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Investigation of 21st Century Teaching Skill Levels of Classroom Teachers

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Abstract

Many dramatic changes have been observed in the quality and quantity of knowledge and skills, as well as in the form of access to and transfer of information in the 21st century. It is important to identify the skill levels of the classroom teachers who are responsible for educational activities in primary schools for maintaining an effective educational process. The aim of this study is to examine the classroom teachers' 21st century skills in terms of various variables. An explanatory sequential pattern of mixed research methods was used in the study. The quantitative data of the study were collected from 268 classroom teachers determined by convenience sampling method, and the qualitative data were collected from 20 classroom teachers determined by maximum sampling method. The quantitative data of the study were collected using the 21st Century Teaching Skills Scale developed by Orhan-Göksün (2016) and the qualitative data were collected through an interview form prepared by the researchers consisting of seven questions. The quantitative data were evaluated by descriptive statistics, Mann-Whitney U-Test and Kruskal Wallis H-test using SPSS 22 program. The qualitative data were analyzed by the content analysis method using Nvivo 11 program. The quantitative findings of the study revealed that the participants “generally” benefited from the 21st century teaching skills in the classroom. It was also found that they used confirmatory teaching skills at the most and flexible teaching skills at the least in the sub-dimensions of the scale. The results of the study showed that the 21st century skills of classroom teachers do not differ significantly in terms of age, gender, seniority in the profession and educational level. However, there were significant differences in terms of gender in the flexible teaching sub-dimension; in terms of age and seniority in the profession in technopedagogical and consenting skills sub-dimensions. The qualitative findings of the study revealed that the classroom teachers often reinforced the positive behaviors of their students, made the necessary work to ensure that students respect individual differences, kept observation records about the basic skills of their students, determine the classroom rules together with their students, prepared worksheets and authentic materials, used technological devices to enrich teaching and organized educational and social activities for students.

Keywords: 21st Century Teaching Skills, Classroom Teachers, Teacher Competencies.

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INTRODUCTION

The 21st century has brought about numerous changes and innovations in health, industry, economy, social life and especially in education along with new approaches and different perspectives. Teachers were deemed as a source of information when the internet was not common and even accessing to the library and books was limited. However, following the rapid development of technology, it is possible to access all kinds of information online, and the role of the teacher in the teaching process is irrevocably changed. In this new educational approach, the teacher plays the role of a guide or a mediator who encourages the student to learn, reach different sources of information, help the student with the newly learned knowledge and to use it in daily life.

In the past, students were considered as *tabula rasa* to record and process knowledge. In addition, each student was assumed to be the same and a single-level teaching was conducted without reckoning individual differences. The school was almost the only place where education was provided. The process of education was thought to take place as an activity of people coming to school at certain age intervals (Öğretir Özçelik and Eke, 2020, p.233). However, in the 2023 Educational Visionary Document, it was emphasized that education could be realized in the 21st century not only in the school but also in the class, home, media, street and everywhere else, and that every individual in the society should make learning a lifestyle (MEB, 2018, p.24). In short, with the rise of new educational approach in the 21st century, education was emancipated from school buildings, engendering the concept of “education everywhere”. It was also freed from certain age intervals, giving birth to the concept of “lifelong learning”.

Advancements in nanotechnology, artificial intelligence, robotic technologies and genetics will lead to a wide range of socio-economic, geopolitical and demographic changes in the near future. Therefore, needs for some professions will increase while some will face extinction. It is estimated that approximately 65 % of the children who are currently attending to primary school will work in professions that do not exist at the moment (WEF, 2016). Hence, it is crucial to adapt to such important changes that are expected to occur soon and to educate and equip the students with appropriate skills for the countries in the future. In order to raise individuals in accordance with the developments and innovations in the 21st century, it is necessary to know the requirements of the 21st century teaching skills and to have these skills.

As a result of the innovations occurring in the 21st century, sometimes called as information age, curriculums and qualifications of the teachers who apply these programs have been changed and redefined. The most important reason that is effective in changing the teacher qualifications is that the qualities of learners have also undergone changes. For this reason, it has been reported that teachers should be re-trained in accordance with the newly formed learning qualities and that teachers working in the existing system should improve their skills and capabilities (Taşgın, 2020, p.207).

Pedagogy, curriculum, class rules and school climate are key factors in the development and monitoring of 21st century skills. The class is the primary environment in which knowledge is acquired and skills are developed and increased at the largest extent. In addition, the class is a place where students observe that these skills are modeled by their teachers and they can practise these skills by themselves. For this reason, it is essential that teachers are well-prepared for teaching the 21st century skills and the dissemination of these skills (Kim, Raza and Seidman, 2019, p.110). The success of the teachers and the quality of their education depends on many factors. The 21st century teaching skills can be expressed as one of these factors (Kozikoğlu and Özcanlı, 2020, p.271). It should be ensured that the teachers are prepared for the 21st century understanding and skills by providing effective participation in all innovative practices in the field of education (Tutkun and Aksoyalp, 2010, p.363).

The seven golden skills of the 21st century were listed by Wagner (2008) as follows (quoted by Kıyasoglu and Çeviker Ay, 2020, p.241):

1. Critical thinking and problem solving,
2. Cooperation between systems and individuals and leadership,
3. Astute intelligence and adaptation,
4. Entrepreneurship and taking initiatives,
5. Effective oral and written communication,
6. Access to and analysis of information,
7. Curiosity and imagination.

Critical thinking and problem solving skills refers to testing the accuracy of the information obtained, questioning what this information will work for and using the information correctly in solving the problem. Cooperation between systems and individuals and leadership skills include capabilities to adapt to the system of which people are part, to learn from each other by cooperating, and to obtain information about different cultures and to accommodate these cultures. The astute intelligence and adaptation skills encompasses the ability to produce quick, new and creative solutions to the problems encountered in learning environments or real life, to adapt to cultural change and to renew oneself in line with these changes (Wagner, 2008, quoted by Orhan Göksün and Kurt, 2017, p.4). The entrepreneurship and initiative skills mean that individuals are required to use self-management and self-control strategies to obtain information and overcome the difficulties in their business life, and to take initiatives that direct learning and business life about their interests. Effective verbal and written communication skills include active use of speaking and writing through printed or digital media. The ability to access and analyze information entails the skills that students need to overcome the information overload seen in the 21st century (Orhan Göksün and Kurt, 2017, p.4). Curiosity means being willing to reach information, to detect the problems and to solve them while imagination means having a broader mind and perspective in situations of interpreting and synthesising information, and finding solutions to problems.

Orhan Göksün (2016) examined the 21st century teacher skills by categorizing them under the titles of “General Teacher Competencies of MEB”, “ISTE Standards for Teachers”, “49 Techniques of Effective Teaching” and “How to Be Good Teacher ”. In our country, the Ministry of National Education has divided the *teacher competencies* into six groups: Personal and professional development, student recognition, process of learning and teaching, monitoring and evaluation of learning and development, the relationships between school, family and society, curriculum and content knowledge (MEB, 2017). International Teachers' Competencies are determined by the International Educational Technologies Society (ISTE) under seven standards. These standards for teachers are as follows:

- 1. Student:** Learning with others, benefiting from technology and innovative practices to enable students to learn.
- 2. Leader:** Giving students tasks to accomplish, support the students' success, searching for leadership opportunities to develop teaching and learning.
- 3. Digital Citizenship:** Inspiring students to contribute positively to the digital world and to participate in a responsible manner.
- 4. Collaborator:** Cooperating with colleagues and students to solve problems, discovering and sharing new ideas.
- 5. Designer:** Recognizing the changes in students, adapting to these changes, designing student -oriented activities and environments.

6. Facilitator: Helping students to learn by using technology.

7. Analyst: Understanding and using the data in order to direct their teaching and to support students in achieving their learning goals (ISTE, 2018).

49 techniques of effective teaching involve creating high academic expectations, making plans for academic success, structuring and presenting lessons, providing students to participate in the course, building a strong classroom culture, creating and maintaining high behavioral expectations, and strengthening the character and honesty. On the other hand, **how to become good teachers** involve arranging environments for change, arranging personal spaces and materials, reflective teaching model, forming a model as a leader, practising between classes, cooperating with parents, creating a permanent learning environment, creating a culture of citizenship (Lemov, 2010; Melvin, 2011; Orhan Göksün, 2016).

The 21st century has witnessed numerous changes in the quality and quantity of knowledge and skills as well as in accessing and transferring information. These changes have naturally affected the process of learning and teaching directly. For this reason, it is important for an effective education process to evaluate the readiness of teachers who are responsible for teaching activities in schools for these changes and whether they have required skills and competencies in accordance with these changes.

The aim of this study is to evaluate the levels of 21st century teaching skills of classroom teachers working in primary schools. In line with that, the following questions were sought in the quantitative dimension of the study:

1. What is the level of 21st century teaching skills of the participant classroom teachers?
2. Do the 21st century teaching skill levels of the classroom teachers differ significantly in terms of gender?
3. Do the 21st century skill levels of the classroom teachers differ significantly in terms of age?
4. Do the 21st century skill levels of the classroom teachers differ significantly in terms of seniority in the profession?
5. Do the 21st century skill levels of the classroom teachers differ significantly in terms of educational levels?

The following questions were sought in the qualitative dimension of the study:

What are the views of the teachers on

1. keeping records of students' learning processes?
2. the status of determining the class rules together with the students?
3. the use of technology in teaching activities?
4. the reinforcement of the students' positive behavior?
5. the situation of students to respect individual differences?
6. the status of educational or social activity organizing outside the classroom?
7. the status of preparing authentic materials for their lessons?

METHOD

Research Model

An explanatory sequential pattern of mixed research methods was used in the study. The mixed method is an approach employed to use both qualitative and quantitative data to understand the research problems and thus benefitting from the advantages of both data sets (Creswell, 2019, p.2). The explanatory sequential pattern is based on collecting and analysing quantitative data before collecting and analysing the qualitative data and used primarily to explain or expand quantitative results (Creswell, 2019, p. 38).

The Population and Sample

The population of this study consists of 833 classroom teachers working in a city center in the Central Anatolia Region of Turkey in 2020-2021 academic year. The study sample consists of 268 class teachers determined by convenience sampling method in the quantitative dimension of the study. Convenience sampling is the method in which each sampling unit is equally selected (Büyüköztürk et al., 2020, p.88). The following formula was used to determine the sample size. The sample size was calculated as 264 people with 95 % confidence interval and applied to 268 teachers.

$$N = \frac{Nt^2pq}{d^2(N - 1) + t^2pq}$$

The demographic data of the participant teachers in the sample of the quantitative dimension of the study is presented in Table 1.

Table 1. The demographic data of the participant teachers in the quantitative dimension of the study

		<i>f</i>	%
Gender	Male	128	47,8
	Female	140	52,2
Age	20 - 25 years	9	3,4
	26 - 30 years	15	5,6
	31 - 35 years	33	12,3
	36- 40 years	52	19,4
	41- 45 years	51	19,0
	46- 50 years	51	19,0
	51- 55 years	40	14,9
	56 and over	17	6,3
Seniority in the profession	0 - 5 years	24	9,0
	6 - 10 years	29	10,8
	11- 15 years	56	20,9
	16 -20 years	34	12,7
	21 - 25 years	55	20,5
	26 - 30 years	44	16,4
Educational level	31 years and over	26	9,7
	Vocational school	19	7,1
	Undergraduate	208	77,6
	Graduate	41	15,3

In the qualitative dimension of the study, a semi-structured interview was conducted with 20 teachers. Convenience sampling method was used for determining the teachers to be interviewed. The demographic data of the participant teachers who were interviewed is presented in Table 2.

Table 2. The demographic data of the teachers who were interviewed

		<i>f</i>	%
Gender	Male	128	47,8
	Female	140	52,2
Age	20 - 25 years	9	3,4
	26 - 30 years	15	5,6
	31 - 35 years	33	12,3
	36- 40 years	52	19,4
	41- 45 years	51	19,0
	46- 50 years	51	19,0
	51-55 years	40	14,9
	56 and over	17	6,3
Seniority in the profession	0 - 5 years	24	9,0
	6 - 10 years	29	10,8
	11 - 15 years	56	20,9
	16 - 20 years	34	12,7
	21- 25 years	55	20,5
	26- 30 years	44	16,4
Educational level	31 years and over	26	9,7
	Vocational school	19	7,1
	Undergraduate	208	77,6
	Graduate	41	15,3

Data Collection Tools

21st Century Teaching Skills Scale was used to collect quantitative data and a *semi-structured interview form* was used in order to collect qualitative data. The 21st Century Teaching Skills Scale is a 5 point-Likert type tool with 27 items and was developed by Orhan Göksün (2016). The scale consists of five sub-dimensions: administrative, technopedagogical, confirmatory, flexible teaching and productive skills. The high scores in the total scale and sub-dimensions indicate the high frequency of the use of the 21st century teaching skills.

While developing a scale by the researchers, a draft pool of 61 items was created and focus group interviews were made with sixteen teachers from different branches. Then a content analysis was performed with the data obtained from the interviews. Within the scope of validity studies, expert opinion was obtained from seven different disciplines. In line with the expert opinions, the number of items was reduced to 59. As a result of the explanatory factor analysis, the factor load limit was taken as .40. After the confirmatory factor analysis of the scale, the reliability studies were completed by test-retest method on a group.

The highest score to be obtained from the scale is 135 points and the lowest score is 27 points. In addition, the scale intervals were determined in order to evaluate the mean scores of the teachers from the 21st century teaching skills scale. In order to perform this, the difference ($5-1=4$) between the lowest (1) and the highest (5) scores of the scale was divided into the number of intervals (5) and each interval was calculated as 0.8 points. Accordingly, in order to evaluate the skill levels of the teachers on the general and sub-dimensions of the scale, the mean scores between 1.00-1.80 were evaluated as *never*, between 1.81-2.60 as *rarely*, between 2.61-3.40 as *occasionally*, between 3.41-4.20 as *usually* and between 4.21-5.00 as *always*.

Cronbach's Alpha reliability coefficient of this scale, whose validity and reliability was previously carried out, was calculated as 0.91 for the total scale, 0.85 for administrative skills subscale, 0.66 for technopedagogical skills subscale, 0.52 for confirmatory skills subscale and 0.86 for flexible teaching skills subscale and 0.74 for the productive skills subscale. It was accepted that the scale was sufficiently reliable since the reliability coefficient of the total scale was high.

The semi-structured interview form in which qualitative data were obtained was prepared in parallel with the sub-dimensions of the 21st Century Teaching Skills Scale. In line with this purpose, a

total of 10 questions, including two questions about all dimensions of the scale, were prepared. Expert opinion for the interview form prepared was received from three different academics. In the light of expert opinions, two questions were completely changed and three questions were changed in terms of format. Two questions were excluded and two questions were combined and finally a seven-item interview form was created including two questions about administrative skills (questions 1 and 2), technopedagogical skills (question 3), two questions about confirmatory skills (questions 4 and 5), flexible teaching (question 6) and production skills (question 7).

Data Collection and Data Analysis

Data collection tools, which consist of the 21st Century Teaching Skills Scale and the semi-structured interview forms, were administered to the participants by the researcher by obtaining permission from the Provincial Directorate of National Education. The 21st Century Teaching Skills Scale was responded by 268 teachers. SPSS 22 program was used for to analyse the quantitative data obtained from the scale.

In order to determine the tests to be performed in the analysis of quantitative data, the normality of the distribution of the data was examined. The results of the Kolmogorov-Smirnov and Shapiro Wilk test (when the number of elements in the group is below 50), Q-Q plot and histogram graphics were checked. It was found that the data did not normally distributed. So, it was decided that valid and reliable results could be achieved by using nonparametric tests for analysis of data. Descriptive statistics were used in order to determine the 21st century teaching skill levels of teachers. Mann-Whitney U-Test and Kruskal Wallis H-test were used in order to determine whether 21st century teaching skills differed according to the independent variables.

The semi-structured interview form created by the researchers in order to collect qualitative data was applied to 20 teachers determined by convenience sampling method and the statements of the teachers were recorded in writing. The data obtained from the interviews were analyzed using NVivo 11 package program. Content analysis was performed by using codes and categories in order to summarize the responses of the participants to the questions make it clearer and more understandable (Sağlam and Kanadlı, 2021). The aim of the content analysis is to reveal the concepts and relationships that can explain the data (Yıldırım and Şimşek, 2008, p.227). The content analysis was conducted by both researchers in order to ensure the coder reliability. In order to ensure the reliability of the qualitative dimension of the study, the data were coded separately by the two researchers, and then the coding was compared and common categories and themes were created. It was revealed that there was a high compliance at the level of the .85 between the codes created by the researchers. In addition, the data obtained from the participants were transferred directly by quotations without interpreting them. Expert examination was conducted for the validity studies and the purposeful sampling method was used.

FINDINGS

The findings of the quantitative and qualitative subproblems of the study are presented below.

1. Quantitative findings

In this section, the level of classroom teachers' 21st century teaching skills in terms of various variables were explained.

1.1. The level of classroom teachers' 21st century teaching skills

The data on the level of 21st century teaching skills of the classroom teachers are presented in Table 3.

Table 3. Descriptive Statistics of Classroom Teachers' 21st Century Teaching Skills

Scale/Subscales	N	Min	Max	\bar{X}	Ss
21st century teaching skills	268	2,37	4,93	3,97	0,446
Administrative skills	268	2,42	5,00	4,06	0,496
Technopaedagogic skills	268	2,00	4,75	3,70	0,492
Confirmatory skills	268	3,00	5,00	4,71	0,357
Flexible teaching skills	268	1,00	5,00	3,47	0,925
Productive skills	268	1,50	5,00	3,96	0,753

When Table 3 is examined, it is seen that the classroom teachers “*usually*” use the 21st century teaching skills ($\bar{x} = 3,97$). The most frequently used skills by the classroom teachers are confirmatory skills ($\bar{x} = 4,71$), administrative skills ($\bar{x} = 4,06$), productive skills ($\bar{x} = 3,96$), technopaedagogical skills ($\bar{x} = 3,70$) and the least used skill is flexible teaching skills ($\bar{x} = 3,47$). In addition, it is obvious that the classroom teachers “*always*” use the confirmatory skills and “*usually*” the administrative, technopaedagogical, flexible teaching and productive skills.

The results of Mann-Whitney U-test performed to determine whether the 21st century teaching skills of the classroom teachers differ significantly in terms of gender, are presented in Table 4.

