9.57	.00	(1-3), (1-4), (2-4)
	Within groups	6342.50	206	30.79			
	Total	7226.42	209				

Table 5 indicates that there was a significant difference between the groups in the sub-dimensions of evaluation and research-investigation by grade level ( $p < .05$ ). The effect size calculated through the test on the sub-dimension of evaluation ( $\eta^2 = .038$ ) means that this difference was at a low level. First, Tukey test was applied to determine which groups significantly differed. As Tukey test failed to achieve this, LSD test was conducted. The results of the LSD test for multiple comparisons show that the significant difference was between 1<sup>st</sup> and 3<sup>rd</sup> (freshman-junior) as well as 1<sup>st</sup> and 4<sup>th</sup> (freshman-senior) grade levels. The effect size calculated through the test on the sub-dimension of research-investigation ( $\eta^2 = .12$ ) means that this difference was at a high level. The results of the Tukey test for multiple comparisons show that the significant difference was between 1<sup>st</sup>-3<sup>rd</sup> (freshman-junior), 1<sup>st</sup>-4<sup>th</sup> (freshman-senior) and 2<sup>nd</sup>-4<sup>th</sup> (sophomore-senior) grade levels.

Kruskal-Wallis test was applied to identify a potential significant difference between the groups in the sub-dimension of visual by grade level. The relevant findings are presented below.

**Table 6. Results of Kruskal-Wallis H Test on the Sub-dimension of Visual by Variable of Grade Level**

Grade Level	N	Mean Rank	sd	X <sup>2</sup>	p	Significant difference
Freshman	57	82.48	3	15.48	.00	(1-2), (1-3), (3-4)
Sophomore	51	109.94				
Junior	53	127.22				
Senior	49	104.16				

Table 6 demonstrates that there was a significant difference between the groups in the sub-dimension of visual by grade level ( $X^2_{(3)} = 15.48$ ,  $p < .05$ ). The results of Mann-Whitney U tests, which were performed to trace the source of this difference, show that this difference was between 1<sup>st</sup>-2<sup>nd</sup> (freshman-sophomore), 1<sup>st</sup>-3<sup>rd</sup> (freshman-junior), 1<sup>st</sup>-4<sup>th</sup> (freshman-senior) and 3<sup>rd</sup>-4<sup>th</sup> (junior-senior) grade levels.

### **Analyzing the Self-efficacy Perception Levels on Critical Reading by Variable of Academic Achievement**

Findings on whether the pre-service Turkish language teachers' scores on the Critical Reading Self-Efficacy Perception Scale varied by academic grade average or not are presented below.

**Table 7. Results of Kruskal-Wallis H Test on the Self-efficacy Perception on Critical Reading by Variable of Academic Achievement**

Grade Average	N	Mean Rank	sd	X <sup>2</sup>	p
1-1.99	7	98.64	2	.18	.915
2-2.99	134	106.63			
3-4	69	103.99			

Table 7 shows that the self-efficacy perception levels of the pre-service teachers on critical reading did not significantly vary between the groups by academic grade point average ( $X^2_{(2)} = .18$ ,  $p > .05$ ).

Findings on whether the pre-service Turkish language teachers' scores on the sub-dimensions of the Critical Reading Self-Efficacy Perception Scale varied by academic achievement or not are presented below:

**Table 8. Results of Kruskal-Wallis H Test on the Sub-dimensions of Evaluation and Visual in the Critical Reading Self-Efficacy Perception Scale by Variable of Academic Achievement**

Sub-dimensions	Grade Average	N	Mean Rank	sd	$X^2$	p
Evaluation	1-1.99	7	96.93	2	.18	.92
	2-2.99	134	106.35			
	3-4	69	104.72			
Visual	1-1.99	7	56.71	2	4.94	.09
	2-2.99	134	108.53			
	3-4	69	104.57			

As observed in Table 8, there was no significant difference between the groups in the sub-dimensions of evaluation and visual by academic achievement ( $X^2_{(2)}=.18$ ,  $p>.05$ ).

One-way ANOVA test was performed to determine whether there was a significant difference between the groups in the dimension of research-investigation by academic achievement. The relevant findings are presented below.

**Table 9. Results of One-Way ANOVA Test on the Dimension of Research-Investigation by Variable of Academic Achievement**

Sources of Variation	Sum of Squares	Sd	Mean Square	F	P
Between groups	67.88	2	33.94	.98	.38
Within groups	7158.54	207	34.58		
Total	7226.42	209			

Table 9 indicates that there was not a significant difference between the students in the sub-dimension of investigation-research by academic grade point average ( $F_{(2-207)}=.98$ ,  $p>.05$ ).

### Analyzing the Self-efficacy Perception Levels on Critical Reading by Variable of Reading Frequency

Findings on whether the pre-service Turkish language teachers' scores on the Critical Reading Self-Efficacy Perception Scale varied by reading frequency or not are presented below.

**Table 10. Results of Kruskal-Wallis H Test on the Self-efficacy Perception on Critical Reading by Variable of Reading Frequency**

Reading frequency	N	Mean Rank	sd	$X^2$	p	Significant difference
1-5 books	35	74.91	2	14.66	.00	All groups
6-11 books	95	103.18				
12 books or more	80	121.64				

Table 10 shows that the self-efficacy perception levels of the pre-service teachers on critical reading significantly varied between the groups by variable of reading frequency ( $X^2_{(2)}=14.66$ ,  $p<.05$ ). The results of Mann-Whitney U tests, which were performed to trace the source of this difference, show that this difference was between all frequency groups.

Findings on whether the pre-service Turkish language teachers' scores on the sub-dimensions of the Critical Reading Self-Efficacy Perception Scale varied by reading frequency or not are presented below.

**Table 11. Results of One-Way ANOVA Test on the Dimension of Evaluation by Variable of Reading Frequency**

	Sources of Variation	Sum of Squares	Sd	Mean Square	F	P	Significant difference
Evaluation	Between groups	2462.53	2	1231.27	6.64	.00	(1-5)-(12 and more)
	Within groups	38371.39	207	185.37			
	Total	40833.92	209				
Research-Investigation	Between groups	437.29	2	218.65	6.67	.00	(1-5)-(12 and more)
	Within groups	6789.13	207	32.80			
	Total	7226.42	209				

It is clear from Table 11 that there was a significant difference between the students in the sub-dimension of evaluation by reading frequency ( $F_{(2-207)}=6.64$ ,  $p<.05$ ). The effect size calculated through the test on the sub-dimension of evaluation ( $\eta^2=.06$ ) means that this difference was at a moderate level. The results of Tamhane's T2 multiple comparison test show that the significant difference was between those who read 1-5 books and those who read 12 and more books per year. There was a significant difference between the groups in the dimension of research-investigation ( $F_{(2-207)}=6.67$ ,  $p<.05$ ). The effect size calculated through the test ( $\eta^2=.06$ ) indicates that this difference was at a moderate level. The results of the Tukey test for multiple comparisons show that the significant difference was between those who read 1-5 books and those who read 12 and more books per year.

**Table 12. Results of Kruskal-Wallis H Test on the Sub-dimension of Visual by Reading Frequency**

Reading frequency	N	Mean Rank	sd	$X^2$	p	Significant difference
1-5 books	35	81.20	2	7.49	.02	(1-5)-(6-11)
6-11 books	95	106.93				(1-5)-(12 and more)
12 books and more	80	114.43				

Table 12 demonstrates that there was a significant difference between the groups in the dimension of visual by variable of reading frequency ( $X^2_{(2)}=7.49$ ,  $p<.05$ ). The results of Mann-Whitney U tests, which were performed to trace the source of this difference, show that this significant difference was between (1-5)-(6-11) and (1-5)-(12 and more).