Table 4. The Results of Mann-Whitney U-test of the 21st Century Teaching Skills of the Classroom Teachers in terms of Gender

Scale	Gender	N	Mean	Total	U	Z	p
21st century teaching skills	Male	128	135,49	17343,00	8833,00	-,200	,841
	Female	140	133,59	18703,00			
Administrative skills	Male	128	129,75	16608,50	8352,50	-,960	,337
	Female	140	138,84	19437,50			
Technopaedagogic skills	Male	128	140,11	17933,50	8242,50	-1,136	,256
	Female	140	129,38	18112,50			
Confirmatory skills	Male	128	131,45	16825,00	8569,00	-,665	,506
	Female	140	137,29	19221,00			
Flexible teaching skills	Male	128	148,64	19026,50	7149,50	-2,911	,004
	Female	140	121,57	17019,50			
Productive skills	Male	128	136,55	17478,50	8697,50	-,424	,672
	Female						

When Table 4 is examined, it is seen that the 21st century teaching skills of classroom teachers and their subdimensions including administrative skills, technopaedagogical skills, confirmatory skills and productive skills do not differ significantly differences in terms of gender. However, flexible teaching skills differs significantly in favor of male teachers ($p < 0.05$). Therefore, it can be argued that the ability to organize educational and social activity out of classroom is higher in male teachers.

The results of Kruskal-Wallis H-test performed to determine whether the 21st century teaching skills levels of classroom teachers differ significantly in terms of age are presented in Table 5.

Table 5. The results of Kruskal-Wallis H-test of the 21st Century Teaching Skills Levels of Classroom Teachers in terms of Age

Scale	Age	N	Mean Rank	sd	χ^2	p
21st century teaching skills	20-25 years	9	123,33	7	8,962	,255
	26-30 years	15	96,43			
	31-35 years	33	126,42			
	36-40 years	52	127,57			
	41-45 years	51	131,85			
	46-50 years	51	139,36			
	51-55 years	40	155,99			
	56 and over	17	153,68			
Administrative skills	20-25 years	9	133,11	7	5,687	,577
	26-30 years	15	118,93			
	31-35 years	33	119,26			
	36-40 years	52	130,31			
	41-45 years	51	127,56			
	46-50 years	51	140,98			
	51-55 years	40	152,30			
	56 and over	17	150,88			
Technopaedagogic skills	20-25 years	9	85,61	7	17,996	,012
	26-30 years	15	75,00			
	31-35 years	33	137,30			
	36-40 years	52	126,16			
	41-45 years	51	139,81			
	46-50 years	51	137,86			
	51-55 years	40	157,48			
	56 and over	17	152,85			
Confirmatory skills	20-25 years	9	122,78	7	21,609	,003
	26-30 years	15	103,17			
	31-35 years	33	122,00			
	36-40 years	52	118,04			
	41-45 years	51	139,86			
	46-50 years	51	157,65			
	51-55 years	40	159,65			
	56 and over	17	98,26			
Flexible teaching skills	20-25 years	9	140,83	7	9,700	,206
	26-30 years	15	108,90			
	31-35 years	33	125,71			
	36-40 years	52	137,72			
	41-45 years	51	123,52			
	46-50 years	51	131,74			
	51-55 years	40	144,81			
	56 and over	17	177,91			
Productive skills	20-25 years	9	149,50	7	2,101	,954
	26-30 years	15	119,43			
	31-35 years	33	131,73			
	36-40 years	52	138,44			
	41-45 years	51	129,55			
	46-50 years	51	131,89			
	51-55 years	40	137,35			
	56 and over	17	149,15			

When Table 5 is examined, it is seen that the 21st century teaching skills of classroom teachers and their subdimensions including administrative skills, flexible teaching skills, and productive skills do not differ significantly in terms of age. However, there is a significant difference in technopedagogical skills and confirmatory skills sub-dimensions ($p < 0.05$). In order to determine the source of this difference, binary comparisons in Mann-Whitney U-test were made and it was found that there were significant differences between teachers aged 26-30 years and 41-45 years, in favour of teachers of 41-45 years; between teachers aged 26-30 years and 46-50 years, in favor of teachers of 46-50 years; between teachers aged 26-30 years and 51-55 years, in favor of teachers of 51-55 years of age, in technopaedagogical sub-dimension.

Moreover, it was found that there were significant differences between teachers aged 36-40 years and 46-50 years, in favor of teachers of 46-50 years; between teachers aged 36-40 years and 51-55 years, in favor of 51-55 years; between teachers aged 46-50 and those over 55 years, in favor of teachers of 46-50 years and finally between teachers aged 51-55 years and those over 55 years, in favor of 51-55 years, in the subdimension of the confirmatory skills.

The results of Kruskal-Wallis H-test performed to determine whether the 21st century teaching skills levels of classroom teachers differ significantly in terms of seniority in the profession are presented in Table 6.

Table 6. The Results of Kruskal-Wallis H-test of the 21st Century Teaching Skills Levels of Classroom Teachers in terms of Seniority in the Profession

Scale	Seniority	N	Mean Rank	sd	χ^2	p
21st century teaching skills	0 - 5 years	24	110,44	5	8,815	,117
	6-10 years	29	113,60			
	11-15 years	56	129,83			
	16-20 years	34	126,96			
	21-25 years	55	148,70			
	26 year and over	70	147,65			
	Total	268				
Administrative skills	0 - 5 years	24	121,50	5	4,581	,469
	6-10 years	29	125,59			
	11-15 years	56	125,85			
	16-20 years	34	126,09			
	21-25 years	55	146,23			
	26 year and over	70	144,44			
	Total	268				
Technopaedagogic skills	0 - 5 years	24	92,71	5	14,545	,012
	6-10 years	29	110,33			
	11-15 years	56	130,81			
	16-20 years	34	136,94			
	21-25 years	55	147,64			
	26 year and over	70	150,29			
	Total	268				
Confirmatory skills	0 - 5 years	24	108,17	5	15,683	,008
	6-10 years	29	114,48			
	11-15 years	56	126,85			
	16-20 years	34	119,28			
	21-25 years	55	158,40			
	26 year and over	70	146,56			
	Total	268				
Flexible teaching skills	0 - 5 years	24	113,21	5	10,030	,074
	6-10 years	29	110,93			
	11-15 years	56	140,31			
	16-20 years	34	123,72			
	21-25 years	55	132,89			
	26 year and over	70	153,41			
	Total	268				
Productive skills	0 - 5 years	24	137,88	5	7,364	,195
	6-10 years	29	107,55			
	11-15 years	56	145,33			
	16-20 years	34	121,50			
	21-25 years	55	146,82			
	26 years and over	70	132,48			
	Total	268				

When Table 6 is examined, it is seen that there is no significant difference in the 21st century teaching skills of classroom teachers and their subdimensions including administrative skills, flexible teaching skills and productive skills in terms of seniority in the profession. However, there is a significant difference in technopaedagogical skills and confirmatory skills in terms of seniority in the

profession ($p < .05$). In order to determine the source of this difference, binary comparisons in Mann-Whitney U-test were made and it was found that there were significant differences between teachers with a seniority of 0-5 years and teachers with 21-25 years of seniority, in favour of those between 21-25 years of seniority; between teachers with a seniority of 0-5 years and teachers with 26 years and over, in favor of teachers with a seniority of 26 years and over in technopaedagogical sub-dimension.

Moreover, it was found that there were significant differences between teachers with a seniority of 0-5 years and teachers with 21-25 years of seniority, in favour of those between 21-25 years of seniority; between teachers with a seniority of 6-10 years and teachers with 21-25 years of seniority, in favor of teachers with a seniority of 21-25 years in the subdimension of the confirmatory skills.

The results of Kruskal-Wallis H-test performed to determine whether the 21st century teaching skills levels of classroom teachers differ significantly in terms of educational levels in the profession are presented in Table 7.

Table 7. The Results of Kruskal-Wallis H-test of the 21st Century Teaching Skills Levels of Classroom Teachers in terms of Educational Levels

Scale	Educational level	N	Mean Rank	sd	χ^2	p
21st century teaching skills	Vocational school	19	119,18	2	1,372	,504
	Undergraduate	208	134,02			
	Graduate	41	144,04			
	Total	268				
Administrative skills	Vocational school	19	128,24	2	,686	,710
	Undergraduate	208	133,36			
	Graduate	41	143,18			
	Total	268				
Technopaedagogic skills	Vocational school	19	107,18	2	5,264	,072
	Undergraduate	208	133,01			
	Graduate	41	154,72			
	Total	268				
Confirmatory skills	Vocational school	19	119,37	2	1,082	,582
	Undergraduate	208	136,50			
	Graduate	41	131,35			
	Total	268				
Flexible teaching skills	Associate degree	19	112,58	2	3,264	,195
	Undergraduate	208	133,50			
	Graduate	41	149,76			
	Total	268				
Productive skills	Associate degree	19	130,82	2	,720	,698
	Undergraduate	208	136,53			
	Graduate	41	125,91			
	Total	268				

When Table 6 is examined, it is seen that there is no significant difference in the 21st century teaching skills of classroom teachers and their subdimensions in terms of educational levels.

2. Findings on the Qualitative Dimension of the Study

The classroom teachers' views about the 21st century teaching skills levels are included in this section.

2.1 Classroom Teachers' Keeping Records of Students' Learning Processes

In order to examine the situation of classroom teachers about keeping records of learning processes of the students, the question "Would you keep a record of your students' learning processes?" was asked to the study group, responded by 18 positive and 2 negative answers. Those

who responded positively were asked "What kind of records do you keep about your students' learning processes?". The findings obtained from the relevant question are given in Figure 1.

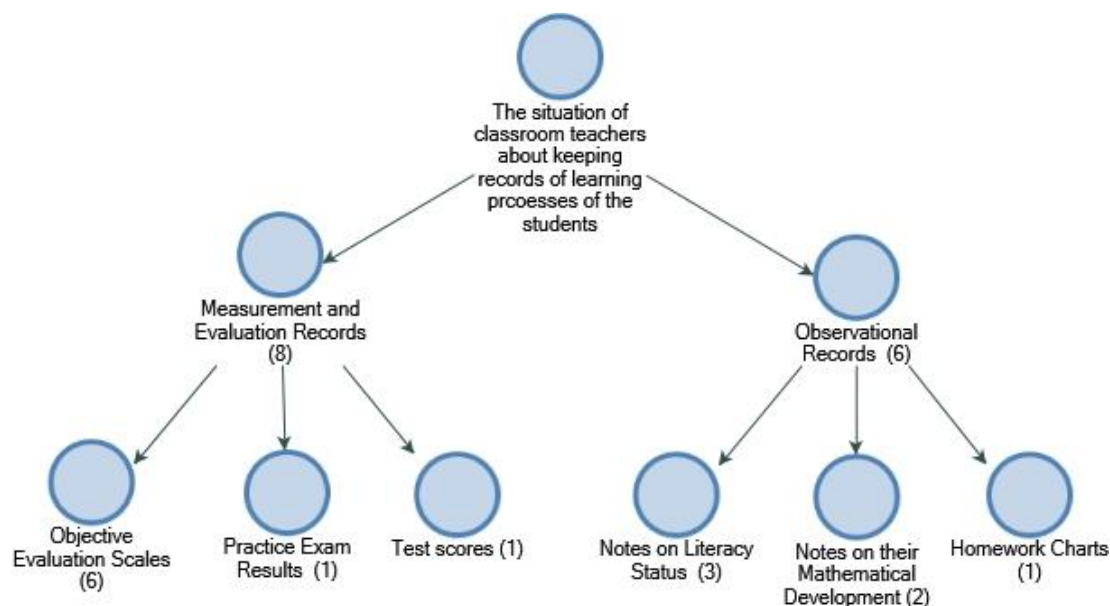


Figure 1. The Situation of Classroom Teachers About Keeping Records of Learning Processes of the Students

When Figure 1 is examined, it is seen that classroom teachers more frequently keep measurement and evaluation records (f: 8) and observation records (f: 6). The measurement and evaluation records are objective evaluation scales (f: 6), practice exam results (f: 1) and test scores (f: 1). On the other hand, the observational records are kept as notes on the mathematical development of the students (f: 2), literacy (f: 1) and homework charts (f: 1).

Some direct quotations from the statements showing the record keeping situations of classroom teachers in the learning processes of the students are as follows:

"I definitely keep records to check whether students have learned the objectives or not." (Teacher2-Male)

"I keep observation, experiment and evaluation records of learning processes. I try to revise my teaching every day after I finish any topic." (Teacher18-Female)

"I take notes for the whole class about their literacy, writing skills, and their mathematical development." (Teacher1-Female)

2.2 The Situation of Classroom Teachers about Setting Classroom Rules together with the Students

In order to examine the classroom teachers' setting classroom rules together with their students, the question "Do you set the classroom rules together with your students?" was asked to the study group. This question was responded by 19 "yes" and 1 "no" answers. Those who answered positively were asked "What kind of rules do you set with your students?". The findings obtained from the relevant question are shown in Figure 2.

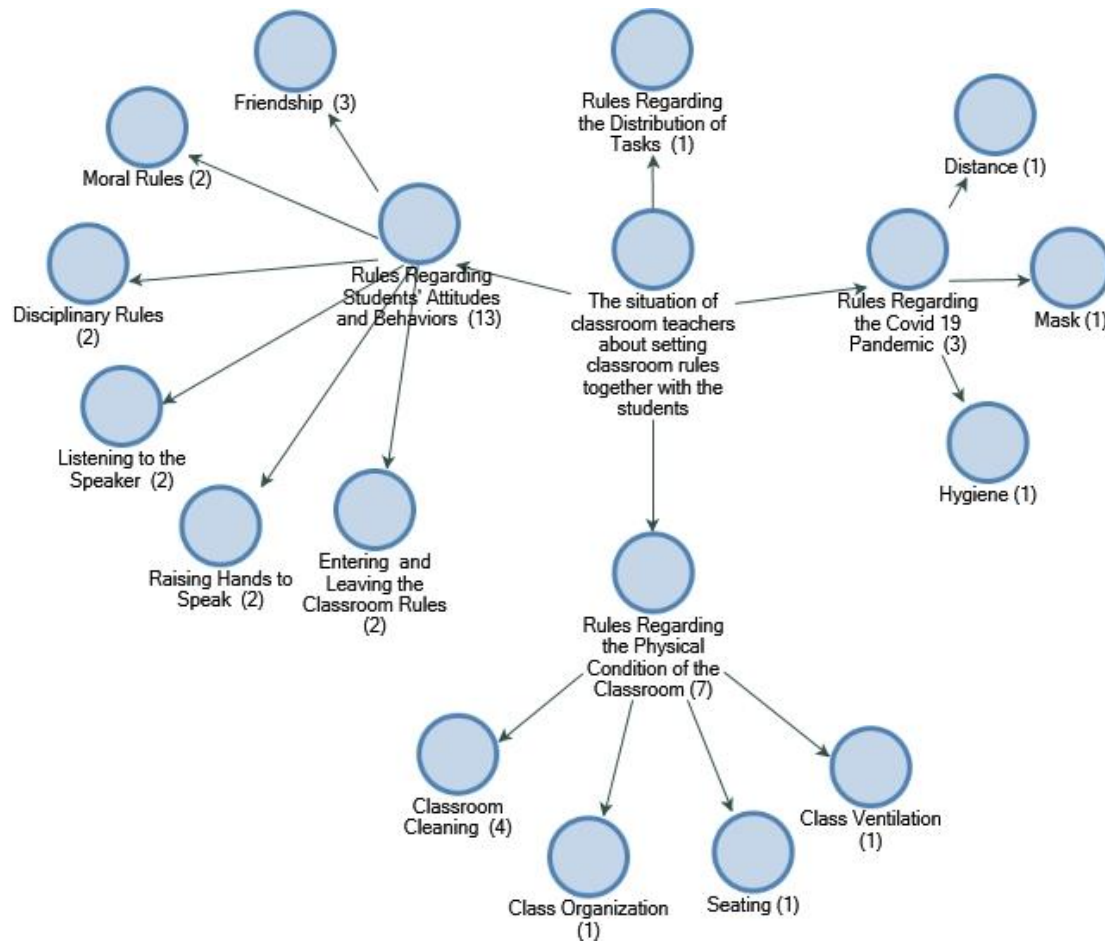


Figure 2. The Situation of Classroom Teachers about Setting Classroom Rules together with the Students

When Figure 2 is examined, it is seen that the rules determined by the classroom teachers together with the students include attitudes and behaviors of the students (f: 13), physical condition of the classroom (f: 7), Covid 19 pandemic (f: 3) and the rules regarding the distribution of tasks (f: 1). The rules related to the students' attitudes and behaviors associate with friendship relations (f:3), moral rules (f:2), discipline rules (f:2), listening to the speaker (f:2), entering and leaving the classroom (f:2), the rules of speaking by raising a hand (f:2). The rules regarding the physical condition of the classroom are related to classroom hygiene (f:4), ventilation (f:1), class layout (f:1) and rows and seating (f:1). It is also seen that the rules regarding the Covid 19 pandemic are related to hygiene (f: 1), wearing masks (f: 1) and keeping social distance (f: 1).

Some direct quotations from the statements showing rule setting situations of classroom teachers together with the students are as follows:

“We set the rules on subjects such as class order and organization, hygiene, entering and leaving the class, speaking rules, and food menu.” (Teacher2-Male)

“Asking for permission, class representative, games, seating etc.” (Teacher5-Male)

“First of all, I make sure that the rules are acceptable, simple, clear, understandable, as few as possible, supported with pictures and figures, and created with the participation of students. (To enter the class on time, not to interrupt the speakers, to ventilate the class during breaks, not to take off the masks, to keep a distance, not to fight, not to run in the classroom and in the corridors, not to throw garbage on the floor, not to fight, to be kind to everyone, etc.)” (Teacher18-Female)

2.3 Technology Using Situations of Classroom Teachers in Teaching Activities

In order to examine technology using situations of classroom teachers in enriching their teaching activities, the question "Can you enrich your teaching activities with technology?" was asked to the study group, responded by 18 positive answers and one negative. Those who answered positively, were asked "What kind of technologies do you enrich your teaching activities?". The findings obtained from the relevant question are shown in Figure 3.

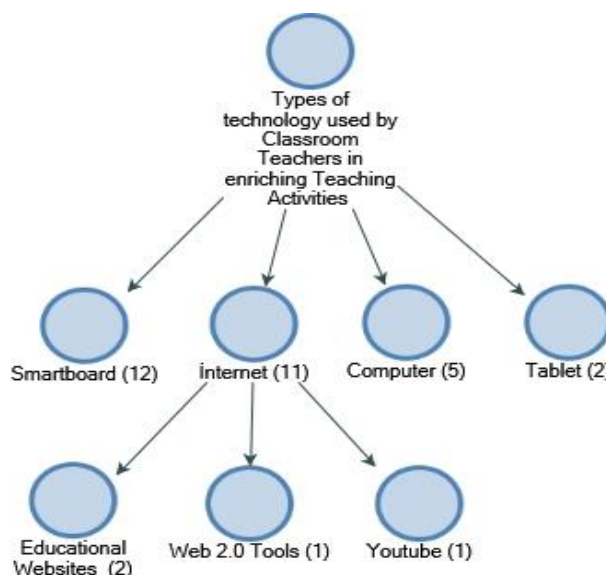


Figure 3. Types of Technology Used by Classroom Teachers in Enriching Teaching Activities

When Figure 3 is examined, it is seen that the type of technology mostly used by classroom teachers enrich their teaching activities include the smartboard (f:12), internet (f:11), computer (f:5), and tablet computers (f:2) respectively. The type of technology enriched by the Internet includes educational sites (f:2), Web 2.0. tools (f:1) and Youtube (f:1).

Some direct quotations from the statements showing classroom teachers' use of technology to enrich teaching activities are as follows:

"I download videos from the Internet, prepare slides at home and use the classroom computer effectively." (Teacher1-Female)

"I benefit from educational sites and other teachers' activities using the smart board." (Teacher3-Male)

"I actively use the smartboard and the web while teaching." (Teacher17-Male)

2.4 The Situations of Classroom Teachers' Reinforcing Students' Desired Behaviors

In order to examine the classroom teachers' reinforcing the desired behaviors of the students, the question "Can you reinforce the positive behaviors of your students?" was asked to the study group, responded by 19 positive answers and 1 negative answer. Those who answered positively were asked "How do you reinforce the positive behaviors of your students?". The findings obtained from the relevant question are shown in Figure 4.

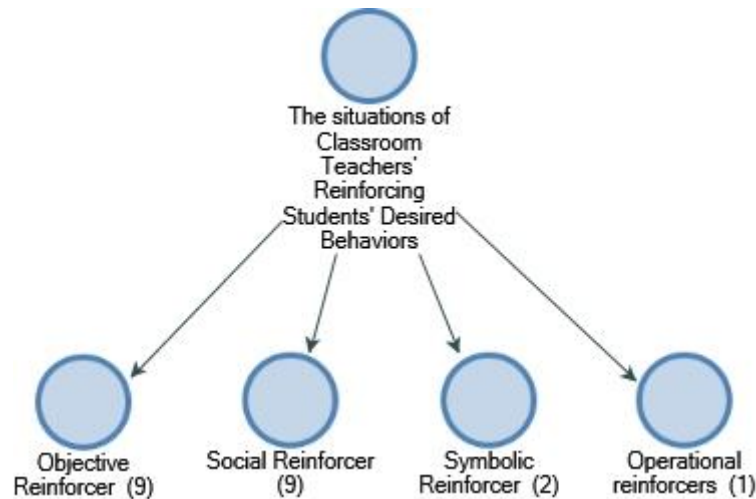


Figure 4. The situations of Classroom Teachers' Reinforcing Students' Desired Behaviors

When the responses of the teachers who stated that they reinforce the desired behaviors of the students in Figure 4 are examined, it is seen that the classroom teachers mostly use social reinforcements such as applauding, appreciating, and showing model (f:9) and objective reinforcements such as rewards and gifts (f:9). However, it is seen that they use symbolic reinforcers (f:2) such as giving symbolic stars, despite being used less than other types of reinforcements, and operational reinforcers (f:1) such as permitting them to do an activity they like.

Some direct quotations from the statements showing classroom teachers' use of reinforcements for desired behaviours of the students are as follows:

“ I reward the student, give him/ her presents, make the students applaud him/ her and show as a model.” (Teacher 3-Male)

“I appreciate, motivate and thank to the student.” (Teacher 6-Male)

“ I permit the student to do their favourite activity.” (Teacher 19-Female)

2.5. Situations of Classroom Teachers to Ensure Students Respect Individual Differences

In order to examine how classroom teacher make the students' respect for individual differences, the question "Can you make your students respect individual differences?" was asked to the study group, responded by 19 positive answers and 1 negative answer. Those who answered positively were asked “How do you make your students respect individual differences?”. The findings obtained from the relevant question are shown in Figure 5.

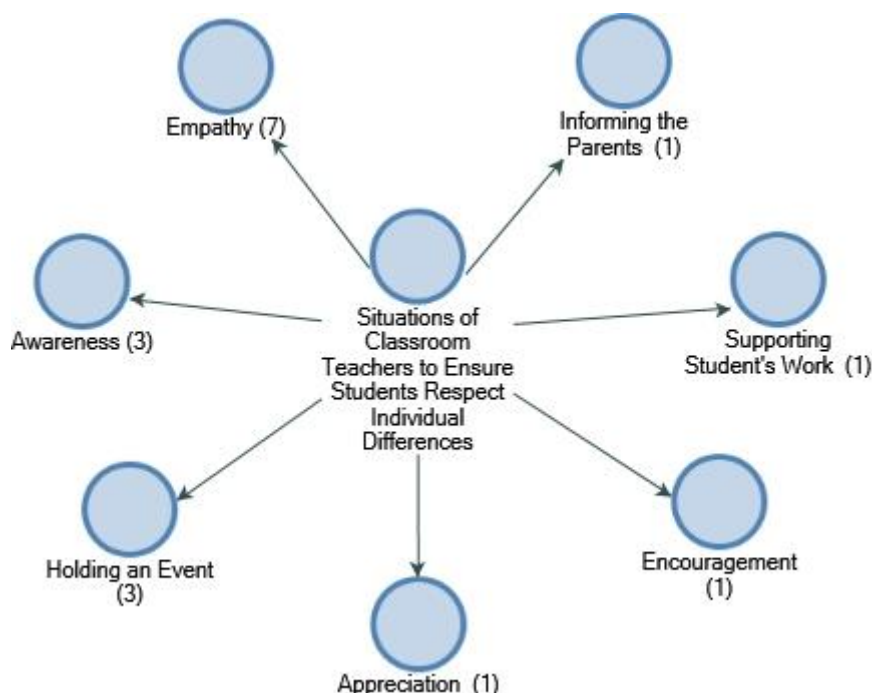


Figure 5. Situations of Classroom Teachers to Ensure Students Respect Individual Differences

When Figure 5 is examined, it is seen that classroom teachers mostly allow students to show empathy (f:7) in order to ensure that they respect individual differences, and then they raise students' awareness about individual differences (f:3) and perform various activities (f:3) on this subject. In addition, they encourage the students to respect individual differences (f: 1), appreciate those students who respect individual differences (f: 1), support their efforts to respect individual differences (f: 1), and raise awareness among the parents on this issue (f: 1).

Some direct quotations from the statements showing situations of classroom teachers to ensure students respect individual differences are as follows:

“I engage the students with various activities and make them empathize.” (Teacher5-Male)

“I build awareness that differences are a necessity of creation and that they are our greatest wealth.” (Teacher6-Male)

“I emphasize on the examples related to the subject. I prepare drama activities related to the subject.” (Teacher17-Male)

2. 6 Situations of Classroom Teachers' Organizing Educational or Social Activities Outside the Classroom

In order to examine the situations of classroom teachers' organizing educational or social activities outside the classroom, the question "Do you organize educational activities outside the classroom?" was asked to the study group, responded by 17 positive answers and 3 negative answers. Those who answered positively were asked “What kind of educational activities do you organize outside of the classroom?”. The findings obtained from the relevant question are shown in Figure 6.

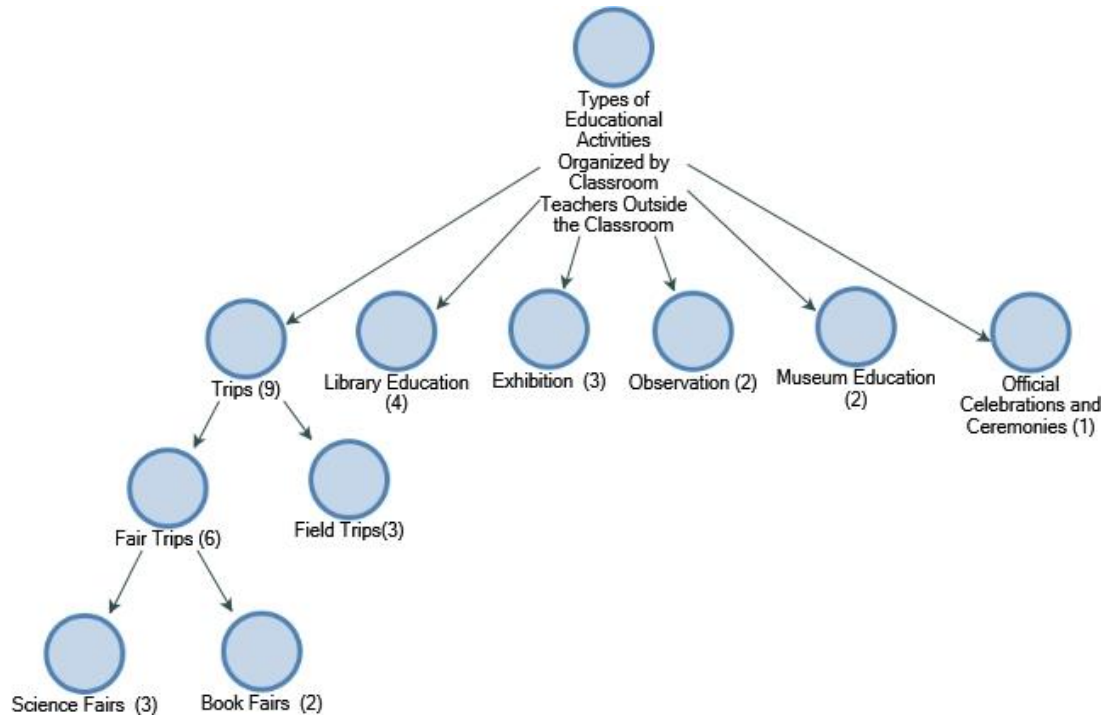


Figure 6. Types of Educational Activities Organized by Classroom Teachers Outside the Classroom

When Figure 6 is examined, it is seen that classroom teachers more often organize trips (f:9) as out-of-class educational activities, but library education (f:4), exhibition (f:3), observation (f:2), museum education (f:2) and official celebrations and ceremonies (f: 1). It is also seen that the trips are organized in the form of field trips (f: 3) and fair trips (f: 6) and the fair trips are organized in the form of science fairs (f: 3) and book fairs (f: 2).

Some direct quotations from the statements showing the types of educational activities organized by classroom teachers outside the classroom are as follows:

“I take the students to scientific events such as TÜBİTAK fairs organized by the municipality, governorship or ministry of national education.” (Teacher9-Male)

“As part of the school's project, we spend two lessons a month reading books in the library.” (Teacher15-Male)

“I am planning a trip to Museum of Sivas Congress, Çifte Minaret, Buruciye and Gök Madrasa.” (Teacher13-Male)

In order to examine the situations of classroom teachers' organizing social activities outside the classroom, the question "Do you organize social activities outside the classroom?" was asked to the study group responded by 17 positive answers and 3 negative answers. Those who answered positively were asked “What kind of social activities do you organize outside of the classroom?”. The findings obtained from the relevant question are shown in Figure 7.

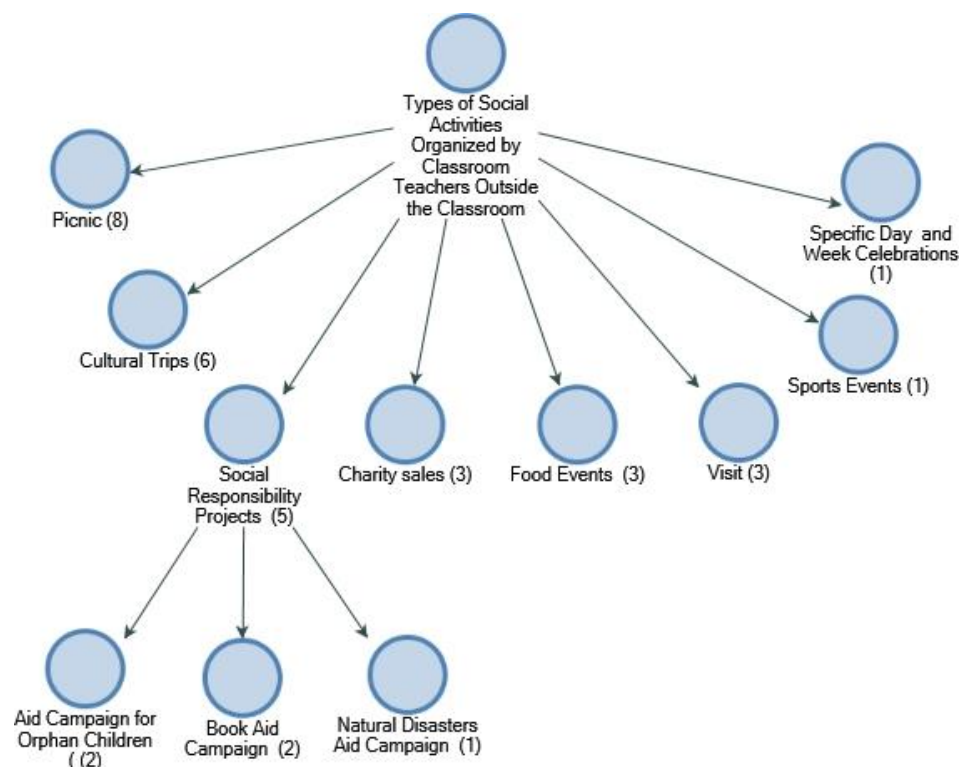


Figure 7. Types of Social Activities Organized by Classroom Teachers Outside the Classroom

When Figure 7 is examined, it is seen that classroom teachers mostly organize picnics (f:8) and cultural trips (f:6) as social activities outside the classroom, followed by social responsibility projects (f:5), as well as food events (f:3), visits (f: 3), charities (f:3), sports events (f:1) and celebrations of certain days and weeks (f:1). It is clear that social responsibility projects are in the form of natural disasters aid campaign (f: 1), book aid campaign (f: 2) and aid campaigns for orphan children.

Some direct quotations from the statements showing the situations of classroom teachers' organizing social activities outside the classroom are as follows:

"I organize a picnic with the participation of parents and students." (Teacher2-Male)

"I take the children to the nursing home to visit the elderly." (Teacher 13-Male)

"We are holding a fundraiser, a charity campaign for orphans and a book campaign for rural schools." (Teacher 20-Female)

2.7. Authentic Material Preparation Situation of Classroom Teachers

In order to examine the classroom teachers' authentic material preparation situation, the question was asked to the study group "Can you prepare authentic materials for your lessons?" responded by 16 positive answers and 4 negative answers. Those who answered positively were asked "What kind of authentic materials do you prepare for your lessons?" The findings obtained from the relevant question are shown in Figure 8.

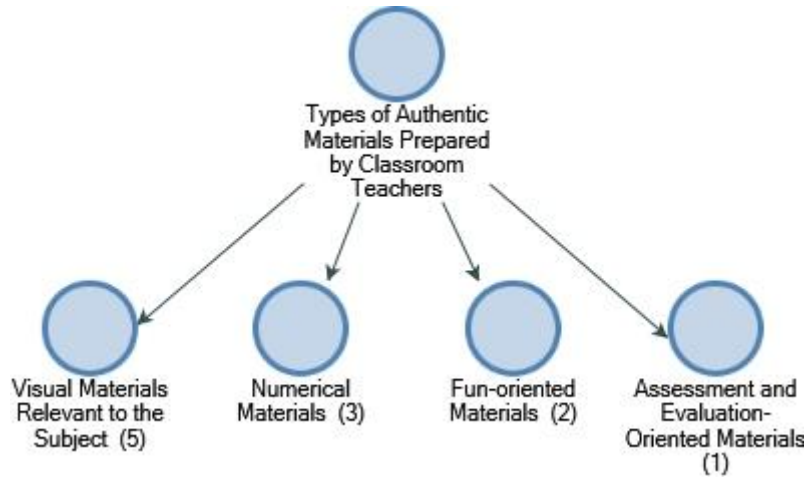


Figure 8. Types of Authentic Materials Prepared by Classroom Teachers

When Figure 8 is examined, it is seen that classroom teachers mostly prepare visual materials relevant to subject (f:5), numerical materials (f:3), fun-oriented materials (f:2) and assessment and evaluation-oriented materials (f:1), respectively.

Some direct quotations from the statements showing what kind of authentic materials the classroom teachers prepare are as follows:

“I prepare visuals suitable for the subject.” (Teacher 2-Male)

“I prepare simple materials on measuring time, reading numbers, four mathematical operations, etc. according to the students’ level.” (Teacher3-Male)

“I prepare game-related materials.” (Teacher9-Male)

DISCUSSION AND CONCLUSION

In this study conducted to reveal the perception levels of classroom teachers for 21st century teaching skills, the following results were obtained:

In line with the findings obtained in the quantitative dimension of the research, it was concluded that classroom teachers "generally" use their 21st century teaching skills, which is similar to other studies on 21st century teacher skills in the literature (Burakgazi et al., 2019; Cemaloğlu et al., 2019; Çelebi & Sevinç, 2019; Gürültü et al., 2018, Gürültü et al., 2020; Kıyasoglu & Ay, 2020; Kozikoğlu & Özcanlı, 2020; Orhan Göksun & Aşkın Kurt, 2017; Sulaiman & Ismail, 2020; Uyar & Çiçek, 2021; Viinikka et al., 2019; Yalçın İncik, 2020). In these studies, the 21st century teaching skill scores of the classroom teachers and teachers in other branches were found to be higher than the medium level. Based on this result, it can be argued that the classroom teachers are well-prepared and equipped for 21st century innovations and changing teaching strategies.

It was also found that the participant teachers “always” used confirmatory skills, and administrative, techno-pedagogical, flexible teaching and productive skills are “generally” used. In the light of these results, it can be interpreted that the classroom teachers pay attention to show positive behavior and be respectful in the classroom; are generally open and alert to technological developments, learning new information, new teaching methods and environments, have sufficient skills to adapt to the requirements of the period and use these skills in their professional lives.

When the sub-dimensions of 21st century teaching skills scale were examined separately, it was concluded that score of confirmatory skills were higher than other sub-dimensions. In the study by Miller and Pedro (2006), in which they investigated the parameters of teaching and encouraging

respect in classrooms for young children, and in studies investigating 21st century teaching and learning skills of teachers at different levels (Gürültü et al., 2018; Noise et al., 2020; Kıyasoglu and Çeviker Ay, 2020; Kozikoğlu & Özcanlı, 2020; Orhan Göksün, 2016; Orhan Göksün & Aşkın Kurt, 2017; Uyar & Çiçek, 2021; Yalçın İncik, 2020), the high scores of confirmatory skills were similar to this result of the research. All these In the study by Asio and Riego de Dios (2018), the students got very high scores to confirmatory skills while evaluating their teachers. It can be considered significant that confirmatory skills are similarly high in different countries and cultures.