## CONCLUSION AND DISCUSSION

The findings of this study indicate that the self-efficacy perception levels of the pre-service Turkish language teachers towards critical reading are moderate. This finding overlaps with the findings of the studies on pre-service teachers in the literature (Akdan, 2016; Bağcı, 2019; Karabay et al., 2015). On the other hand, some studies (Aşılıoğlu & Yaman, 2017; Aybek & Aslan, 2015; Çam Aktaş, 2016; Eskimen, 2018; Küçüköğlu, 2008; Özdemir, 2018; Özden, 2018; Topçuoğlu Ünal & Sever, 2013) have concluded that the self-efficacy perception levels of the pre-service teachers towards critical reading are high; also, the study by Karasakaloğlu et al. (2012) reports that the self-efficacy perception levels of the pre-service teachers studying in the department of primary education towards critical reading are low. As for the findings of the studies performed only with the pre-service teachers in the department of Turkish language teaching, the results of the study by Akdan (2016) are similar to that of this present study. Nevertheless, Özdemir (2018) and Topçuoğlu Ünal and Sever (2013) revealed that the self-efficacy perception levels of the pre-service Turkish language teachers towards critical reading are high.

Overall, the fact that the pre-service Turkish language teachers' self-efficacy perception levels are not low is a positive finding. However, considering the professional requirements, pre-service Turkish language teachers can be expected to have higher self-efficacy perception levels towards critical reading.

Also, the findings of this study show that the self-efficacy perception levels of the pre-service teachers towards critical reading did not vary by gender. Some studies in the literature (Aybek & Aslan, 2015; Bağcı, 2019; Çam Aktaş, 2016; Özdemir, 2018; Topçuoğlu Ünal & Sever, 2013; Ulu & Avşar Tuncay, 2019) have similarly found out that the self-efficacy perception levels towards critical reading did not differ by gender. Nevertheless, certain studies (Akdan, 2016; Aşılıoğlu & Yaman, 2017; Eskimen, 2018; Karabay et al., 2015; Kösem, 2020; Özden, 2018) have reported a significant difference in favor of female students between female and male students. The findings of this study overlaps with the findings of the studies by Topçuoğlu Ünal and Sever (2013) and Özdemir (2018) on pre-service Turkish language teachers; however, Akdan (2016) has reported a significant difference in favor of female students. This study further did not find any significant difference in the self-efficacy perception levels towards critical reading in the sub-dimensions of evaluation, research-investigation and visual by gender. Other studies that employed the same scale have ascertained a significant difference between female and male students in the dimension of visual (Şahin, 2019), in the dimensions of evaluation and visual (Aşılıoğlu & Yaman, 2017), and in the dimensions of evaluation and research-investigation (Kösem, 2020).

The tests performed in this study to determine whether the self-efficacy perception levels of the pre-service teachers towards critical reading varied by grade level or not indicate that there is a significant difference between the groups. The analyses applied to determine the source of this difference demonstrate that this significant difference is between 1<sup>st</sup> and 3<sup>rd</sup> grades in favor of 3<sup>rd</sup> grade, between 1<sup>st</sup> and 4<sup>th</sup> grades in favor of 4<sup>th</sup> grade, between 2<sup>nd</sup> and 3<sup>rd</sup> grade in favor of 3<sup>rd</sup> grade. This finding is supported by other studies as well (Akdan, 2016; Topçuoğlu Ünal & Sever, 2013). Some scholars in the literature (Aybek & Aslan, 2015; Eskimen, 2018; Karabay et al., 2015; Özdemir, 2018; Şahin, 2019) conclude that there is no significant difference between grade level and self-efficacy perceptions towards critical reading. The results of the analyses on the difference imply that a significant difference mostly occurs when the difference between grade levels increases and that self-efficacy perception levels towards critical reading are high in the senior grades. This may result from the fact that as grade level increases, the qualified reading skills of students improve, depending on the department they study at. However, Topçuoğlu Ünal and Sever (2013) have reported that the self-efficacy perception levels of the junior-level students in the department of Turkish language teaching are higher than the levels of the senior-level students. Among the studies with pre-service Turkish language teachers, the studies by Akdan (2016) and Topçuoğlu Ünal and Sever (2013) argue that there is a difference between grade levels; furthermore, Özdemir (2018) and Şahin (2019) claim that there is no significant difference between grade level and self-efficacy perception levels towards critical reading.

The findings of the tests conducted to determine whether there is a significant difference in the sub-dimensions by grade level reveal that there is a difference between 1<sup>st</sup> and 3<sup>rd</sup> grade in favor of 3<sup>rd</sup> grade, as well as between 1<sup>st</sup> and 4<sup>th</sup> grade in favor of 4<sup>th</sup> grade in the sub-dimension of evaluation; between 1<sup>st</sup> and 3<sup>rd</sup> grade in favor of 3<sup>rd</sup> grade as well as between 1<sup>st</sup> and 4<sup>th</sup> grade in favor of 4<sup>th</sup> grade and between 2<sup>nd</sup> and 4<sup>th</sup> grade in favor of 4<sup>th</sup> grade in the sub-dimension of research-investigation. Moreover, a significant difference is identified between 1<sup>st</sup> and 2<sup>nd</sup> grade in favor of 2<sup>nd</sup> grade as well as 1<sup>st</sup> and 3<sup>rd</sup> grade in favor of 3<sup>rd</sup> grade and between 3<sup>rd</sup> and 4<sup>th</sup> grade in favor of 3<sup>rd</sup> grade in the sub-dimension of visual. It is notable that as grade level increases, the self-efficacy perception levels in the sub-dimensions are mostly higher.

The analyses performed to determine whether the self-efficacy perception levels of the pre-service Turkish language teachers significantly vary by academic grade point average, reveal that there is no significant difference between the groups with different academic achievement success. This implies that the self-efficacy perception levels of the students do not vary depending on academic achievement. Yet, Karabay et al. (2015) have reported a significant difference between the self-efficacy perception levels of pre-service teachers and their academic achievement. Indeed, there is a significant difference between the students with a grade point average of 1.99 and below and those with a grade point average of 3.00 and above in favor of 3.00 and above.

Further, the findings of the tests conducted to determine whether there is a significant difference in the sub-dimensions (evaluation, research-investigation, and visual) by academic grade point average reveal that there is no significant difference in all sub-dimensions. The lack of a significant difference in academic achievement in this study may result from the fact that all of the participants are students in the department of Turkish language teaching, entered into the university based on the same type of grade and thus had similar reading backgrounds. Indeed, Karabay et al. (2015) included students from different departments in the faculty of education in their study.

Also, the analyses performed to determine whether the self-efficacy perception levels of the pre-service Turkish language teachers significantly vary by reading frequency, reveal that there is a significant difference between all reading frequency groups. This finding overlaps with the findings of other studies (Akdan, 2016; Aşılıoğlu & Yaman, 2017; Aybek & Aslan, 2015; Eskimen, 2018; Şahin, 2019; Topçuoğlu Ünal & Sever, 2013). This difference is between the groups who read 1-5 books and 12 books and more books for the latter; between those who read 6-11 books and 12 books and more books for the latter; and between those who read 1-5 books and 6-11 books for the latter. For that reason, as reading frequency increases, the self-efficacy perception levels towards critical reading increase too. The findings of the studies performed only with the Turkish language teachers (Akdan, 2016; Şahin, 2019; Topçuoğlu Ünal & Sever, 2013) support this finding.