In this study, regarding the finding that the classroom teachers “*generally*” use technopedagogical skills, Garba, Byabazaire, and Busthami (2015) conducted a study with Malaysian teachers, although the teachers are competent in using computers, accessing and using online information and resources, and knowledge of integrating technology into teaching, it was concluded that the skills of integrating technology and pedagogy (technopedagogical skills) in teaching and presenting the subject content were not yet at a sufficient level. It has been suggested that the reason why teachers cannot integrate technology into education arises from the lack of sufficient computers and projectors in standard classrooms in Malaysia. In this study conducted with Turkish teachers, it can be said that providing internet, smart boards or projections to the classrooms in Turkey, especially within the scope of the FATİH project, is highly effective in integrating their technological skills into education and using technopedagogical skills “*generally*”.

It was observed that the lowest score obtained from the sub-dimensions of the 21st Century Teacher Skills Scale was in flexible teaching skills. In the studies conducted on this subject in the literature (Gürültü et al., 2018; Gürültü et al., 2020; Yalçın İncik, 2020; Kozikoğlu & Özcanlı, 2020; Uyar & Çiçek, 2021), the fact that the flexible teaching skills scores are lower than the other sub-dimensions overlaps this result of the study. Based on this result, it can be commented that the classroom teachers are not willing to organize educational and social activities, do not consider it necessary or these skills are not sufficiently developed. In the study of Asio and Riego de Dios (2018), in which they evaluated teachers' 21st century skills from the perspective of university students, the teachers' flexible teaching skills were found to be quite high, which contradicts this finding of the study. The main reason for this discrepancy may be due to the fact that the education in universities is more flexible than primary schools. However, since the studies were conducted in different countries, it can be thought that culture has an effect on this difference.

It was found that the mean scores of the classroom teachers in the total of 21st century teacher skills scale and in the sub-dimensions of administrative, technopedagogical, confirmatory and productive skills do not differ significantly in terms of gender. This overlaps with other studies in the literature that reveal the same results (Burakgazi et al., 2019; Cemaloğlu et al., 2019; Erten, 2020; Gürültü et al., 2020; Kozikoğlu & Özcanlı, Sulaiman & Ismail, 2020; Uyar & Çiçek, 2021; Yalçın İncik, 2020). However, it was revealed that flexible teaching skills, one of the sub-dimensions of the 21st century teacher skills scale, differed significantly difference in terms of gender and this difference was in favor of male teachers. In line with this result, it can be argued that male teachers organize more social and educational activities than female teachers. The study conducted by Gürültü et al (2018) has identified a significant difference in favor of male teachers in flexible teaching skills, which supports this.

While the 21st century teaching skills of classroom teachers and the sub-dimensions of these skills including administrative skills, flexible teaching skills and productive skills, do not differ in terms of age, there is a significant difference in the sub-dimensions of technopedagogical skills and confirmatory skills. In the technopedagogical sub-dimension, a significant difference was found between the teachers aged 26-30 years and those aged 41-45 years, in favor of 41-45 years; between the teachers aged 26-30 years and 46-50 years, in favor of 46-50 years; between the teachers aged 26-30 years and 51-55 years, in favor of 51-55 years. The study conducted by Sulaiman and Ismail (2020) also does not support this finding of the research, since 21st century teaching skills do not differ significantly in terms of age. This difference between the findings can be thought to be due to the

technological infrastructures, facilities and the differences in teachers' attitudes towards technology for various reasons, since the studies were conducted in different countries.

It was found that there were significant differences between teachers aged 36-40 years and 46-50 years, in favor of teachers aged 46-50 years; between teachers aged 36-40 years and 51-55 years, in favor of 51-55 years; between teachers aged 46-50 and those over 55 years, in favor of teachers aged 46-50 years and finally between teachers aged 51-55 years and those over 55 years, in favor of those 51-55 years, in the subdimension of the confirmatory skills.

While there is no significant difference in terms of seniority in the 21st century teaching skills of classroom teachers and the sub-dimensions of these skills including administrative skills, flexible teaching skills and productive skills, and in general scale, a significant difference was found in the sub-dimensions of technopedagogical skills and confirmatory skills. There were significant differences between teachers with a seniority of 0-5 years and teachers with 21-25 years of seniority, in favour of those between 21-25 years of seniority; between teachers with a seniority of 0-5 years and teachers with 26 years of seniority, in favor of teachers with a seniority of 26 years in technopaedagogical sub-dimension. Accordingly, in general sense, senior teachers have higher technopedagogical skills than less senior teachers. This result may be due to the fact that teachers who learned to use technology later considered using technological tools and equipment in the educational process as more interesting and intriguing than teachers born into technology. However, it can be thought that although more senior teachers consider themselves sufficient in terms of technopedagogical skills and think that they use these skills frequently, they do not use them sufficiently. For example, in the study conducted by Jansen and Merwe (2015) on the teachers from different branches working in different secondary schools, it was revealed that teachers generally do not have sufficient digital media literacy skills although they are self-confident technology users.

There was no significant difference between the 21st century teaching skills of classroom teachers and the sub-dimensions of these skills including administrative skills, technopedagogical skills, confirmatory skills, flexible teaching skills and productive skills.

According to the findings obtained from the qualitative dimension of the study, the following results were obtained:

When keeping records situations of the classroom teachers regarding the learning processes of the students are examined, it is seen that the classroom teachers keep records of the observation and evaluation forms showing the mathematical development, literacy and doing homework, and the achievement evaluation scales, the practice exam results and the measurement results with the test scores of the students. It is also clear that the records kept related to assessment and evaluation are generally related to objectives while the observation records consisted mostly of the notes kept about the literacy status of the students.

Based on the findings on determining the classroom rules together with the students, it was revealed that most of the teachers determined the classroom rules regarding the attitudes-behaviors of the students and the physical condition of the classroom, and some of them determined the rules together with the students due to the Covid 19 pandemic and the by distributing tasks in the classroom. The rules of students' attitudes and behaviors included friendship relations, entering and leaving the class, moral rules, disciplinary rules, listening to the speaker and speaking by raising a hand while the rules related to the physical condition of the class included seating arrangement, ventilation of the classroom, the organization of the class and hygiene. It has been found that the rules regarding the Covid 19 pandemic are in the form of mask, distance and hygiene rules. The findings of some studies on determining classroom rules support this finding of the study (Güleç, Bağçeli, & Onur, 2008; Sadık & Arslan, 2015; Kırbaş & Atay, 2017). In these studies, it has been found that classroom rules should be determined with the students in order to ensure effective classroom management and discipline, and that the majority of classroom teacher candidates prefer to determine the classroom rules together with the students.

When the opinions of the classroom teachers on the use of technology in teaching activities related to technopedagogical skills, one of the 21st century teacher skills, were examined, it was found that the majority of the classroom teachers used smart boards and internet to enrich their teaching activities, and some of them used technological tools such as computers and tablet computers. In addition, those teachers who use the Internet to enrich their teaching activities also benefit from educational sites, Web 2 tools and Youtube channels. Most of the teachers participating in the research of Jannah et al.(2020) reported that they used multimedia tools such as mobile phones, computers, internet, projectors, etc. In her research, Fatimah (2017) concluded that media technologies are really effective on the students' attitudes towards learning and support teachers' professional development, and the technology helps teachers to provide a better learning environment. It is obvious that the results of the related studies show similarities with the results obtained in this study regarding the technopedagogical skills of classroom teachers.

When the participant teachers' reinforcing students' desired behaviors in relation to confirmatory skills, one of the 21st century teacher skills, and the activities they do to ensure that students respect individual differences are examined, it is apparent that they use more objective and social reinforcers, as well as symbolic and operational reinforcements, while classroom teachers reinforce the positive behaviors of students. Social reinforcers used by classroom teachers generally include applauding, appreciating, showing as a model while objective reinforcers include rewards and gifts and symbolic reinforcers such as giving stars. On the other hand, operational reinforcers include making children do a favourite activity. Most of the classroom teachers make students show empathy and do activities to help them respect individual differences, build awareness of individual differences, and some teachers support and appreciate the students' work on individual differences, encourage them to do this kind of work, and inform the parents about individual differences. Miller and Pedro (2006) emphasized the place of respect in the educational environment in their study titled "Creating respectful classroom environments" and argued that success will occur in the environments where respect is internalized by both teachers and students. However, they argued that respect should be a critical component of all classroom settings.

Considering the situation of organizing educational or social activities outside the classroom regarding flexible teaching skills, one of the 21st century teacher skills, it is clear that most of the teachers organize trips as educational activities, but they also include library education, exhibitions, museum education, observation, official celebrations and ceremonies into the process alongside field and fair trips such as science fairs and book fairs. Social activities organized by most of the classroom teachers outside the classroom include picnics, cultural trips and social responsibility projects. It has been concluded that some of them are held in the form of charity sales, food events, visits, sports events and celebrations on certain days. In addition, it has been observed that social responsibility projects are held in the form of aid campaign for the victims of natural disasters, book donation campaigns and financial aid campaigns for orphan children.

When the situation of the classroom teachers' preparing authentic material for their lessons in relation to productive skills, one of the 21st century teacher skills, is examined, the majority of the classroom teachers reported that they prepared visual materials suitable for the subject. It was also found that some of them prepared digital, fun-oriented and measurement and evaluation-oriented materials.

When the literature review on the skills of teachers to create authentic materials is examined, it is seen that the classroom teachers mostly prepare the materials they use in both face-to-face and distance education on their own, their material design skills are high, and they are more creative in the materials they prepare manually than the computer-based materials. The finding that the teachers from other branches prepared the materials themselves instead of using ready-made materials such as worksheets, concept maps and presentations, supports this. (Ari, 2019; Çopur, 2022; Korkmaz, 2018; Kuloğlu, 2022; Yanpar et al.,2006).

Suggestions

In line with the results of the research, the following suggestions can be made:

Required central and local in-service trainings, courses and seminars should be organized by the Ministry of National Education in order to develop the 21st century teaching skills of all classroom teachers, especially on their technopedagogical, confirmatory and flexible teaching skills.

Planned needs analyses can be made on the level of use of 21st century teaching skills in educational institutions, and necessary arrangements can be made by informing the related private and public institutions about these identified needs.

The recommendations can be made for the future researchers who want to study 21st century teaching skills including using different scales, observation and interview forms; administering scales in different cities and larger samples; collaborating with the teachers working in different branches and at different school levels other than classroom teachers, examining pre-service teachers in different branches for the future researchers who want to study 21st century teaching skills. It can also be suggested that the demographic information of the participants should be expanded to investigate the effect on 21st century teacher skills, and to examine different factors that are thought to affect 21st century teacher skills.

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Predicting Digital Addiction in Adolescents: The Role of Perceived Social Support and Well-Being Variables

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Abstract

The aim of this study is to examine the role of perceived social support and well-being variables in predicting digital addiction levels in adolescents. The participants in this study, which was conducted based on a correlational research model, comprised 876 adolescents, of whom 55.5% (n = 486) were female and 44.5% (n = 390) were male, studying in different types of high schools during the 2018-2019 academic year and determined according to the convenience sampling method. The revised Perceived Social Support Scale (PSSS-R), the Digital Addiction Scale (DAC) and the five-dimensional Measure of Adolescent Well-Being (EPOCH) were used for collection of the research data. In the analysis of the data, descriptive statistics, Pearson correlation test and hierarchical regression analysis were utilized. The research findings revealed that perceived social support was significantly positively correlated with well-being and significantly negatively correlated with digital addiction. Similarly, statistically significant relationships were found between well-being and the sub-dimensions of digital addiction. In addition, the results show that perceived social support and well-being variables significantly predicted digital addiction and that these two variables together explained 7% of the change in digital addiction scores. Based on the findings of the study, it can be stated not only that perceived social support has a direct effect on digital addiction, but also that this effect increases through well-being.

Keywords: Perceived Social Support, Well-Being, Digital Addiction, Adolescent

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INTRODUCTION

Addiction is defined as an individual's inability to give up doing a certain activity or using a certain substance, or an uncontrollable desire for an action to be repeated, despite being aware of their psychologically, physically, socially, mentally or economically destructive effects (Young, 1998; Griffiths, 2000). It is seen that the issue of addiction, which is considered to be an important public health problem, was mostly examined within the framework of chemical addictions in the past. However, according to the biopsychosocial model, in behavioral addictions, symptoms such as mood changes, tolerance, withdrawal and conflict occur in the individual (Griffiths, 2005). It is observed that behavioral addictions affecting the lives of individuals have increased significantly in the last two decades (Kuss, Kristensen, & Fernandez, 2021). In this context, the definition and limits of addiction have been expanded to include any substance use or reinforcing behavior that is pleasurable and repetitive, harmful to the person, and difficult to change or stop (Orford, 1985). This situation has resulted from examining addiction to a physical substance and a behavioral action under two separate categories (Arslan, 2019). This change in the scope of addiction has highlighted a type of addiction that is classified as behavioral addiction and that produces similar negative results to those occurring in substance addiction, even though no addictive substance is used (Sevindik, 2011). Thus, as a result of the widespread infiltration of computers, internet and mobile phones into our lives due to the development of technology, the concept of digital addiction has become a phenomenon that we frequently encounter in daily life. However, contrary to the level of development that technology and communication tools have reached today, the low level of awareness about the conscious use of these tools exposes young people, in particular, to many risky situations, both individual and environmental (Kaya et al., 2019).

With the continuous development of new technologies and the digitalization at the heart of technology in recent years, the concept of the "addicted individual" has emerged in society and individuals have acquired a new life form in line with their addictions (Yengin, 2019). As well as facilitating human life by enabling many tasks and transactions to be done more easily and efficiently, the internet and the digital tools that provide access to the internet have brought with them a number of new problems that humanity has to deal with. In this context, one of the problem areas whose effect is discussed is digital addiction (Kesici, 2019). Digital addiction is behavioral technology addiction that occurs with the inability to control oneself against the urge to use digital tools, the inability to resist the impulse to use digital tools (Şentürk, 2017) and the feeling of inadequacy related to this (Arslan, 2020). When the concept of digital addiction is examined, although there is no consensus on its definition (Cemiloğlu, Almourad, McAlaney, & Ali, 2022), it is defined as an umbrella term that includes subtypes of the long-standing problem of internet addiction, the much-debated game addiction problem, and the emerging issue of social media addiction or other digital media addiction (Christakis, 2019). Digital addiction does not necessarily involve internet use and therefore includes not only addiction to online activities, but also addiction to offline activities using digital devices, such as offline gaming addiction (Almourad, McAlaney, Skinner, Pleya, & Ali, 2020). Digital addiction is associated with definitions of problematic internet use (Caplan, 2005), pathological internet use (Davis, 2001), internet addiction (Ha et al., 2006), and technological addiction (Griffiths, 1996). It can be said that due to the rapid spread of digital addiction and its multiple negative effects on individuals socially, emotionally and behaviorally, it is an important area that needs to be investigated with all its dimensions, as is also emphasized in the literature (Almaliki & Ali, 2016). In fact, previous studies have shown that digital addiction is associated with a decrease in academic achievement, a reduction in social activities, an increase in domestic conflicts, a change in sleeping habits, the emergence of depression, and deterioration in work performance and social functions (Dahl & Bergmark, 2020; Özyirmidokuz & Karakaş, 2019; Young & Abreu, 2011).

In the reviews of the literature, some studies have been accessed on the use of digital tools and the addictions they cause. Excessive and obsessive use of digital connections can cause significant social and cognitive problems in society (Alrobai, 2018). Some of these problems are low academic achievement, withdrawal from social activities, depression and insomnia (Echeburúa & De Corral, 2009; Young, 1999). Excessive use also leads to an increase in the level of digital addiction in

individuals and negatively affects their levels of well-being (Cham et al., 2019). It has been found that digital addiction causes problems that threaten physical health in adolescents such as muscle/joint pain, obesity and loss of vision (Aziz, Nordin, Abdulkadir, & Salih, 2021), that children's maladaptive behaviors towards digital devices lead to other maladaptive behaviors such as substance abuse and pathological play (Schulz van Endert, 2021), and that digital game addiction is associated with emotional eating in adolescents (Caner & Evgin, 2021). Moreover, it is observed that digital addiction has been investigated in high school students (Eryılmaz & Çukurluöz, 2018; Arslan, 2019) and university students (Arslan, 2020). Within the scope of this research, however, the concepts of perceived social support and well-being, which are considered as protective factors, are discussed as variables that can affect digital addiction. In fact, previous studies also show that digital addiction has an impact on well-being (Duradoni, Innocenti, & Guazzini, 2020; Cham et al., 2019; Zhao, 2021). This makes it important to investigate the relationship of protective factors such as perceived social support and well-being with digital addiction.

Social support is defined as the social and psychological support that the individual receives from his/her environment (Yıldırım, 1997) or the assistance provided to the individual by his/her environment (Yılmaz, Yılmaz, & Karaca, 2008). The concept of social support, which is considered to be multidimensional in the literature, includes giving advice and information to the individual, emotional support, financial assistance, appreciation, helping the individual to cope with his/her problems, being a role model for the individual, and social interest. People such as parents, spouses, lovers, friends, family, teachers, relatives, neighbors and experts, who have an important place in the life of the individual, constitute the social support resources of that individual (Yıldırım, 2004). In addition, it is seen that the concept of social support is examined in two different categories. The first of these includes objective elements such as direct assistance for the individual by others, the existence of social networks, and the communities involved, while the second is perceived social support, which is concerned with the subjective feeling of the individual (Kaniasty & Norris, 2008). Perceived social support refers to the individual's belief and confidence that adequate support will be provided to him/her when needed (Barrera, 1986). Studies have shown that a high level of social support increases the individual's well-being by protecting him/her from loneliness, depression and physical disorders (Polat & Bayrak-Kahraman, 2013). It is stated that perceived social support is an important protective factor for children and adolescents in developmental issues related to school achievement, self-esteem and mental health (Emser & Christiansen, 2021).

When studies in the literature investigating the relationships between perceived social support and variables related to digital addiction are examined, according to a meta-analysis study conducted among studies examining the relationship between internet addiction and social support among young people in China, it was found that internet addiction decreased as social support increased (Lei, Li, Chiu, & Lu, 2018). According to other conducted studies, it was found that internet addiction was low in adolescents with a high level of perceived social support (Wu et al., 2016), there was a negative relationship between internet and game addiction and perceived social support (Yavuz, 2018), social support reduced depressive symptoms in children and adolescents (Klasen et al., 2015; Sobol, Wozny, & Czubak-Paluch, 2021), and during the COVID-19 epidemic, more mental health problems were observed among adolescents who had low social support (Qi et al., 2020). Moreover, in a study covering six European countries, it was found that adolescents with high levels of perceived social support from their parents and teachers had a lower tendency to experience violence and accept violence (Perez-Martinez et al., 2021). In a study comparing the effect of social support received from the real environment and social support received through social media on the reduction of problems such as social isolation, depression and anxiety, it was observed that social support received from the real environment reduced social isolation, depression and anxiety, while it was concluded that social support received through social media had no effect on the prevention of these problems (Meshi & Ellithorpe, 2021). The results obtained from the studies mentioned above reveal that perceived social support is a protective factor in terms of well-being and digital addiction in adolescents.

The concept of well-being, which refers to ideal psychological functionality and experience, is one of the issues emphasized in the field of psychology (Deci & Ryan, 2008). As a result of studies

conducted on well-being, the concepts of subjective well-being and psychological well-being, which reveal two important perspectives, have been defined (Demirci & Ekşi, 2015). While subjective well-being prioritizes avoiding pain and obtaining pleasure, psychological well-being focuses on the individual's gaining meaning and self-realization in his/her life (Ryan & Deci, 2001). The concept of well-being consists of constructs such as autonomy, establishing positive relationships with others, life purpose, realization of potential, and self-acceptance (Ryff, 1989). Nowadays, one of the ways of meeting the important needs of adolescents, such as expressing themselves, communicating with others and realizing their potential, is digital channels such as social media, the internet and telephones. However, excessive use of these channels leads to an increase in the level of individuals' digital addiction and to a negative effect on their level of well-being. When the related studies are examined, it is seen that digital addiction causes negative life experiences such as domestic conflict, psychological problems like depression and stress, low job performance, low self-esteem, irregular sleep, a decrease in face-to-face communication, and violation of others' privacy (Cham et al., 2019). From this point of view, it can be said that digital addiction has a significant effect on well-being in adolescents.

In the conducted studies, it was found that internet addiction decreased as the level of subjective well-being increased in adolescents (Derin & Bilge, 2016), internet addiction increased as the level of psychological well-being decreased in university students (Uz-Baş, Öz-Soysal, & Aysan, 2016), internet addiction decreased as happiness increased (Totan, Ercan, & Öztürk, 2019), subjective well-being decreased as digital game addiction increased (Baysan, Çakici-Eş, & Tezer, 2019), and four types of technological addiction, namely internet addiction, social media addiction, digital game addiction and smartphone addiction, significantly negatively predicted social connectedness (Savcı & Aysan, 2017). When the research findings are examined in general, it is seen that individuals with high levels of perceived social support also have high levels of well-being and low levels of digital addiction. Moreover, it was found that individuals with high levels of digital addiction had low levels of well-being. From this point of view, it is predicted that perceived social support will increase well-being and that this will contribute to the reduction of digital addiction. When the literature is examined, no study can be found that examines perceived social support, well-being and digital addiction together and investigates the role of perceived social support and well-being in predicting digital addiction in adolescents. This distinguishes the present study from previous studies. In line with the purpose of the research, answers to the following questions were sought:

1. Is there a significant relationship between perceived social support, well-being and digital addiction levels in adolescents?
2. Do levels of perceived social support and well-being significantly predict digital addiction in adolescents?

METHOD

Research Design

In this study, a correlational research model was utilized to examine the relationships between perceived social support, digital addiction and well-being. Correlational survey studies are carried out to determine the relationships between two or more variables (Büyüköztürk, Kılıç-Çakmak, Akgün, Karadeniz, & Demirel, 2017). Hierarchical regression analysis was conducted in order to determine the effect of perceived social support and well-being on digital addiction. Hierarchical regression is the examination of the effects of variables determined by the researcher on the predicted variable (Can, 2019).

Research Participants

The participants in the study consisted of 876 students, of whom 55.5% (n = 486) were female and 44.5% (n = 390) were male, who were studying in different types of high schools during the 2018-

2019 academic year and were determined according to the convenience sampling method. It was seen 23.3% of the participants were vocational high school students, 22.7% were imam hatip (religious vocational) high school students, 31.4% were Anatolian high school students and 22.6% were science high school students. While 22.9% of the students were in 9th grade, 35.3% were in 10th grade, 23.3% were in 11th grade and 18.5% were in 12th grade. It was determined that 8.3% of the students defined their achievement level as low, 42.2% expressed it as medium, 40% defined it as good and 9.5% described it as very good. In terms of parental education level, it was seen that 8.7% of the students' fathers and 31.4% of their mothers were illiterate. Regarding social media use, 81.4% of the students stated that they used social media. In terms of period of use, 27.2% of these students stated that they used social media for half an hour or less, 27.9% used it for 1 hour, 18.8% used it for 2 hours, 8.7% used it for 3 hours and 17.4% used it for more than 3 hours per day.

Data Collection Tools

Perceived Social Support Scale (PSSS-R)

The Perceived Social Support Scale (PSSS-R), which was developed by Yıldırım (1997) and also revised by Yıldırım (2004), was used to determine the perceived social support levels of the students. The PSSS-R is a Likert-type scale consisting of 50 items and three sub-dimensions: family support (FAS), friend support (FRS) and teacher support (TRS). There are 20 items in the FAS sub-dimension, 13 items in the FRS sub-dimension, and 17 items in the TRS sub-dimension. There is one reverse-scored item in each sub-dimension of the scale. The lowest score that can be obtained from the PSSS-R is 50, while the highest score is 150. Higher scores indicate that the individual receives more social support. Within the scope of this study, the Cronbach alpha coefficients were calculated as .95 for the overall PSSS-R, .93 for the FAS sub-dimension, .91 for the FRS sub-dimension, and .93 for the TRS sub-dimension.

Five-dimensional Measure of Adolescent Well-Being (EPOCH)

The five-dimensional Measure of Adolescent Well-Being (EPOCH), which was developed by Kern, Benson, Steinberg and Steinberg (2015), was adapted into Turkish by Demirci and Ekşi (2015). The scale consists of the dimensions of engagement, perseverance, optimism, connectedness and happiness. There are a total of 20 items in the scale, each dimension of which consists of 4 items. The EPOCH is a 5-point Likert-type scale, and the lowest score that can be obtained from the scale is 20, while the highest score is 100. High scores obtained from the scale mean a high level of well-being. Within the scope of this study, the Cronbach alpha coefficients were found to be .91 for the overall EPOCH and .79 / .72 / .80 / .77 and .69 for the sub-dimensions, respectively.

Digital Addiction Scale (DAS)

The Digital Addiction Scale (DAS), which was developed by Arslan, Kırık, Karaman and Çetinkaya (2015), consists of three sub-dimensions: Game Addiction (11 items), Social Media Addiction (12 items) and Impact on Social Life (6 items), and a total of 29 items. The scale was prepared as a 5-point Likert type, and the lowest score that can be obtained from the scale is 29, while the highest score is 145. High scores obtained from the scale indicate a high level of digital addiction. Within the scope of this study, the Cronbach alpha coefficient for the total DAS was calculated as .92, while the Cronbach alpha coefficients of the sub-dimensions were calculated as .84 / .92 and .84, respectively.

Personal Information Form

Information about the participants' gender, school type, grade level, achievement status, parental education level and social media usage were collected through an information form created by the researchers.

Data Analysis

The SPSS 21.0 program was used in the analysis of the data. The skewness coefficient was used to test the normality of the scale scores. When the skewness coefficient used in the normal distribution characteristic of the scores obtained from a continuous variable is within the limits of ± 1 , this can be interpreted as that the scores do not show a significant deviation from the normal distribution (Büyüköztürk, 2011). Since it was determined that the scale and sub-dimension scores were normally distributed, the Pearson correlation test was used to determine the relationship between the scale and its sub-dimensions; hierarchical regression analysis was used to determine the effect of perceived social support and well-being on digital addiction. In the first stage of the regression analysis, the independent variables were included in the model in block form and their contribution to the variance in the dependent variable was examined. In the second stage, the sub-dimensions of the well-being scale were included in the model and the change in the variance was examined. According to the difference in the variance between the first model and the second model, it was evaluated whether well-being had a significant effect on the relationship between the independent and dependent variables with the statistical significance level of the change in variance. The change in variance and its statistical significance can be obtained with the “R Square Change” command in the SPSS program. In the analyses, the confidence interval was determined as 95% and the significance level as .05.

FINDINGS

The descriptive statistics for the scores obtained by the adolescents participating in the study from the PSSS-R, EPOCH and DAS scales and their sub-dimensions are presented in Table 1.

Table1. Descriptive Statistics for PSSS-R, EPOCH and DASScales and Sub-Dimensions

Scale and Sub-Dimensions	N	Min.	Max.	\bar{X}	Sd	Skewness	Kurtosis
Family	872	1.00	3.00	2.46	.46	-.95	.21
Friends	874	1.00	3.00	2.44	.50	-.96	.17
Teachers	876	1.00	3.00	2.16	.56	-.29	-.95
Perceived Social Support	876	1.12	3.00	2.35	.39	-.50	-.25
Connectedness	870	1.00	5.00	3.78	1.04	-.70	-.36
Engagement	870	1.00	5.00	3.45	.97	-.26	-.62
Happiness	870	1.00	5.00	3.29	1.10	-.09	-.91
Optimism	870	1.00	5.00	3.42	1.04	-.25	-.73
Perseverance	870	1.00	5.00	3.35	.93	-.17	-.53
Well-Being(EPOCH)	870	1.05	5.00	3.46	.79	-.27	-.25
Game Addiction	874	1.00	5.00	2.34	.88	.56	-.13
Social Media Addiction	874	1.00	5.00	2.64	1.07	.37	-.70
Impact on Social Life	874	1.00	5.00	2.57	1.10	.30	-.78
Digital Addiction	874	1.00	5.00	2.51	.82	.41	-.37

As seen in Table 1, the adolescents participating in the study obtained the highest social support score from the family sub-dimension (2.46 ± 0.46) and the lowest social support score from the teachers sub-dimension (2.16 ± 0.56). The mean score for the total perceived social support scale was determined as (2.35 ± 0.39). It was determined that the mean score obtained from the total EPOCH scale was (3.46 ± 0.79), while the highest mean scores obtained from the sub-dimensions were for connectedness (3.78 ± 1.04), engagement (3.45 ± 0.97) and optimism (3.42 ± 1.04), respectively, while the lowest mean score was obtained from the sub-dimension of happiness (3.29 ± 1.10). When the scores for the digital addiction scale were examined, it was revealed that the highest mean score was obtained from the social media addiction sub-dimension (2.64 ± 1.07), while the mean scores for impact on social life and game addiction were (2.57 ± 1.10) and (2.34 ± 0.88), respectively. The mean score for the overall digital addiction scale was found to be (2.51 ± 0.82).

The results of the Pearson correlation analysis of the relationships between the PSSS-R, EPOCH and DAS scales and their sub-dimensions are given in Table 2.

Table2. Correlation Analysis Results for the Relationship Between Variables

Scale and Sub-Dimensions	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Family	.38**	.40**	.75**	.49**	.28**	.34**	.37**	.37**	.47**	-.15**	-.08*	-.10**	-.13**
2. Friends	1	.36**	.75**	.58**	.22**	.30**	.27**	.23**	.41**	-.05	.07*	-.05	.00
3. Teachers		1	.79**	.30**	.25**	.30**	.32**	.35**	.39**	-.14**	-.14**	-.10**	-.16**
4. Perceived Social Support			1	.59**	.33**	.41**	.41**	.42**	.55**	-.15**	-.07*	-.11**	-.13**
5. Connectedness				1	.40**	.53**	.51**	.40**	.73**	-.04	.07*	-.07*	.00
6. Engagement					1	.54**	.53**	.48**	.75**	.03	.07*	.00	.05
7. Happiness						1	.64**	.48**	.83**	.01	.06	-.04	.02
8. Optimism							1	.59**	.84**	-.01	.03	-.01	.01
9. Perseverance								1	.74**	-.10**	-.10**	-.10**	-.13**
10. Well-Being (EPOCH)									1	-.02	.04	-.06	-.01
11. Game Addiction										1	.59**	.36**	.83**
12. Social Media Addiction											1	.40**	.89**
13. Impact on Social Life												1	.64**
14. Digital Addiction													1

*p<.05**p<.01

As seen in Table 2, positive and significant relationships with perceived social support from the family were found for connectedness ($r=.49$; $p<.05$), engagement ($r=.28$; $p<.05$), happiness ($r=.34$; $p<.05$), optimism ($r=.37$; $p<.05$), perseverance ($r=.37$; $p<.05$) and total well-being scale ($r=.47$; $p<.05$) scores. There are positive and significant relationships with perceived social support from friends for connectedness ($r=.58$; $p<.05$), engagement ($r=.22$; $p<.05$), happiness ($r=.30$; $p<.05$), optimism ($r=.27$; $p<.05$), perseverance ($r=.23$; $p<.05$) and total well-being scale ($r=.41$; $p<.05$) scores. Positive and significant relationships with perceived social support from teachers were found for connectedness ($r=.30$; $p<.05$), engagement ($r=.25$; $p<.05$), happiness ($r=.30$; $p<.05$), optimism ($r=.32$; $p<.05$), perseverance ($r=.36$; $p<.05$) and total well-being scale ($r=.39$; $p<.05$) scores. Moreover, positive and significant correlations with total perceived social support scale scores were determined for connectedness ($r=.59$; $p<.05$), engagement ($r=.32$; $p<.05$), happiness ($r=.41$; $p<.05$), optimism ($r=.41$; $p<.05$), perseverance ($r=.42$; $p<.05$) and total well-being scale ($r=.55$; $p<.05$) scores. Negative and significant relationships with perceived social support from the family were found for game addiction ($r=-.15$; $p<.05$), social media addiction ($r=-.08$; $p<.05$), impact on social life ($r=-.10$; $p<.05$) and total digital addiction scale ($r=-.13$; $p<.05$) scores. A positive and significant relationship was found between perceived social support from friends and social media addiction ($r=.07$; $p<.05$) scores. Negative and significant relationships with scores for perceived social support from teachers were found for game addiction ($r=-.14$; $p<.05$), social media addiction ($r=-.14$; $p<.05$), impact on social life ($r=-.10$; $p<.05$) and total digital addiction scale ($r=-.16$; $p<.05$) scores. There are negative and significant correlations with total perceived social support scores and game addiction ($r=-.15$; $p<.05$), social media addiction ($r=-.07$; $p<.05$), impact on social life ($r=-.11$; $p<.05$) and total digital addiction scale ($r=-.13$; $p<.05$) scores.

When Table 2 is examined, it is seen that there is a positive and significant relationship between connectedness scores and social media addiction ($r=.07$; $p<.05$) scores, while there is a negative and significant relationship between engagement scores and impact on social life ($r=-.07$; $p<.05$) scores. A positive and significant relationship was determined between scores for engagement and social media addiction ($r=.07$; $p<.05$). Negative and significant relationships with perseverance scores were found for game addiction ($r=-.10$; $p<.05$), social media addiction ($r=-.10$; $p<.05$), impact on social life ($r=-.10$; $p<.05$) and total digital addiction scale ($r=-.13$; $p<.05$) scores. It was observed that there is no significant relationship with happiness, optimism and total well-being scale scores for total digital addiction scale and sub-dimension scores ($p>.05$).

The results of the hierarchical regression analysis performed for the prediction of digital addiction levels in adolescents according to the variables of perceived social support and well-being are shown in Table 3.

Table 3. Hierarchical Regression Analysis Results for Prediction of Digital Addiction

	Independent Variables	B	SH _B	β	t	p	Tolerance	VIF
1st Model	Constant	3.077	0.175		17.607	0.000		
	Family	-0.187	0.068	-0.104	-2.736	0.006	0.774	1.291
	Friends	0.158	0.061	0.096	2.579	0.010	0.801	1.248
	Teachers	-0.228	0.055	-0.155	-4.127	0.000	0.789	1.267
	R=0.197	R ² =0.039	F _(3; 860) =11.515		p=0.000			
2nd Model	Constant	3.026	0.181		16.705	0.000		
	Family	-0.209	0.072	-0.117	-2.892	0.004	0.668	1.497
	Friends	0.110	0.069	0.067	1.598	0.110	0.615	1.626
	Teachers	-0.224	0.056	-0.153	-3.993	0.000	0.741	1.349
	Connectedness	0.014	0.039	0.017	0.358	0.720	0.455	2.199
	Engagement	0.099	0.036	0.116	2.785	0.005	0.622	1.609
	Happiness	0.035	0.035	0.047	1.007	0.314	0.492	2.034
	Optimism	0.073	0.038	0.093	1.915	0.056	0.458	2.184
	Perseverance	-0.164	0.038	-0.185	-4.267	0.000	0.579	1.727
	R=0.268	R ² =0.072	F _(8; 855) =8.263	p=0.000	F _{Change (5; 855)} = 6.107;		p=0.000	

As seen in Table 3, in the first step of the hierarchical regression analysis, the effect of perceived social support, which is an independent variable of the research, on the dependent variable digital addiction was examined. It is seen that the first established model is appropriate ($F_{(3;860)}=11.52$; $p<.05$), and that there is no autocorrelation and multicollinearity between the independent variables (tolerance>0.20; VIF<10). Perceived social support explains about 4% ($R^2=0.039$) of the variance in digital addiction.

According to the standardized regression coefficients (β) and the significance of the coefficients (t) in the first model, it was found that perceived support from family ($\beta=-0.10$; $t=-2.74$; $p<.05$) and perceived support from teachers ($\beta=-0.16$; $t=-4.13$; $p<.05$) had a negative and significant effect on digital addiction; however, perceived support from friends ($\beta=0.10$; $t=2.58$; $p<.05$) had a positive and significant effect on digital addiction.

When Table 3 is examined, it is seen that the second model, in which the sub-dimensions of well-being are included, is appropriate ($F_{(8;855)}=8.26$; $p<.05$), and that there is no autocorrelation and multicollinearity between the independent variables (tolerance>0.20; VIF<10). With the inclusion of the sub-dimensions of well-being in the model, the explanation rate of the variance in digital addiction was determined as 7% ($R^2=0.072$).

In the second model, it was determined that the difference in explained variance with the inclusion of the sub-dimensions of well-being in the model was at the level of 0.033 ($1.R^2 - 2.R^2=0.033$), and that this difference was statistically significant ($F_{\text{Change (5; 855)}}=6.11$; $p<.05$). In other words, in the second model established for the effect of perceived social support on digital addiction, it was seen that the variable of well-being contributed significantly to the variance. When the regression coefficients and the t-test values regarding the significance of the coefficients are examined, the negative effect of perceived social support on digital addiction decreased as the engagement scores increased ($\beta=0.12$; $t=2.78$; $p<.05$); the negative effect of perceived social support on digital addiction increased as the perseverance scores increased ($\beta=0.18$; $t=2.78$; $p<.05$).

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

Adolescents may turn towards the use of technological products through the influence of the age of technology and their peers, and may face the risk of becoming addicted to the use of technological products due to academic failure, loneliness, introversion, depressive affect, problems in family relationships and lack of social support (Ektiricioğlu, Arslantaş, & Yüksel, 2020). This study aimed to examine the effect of perceived social support and well-being variables in predicting digital addiction. According to the findings obtained from the research, it was seen that perceived social support from family and teachers negatively affected digital addiction, while perceived social support

from friends positively affected digital addiction. In addition, it was found that perceived social support and well-being variables significantly predicted digital addiction.