This study further ascertains a significant difference between the groups in the sub-dimension of evaluation by reading frequency. This difference is between those who read 1-5 books and 12 books and more books for the latter. Furthermore, there is a significant difference between the groups in the sub-dimension of research-investigation by reading frequency. This difference is between those who read 1-5 books and 12 books and more books for the latter.

Lastly, a significant difference is identified between the groups in the sub-dimension of visual by reading frequency. The analyses performed to determine the source of this difference show that this difference is between the groups (1-5) and (6-11) for the latter and between (1-5) and (12 and more) for the latter.

Reading is one of the best activities to develop thinking and evaluation skills, to distinguish between good and bad, right and wrong. Critical reading is closely related to advanced reading skills and culture. This can explain the finding that self-efficacy perception levels towards critical reading increase as reading frequency increases.

Based on its findings, this study proposes the following suggestions to improve self-efficacy perception levels towards critical reading and critical reading skills:

- Self-efficacy perception levels of students in different educational levels towards critical reading need further investigation.
- It is necessary to perform training and practices in undergraduate education to gain critical reading skills for pre-service teachers.
- Future studies need to focus on improving students' critical reading skills and seeking to determine their effects on student achievement and perceptions.
- Future studies need to investigate whether self-efficacy perceptions towards critical thinking predicts success in critical reading and understanding.
- Further correlational research is necessary to study critical listening, critical reading and self-efficacy perceptions towards critical reading.

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## **The Growth of Independent Education Alternatives in New Zealand**

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### **Abstract**

The New Zealand schooling system is well-known for its progressive and innovative approach to education (Couch, 2012; Mutch, 2013; Wells, 2016). Their national curriculum is inclusive and flexible, allowing schools and teachers to select the content they deem necessary to meet the competencies in the designated learning areas (Ministry of Education, 2007). Additionally, the NZ education system provides choice to parents by offering a range of alternative approaches to schooling, such as Steiner Schools, Montessori Schools, Catholic Schools, or Kura Kaupapa Māori (Māori language immersion schools). Within such progressive public schooling system, one would not expect that there would be interest in alternative private schools. Yet, this study found the opposite. To examine the growing interest in independent alternative programs in New Zealand, this study uses a qualitative multiple-case study design of four independent educational programs in the North Island of New Zealand.

**Keywords:** Alternative Education, Progressive Education, Holistic Education, Independent Schools, Private School

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## INTRODUCTION

Alternative education is often used to describe approaches to education that are different from those offered in mainstream schools (Riddle & Clever, 2017, Woods & Woods, 2009). It refers to education programs funded by the government for students who have been alienated from mainstream education (Conley, 2002; Vaughan, 2002; Wasburn-Moses, 2011), and to schools (private or public) that use flexible and innovative approaches to curriculum and pedagogy, such as Steiner, Montessori, and democratic schools (Rudge, 2010). The New Zealand schooling system provides diversity and choice for parents and students through different pathways within the public system (Vaughan, 2002). Parents can choose to enroll their children in mainstream state school, state-integrated schools such as Steiner, Montessori, and Catholic Schools, or Kura Kaupapa Māori (Māori language immersion schools). The different pathways offered in the New Zealand schooling system reflects their progressive liberal ideas. New Zealand has a long history of progressive education. Some of the key tenets of progressive education, such as child-centered, experiential learning, emergent curriculum, and creativity are present in various classrooms in New Zealand schools (Mutch, 2013). With such progressive schooling system, one would not expect any interest in alternative private schools. Yet, this study found the opposite—a growing interest in this sector. To examine the increasing attention to independent alternative programs in New Zealand, this study uses a qualitative multiple-case study design of four recently-launched independent educational programs in the North Island of New Zealand.

The New Zealand schooling system is well-known for its progressive and innovative approach to education (Couch, 2012; Mutch, 2013; Wells, 2016). Their national curriculum is inclusive and flexible, allowing schools and teachers to select the content they deem necessary to meet the competencies in the designated learning areas (Ministry of Education, 2007). The curriculum provides guidance on effective pedagogy, frames teaching as an on-

going inquiry, and allows schools to determine their own assessment methods. NZ education system is at the forefront of innovation. Recently, the government has invested millions of dollars to change the architectural design of school buildings into open flexible spaces to encourage change and innovation in pedagogical practices (Fletcher & Everatt, 2021; New Zealand Government, 2018). When I moved to New Zealand in 2018, I was excited with the opportunity to learn more about their flexible learning environments and innovative pedagogical practices. I have always been interested in alternative approaches to schooling and was thrilled to be in a country that promoted such progressive approach to education at a national level. As I began my investigation, I was surprised to find a group of educators “working to revolutionize education in New Zealand” through alternative independent (private) schools and programs (Ed Innovators NZ). Why were they interested in creating alternative private schools in a country that already offered such innovative education to students? Why would parents be willing to pay for a private alternative school when the public system already offered a liberal and progressive education? What are these private programs offering that the public system is not delivering? These questions led to the present study, a qualitative multiple-case study design of four recently-launched independent educational programs in the North Island of New Zealand.

### **Alternative Education, Alternative Schools**

Alternative education is often used to describe approaches to education that are different from those offered in mainstream schools (Riddle & Clever, 2017, Woods & Woods, 2009). Alternative education programs come in many varieties and can be found in public, charter, and independent schools, as well as home-based learning environments. In countries such as US, Australia, and New Zealand, alternative education has a twofold meaning. On one hand, alternative education refers to education programs funded by the government for students who have been alienated from mainstream education (Conley, 2002; Vaughan, 2002; Wasburn-

Moses, 2011). ‘At-risk’ and disadvantaged students are often sent to these programs as an ‘alternative’ to reengage them into the schooling system. On the other side of the spectrum, the term ‘alternative schools’ refers to schools (private or public) that use flexible and innovative approaches to curriculum and pedagogy, such as Steiner schools, Montessori schools, democratic schools, and open schools (Rudge, 2010).

The rise of ‘alternative schools’ is often traced back to Dewey and the progressive movement of 1920s (Conley, 2002), although others would argue that the movement has its roots in the educational theories of Rousseau, Pestalozzi, and Frobel (Miller, 1990; Forbes, 2003). Each alternative school has its own distinct profile, however, most of them embrace some of the following characteristics—they provide an option for students, parents, and teachers; they are committed to be more responsive to the educational needs within the community than conventional school; they have more comprehensive goals, are more flexible and responsive to feedback and change, and are smaller than conventional schools (Conley, 2002). Alternative schools also tend to be more attuned to the child’s needs instead of following “narrow age-classified groups” (Kraftl, 2013), they value learning as “imminent to life itself” (Falk et al, 2009) and regard meaningful and personalized relationships as essential in education (Rudge, 2010, 2016). The most common and widely spread alternative approaches to schooling are Steiner schools, Montessori schools, democratic/free schools, Quaker/Friends schools, open schools, and homeschool (Rudge, 2010). Kraftl (2013) also includes forest schools, care farms, and human scale schools as alternative schooling contexts. Most of these alternative approaches to schooling are privately funded and independent from government control, however, in countries such as the US, Australia, and New Zealand, some of these alternative models of education have been incorporated into the public system.