When the mean scores for the variables discussed in this study are examined, it is seen that the level of general social support perceived by the adolescents was moderate, and that in terms of the sub-dimensions, the highest mean scores were obtained from the family and friends sub-dimensions, respectively, while the lowest mean scores were obtained from the teachers sub-dimension. When the literature is examined, in a study conducted on adolescents by İlhan and Taşkın (2019), family and friends, respectively, were perceived as an important social support system. This result reveals the importance of support given by the family for students studying at high school level. In a study conducted on university students by Süel and Ünlü (2019), however, it was seen that the friend dimension came to the forefront as the social support system, and that the family dimension came second. This may be related to the social support networks required by individuals in their developmental period. It was seen that the adolescents' general well-being was moderate, while the highest mean score in the sub-dimensions of well-being was in the connectedness sub-dimension, followed by the engagement and optimism sub-dimensions, respectively. On the other hand, the adolescents obtained the lowest mean score from the happiness sub-dimension. When evaluated together with perceived social support, the fact that the family and friends environment was more prominent among the adolescents is in parallel with the fact that the connectedness sub-dimension was at the forefront in the context of well-being. In the study conducted by Kocayörük (2012), it was seen that perceived support from parents had a positive effect on adolescents' well-being. A supportive finding was obtained from the study carried out by Cihangir-Çankaya (2009). From this point of view, it can be said that the perceived social support from family and friends is an important factor in meeting students' psychological needs, and that this also has a positive effect on their well-being.

When the mean scores for digital addiction are evaluated, it is seen that the general digital addiction levels of the adolescents were low, and that when the sub-dimensions are taken into account, they obtained the highest scores in the social media addiction dimension, followed by the impact on social life and game addiction sub-dimensions, respectively. Similar to the research findings, adolescents' digital addiction levels were found to be low in the study conducted by Arseven (2020). In the studies conducted by Arslan (2019) and Arslan (2020) with secondary school and university students, however, it was found that digital addiction was at a moderate level. In different studies investigating adolescents' digital addiction levels (Eryılmaz & Çukurluöz, 2018; Arslan, 2020; Arseven, 2020; Altınok 2021), it was seen that the highest scores were obtained from the social media addiction dimension and the lowest scores from the game addiction sub-dimension, which is similar to the finding obtained in this study. In a study named "Turkish Youth Research" conducted by Ateş (2021) in 22 provinces in Turkey, the participants stated that they used the internet mostly for social media, education/research, gaming, entertainment and making friends, respectively. In parallel with the results obtained from this study, these findings support the fact that the social media addiction dimension was at the forefront. In studies conducted on social media addiction in adolescents, it was found that social media addiction was at a moderate level (Güney & Taştepe, 2020), adolescents with high levels of social media usage participated less in social activities (Can, Hazar & Kurt, 2021), there was a moderately positive relationship between the fear of missing out on developments in social settings and depression and anxiety among adolescents (Kartol & Peker, 2020), and there was a relationship between social media use disorder and personality disorders (Türk, 2020). Considering these findings, it can be said that the use of social media, which is an important dimension of digital addiction, causes various problems among adolescents and has a negative effect on their social lives.

In this study, the relationships between perceived social support, well-being and digital addiction and the sub-dimensions of these variables were examined. According to the first findings obtained, positive significant relationships were found between scores obtained from the total perceived social support and all its sub-dimensions, and the scores obtained from the total well-being scale and its sub-dimensions. Accordingly, it was seen that as the level of support perceived by the adolescents from social support sources such as family, friends and teachers increased, their well-being was positively affected by this. In general, a high level of social support positively affected the

adolescents' characteristics of engagement, perseverance, optimism, connectedness and happiness that encompass well-being.

According to the findings of the study, negative significant relationships were found between the scores obtained by the adolescents from the total perceived social support scale and its family and teacher sub-dimensions, and their scores in the total digital addiction scale and its game addiction, social media addiction, and impact on social life sub-dimensions. According to these results, it can be said that as the perceived social support level increased, the level of digital addiction decreased. Similar to this finding, in some conducted studies (Blau, Goldberg & Benolol, 2019; Herrero et al., 2019), it was found that as social support increased, addiction decreased. In the study conducted by Almourad et al. (2020), it was found that excessive use of digital tools caused social isolation and withdrawal from social activities. Similarly, Peper and Harvey (2018) found that digital addiction increased loneliness, anxiety and depression. The concept of social support, which is defined as the social and psychological support obtained by an individual from his/her environment, is based on Kurt Lewin's Field Theory. Lewin defined life space as all the behaviors that affect the life of the individual at a certain time, and behavior as a function of the individual and the environment. Life space is classified into behaviors that define the individual and those that define the environment. The environment in Lewin's definition of behavior is the psychological environment. All elements of the psychological environment affect behavior and it may be possible to eliminate the individual's negative behaviors and for him/her to acquire new behaviors by helping him/her to make changes in his/her psychological environment. In this sense, the social support system of the individual is located in his/her psychological environment (Yıldırım, 1997). This situation shows that perceived social support is an important factor in reducing the negative effects on individuals caused by excessive use of technological and digital tools. Moreover, when the studies examining the relationship between perceived social support and types of digital addiction are examined, it is seen that low social support predicted internet addiction (Tudorel & Vintila, 2018), there was a moderate negative relationship between perceived social support and internet addiction, and the perceived social support levels of adolescents who spent time with their mothers were high, while their internet addiction levels were lower (Günüç & Doğan, 2013). Moreover, social support was found to be a significant negative predictor of internet addiction in adolescents (Wu et al., 2016). In the study conducted by Wang and Wang (2013), too, it was found that while there was a positive relationship of online social support and online social relationships with internet addiction, normal social support and social relationships were negatively correlated with internet addiction. However, in a study conducted by Meshi and Ellithorpe (2021), comparing the effects of social support received from the real environment and of social support received through social media on reducing problems such as social isolation, depression and anxiety, it was seen that social support received from the real environment reduced social isolation, depression and anxiety, while it was concluded that social support received through social media had no effect on preventing these problems. As a result of these findings, it can be said that perceived social support from the environment is an important factor in reducing and preventing digital addiction. According to another finding of the study, a positive significant relationship was found between perceived social support from friends and social media addiction. In the study conducted by Kaşıkçı, Denli and Karaman (2021), it was determined that as social exclusion among adolescents increased, their social media addiction increased. Unlike these findings, which show that different results were revealed for peer influence, in a study made by Deniz and Kazu (2021), it was found that the path estimates made between perceived family, friend and teacher support and attitude variables related to social media were not statistically significant. This situation may be due to the increase in social media friendships in today's society and the attitudes of communicating with others through these channels. Considering the findings obtained from this study and the studies in the literature, it can be stated that the social support system and digital addiction are significantly related.

When the relationship between the well-being variable and digital addiction is examined in terms of total scores and sub-dimensions, a positive and significant relationship was found between the engagement and connectedness dimensions and the social media addiction sub-dimension, while there was a negative and significant relationship between the connectedness dimension and the sub-dimension of impact on social life. While demonstrating that technology is used as an alternative to

real social environments in the development and maintenance of social engagement, this finding also supports the view that excessive use has negative effects on social life (Savcı & Aysan, 2017). Another finding reveals that the relationship between perseverance and total digital addiction and all its sub-dimensions was negative and significant. Perseverance refers to the effort made by a person to progress towards his/her goals in spite of obstacles (Demirci & Ekşi, 2015). Although no finding supporting this result can be found in the literature, this situation shows that perseverance is an important factor in preventing digital addiction.

In this study, according to the regression analysis performed to examine whether the independent variable was a significant predictor of the dependent variable, the perceived social support variable explained 4% of the total variance in digital addiction. Accordingly, it was found that perceived social support from the family and perceived social support from teachers had a negative significant effect on digital addiction. This finding shows similarity to the results of some studies (Kayri, Tanhan, & Tanrıverdi, 2014; Ceyhan, 2011). According to another finding that was obtained, it was concluded that the effect of perceived social support from friends on digital addiction was positive and significant. The fact that the use of technologies such as the internet and social media is more common among adolescents (Savcı & Aysan, 2017) may induce adolescents to mostly refer to digital resources when communicating. In line with these findings, it can be said that as perceived social support from the family and teachers increases, digital addiction decreases, and that as perceived social support from friends increases, the tendency to use digital tools and the resulting addiction also increase.

According to the findings of the second model, in which the well-being variable was included, well-being was also found to be a significant predictor of digital addiction. Accordingly, with the inclusion of the sub-dimensions of the well-being variable in the model, the variance in digital addiction increased to 7%. Regarding the sub-dimensions of the well-being variable, as the scores for engagement increased, the negative effect of perceived social support on digital addiction decreased; as perseverance scores increased, however, the negative effect of perceived social support on digital addiction increased. While engagement means an individual's full involvement in and focus on the work and activity he/she does, perseverance refers to the effort made by a person to progress towards his/her goals in spite of obstacles (Demirci & Ekşi, 2015). Similarly, in the study conducted by Uz-Baş, Öz-Soysal and Aysan (2016), it was found out that psychological well-being was a significant predictor of excessive internet use. Based on the results of this study, it can be stated not only that perceived social support has a direct effect on digital addiction, but also that this effect increases through well-being.

When the research findings are evaluated in general, it was found that the variables of perceived social support and well-being significantly predicted digital addiction. Considered within the framework of the literature, it can be said that perceived social support is related to internet, gaming, social media and technology addiction. At the same time, the detection of a positive significant relationship between the connectedness and engagements sub-dimensions of the well-being variable and social media addiction, which is a sub-dimension of digital addiction, has brought to mind a relatively new concept in recent years, that of digital well-being. Digital well-being is individuals' state of feeling happy as a result of doing research, spending time and communicating with others by using social media, telephones and technological devices (Kara, 2019). When the literature is examined, it was found in the study carried out by Liu et al. (2019) that through digital communication channels, individuals' well-being increased by making phone calls, texting, using social networks and presenting themselves via digital tools, while online games were found to have a negative effect on well-being because they were a substitute for social contact. Similarly, it was found that there was a positive relationship between smartphone addiction and digital well-being (Kara, 2019), and that positive digital media use increased well-being in young people (James et al., 2017), while in the study conducted by Totan, Ercan and Öztürk (2019), it was found that as happiness increased, internet addiction decreased. As a result of these findings, just as digital tools, which are and will continue to be an inevitable part of our lives, may have negative effects on individuals, they can also have positive effects on individuals' well-being by facilitating communication with others,

speeding up work, and providing individuals with opportunities to express themselves in different ways.

While the use of digital tools and online applications provides people with significant benefits, there are disadvantages resulting from excessive use. The proliferation of digital addictions, which occur as a result of excessive use of digital technology, especially among the adolescents who represent future generations, brings with it important problems, because the imbalance in the use of digital technology leads to significant deficiencies in the individual him/herself, and in his/her family, community and country (Hamid et al., 2020). In this respect, it is important for psychological counselors and teachers working in schools to carry out preventive studies that will reduce digital addiction and ensure conscious internet use in order to control the negativities that may occur. This study is limited to the variables of digital addiction, perceived social support and well-being in adolescents attending secondary school. In future studies, investigating different variables and groups and developing preventive intervention programs aimed at digital addiction will contribute to the researches.

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The Effects of the ÇABA Multi-Purpose Early Childhood Education (ÇABAÇAM) Model on the Academic Achievement, Personal and Professional Development of Preschool Teacher Trainees*

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Abstract

This is a case study on the Effects of The Çanakkale Onsekiz Mart University ÇABA Multi-Purpose Early Childhood Education (ÇABAÇAM) Model on the Academic Achievement, Personal and Professional Development of Preschool Teacher Trainees as a result of their experiences as voluntary practitioners within the ÇABAÇAM model. Using a qualitative research model, the research is carried out within a case study-based framework. Following a literature review, the researcher developed a semi-structured interview questionnaire as the means of data collection. The study group consists of preschool teacher trainees volunteering as preschool classroom practitioners in ÇABAÇAM while attending Çanakkale Onsekiz Mart University Education Faculty Preschool Education Teaching Undergraduate Program. 13 Teacher trainees were selected by the researcher for the project. Semi-structured interviews were held with the volunteer teacher trainees between October 1st and November 1st 2020. The analysis of the data gathered was done by content analysis. Maxqda2020 was employed in the analysis of the semi-structured interviews. The data, as examined by the researcher indicates that the ÇABAÇAM Model had a positive effect both on the academic achievement and the personal and professional development of preschool teacher trainees. Research findings show that in accordance with its fundamental educational goals, the ÇABAÇAM Model is shown to successfully ease pre-assignment teachers' transition into work life by equipping them for their future professional roles in ways which will enable them to better contribute to meeting the quality standards for preschool education.

Keywords: ÇABAÇAM, ÇOMÜ, Teacher, Voluntarism, Awareness, Preschool Education

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INTRODUCTION

Early Childhood Education

Preschool education takes place between 0-66 months, during the infancy and early childhood period of a child's life, spanning the child's birth up to their entry into primary school. This period of education enables children's development in accordance with societal norms, and it is the developmental phase in a child's life during which education supports the growth of a child's reasoning skills, advancing their psycho-social development and powers of perception. Early childhood education, or "early learning" as it is also known, aims to enhance the child's creative abilities as an individual, broadening their horizons as they acquire the national, moral and human values of the society in which they live (Yılmaz, 2003). This stage of education lays a solid foundation for the development of their socio-emotional, cognitive, language and motor skills and for the life-long wellbeing of the child. Provision of a high-quality systematic education during this period is seen as the most important phase in the educational system, as it lays the foundation for basic knowledge, skills and attitudes which every child will continue to develop throughout their lifetime, providing experiences which will also go on to influence their subsequent education (2023 Education Vision 2018).

Children between the ages of 0-6 are known to develop at a rate of alacrity unmatched in later life. This phase of education is of particular importance for the Turkish Education System. According to the ERG Education Monitoring Report 2022, the rise in access to pre-school education in the 2021-2022 school year is a consequence of the actions taken by the Ministry of National Education. Pre-school enrolment amongst the five year age group increased to 81.6% during the 2021-2022 school year. This represents a 10.4% rise over the 2019-2020 school year to become the highest recorded percentage increase in enrolment of recent years. The enrolment ratio stands at 55.9% in the 4-5 age group and 44.1% in the 3-5 age group.

Enrolment for 3 year olds appears to be 1,114,165, and 913,757 for 4 year olds. The enrolment figures for 5 year olds are officially at 219,356. There is an overall lower percentage of enrolment for girls compared to boys throughout the preschool education level. The enrolment gender percentage among 5 year olds is recorded as 81.4 % for girls and 81.9 % for boys respectively (ERG, 2022).

The Preschool Teacher

Learning and behaviour development peaks in individuals between 0-6 years of age. Learning and attitudes acquired in this period remain with the individual for life. Teachers have a considerable impact in setting the foundations for learning. Thus, great emphasis is placed globally on the training of teachers. The preschool teacher cannot be compared with teachers in other areas as they are often the first educator the child encounters during their life. The teacher is the first adult the child meets outside of their own family circle. This first contact with education has a profound impact on the child. The first educator creates an impact on the child's consciousness which will become instrumental in building their lifelong basic schemata for the role of the teacher.

According to the 2022 ERG Education Monitoring Report, 1,139,673 teachers were in service in Turkey during the 2021-2022 academic year. 975,698 of these were employed in the public sector while 163,975 worked in private institutions. Teacher employment increased by 2.7% in the 2021-2022 year, compared to figures for the previous academic year of 2020-2021. The general numbers of teachers employed in public and private institutions increased during the 2021-2022 school year, comparatively the most significant increase occurred in the pre-school teaching population. The number of children attending pre-school education decreased by 24.8% while the numbers of teachers within the same group decreased by 3.8% during the 2020-2021 school year. However, the number of children attending pre-school education increased by 53.8% while the numbers of teachers within the same group increased by 12.8% during the 2020-2021 school year.

Preschool teachers, who play a significant role particularly in the personal development of individuals, are themselves in need of both quantitative and qualitative support.

Preschool Teacher Competencies

When we consider the demands of the 21st century knowledge-based society, continuity becomes key to the development of an educational system in which teachers are ever more capable, considerate and sensitive in face of the challenges of the age. Such continuity may be enhanced by the consistent provision of professional development opportunities for educators such as conferences, courses, seminars, programs and a variety of published educational material. However, it is essential to consider carefully the fundamental structure and impact of such devices, if they are to be truly instrumental in contributing towards the desired developments in teachers (Djoub, 2018).

Analysing the special area proficiencies officially considered by The Ministry of National Education (MoNE) to be requirements for preschool teachers as the initial educator encountered by the 0-6 year old, it must be emphasised that teachers need to continue their own development, both in terms of professional skills, personal and social competencies and academic achievement. Preschool teacher trainees must be aware, during the four-year period of their undergraduate studies in faculties of education, of how essential it is for them to focus on acquiring multi-faceted competencies and skills, not only in academic but also personal and social domains in order to develop all-round professional and personal capability and ensure their preparedness for future professional life. It is crucial that teachers begin to self-improve as trainees while still enrolled as undergraduates. The global need for better qualified preschool teachers is ever more pertinent as quality standards in preschool education continue to rise (Early and Winton, 2001).

Personal Development

Personal development, in summary, is the ability of a person to effectively realise their lifelong potential as a self-reliant, independent individual who engages in the continuous pursuit to develop personal resources and skills appropriate to this end. The first step in personal development is self-awareness. The individual must first recognise their existing strengths and weaknesses, understand their personal propensities and behaviours and develop awareness and understanding of their cultural environment (Özdemir, 2004).

Özkan (2003) defines personal development as the process by which an individual initiates change in areas of perceived deficit or inadequacy, in order to acquire the desired outcome in a defined area of need. The individual, in this phase of development, will be aware of their existence within an increasingly globalising world, and recognise that they must constantly self-renew and self-develop in order to adapt to the constant state of flux in their changing environment. Teachers must have a proactive personality, be open to innovation and change, and must always respect the views, cultural values, beliefs and consciousness of others. They must be respectful, patient, helpful, protective, disciplined, sensible, open to different attitudes, trustworthy and ethical in their behaviours. Teachers must also be diligent, organised and systematic in their approach to their own personal development. They must be selfless, avoid negative habits wherever possible, and be aware, engaged and positively invested in social and societal issues (Yetim and Göktaş, 2004).

Academic Success

Academic success is defined as the result of an outcomes-based assessment of abilities and knowledge acquired through formal instruction within an establishment, and recognisably verified through an academic process of assigned grading, testing or both. The student is awarded success in this system via combined outcomes assessment calculations based on performance, ability to access knowledge and skills of self-expression within an academic environment, alongside standard test grades and achievement in tasks and responsibilities assigned by specific programs within the

institution, which are assessed according to quality indicators and levels predetermined by each program. (Demirel, 2012).

The concept of academic success is of particular significance in educational research. According to studies in the field of education, the concept of the school as a determining factor in academic success begins to be pinpointed in school studies ensuing 1960 (Balcı, 2002). In subsequent studies the factors influencing academic success are defined as: size of the educational institution and the learning setting, its physical attributes, administrative structure, management approaches and the school environment (Çalık and Kurt, 2010; Özdemir et al, 2010), as well as teacher behaviours, experience and proficiency (Razon, 1987; Sama and Tarım, 2007). The socio-economic levels of the parents, parenting styles, child-rearing attitudes and approaches to education and discipline are other complimentary factors impacting academic success. In addition, the school environment, teacher behaviour, the student's perception of self-worth, level of social / emotional intelligence, level of self-awareness, the educational approaches and methods employed within an institution, along with the student, the teacher, the school and the family may be counted among the variables influencing academic success.

Professional Development

Looking at the definition of the concept of professional development, as an important contributor to a teacher's lifelong learning process (Bümen vd., 2012; Telese, 2012), the provision of inclusive and high quality learning services is considered the primary rational for why both teachers and school management should seek to develop their professional skills (MEB 2023 Vision, 2018). Professional development is a concept defining the rational for and ways in which practitioners in a specific career area engage in professional improvement to enable optimal attainment in their field of interest. Through professional development, school managers, trainers and teachers can re-assess and fine-tune their knowledge, become aware of new developments in a given field and seek to hone newly acquired skills to the standards of the establishment in which they operate.

Professional development in the field of education is expressed as continuous and systematic learning experiences based on targeted content presented by a trainer, aiming to enhance teacher effectiveness within the teaching-learning environment, in order to increase the academic success of students (Reese, 2010).

Opportunities should be provided throughout their four-year undergraduate studies to maximise the all-round development of teacher trainees, targeting both their personal and professional development as well as their academic success. If carried out effectively, teachers will advance their proficiency upon graduation, and will become better-equipped teachers, who are more beneficial to their students and the community throughout their careers. The ÇABA Multi-Purpose Early Childhood Education Centre is an academically grounded, community based institution which was established to assist in the all-round development of teacher trainees, while engaged in re-integrating children of socio economically underprivileged backgrounds into the community.

ÇOMÜ ÇABA Multi-Purpose Early Childhood Education Centre (The ÇABAÇAM Model)

A stated goal of The Ministry of National Education (MEB) Board of Education 2013 Early Childhood Education Program is to create a common environment for children from disadvantaged environments and families. According to the programme, with the essential aim of creating equal opportunities to maximize the potential of all individuals, children identified as being from disadvantaged backgrounds are to be pinpointed, and all those who might come in contact with those children are to be reached. There is a need for ground-breaking institutions, and a diversity of systems and services to give children of disadvantaged backgrounds access to early childhood education. The national ratio of community based early childhood education centres is 4.1%. The ÇABAÇAM Multi-

Purpose Early Childhood Education Centre (ÇABAÇAM) model is one such establishment (ERG, 2021).

“The Çanakkale Onsekiz Mart University (ÇOMÜ) ÇABAÇAM (Multi-Purpose Early Childhood Education Centre) project was established as an innovative cooperative initiative between the university, local government, and NGO's, with support from the ÇABA association and the municipality of Kepez, Çanakkale, which first opened its doors within the Faculty of Education in 2008" (Güler, 2022).

The project ran between the years 2008-2012 as the 'Prof. Dr. Suzan Erbaş Early Childhood Education Classroom, continuing between 2012-2015 as the 'ÇABA Multi-Purpose Early Childhood Education Classroom' at the Faculty of Education (ÇOMU Anafartalar campus). The unit was inaugurated at new premises in the 2015-2016 academic year (on ÇOMÜ Terzioğlu campus); re-commencing its program there as the 'ÇABAÇAM Multi-Purpose Early Childhood Education Centre'. Within this program, at the new location, 'The Kozalak Toy Exchange Workshop' was set up as a community service to distribute community-sourced toys, stationary and other donated equipment to educational establishments throughout the country where there was need ("ÇABAÇAM", n.d.)

The ÇABAÇAM Model from the Perspective of the Child and the Teacher

The main purpose of this project is to, in cooperation with the wider community, provide early childhood services for children and families of disadvantaged environments facing developmental risks. An equally important role was to provide the setting and opportunities for teacher trainees to combine theory and practice during the pre-service phase of their training ("ÇABAÇAM", n.d.). To date, 120 children aged between 4-6, their families and close to 200 teachers have been instructed and/or have benefited from the services provided by the ÇABAÇAM project.

The future objective of the centre is to take the project forward country-wide, in collaboration with the entire ÇABA team, to provide further support for early childhood education services for children, as well as their families, teacher trainees, teachers, and carers, in short, reaching all individuals who come into contact or work with children within this age group across the country where there is need. The goal is to provide services to families who do not otherwise have free access to such educational opportunities. Asylum seekers, refugee children and their families are included in the program, in line with the protocol signed between ÇABAÇAM and with the Association for Solidarity with Asylum Seekers and Migrants in 2015.

The ÇABAÇAM model is realised with the participation of teacher trainees studying at the university as undergraduates and graduate level students who participate in the program as volunteers. The centre is founded on the basis of the cooperation of teachers, trainee teachers, academicians, local government and NGO's, and may be regarded as a case model for community centred early childhood education. Multiple studies related to the efficacy of this model have indicated that participating children have benefitted in terms of support for their all-round development and, in addition that the program has contributed to their preparedness for formal education at the primary school level. The model has also proved effective in supporting the development of the linguistic skills of asylum seeker and migrant children (ERG, 2021).

The table below indicates a detailed programme of dedicated trainings aiming to support the all-round development of teacher trainees within the model. These trainings are specifically designed within the scope of the educational goals underpinning the ÇABAÇAM model ("ÇABAÇAM", n.d.) and carried out according to those goals by expert educators who are specialists in their fields.

Table 1 Educational activities within the ÇABAÇAM model.

ENKA Schools Cultural Excursion	Museum Visit
Psychology Training	Basic Education Symposium
Interactive Group Story Reading Training	Movement, body percussion training project
Personal Development Trainings	Field Trips
İTÜ Schools Visit	Little Scientists Project
Istanbul Excursion	Little Chefs Project
Science Education Projects	Arts and Crafts Training
ORFF Training	Projects With Dads
Diversity Awareness Training	Student Conference
Family Participation Activities	Kermesse/fairs
Early Childhood Education Centre Gatherings	Preschool Program Training
Maltepe Student Congress	ORFF Training
Drama Training	The Persona Doll Approach
Participatory Ecological Activities for Children	STEM Training

METHOD

This chapter discusses the model, study group, validity and reliability, data collections tools and the methods of data analysis used for the research.

Research Model

The case study is a methodological in-depth analysis approach used to systematically collect information on the workings of limited systems (Chmiliar, 2010). Quantitative or qualitative approaches may be used in case studies.

Cohort Group

The research work group was made up of trainee teachers volunteering at the ÇABA Multi-Purpose Early Childhood Education Centre while continuing their studies at the Çanakkale Onsekiz Mart University Early Childhood Education Department. Thirteen volunteers participated in the research project. The participating teacher trainees were selected with criterion sampling, a purposive sampling method. Collecting data from interviews with individuals highly informed of the situation was of fundamental importance. Thus, the sampling of participants was carefully constituted of individuals who met the required qualifications. The main criteria for participant selection were their being enrolled in the Çanakkale Onsekiz Mart University Faculty of Education, Early Childhood Education Department and being a volunteer teacher trainee at the ÇABA Multi-Purpose Early Childhood Education Centre.

Table 2 The Volunteer teacher trainees' Introduction to ÇABAÇAM

Main Category	Sub Category	<i>f</i>	N
The Volunteer Teacher Trainees' Introduction to the ÇABAÇAM Model	Program Coordinator 1	8	8
	Peer Suggestion	4	4
	Program Coordinator 2	1	1

Information on how the trainee teachers first encountered the ÇABAÇAM model is displayed in table 2. According to the table, the most coded sub-theme is "Program Coordinator 1" followed by "Peer Suggestion" and "Program Coordinator 2". 8 of the 13 trainee teachers stated in the interviews conducted by the researcher that they were introduced to the ÇABAÇAM model by Program Coordinator 1.

Data Collection Tools

Research data was gathered with semi-structured interview questionnaires developed by the researcher. The semi-structured interview form is the most commonly used data collection method in

qualitative research. It is important to comprehend the principal features, the advantages and disadvantages, and the strong and weak points of a method to enable its effective and productive use. The preparation of the interview questionnaire and the interview itself are all points to be taken into account in the quest to uncover the required qualitative data (Yıldırım and Şimşek, 2011).

The researcher prepared 11 open ended questions on the ÇABAÇAM model's impact on the personal and professional development of the participants. National and international literature was consulted during the development of the interview form. Three experts in the field were consulted on the reliability of the form. Pilot applications did not uncover any issues in the coherency or comprehension of the questions. The questionnaire was put into use following final revisions.

Data Analysis

The data was processed by content analysis. Content analysis, "is a way to objectively and systematically classify, numerically tabulate, decode, and make deductions on spoken, written or other kinds of source material" (Tavşancıl and Aslan, 2001, p. 22). The semi-structured research interviews were analysed using the Maxqda 2020 program.

FINDINGS

The data gleaned from the observation and interview forms of the ÇOMÜ ÇABA Early Childhood Education Centre (ÇABAÇAM)'s impact on the volunteer teacher trainees' academic success, and personal and professional development is presented in this section.

Decoding the Teacher Trainee Interviews

Semi-structured interview forms were employed by the researcher in the interviews with the ÇABAÇAM teacher trainees. The data retrieved is presented in the subsequent chapter.

Findings from the Analysis of the Volunteer Trainee Teachers' Perceptions of ÇABAÇAM

Analysis of table 3 indicates the most frequently coded sub-themes regarding the teacher trainees' perception of the ÇABAÇAM project were, "**Children from Disadvantaged Backgrounds**", "**Early Childhood Education Centre**", and "**Preschool Teacher Trainees**". The fact that all 13 of the volunteer participants referred to the participation of children of disadvantaged backgrounds in the ÇABAÇAM project (f:15) indicated a bias in the ÇABAÇAM model's education system towards disadvantaged groups. The teacher trainees stress that the centre is an early childhood education centre and it is staffed by preschool teacher trainees.

The volunteer teacher trainees' outlook on the ÇABAÇAM model is positive. The centre is seen as a project school/centre where children of disadvantaged backgrounds have access to free early childhood education, where volunteer teacher trainees are trained and where teacher trainees of varied speciality areas have the opportunity to develop their skills. The participants' attention can be seen to be mainly focused on the training of children from socio economically disadvantaged backgrounds. The impact of the establishment in this respect is evident in these findings. The participants' perception of the centre as a project school that focuses on trainings for teacher trainees, preschool early childhood education and advancing trainee experience and awareness is clearly expressed.

Table 3 Findings related to the Volunteer trainee teachers' perceptions of the ÇABAÇAM model

Main Category	Sub Category	<i>f</i>	N
Findings On The Volunteer Teachers' Perceptions of ÇABAÇAM	Children From Disadvantaged Backgrounds	15	13
	Early Childhood Education Centre	7	4
	Preschool Teacher Trainees	7	7
	Awareness	6	5
	Trainee Training	6	5
	Experience	6	6
	Project School	5	4
	Volunteer Based Foundation	5	5
	Professional Incentive	3	3
	Asylum seekers and migrant children	3	3
	Specialist Teacher Trainees	3	3
	University Based	2	2
	Project Manager Prof. Ebru Aktan Acar	2	2
	Laboratory Environment	1	1
	Post-Graduate Students	1	1
	Family Trainings	1	1

Analysis of Table 4 regarding the volunteer trainees' opinions about university education systems shows the most frequently coded sub-themes to be **"Insufficient practical training/internship time"** and **"Theoretical Education"**. All 13 participants frequently (F:20) indicated university assigned internship periods were too brief. This indicates the time allotted to practical experiences at universities is limited. Concurrently, the volunteers indicated university education to be largely theory based.

Table 4 Findings related to volunteer teacher trainee opinions on university education systems

Sub Category	Sub Category	<i>f</i>	N
Findings On The Volunteer Teachers' Opinions of The Universities' System of Education	Insufficient practical training/internship time	20	13
	Theoretical education	8	7
	Insufficient Communication with Children	6	6
	Insufficient Experience	6	6
	Insufficient Opportunities For Field Specialization	5	6
	Insufficient Opportunities For Meeting Teachers From different Specialist Areas	3	2
	Insufficient Socio Cultural Contribution	3	2
	Rote Teaching	3	2
	Insufficient Awareness of Responsibility	1	1
	Insufficient Socializing	1	1
	Lack of Creative Environment	1	1
	Structured Education System	1	1
	Teacher Centred Education	1	1
	Insufficient Knowledge of Teaching Techniques	1	1

The volunteers' and teacher trainees' appraisal of the undergraduate degree in which they are enrolled is of note. When compared to the ÇABAÇAM example, the trainee teachers point to a lack of practical experience/internship opportunities in the undergraduate degree programs they are enrolled in. The participants explain that ÇABAÇAM is able to both provide internship and theoretical training, that their time at the centre had been highly productive, and they felt satisfied and happy about the experience and felt empowered. The participants' further point out that, intermingling with teacher trainees with diverse specialities, and being in direct contact with the children and their parents enriched their teaching experience. As a result, the participants expressed the perception that both the theoretical and practical implementations of formal university courses are insufficient. Furthermore, the participants are of the view that formal education is steered by an authoritative relational framework, that such education was lacking in freedom and independence, is unimaginative, tends to be facile, and is inadequate in encouraging academic specialization. In this context, it can be seen that the ÇABAÇAM model is not seen as an alternative to university education but rather as a method of enriching and reinforcing it.

Assessing the Teacher Trainees Who Volunteered in the ÇABAÇAM Model within the Purview of Teacher Adequacy

Findings regarding the academic success, personal and professional development of the teacher trainees volunteering in the ÇABAÇAM model are assessed under four sub-headings in the following chapters.

Findings Related to the Personal Development of Volunteer Teacher Trainees in Relation to Their Experiences within the ÇABAÇAM Model

Table 5 displays the personal development experienced by the teacher trainee volunteers involved with the ÇABAÇAM model.

The most frequently coded sub-themes of table 5 in relation to the impact of the ÇABAÇAM model volunteer trainee experience on the personal development of the preschool teacher trainees are **"Communication Skills"**, **"Cultural Interaction"** and **"Humanist Attitude"**. The Communication skills and cultural Interaction sub-themes were often referred to by all 13 of the participants. The ÇABAÇAM model was seen to pre-eminently improve the teacher trainee's communication abilities and cultural interactions the most. At the same time, the model was observed to encourage the teacher trainees to be more humane, as 9 of the 13 participants frequently coded the **"Humanist Attitude"** sub-theme.

Table 5 Findings related to the personal development effect of the ÇABAÇAM model on volunteer teacher trainees.

Sub Category	Sub Category	<i>f</i>	N
Data On the Personal Development of Volunteer Teachers	Communication Skills	34	13
	Cultural Interaction	20	11
	Humanist Attitude	16	9
	Socialization	12	6
	Self-Confidence	9	5
	Cooperation	7	6
	Responsibility	7	6
	All-round Development	6	5
	Planned Approach to Work	6	4
	Creativity	6	4
	Patience	4	4
	Self-control	4	3
	Empathy	4	3
	Inquiry Skills	3	3
	Collaboration	3	3
	Decisiveness	1	1
	Critical Thinking	1	1
	Idealist Attitude	1	1
	Observation Skills	1	1

As can be surmised from their statements, the volunteer teacher trainees gained all-round capabilities which had a positive impact on their personal development as a result of their voluntary internship at the ÇABAÇAM education centre. Communication, humanism, enhanced cultural interaction, and socialization, confidence, self-control, responsibility, critical thinking, and increased ability to plan and schedule work were cited among the trainees as capabilities they acquired.

Findings Related to the Effects of Their ÇABAÇAM Experiences on the Academic Success of the Volunteer Teacher Trainees

Table 6 Findings Related to the Effects of the ÇABAÇAM model on The Academic Success of The Volunteer Teacher Trainees

Main Category	Sub Category	<i>f</i>	N
Data On The Academic Success of Volunteer Teachers	Long Term Learning Through Practice	15	9
	Knowledge of Teaching Techniques	12	7
	Increase In School Performance Standings	10	8
	Knowledge In Field	10	4
	Increased Motivation	5	5
	Support For Pre-Service Training	4	4
	Theory to Practice	3	3
	Activity-Material Knowledge	2	2
	Program Planning Capabilities	1	1
	Peer Learning	1	1
	Increased Proficiency Level	1	1
	Enhanced home assignment performance	1	1
	Opportunity to meet quality teachers/lecturers	1	1
	Had no Effect	1	1

Table 6 shows the ÇABAÇAM model's impact on the academic success rates of the volunteer preschool teacher trainees. 9 of the 13 teacher trainees most frequently stressed the **"Long Term Learning through practice"** sub-theme (f:15). The long-term learning absorbed by the trainees through the ÇABAÇAM model can be seen to contribute in a meaningful manner to their academic success as future teachers. **"Knowledge of Teaching Techniques"** and **"Increase in School Performance Standings"** sub-themes are the two other frequently selected sub-themes.

The volunteer teachers indicated that the ÇABAÇAM model training provided at the centre had a positive effect on their academic success. Following their experiences at the centre, where they had the opportunity to learn through practice, the teacher trainees indicated improvements in the performance standings of their schools and in their teaching methods and techniques. With the pre-service training they received through the program, the participants also indicated that their field knowledge and ability to generate relevant material on the subject has increased.

Findings Related to the Effects of the ÇABAÇAM Experience on the Professional Development of the Volunteer Teacher Trainees

Table 7 indicates that the sub-themes most selected by teacher trainees when asked about the effect their volunteer teacher trainee experiences in the ÇABAÇAM model had on their professional performance were: **"Professional Attachment"**, **"Ability to communicate with children and their families"**, and **"Occupational experience gain"** The professional attachment sub-theme (f:18) was selected by 11 of the 13 participants. This proves the occupational training provided in the ÇABAÇAM model has met its target. The 'ability to communicate with children and their families' sub-theme (f:16) was selected frequently by 11 of the 13 participants. The model has attained its educational goal in enabling its participants to communicate with children and their families. The 'occupational experience gain' sub-theme (f:11) was also selected repeatedly by 10 of the participants.