## **Alternative Education Pathways in New Zealand**

The New Zealand schooling system provides diversity and choice for parents and students through different pathways within the public system (Vaughan, 2002). The schooling system includes state<sup>1</sup> schools, state-integrated schools (formerly private schools), Kura Kaupapa Māori (Māori language immersion schools), senior school transition pathways (vocational pathways)<sup>2</sup>, and alternative programs for ‘at-risk students.’ All children in New Zealand aged six to sixteen years old must either attend school or be educated at home. Most children start school when they turn five after attending some form of early childhood education. Children are usually expected to attend a school in the zone where they live but some schools, such as state-integrated schools and Kura Kaupapa Māori, accept children from other zones. All Catholic schools, most Steiner (Waldorf) and Montessori schools, and the ‘short-lived’ charter schools (2014-2018) are state-integrated schools. These schools were integrated into the system without compromising their philosophical and pedagogical approach to education. They are designated as ‘special character schools.’

The different pathways offered in the New Zealand schooling system reflects their progressive liberal ideas. New Zealand has a long history of progressive education. Since 1930s, progressive education ideas have influenced education policy as well as the curriculum and pedagogy in New Zealand schools (Couch, 2012). Some of the key tenets of progressive education, such as child-centered, experiential learning, emergent curriculum, holistic pedagogy and creativity are present in various classrooms in New Zealand schools (Mutch, 2013). In the last decade, New Zealand has been through education policy reforms that

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<sup>1</sup> Public schools in New Zealand are called state schools. Both terms are used in this article interchangeably.

<sup>2</sup> The senior school transition pathway includes diverse vocational pathways. Schools often “steer low achieving students into vocationally, rather than academically, oriented programmes” (Vaughan, 2002, p.14).

threatened their progressive ideals, like Tomorrow's Schools<sup>3</sup> and the introduction of national standards<sup>4</sup> in 2010. Nonetheless, despite the changes many classrooms continued to exhibit the key tenets of progressive education (Mutch, 2013). This is due in part to the flexibility of the *New Zealand Curriculum* (Ministry of Education, 2007). The curriculum provides “descriptive statements about each curriculum area with a set of overarching achievement objectives but with freedom for schools and teachers to select the content that they felt would best help students achieve these objectives” (Mutch, 2013, p.108). Additionally, the curriculum provides guidance on effective pedagogy, frames teaching as an on-going inquiry, and allows schools to determine their own assessment methods. All state and state-integrated schools follow the *New Zealand Curriculum*, Kura Kaupapa Māori have their own distinct curriculum, and private schools are not required to follow the national curriculum. About 95% of New Zealand children attend state or state-integrated schools or Kura Kaupapa Māori. Under 5% attend private/independent schools and less than 1% are homeschooled (The school system, n.d.).

### **Theoretical Framework**

The theoretical constructs of holistic education informed the data collection and analysis of this study. Holistic education emerged as a response to the dominant worldview of mainstream education (Rudge, 2010). Holistic educators advocate for an education that values the child's inner potential, nourishes its possibilities of development, and allows its “self-unfolding” to occur naturally (Flake, 1993; Miller, 1990). They recognize that every person is a unique being with inherent qualities, potentialities, and needs, and with a singular way to interact and respond to reality (Flake, 1993; Miller, 1990; Miller, 2006). Holistic educators

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<sup>3</sup> During mid-to-late 1990s, New Zealand education system changed from a centralized and democratic system of education to a decentralized system that fostered competition between schools (O'Connor & Holland, 2013). Although many schools continued to embrace progressive education ideals, others changed into more conservative institutions (McGregor & Mills, 2012; Nairn & Higgins, 2011).

<sup>4</sup> In 2010, the National party introduced a policy of National Standards in reading, writing, and mathematics for Years 1-8. In 2017, with the new government, the National Standards were removed.

focus on development of the whole child—cognitive, emotional, physical, social, aesthetic, and spiritual (Miller, 2014)—and regard caring and positive relationships as the foundation for learning, social life, and social justice (Noddings, 2005, 2013).

Proponents of holistic education argue for a curriculum that integrates the various domains of knowledge, fosters connections and relationships, and prepares students to live in a global interconnected society (Clark, 2001; Miller, 2019). They call for an education that nurtures authentic connections with the natural world, cultivates ecological awareness, and promotes sustainability (Clark, 1991; Miller et al., 2019; Nava, 2001). Furthermore, holistic educators reject any form of standardized approach to education and argue instead for an education that begins with the child, with the ‘living reality’ of each individual (Rudge, 2010). They believe children should have autonomy and freedom of choice in the learning process and be able to freely and safely express their thoughts and ideas (Forbes, 2003; Miller, 2002). Finally, advocates of holistic education refuse to accept a rigid authoritarian system ruled by economic, social, or cultural power (Eisler, 2000; Koegel & Miller, 2003; Miller, 1993, 2002; Nava, 2001). Instead, they call for ‘participatory democracy,’ where citizens are empowered to participate in meaningful ways in the community, society, and the planet. They argue for an education that values egalitarian, open, and democratic relationships (Eisler & Miller, 2004).

### **Methods of Inquiry**

This study used a multiple-case study design (Yin, 2014). The design involved four case studies—two independent schools and two private outdoor programs. The main research question guiding this study was: What is motivating the recent growth of alternative independent schools and programs in New Zealand?

Criteria for selecting the case studies included: 1) the school/program is independent of the public system; 2) the school/program is relatively new (research was conducted in 2019); 3) the school/program has a holistic/progressive approach to education; 4) the school is



not affiliated with well-established holistic institutions<sup>5</sup> (e.g. Steiner or Montessori schools); and 5) the school/program is situated in North Island of New Zealand (convenience sampling). Three schools and two outdoor programs were invited to participate in the study. One school declined to participate. This research project was approved by the University of Auckland Human Participants Ethics Committee on July 4, 2019 (ref. 023246).

### *Participants*

The four case studies included in this study were: Ako, a full primary<sup>6</sup> independent school for children 5-13 years old; AGE, an independent school for children 5-14 years old; The Forest School (FS), a One Day School designed for primary and middle school students (5-15 years old); and Conscious Kids (CK), a One Day outdoor program for children 5-12 years old. 7 founders, 2 principals, and 1 educational advisor participated in the focus groups: Ako founder (n=1) and principal (n=1); AGE founders (n=2) and principal (n=1); CK founders (n=2); and FS founder (n=1) and educational advisor (n=1). 50 students participated in the interviews: Ako (n=9), AGE (n=5), CK (n=12), FS (n=24). 70 parents completed the Qualtrics online questionnaire: Ako (n=7), AGE (n=20), CK (n=7), and FS (n=36). Letters of support from 20 CK parents, previously sent to the institution, were also included in the data analysis.

### *Data*

Data was collected July-August, 2019 and included four focus groups with founders/principal (one in each institution), semi-structured interviews with students, online parent questionnaire, letters of support from parents (from one institution), school documentation, and observation notes. The semi-structured interviews with students were aimed at collecting their perspective of the program. The online parent questionnaire included demographic and

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<sup>5</sup> Steiner and Montessori schools have a long history in NZ education system and many of them have been integrated into the state system. The focus of this study is on the recent growth of alternative schools.

<sup>6</sup> The New Zealand school system is organized as: primary school (Years 1-6 = ages 5-11); full primary school (Years 1-8 = ages 5-13); intermediate/middle school (Years 7-8 = ages 10-13); and secondary school (Years 9-13 = ages 13-18).

open-ended questions related to reasons for choosing the selected program (see appendix A). Focus groups and interviews were audio recorded and transcribed. Founders of the four institutions gave permission to disclose their names and the institution's name in publications of this study.

### *Data Analysis*

Data were analyzed qualitatively using the grounded theory methodology (Glasser & Strauss, 1967). Data collected from each school/program unit (e.g. founders, parents, and students) were analyzed separately and coded inductively generating a series of categories. Through constant comparative analysis (Corbin & Strauss, 2008), categories were revised and refined and then integrated into core categories. Once the core categories were defined, I revisited the data and reviewed the coding for accuracy.

### **Findings**

Analysis of the data resulted into 29 sub categories collapsed into six core categories: learning environment, learning approach, agency, human development, relationship, and dissatisfaction with public schools (see table 1). Findings of each case study is discussed below.

Table 1 <i>Coding categories</i>			
CORE CATEGORIES	SUB CATEGORIES		
Learning Environment	Indoor space Mixed-age/flexible schedule	Outdoor/connection to nature Low teacher/student ratio	Local community
Learning Approach	Ecological awareness Real life learning	Play-based learning Low tech	Creative arts Academics
Agency	Freedom of choice Problem-solving/innovation	Self-directed learning Personalized learning	
Human development	Whole child development	Resilience	Social/emotional skills
Relationship	Peers	Teachers-students	School community
Dissatisfaction with public schools	Lack of support/resources; Standardized education Large classrooms Difficulties adapting to school	Old education model Bullying Rigid rules of behavior	Excessive sitting time Not challenging

## Case I – Ako

Ako is a full primary independent school for children 5-13 years old located on the North Shore of Auckland. Ako opened in February 2018 in one of the classrooms on the Marae<sup>7</sup> grounds. The school had 12 children enrolled when data was collected (July, 2019). Ako prides itself for being a “future-focused primary school,” that is play-based, child-led, passion-driven, and outdoor centered (<https://www.akospace.com>). The school offers a low teacher-student ratio in a mixed-age learning environment and uses the community as a learning space. Children spend two days a week in a bush site near the school, go to the local library regularly, use the facilities of the local YMCA, and visit local cultural spaces. Parents are encouraged to participate, contribute, and share their knowledge, skills and interests to the school community.

Ako was founded by Sabrina Nagel, an entrepreneur, lecturer and mother “who had a strong desire to create a space that would re-imagine learning for her twin daughters” (school documentation). Claudia Grey, Ako principal and lead teacher and former primary public-school teacher, was also involved in the early development of the school. Both Sabrina and Claudia were not satisfied with the state schools in New Zealand. They criticized the actual implementation of the innovative ideas promoted in mainstream education, arguing that the inquiry-based and self-directed learning encouraged in state schools are in fact very teacher driven. Claudia also pointed out that teacher-student relationships are still very top-down and hierarchical in state schools and teachers remain the ‘bearers of knowledge.’ Moreover, she condemned the excessive emphasis on academics and assessment, and the continuous comparison and pressure placed on students. In her view, NZ state schools place undue focus on cognitive, social and physical development, and neglect children’s emotional and mental

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<sup>7</sup> A marae is a fenced-in complex of carved buildings and grounds that belongs to a particular iwi (tribe), hapū (sub tribe) or whānau (family) in New Zealand.

wellbeing. In response, both Sabrina and Claudia wanted to create a school that focused on the development of the whole child and its wellbeing, nurtured respectful, caring, and egalitarian relationships, and honored children's agency, creativity, and self-directed learning. Finally, Sabrina and Claudia wanted to have a school in an urban center with access to municipal resources and local parks to further children's connection with nature and the local community.

### *Student Response*

Most students at Ako participated in the interviews (n=9). The majority of them were very young (5-6 years old) and had never been to NZ state schools. Only two students who participated in the interview had been to state schools prior to Ako. The themes that emerged most often during their interviews were—*relationship*, *learning approach*, and *agency*. Several students commented that everyone was friendly at Ako, that it was easy to make friends, and they loved playing with their friends. Others spoke fondly of the teachers, that they were very nice and caring. Students talked about their favorite activities at Ako—play, draw, paint, listen to stories, read, go to the library and the bush, and build huts with friends (*learning approach*). *Agency* was another consistent theme in the interviews. Students liked the freedom of eating when they felt hungry (as opposed to mainstream schools), playing with objects and games they chose, and deciding the activities they wanted to do. Finally, students who attended public schools prior to Ako complained about the large size classes, 'boring' activities, and experiences with bullying.

### *Parent Response*

Most parents at Ako responded to the online questionnaire (n=7). There were many reasons why parents chose Ako for their children, however the reasons most frequently cited were *outdoor/connection to nature*, *self-directed learning*, and *play-based learning*. All parents

cited the outdoor program as a reason for choosing Ako for their children. They valued nature and outdoor play in children's education and appreciated that Ako designated long periods of time for outdoor activity. As one parent commented:

Ako recognizes the importance of nature - I strongly believe that the connection to nature will be key to changing the mindset of this generation in enabling them to care for the planet and develop an economic and lifestyle model that respects the world around us. Without the connection to nature, it becomes purely academic which holds less motivation.

Parents (n=7) were also interested in the *self-directed learning* offered at Ako. They appreciated the individualized and personalized learning environment, and the autonomy afforded to children to direct their own learning. Parents liked the *freedom* children have at Ako and the *choices* offered to them. Most parents (n=6) mentioned *play-based learning* as a reason for choosing Ako and several of them (n=5) commented on the attention to *whole child development*. They wrote, Ako provides "a truly holistic approach to education," focused on nurturing and developing "a well-rounded child" (Ako online questionnaire) Another theme cited frequently was the *school community*. Parents (n=4) appreciated being involved in the school, the support they received on parenting issues, and the close relationship with like-minded parents. Other themes that attracted parents to Ako were *low teacher-student ratio*, the development of *social and emotional skills*, the low focus on *technology*, the emphasis on *real life learning* and *problem-solving skills*, the respectful interaction between *peers*, and the *mixed-age* learning environment. Some parents were critical of the state system. They disliked the testing culture in public schools, the disregard for children's differences, and the standardized curriculum. Additionally, they argued that the NZ mainstream education is not equipping children for the future. As one parent wrote:

The more I learned about education for primary school children, the more nervous I felt about sending my child to the local school. I believe that the current school system is not providing our children the skills they will need to be successful in the future.

## **Case 2 – AGE**

AGE is an independent school for children 5-14 years old (Year 1-10) located in a large two-story building in Takapuna, north of Auckland. AGE was established in February 2017 with 12 students enrolled. Their enrollment quickly increased to 38 in the first year. In 2018, they restructured the school and reduced the enrollment to 20 students, which remained the same till data was collected (August, 2019). The learning space is beautifully decorated, warm and inviting, and organized into mixed-age groups. AGE prides itself in offering a “revolutionary approach to education” focused on the development of skills needed “for a changing future” (<https://www.age.school.nz/vision>). The program has a strong emphasis on entrepreneurial learning, innovation, environmental awareness, community participation, and wellbeing. They offer a low teacher-student ratio and provide individualized learning plans for children according to their needs, strengths, and passions. All outdoor activities and sports are provided in partnership with the local industries. Students engage in long-term community-integrated projects and individual ‘passion’ projects.

AGE was founded by Evan Christian and Katherine Allsopp-Smith. They envisioned a school where “children fall in love with the thrill of learning, find the magic in making mistakes, and have the confidence to dream and master new technologies” (school documentation). Similar to Sabrina and Claudia, Evan and Kat were dissatisfied with mainstream education in New Zealand. They criticized the purpose-less activities, the lack of relevance to real life, the excessive stress on academics and sports, and the competition to be at the top of the chart. They condemned the ‘one-size-fits-all model’ and the rigid rules of

behavior in NZ schools and argued, “kids have to fit in, those that not fit in, they get detention or they get expelled, or they get to the bottom of the class” (focus group transcript). They were also critical of the early childhood centers and kindergartens in New Zealand, calling them “babysitting centers” with old fashioned traditional methods that fail to engage kids in effective learning. Evan and Kat wanted to create a school that promoted active learning, innovation, entrepreneurial thinking, and engaged students in authentic and meaningful real-life projects. They envisioned an education that nurtures students’ wellbeing, fosters caring relationships, encourages personalized learning, and supports the local community.

### *Student Response*

Only 5 students at AGE participated in the interviews, 2 young children (ages 5-6) and 3 teenagers. Students’ stressful experiences in previous schools might have contributed to parent reluctance to give consent for their children to participate in the study. Analysis of the interviews show that young children appreciated the flexibility of the *learning environment*, the possibility to move around the building instead of just sitting in one classroom, the freedom to play with Lego at certain times of the day, and the opportunities for active learning (*play-based learning*). The older students also appreciated the open space that allowed them to move around, and the opportunity to work in the community instead of being confined to a school building (*learning environment*). They enjoyed the *freedom* to choose their passion projects and cherished the *creative arts* and *real-life learning activities*. As one student commented, “at this school we get to learn differently. It is a good thing. I feel much more happy learning this way” (interview transcript). The older students reported feeling safe, respected, and happy at AGE, as opposed to their previous schools, where they were bullied, unmotivated, and unhappy. Finally, students reported working well with adults, and having good relationships at AGE (*relationships*),

### *Parent Response*

The majority of parents at AGE responded to the online questionnaire (n=20). *Dissatisfaction with public schools, low-teacher student ratio, personalized learning, and teacher-student relationship* were the most common reasons parents gave for enrolling their children at AGE. Most of them (n=17) wrote about their *dissatisfaction with public schools*. They criticized the *standardized system of education* and the *lack of support/resources* to cater to student individual needs, which they argued, resulted in their children being unhappy, bored, and disengaged at school. A few parents mentioned that the learning environment was *not challenging* enough for their son. Others commented on how *bullying* in the school was affecting the mental health of their kids. A parent stated that his son was suffering from “anxiety, stress, severe loneliness, and lack of self-esteem because he was being picked on by other kids in the class” (online questionnaire). Parents were also dissatisfied with the *large and overcrowded classrooms* and the *old education model* of state schools.

Many parents (n=14) cited AGE *personalized learning* approach and its *low-teacher student ratio* as a reason for choosing the school. They also commented on the flexibility of the curriculum, the self-pace learning environment, and the opportunity given to students to follow their interests. As one parent wrote, my son “is often described as ‘outside the box’ and the teachers at AGE seem to understand him and what is required to get the best out of him” (AGE online questionnaire). Overall, parents seemed very pleased with the teachers at AGE. Half of the parents in the study (n=10) identified the positive *teacher-student relationship* as a distinct feature of AGE. They commented that teachers were caring, kind, positive, and nurturing; they understand students’ needs and know how to respectfully relate with them. Parents also were also pleased with the positive *school community* and the welcoming environment for families.



Several parents (n=7) cited *real-life learning* and the focus on *whole child development* as reasons for choosing AGE. They appreciated the interactive and more ‘hands on approach’ to learning and the emphasis placed on the wellbeing of the child. Two parents commented that their children’s confidence have grown at AGE as they felt valued, understood, and free to be themselves. Some parents (n=6) cited *self-directed learning* as a positive feature of AGE. They appreciated that students had the opportunity to explore their interests and passions. Finally, parents were also pleased with the *indoor space*, the *outdoor learning* opportunities, the use of the *community* as part of the learning environment, and the *mixed-age* groupings offered at AGE. They liked that students were grouped based on their skills and competencies rather than separated by age.

### **Case 3 – The Forest School (FS)**

The Forest School is an independent One Day School located in a beautiful wooded property by the beach in the North Island of New Zealand. FS provides “learning opportunities that connect children with nature in bush, shoreline, island, and ocean environments” (school documentation). It is designed for students 5-15 years old, who are either homeschooled or enrolled in a state or private school. In New Zealand, “One Day Schools are independent education providers that offer specialized learning. The Education Act 1989 allows for this provision, and in 2016 The Forest School became the first nature-based One Day School in New Zealand” (<https://www.theforestschool.co.nz/>). Students at FS attend once a week, regularly every week. Students enrolled in regular schools need an approval letter from their teacher and principal to participate in the program. Students spend 100% of the time outdoors, regardless of the weather. They engage in discovery learning, free play, and in authentic, real-life learning opportunities. FS approach is flexible, adaptive, and responsive to the needs of the child (school documentation). It is grounded on six education propositions—emergent

curriculum, place-based education, education for sustainability, te Whare tapa Whā (Māori concept of health and wellbeing), free-play, and relationship-based learning.

FS was founded by Gavin and Tennille Murdoch, two experienced educators. The school started with a small class of six children in 2016 and rapidly grew to over a hundred students. 54% of the students enrolled had some kind of learning disability. Tennille had been a teacher in the public system for over 20 years before starting the FS. She too was critical of NZ state schools. She mentioned the excessive focus on testing and benchmarks and the pressured placed on young children. She criticized the absence of engaging activities in public schools and their inability to cater to every child. As a response, Gavin and Tennille wanted to create an alternative pathway for children with learning opportunities that were more holistic, experiential, and engaging; a space where children felt safe, valued, and empowered. They envisioned a school where children would enjoy freedom of choice, engage in self-directed learning and real-life learning opportunities that connects them with the natural environment and the working world. Nonetheless, instead of opening a full-time school, they opted for creating a One Day School.

### *Student Response*

24 children at FS participated in the interviews, 17 young children, ages 5-9 and 7 older kids, ages 9-12. Some students were homeschooled while others attended a regular school the other four days of the week. Six children expressed *dissatisfaction with the regular school*. Two of them mentioned being bullied at school while the other four disliked the *rigid rules of behavior* and the lack of freedom in schools. FS *learning approach* was the theme that emerged most often in the interviews. Several children mentioned that they like to engage in *real life learning*, such as building huts, working with tools, making materials, cooking, and building fires. The young children loved the *play-based learning* approach at FS. They talked

about their favorite activities, like playing in the mud, at the beach, climbing trees, swimming, and playing games. Playing with friends (*relationship with peers*) was also among children's favorite activities. As one child commented, "I like to come here more than my school because at my school, I don't have any friends...but at Forest School I made more friends" (FS interview transcript). Having *agency* in the learning activities was an important factor for the older kids while the young ones appreciated the freedom of choice offered at FS. The teenagers talked excitedly about the problems they had to figure out by themselves. One of them noted, "at school they give you examples of problems, here you actually face them." Another one commented, "we do a lot of trial and error, we go through, do a problem and if someone does something bad, we slack a rule on it. Like the knife example we had before, we did a rule for that" (FS interview transcript). Finally, children reported great enjoyment for being *outdoor and connecting with nature*.

#### *Parent Response*

36 parents at FS completed the online questionnaire. 25 parents cited the *outdoor* environment and *connection to nature* as reasons for enrolling their children at FS. Parents' explanations included—a desire to provide their children "with real authentic connection to nature," give them "a chance to be outdoors, away from devices and traditional structured learning," and "extend [them] physically in a way that is not constrained by or structured like traditional physical and sports activities carried out at school" (FS online questionnaire). *Agency* was also important for FS parents (n=19). They liked the "free range learning," the opportunities for free play, self-discovery, outdoor exploration, and creativity. One parent wrote, at FS "they can express themselves in more spontaneous ways and engage with information without having to produce written reports about it" (FS online questionnaire). Parents also appreciated the opportunities for *self-directed learning* and *problem-solving* to help "build independence, confidence, creativity, and problem solving" skills (FS online questionnaire).

Several parents (n=26) chose FS because of its focus on *Human development*. They commented on the opportunities afforded to children to develop self-confidence, *social and emotional skills* and *resilience*. One parent noted, “what Forest School has done for our son, we cannot put into words. He is completely able to be himself. Present, not rushed, not compared to others with unachievable deadlines” (FS online questionnaire).

Many parents (n=17) appreciated the FS *learning approach*. They liked the *real-life learning* activities, the opportunity for *outdoor play-based learning*, and the prospect for developing *ecological awareness*. They (n=9) also valued the positive *teacher-student relationship* at FS and the opportunity for their children to make new friends. Finally, several parents (n=10) expressed *dissatisfaction with the public system*. Five of them reported that their children had *difficulties adapting to school*; they struggled, misbehaved, were bullied, and in the end, dreaded to go to school. Other parents criticized the *rigid rules of behavior* of public schools, the *old educational model*, and the excessive time that children are expected to be *sitting in classrooms*.

#### **Case 4 – Conscious Kids (CK)**

Conscious Kids is a One Day Outdoor Program for children 5-12 years old. CK does not have a permanent location, instead it offers the program in public parks across the North Island of New Zealand. Their aim is to connect “children and families with the natural world right outside their doorstep” (school documentation). CK started the One Day Program in 2016 for homeschoolers but quickly attracted families with children in regular schools. At the time of the interview (July, 2019), CK was operating in 8 different locations. CK provides a full day, 9am-3pm, nature-based experience through unstructured free play. They offer a low adult to child ratio in a mixed-aged setting. Students attend regularly once a week. Children have “the opportunity to make their own choices and follow their own interests and curiosities within a

framework of respect for those around them and the environment” (<https://www.consciouskids.co.nz/one-day-programmes>). They engage in a variety of activities throughout the day, such as building huts, starting a fire, climbing trees, cooking, carving, playing games, exploring the surroundings, and engaging with arts. Educators observe, extend children’s thinking, and document their learning through photos and stories. They recognize the natural environment as the ‘third teacher’ with endless opportunities for problem-solving, creativity, risk-taking and increased self-confidence.

CK was founded by three moms, Maria Mariotti, Rita Pontes, Harriot Brown (deceased), “who wanted to give their children a free-range childhood” experience in nature (school documentation). Maria is an Italian-born experienced yoga and mindfulness teacher and Rita a Brazilian-born graphic and interior designer. Maria and Rita wanted to create an outdoor program where children would connect with nature, engage in free play, be encouraged to take risks, and be creative. They envisioned a program that would promote self-awareness and awareness of the community, the natural environment, and the world. CK grew naturally and organically, attending the needs of the community. Yet, it expanded grew rapidly and today, CK offers a One Day Program, a Holiday Program, programs for public schools, and professional development for educators.

### *Student Response*

12 children age 5-9 participated in the interview. *Relationship with peers* and being *outdoors* were the themes that most frequently emerged during the interviews. Children loved to be in the nature, build huts, climb trees, and play in the mud; they treasured talking, playing, and being with their friends. They also liked to invent different imaginary scenarios, have *freedom* to choose their own activities, engage in *self-directed learning*, and have the autonomy to test their own abilities and limitations. As one child commented, “they tell me where the

boundaries are and show me what I can do. I can climb high if I really know I can do it...it is annoying at school because you are only allowed to climb as high as **they** seem safe” (bold added, CK interview).

### *Parent Response*

Data collected from CK included response to the online questionnaire from 7 parents and letters of support from 20 parents that were previously sent to the institution. These letters of support, written in November 2018, were addressed to Auckland City Council to support the continuation of CK programs in public parks. Data analysis show that most parents (n=21) regard the *outdoor* environment, *connection to nature*, and development of *ecological awareness* as very important to their children’s education. Parents wrote:

“In a time of increased screens and digital babysitters, Kiwi kids are at risk of losing touch with nature and their place in it.”

“We are part of nature after all, and what better way to preserve that connection than to get our children involved in nature from literally the grass roots up. We need to make sure that as many children as possible feel a visceral bond with the land and this comes from first-hand experience of the mud, the plants, the magnetism of life that can be felt in a field, a tree, a pond.”

“This programme has taught him so much about the environment and how to protect and learn from it. He has begun to appreciate nature in a way that he never did before”  
(letters of support)

Parents (n=9) were also very supportive of *play-based learning*. They believed “learning happens in every situation and all through life,” and regarded unstructured and nature-based play as key elements in children’s development (CK online questionnaire). 10 parents cited

*agency* as an important feature of CK. They appreciated children having the freedom to explore the environment, engage in self-directed learning, and solve problems. They valued that their children were “learning skills that are practical for life, in a non-threatening, inspiring environment” (FS letters of support). 9 parents chose CK for the opportunities afforded for *self-development* and *resilience*. They noted that at CK, children have greater opportunity to develop self-confidence, self-esteem, and resilience as they are encouraged to be themselves, take risks, and challenge themselves. Finally, 4 parents reported that their children were struggling in their regular school because of the school’s *rigid rules of behavior*. One parent wrote:

We have had issues with Ben (pseudonym) at school since he started in 2016...There is nothing in place to make allowances for Ben or children like Ben. If you don't fit in the mold then your child is going to struggle. After 3.5 years at school, Ben's self-esteem was at his lowest...We wanted to avoid rock bottom, so I decided to try a 1-day programme which I had researched...Ben has been attending Conscious kids for 3 weeks and is a much happier child on pick-up and actually talks about having an epic day. Ben has even gone the whole day while at Conscious kids with no medication...Ben's school experience is doing more damage than good expecting the same from him as they expect from other children with no mental disability (online questionnaire).

## **Discussion**

This study explores some of the motives driving the growth of alternative independent schools and programs in New Zealand in recent years. Findings of this study indicate five key themes as motivators for parents and founders to seek alternative educational options for their

children—dissatisfaction with public schools, learning environment, learning approach, agency, human development, and relationship.

### *Dissatisfaction with Public Schools*

Despite New Zealand's progressive and innovative approach to education (Couch, 2012; Mutch, 2013; Wells, 2016), founders and parents in this study were not happy with NZ state schools. Ako, AGE, and FS founders were quite critical of NZ state schools. They argued that the current system focused too much on academics and assessment at the expense of the child's wellbeing, causing growing anxiety and mental health issues. Founders were also dissatisfied with the learning approach of mainstream schools. Although they recognized the efforts of NZ schools to promote inquiry and project-based learning, they argued that the projects promoted in schools are still very teacher driven and students have limited opportunity to engage in authentic self-directed learning. In their view, despite all innovation, NZ public schools still regard teachers as the bearers of knowledge and the chief authority in the room. Finally, founders and parents alike criticized the one-size-fits-all-model of education and the rigid rules of behavior in NZ public schools. As AGE founders commented, "kids have to fit in, those that not fit in, they get detention or they get expelled, or they get to the bottom of the class" (focus group transcript). Many parents stated that the public system was failing their children, causing them to be stressed and anxious about school. They argued that public schools do not have adequate support and resources for 'kids that do not fit into their system.' Findings from this study corroborate with Kearney's (2009) research, who found that many students with special needs were being excluded from and within the NZ school system in a number of ways. Other studies show that many students experience alienation in NZ mainstream schooling and end up either outside the public system, if they are in Years 1-8 or in alternative education programs for 'at-risk' students (Kearney, 2009; Nairn & Higgins, 2011; Schoone, 2017).



Every year approximately 3500 young people aged 13–16 years access alternative education in New Zealand. Access to alternative education occurs through a formal process of alienation, a term used, and underscored on official forms, by New Zealand’s Ministry of Education (2012). This process triggers after students receive multiple suspensions, are excluded due to gross misconduct or demonstrate continued truanting behaviours (Schoone, 2017, p.810).

As noted in this study, many students had stressful experiences in mainstream schooling, which led parents to look for alternative education programs. Thus, alternative education programs, be them public or private, in the end, they tend to become refuges for students dealt poorly by mainstream schools (Nairn & Higgins, 2011).

### *Learning Environment*

The outdoor learning environment was a distinct feature across the institutions.<sup>8</sup> Ako, FS, and CK programs (and AGE to a certain extent) were designed to nurture children’s authentic connections with the natural world, foster ecological awareness, and promote sustainability (Miller 2019; Nava, 2001). The outdoor learning environment offered by these institutions appealed to many parents, who were unhappy with the rigid rules of public schools where children had to sit for extended periods of time. Parents wanted their kids to have the opportunity to play and connect with nature, disconnect from screens, and move freely outdoors. As one parent noted, “children should be moving their bodies, shouting, swinging, climbing, painting, and not sitting still on a mat being quiet” (online questionnaire). Parents were also interested in the benefits usually associated with outdoor learning, like risk-taking, team working, social skills (Harris, 2017), competence, autonomy, and resilience (Egan, 2020). The interest in outdoor programs found in this study follows the growing trend of

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<sup>8</sup> Students at AGE went to Forest School once a week during summer term.

families seeking outdoor learning opportunities for their children. The growth of Forest Schools worldwide (Forest School Foundation, 2020), the spread of Free Forest Schools across the US (Free Forest School, n.d), the rise of Green Schools in other countries ([www.greenschool.org](http://www.greenschool.org)), and the countless number of outdoor programs around the world reflect this growing trend.

### *Learning Approach & Agency*

All founders were committed to offering an education that promoted meaningful and authentic learning opportunities through real-life experiences. They endorsed a holistic approach to learning that values community participation, nurtures connections and relationships, and prepares students to live and actively participate in a global interconnected society (Miller, 2006; Miller 2019). Founders and parents alike viewed children as naturally curious and regarded play as a legitimate way of learning (Taylor & Boyer, 2020). Similar to holistic educators (Miller, 1993, 2002; Flake, 1993), Ako, AGE, and FS founders rejected any form of standardized education and believed instead in an education that valued and nurtured the uniqueness of each child. Their programs offered personalized learning opportunities to students and used their low teacher-student ratio to cater to student's individual needs. The personalized program offered at these schools attracted many parents, especially those who were dissatisfied with the standardized system of public schools. The possibilities for self-directed learning and the freedom afforded in these institutions were features that also interested parents. Many of them sought these programs to give their children a space where they could discover and pursue their interests, freely be themselves, speak their mind, and explore their passions. In other words, parents saw in these programs an opportunity for their children to exercise agency in their own learning (Reeve & Tseng, 2011).

### *Human Development*

Similar to proponents of holistic education (Miller, 2014; Miller et al., 2019), founders and parents valued an education that focused on the whole development of the child. They disliked the narrow focus of public schools that prioritized cognitive and physical development. In response, the founders were committed to providing an environment that nurtured children's psychological, emotional, cognitive, social, and physical wellbeing. They offered an education that valued children's wholeness (Miller, 2014), recognized their multiple intelligences (Gardner; 2011; Goleman, 2013, 2020), and nurtured their strengths as opposed to focusing on their weaknesses. The holistic approach provided by these institutions attracted many parents, especially those whose children were struggling in the public system. Several of them reported improvements in their children's anxiety, level of stress, self-confidence, and self-esteem after participating in these programs.

### *Relationships*

Founders, parents and students recognized the importance of caring and positive relationships in education (Noddings, 2005). Ako, AGE, and FS founders disapproved the strict rules of behavior and the top-down relationships in public schools. They argued that schools should be a space where students feel safe and cared for and not afraid to speak up. They believed in an education that nurtures respectful and egalitarian relationships between teachers, students, and families and values everyone's contribution. (Eisler, 2000). Parents and students alike were pleased with the safe and caring learning environment provided at these institutions. Students reported making friends easily and feeling respected by them. Parents felt valued and welcomed, appreciated the sense of community promoted by the schools, and were pleased with how the teachers interacted with their children. As an AGE parent comment, "We found

the teachers to be the most caring, academic and insightful we have ever met... [our son's] confidence is growing and he now loves school" (online questionnaire).

## **Conclusion**

This study explored the motives that led NZ founders and parents seek education alternatives for their children. Findings suggest that the 'progressive' schooling system of New Zealand has its pitfalls as any other mainstream schooling. Participants in this study—founders, parents, principals, and students—were unhappy with NZ state schools. They condemned the excessive focus on academics, the lack of attention to children's wellbeing, the 'one-size-fits-all model that excludes students that 'do not fit in,' the hierarchical structure, and the teacher-centered approach. Findings also suggest that NZ state schools, despite their progressive and innovative reputation, are not attending the aspirations of parents who wish for a more holistic and democratic approach to education. Those parents yearn for an education that focuses on whole child development, caring relationships, and experiential/self-directed/outdoor learning; and they are willing to pay for it, either full-time or one day a week.

To conclude, the increasing interest in alternative independent schools and programs in New Zealand indicates a growing dissatisfaction with its mainstream schooling, despite its reputation of being the "learner's paradise," as Wells (2016) would call it. It also suggests that the NZ state system may not be as progressive and holistic as some parents would expect.

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## **APPENDIX A**

### Online Parent Questionnaire – Ako & Age Schools

#### *Demographics*

1. What school do your child/children attend?
2. How many child/children do you have at this school?
3. What is the year level of the child/children enrolled in this school?
4. Were your child/children enrolled in a state school prior to this school?

#### *Open-ended questions*

5. If you answered yes to the previous question, why did you withdraw your child/children from the state school?
6. Why did you choose this school for your child/children?
7. What does this school offer that is not offered in state schools?

### Online Parent Questionnaire – Forest School & Conscious Kids

#### *Demographics*

1. What outdoor program do your child/children attend?
2. How many child/children have you enrolled in this program?
3. What is the year level of the child/children enrolled in this program?
4. Which school do your child/children attend, state, private, or other?
5. Which school do your child/children attend? Please specify if you have child/children in different schools.

#### *Open-ended questions*

6. Why did you choose to enroll your child/children in this program?
7. What does this program offer that is not offered in your child/children's schools?