Table 7 Findings Related to the Effects of the ÇABAÇAM experience on the professional development of The Volunteer Teacher Trainees

Main Category	Subcategory	<i>f</i>	N
Findings Related to The Volunteer Teacher Trainees Professional Development	Professional Attachment	18	11
	Ability to communicate with children and their families	16	11
	Occupational experience gain	11	10
	Ability to Plan, Program and Assess	8	7
	Classroom Management	8	8
	Contemporary Teacher Concept	8	6
	Developed Activity Resources	6	6
	Use of Materials	5	4
	Teaching Approaches and Techniques	3	3
	Time Management	3	3
	Child Centred Teaching Approach	3	3
	Competency	2	2
	Institutional Culture	2	2
	Effective Problem-Solving Skills	2	2
	Academic Research Skills	1	1
	Organization Activities	1	1
	Academic Advancement Attitude	1	1

As explained in their own statements, through the support it offers, the ÇABAÇAM Model is revealed to have a profound effect on the professional development of volunteer teacher trainees. The trainees' stated they will be integrating knowledge gained into their own professional lives. Professional attachment and a fondness for children are the professional emotions most frequently mentioned by the volunteers. Indeed, a good career in education must be built on sympathetic foundations. It would be very difficult for a teacher trainee who likes neither their vocation of choice nor children to have a productive or good professional life. In addition, volunteer trainers emphasized that ÇABAÇAM gave them many professional skills such as planning, scheduling and evaluating process, in addition to the ability to communicate with children and families. Furthermore, the trainees stated that they gained competencies such as classroom management, activity-based education, and the contemporary teacher approach as a whole. This is evidence that the ÇABAÇAM model has succeeded in meeting its educational goals.

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

The research aims to review the impact ÇABAÇAM has on the academic success, and personal and professional development of preschool teacher trainees. The research employed a qualitative design, and the findings were classified and interpreted thematically. The findings uncovered from the observations and opinions of the volunteer teacher trainees were discussed in the Outcomes section, where suggestions were offered to the points raised by the research. The results pertaining to the findings of the research are disclosed in this chapter. Information gleaned from observations and interviews completed with the volunteer teacher trainees are discussed under the same chapter.

Conclusions from Findings related To the Volunteer Teachers' Perceptions of ÇABAÇAM

Analysis of the findings on the volunteer teachers' perceptions of ÇABAÇAM, point out that the identity of the education centre has become synonymous for the trainees with 'children from disadvantaged backgrounds'. The teacher trainees emphasized that the program is specifically for socio economically underprivileged children. In the eyes of the participants the educational establishment and children from disadvantaged backgrounds are inherently and inextricably linked to one other. This situation defines the mission of the centre. The volunteers' perceptions confirm the establishment as a project school targeting preschool teacher in which trainees may gain practical experience serving children from disadvantaged backgrounds. The least referenced sub-themes are that its founder is Prof.

Dr. Ebru Aktan Acar; that post-graduate students are involved; that the establishment provides preschool education; that a research environment is provided; that family education is offered; and that the environment may be likened to a laboratory. A problematic sub-theme emerges when the results of the findings on the trainees' opinions on the formal education systems within universities are analysed. The practice/internship period allocated to students within the university system is regularly cited as inadequate by the trainees. The teacher trainees are given insufficient opportunities for practical experience throughout their undergraduate studies, which leads them to express fears of future professional inadequacy related to practice. This problem may have been exacerbated by the post 2018 reduction of the minimum pre-graduation internship period by The Council of Higher Education.

Conclusions from Findings related to the ÇABAÇAM Model's Effect on the Personal Development of Voluntary Teacher Trainees

Asked by the researcher about the impact of the ÇABAÇAM model on their personal development, the teacher trainees were seen to take up the sub-themes of communication abilities, cultural interaction, humanist attitude, socialization, and self-confidence with most enthusiasm. The intense emphasis on the sub-theme of communication skills may stem from the multiple ways in which the model enables trainees to communicate with children, other trainees, families, and experts in the field while involved in training. Concurrently, from the cultural interaction aspect, the models' multi cultured structure might have had a positive impact on the participants in that respect. Focusing on the child profile served by the ÇABAÇAM model, in line with its community-based nature, the inclusion of refugee groups is perceived as an integral component of the model. Another often cited sub-theme involves the humanist attitude. Disadvantaged groups and refugees constitute the fundamental structure of the ÇABAÇAM model. Perhaps because of this, the teachers involved with the program, knowingly or otherwise, internalise the humanistic principle of considering "the uniqueness of the individual". The socialization sub-theme is another of the sub-themes most heavily emphasized within the personal development category. Adequate emphasis on this theme might stem from the equal representation of all stakeholders within the model. Cooperation between teacher trainees from varied fields of study during their learning process may contribute to gains both in informal and formal learning. It may provide participants with new networking opportunities. The most emphasized sub-theme is revealed to be self-confidence. The flexible structure of the model leads the teacher trainees to feel encouraged to have a say in the process and be thus empowered to clearly express their ideas and to actively contribute through more creative approaches to the model processes, therefore promoting 'self-confidence' to the status of one of the most emphasized sub-themes of the research.

The least contributing sub-themes were seen to be, ability to plan, program and assess, all-round development, analytical ability, observation skills, decisiveness, sensitivity, volunteerism, idealist approach and institutional culture.

Conclusions from Findings related to the ÇABAÇAM Model Effect on the Academic Success of voluntary Teacher Trainees

According to the answers provided by the teacher trainees to questions on the ÇABAÇAM model's impact on their academic success, long term learning through practice, knowledge of teaching techniques, increase in school performance standings and field knowledge were the most frequently selected sub-themes. The teacher trainees' participation in trainee trainings, the children's direct involvement in the educational process and the management of varied, concurrent projects for the benefit of the model may have provided the participants lasting long term learning opportunities through practice. The reason for the most frequent selection of the sub-theme Knowledge of educational methods and techniques, was a result of the teacher trainees' direct involvement in the children's education, during which they assumed the direct role of teacher of the student and were able to decide and apply the appropriate educational techniques which they acquired during trainee trainings. A direct reciprocal relationship may be said to be observable between the sub-themes of increase in school performance standings and specific field knowledge. The preschool teacher trainees

may owe their subsequent success in undergraduate academic examinations to their increased field knowledge as well as the long-term learning they acquired as a result of their training in praxis within the ÇABAÇAM model.

The least contributory sub-themes according to the teacher trainees were, 'increased proficiency level', 'enhanced home assignment performance', Ability to Plan, Program and Assess, Peer Learning, Academic Research Skills, and Communication Skills.

Conclusions from Findings related to the ÇABAÇAM Model Effect on the Professional Development of voluntary Teacher Trainees

An examination of answers to questions directed to volunteer preschool teacher trainees by the researcher, on the theme of the impact of the ÇABAÇAM model on their professional development, reveals the selection of professional attachment, ability to communicate with children and their families, and the occupational experience gain sub-themes. An increase in professional attachment was recorded among the voluntary trainees participating in the ÇABAÇAM model. The rationale for this improvement may be viewed as the qualities gained by the teacher trainees through becoming stakeholder participants in the early childhood centre, by being immersed in the atmosphere of the setting, being able to explore and master the learning environment and integrate with the children and their families, as well as the opportunity to cooperate with other trainees and familiarise themselves with an institutional culture. It is the sum of these elements which may be said to have led to the teacher trainees' increased attachment towards their future profession. The teacher trainees also explain that thanks to the offered opportunity to spend time with the children and their families, their ability to communicate with former has improved immeasurably. Their engagement with the professional experience sub-theme explains the teacher trainees' attitude towards gaining much needed experience in the educational process before graduating. This approach may result in teacher trainees becoming both technically and psychologically better prepared for their transition to a teaching career, with potentially positive effect on their future professional lives.

Factors defined by teacher trainees as having the least impact on their experience were scientific research skills and professional attachment. The relegation of certain specific professional elements to the lowest rung in trainee perception may be due to individual differences, insufficiencies in undergraduate training, and the programs and activities taking place at the establishment. New programming and events within the establishment may lead to the redress of such drawbacks.

The opinions of the volunteer teacher trainees were gathered by the researcher. Analysis of the findings has demonstrated the ÇABA Multi-Purpose Early Childhood Education Centre had a positive effect on the academic achievement, personal and professional development of preschool teacher candidates. The trainees point out that the centre enhanced their professional readiness throughout their pre-service education, and state that the experience furnished them with the competencies they will require for their professional careers in education. The trainees further indicate that, in their view, those of their colleagues who did not participate in the ÇABAÇAM project graduated with a deficit in professional knowledge.

Most teacher trainees who assessed their pre-service experiences in the faculties of education in which they were enrolled stated that the courses on offer were insufficient, that the education provision did not match the reality in the field, and that they were unable to acquire an education which was adaptable to the children or the education system of today. Furthermore, the trainees stress that the system they find themselves within does not prepare them for the teacher profession or institutional culture in the true sense of the words. The evaluations of the teacher trainees in this study match the outcomes of numerous other research projects.

DISCUSSIONS

The teacher training establishments of Turkey have experienced numerous past changes and revisions, referred to as reforms, in an attempt to better meet the requirements and challenges of the era. Despite this, there is a perception that pre-service teachers cannot gain the necessary professional skills prior to their eventual assignment in the field. However, according to research by Gül and Köse (2021), while pre-service teacher trainees' perception of their formal education, was positive, the participants' professional development levels were found to be severely lacking as practitioners. The research of Eđmir and Koçyiđit (2019) asked teachers to evaluate their own undergraduate training according to their personal experiences. In that context, the said research assessed the teachers' undergraduate experiences from diverse angles. The outcome of the study indicated that teachers were proficient in theoretical knowledge in their specific field, yet felt lacking in knowledge of professional practice. The research outcome indicated that the gaps in the teachers' professional knowledge became apparent as they transitioned from students into professional life. Research by Çalış and Gürbütürk (2019) showed Faculty of Education students struggled to adapt their theoretical knowledge to practical use. The graduates experienced difficulties communicating with children, were lacking in classroom management and were unable to take full advantage of teaching materials. In the conclusion of their paper, the researcher suggests pre-service training and opportunities for classroom practice should be improved. Ergünay (2018) underlines deficiencies such as field knowledge and classroom management in their research. According to the research carried out by Öztürk et al. (2016) 48% of all teaching staff employed in Ministry of National Education (MEB) preschools throughout Turkey did not participate in any seminar, webinar, conference, workshop or any other kind of extra-curricular educational activity throughout their undergraduate studies.

The positive opinions of the volunteer teacher trainees involved with the ÇABA Multi-Purpose Early Childhood Education Centre are in stark contrast with other studies previously completed in the field. This confirms the inadequacy of the theoretical training and pre-service teaching practices being currently provided both from the standpoint of Ministry of National Education and university requirements alike. Thus, the need for additional community based school projects such as ÇABAÇAM and for said establishments to widen their scope is clearly evident.

Studies on undergraduate education elsewhere reveal attempts to ameliorate similar issues by prioritizing pre-assignment education for preschool teachers. A Comparative Study on Pre-Assignment Education by Gong and Wang (2017) states: Examining "Preschool Teachers in China and the United States", it is noteworthy that the Chinese government has begun training most preschool teacher candidates as they start middle school. The US however, employs a different approach. The US chooses to start training preschool teachers at undergraduate level. Bielicki (2014) researched the effect classroom management perception had on the job satisfaction levels of teachers working in the rural areas of New York State. In the research where experience was noted to be instrumental to success, issues relating to class management were traced back to individuals, and an overall inadequacy in classroom management was observed in the participants. Lillvist et al. (2014) examined 810 students who received preschool teacher education at 15 universities in Sweden in terms of teacher competencies and emphasized that there were un-dismissible differences between the students' opinions on the competencies of their teachers and the self-perceptions of the educators. Saraacho and Spodek (2007), analysed 40 published research papers on educational programs and the training systems for the training of preschool teachers. The study concluded that providing good education to individuals involved in the area of preschool education led to an improvement in the overall level of schooling. The quality of preschool education establishments was seen to be linked to the education levels of the teachers involved. Finally, research by Oroszko (1995) analyses the classroom management techniques used by experienced preschool teachers in the US. Oroszko's research involved 18 teachers employed in private and state schools as well as day care centres and those involved in the Head Start Program which caters to low-income children. Approaches to classroom management, capabilities, context and the opinions of the teachers were considered for the research. The outcomes of the research resulting from classroom observation showed primary and secondary school teachers had similar approaches in managing classroom behaviour and activities.

These comparative results indicate both the level and critical importance of the education provided at the ÇABA Multi-Purpose Early Childhood Education Centre. As a result of the literature review, it was concluded that the pre-assignment education of preschool teacher trainees should be of higher quality. In this context, the ÇABAÇAM model can be seen to have had a positive impact on the pre-service education of teacher trainees. The model contributes to the personal and professional development of preschool teacher trainees who take on the role of voluntary educators; at the same time, while enhancing pre-assignment training such services also fortify the academic acumen of those enrolled. The model, which enables learning through practical application, allows the participating trainees to graduate with experience and an expanded toolbox of skills. Preschool teacher trainees thus effectively carry over their experiences into their professional lives, so that both the child participants and the community can benefit from the quality of their teaching practices as a result.

Recommendations

The ÇABAÇAM model has proven to positively contribute to the variables of personal and professional development of teacher trainees while assisting them academically at the same time. By providing the opportunity for practical experience, the model prepares trainees for their professional lives, thus supporting the conversion from theory to practice for the volunteers. With this in mind:

Recommendations for Policy Makers,

Within the context of preschool teacher training, Faculties of Education may alter the contents of their courses to improve teacher trainee access to practitioner training. In the context of the teacher trainee trainings provided at ÇABAÇAM (Drama training, Orff, trainings on varied approaches and models, etc.) the need of improved theoretical instruction at university level becomes clearer.

In addition to extending the duration of practical courses, it is necessary to prepare programs that will enable pre-assignment teachers to be more proactive in the processes which prepare them for their professional life. More comprehensive programs need to be developed aiming to actively prepare preschool teacher trainees for their profession which require the increased participation of those enrolled.

Recommendations Regarding the ÇABAÇAM Model

An in-service professional teacher could be physically present in the classroom alongside the ÇABAÇAM volunteer trainee. Such a teacher could act as mentor for the trainees so support them as they encounter problems in the classroom.

The establishment is currently based solely in Çanakkale. Disseminating the ÇABAÇAM model to other universities throughout the country could help such a program reach additional low-income children and teacher trainees. Participating teachers were witnessed to have developed in the ways foreseen by this research. The project has observably yielded positive results as anticipated. The educational approach employed within this project could act as an exemplar for other similar establishments.

The ÇABAÇAM model should be introduced nation-wide, support from other universities should be sought to widen the reach of the program. It is essential that the number of teacher trainees benefiting from such a program is increased.

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The Relationship Between Pre-Service Teacher Attitudes Towards Learning and Their Personal Growth Initiatives

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Abstract

This study discussed the relationship between pre-service teachers' attitudes towards learning and their personal growth initiatives. The study was carried out with the participation of 378 pre-service teachers studying at the MCBU Faculty of Education. According to the descriptive statistics obtained in the study, pre-service teachers' attitudes towards learning and personal growth initiatives are at a high level. In the context of attitudes towards learning and personal development orientations, no significant difference was found according to gender, teaching division, grade level and cumulative grade point averages. The anxiety dimension of the attitude scale towards learning was found to be higher in the context of those with low cumulative grade point averages. There was a positive, close to normal relationship between pre-service teachers' attitudes towards learning and their personal growth initiatives. Since the data of the study did not show a normal distribution, nonparametric tests were used in the analysis to solve the sub-problems. Mann Whitney U analysis was used for gender and cumulative grade point averages and Kruskal Wallis analysis was used for teaching division and grade level to see if there was a significant difference. The relationship between the scales was evaluated with Spearman's Rank Correlation analysis.

Keywords: Pre-Service Teachers, Attitudes Towards Learning, Personal Growth Initiatives, Personal Development

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INTRODUCTION

It is a well – known fact that to progress of being a society and getting stated between the developed countries, education in schools should be provided as expected in today's world. However, to provide a good education in schools, meant as expected in today's world or having growth successful students, it is necessary to improve the quality of teaching in schools. Qualified teachers have a great role in the success of students and in ensuring the quality of teaching in schools. In other words, good teachers are one of the most important factors of carrying the students to the summit (Seferoğlu, 2004). The qualifications that teachers will have been indispensable for interaction with other factors that bring success. Many studies have concluded that teachers' personal development has an impact on their teaching effectiveness (Yetim & Göktaş, 2004; Ereş, 2010; Altıntaş, 2022). The teacher's way of thinking, personal development and character are indispensable principles in raising individuals with desired qualities. The effectiveness of learning – teaching situations gains meaning only when they are combined with these teacher characteristics. Interest, which is the first key to attitude towards learning, is strongly influenced by the teacher's personality traits and interaction skills (Yetim & Göktaş, 2004). Interest in learning arises from interactions at school and develops within these relationships. The personality model which undertakes the task of teaching and supports learning, is of central importance in these relationships (Özakupınar, 1988). The beginning of ensuring this situation is related to the quality of the pre-service training processes of teachers, teacher training institutions have great responsibilities in this meaning. Education faculties should strive to prepare teachers for the profession at the highest level with the educational processes they offer (Güçlü & Bozgeyikli, 2016). The professional goals of pre-service teachers, their motivation in choosing a profession and their perceptions about the profession are the issues to be considered in teacher training programs. When all these issues considered, it arouses the idea that the relationship between attitudes towards learning and personal growth initiatives of students studying in faculties of education should be investigated.

With this study, it was aimed to determine the relationship between pre-service teachers' attitudes towards learning and personal growth initiatives. In this concept Kara (2010) had pointed out that people should be always open to learning, have positive attitudes towards learning, have positive expectations towards learning, and be away from experiencing a state of anxiety towards learning to solve the situations they encounter. Yalçın and Malkoç (2013) had also highlighted the importance of personal growth initiatives. Because people's approaches in learning a subject also affect learning products and attitudes towards learning triggers personal growth initiatives. In this context, it would be appropriate to address the concept of learning, attitudes towards learning and personal growth initiatives to expand this subject further and provide a theoretical basis.

The Concept of Learning

Although the concept of learning can be handled in many ways, it can generally be explained as the process of accessing the experiences, knowledge, skills, activities, and abilities for surviving vital activities in a healthy way (Fidan, 1986; Karban, 2015; Özden, 2021). Individuals have different characteristics from all other beings on earth due to their reasoning abilities and they need an organized learning process to use these characteristics. For human beings to sustain their lives, they need to use their learning gains, not their instinctive behaviors (De Houwer, Barnes – Holmes & Moors, 2013). Learning is known as "the process of changing behavior that is the product of experience and has relatively permanent traces" (Ertürk, 1975).

In contemporary educational approaches, the concept of teaching is replaced by learning to learn. This change has brought the learner to the forefront and put constructivist approaches that give importance to individual differences at the center of curricula. Everyone has different learning styles, comprehension abilities and the way they construct their knowledge (Thrun & Pratt 2012). For the personal development considering individual abilities and skills has an important meaning. Because everyone has different physiological, psychological, and cognitive structures which involve them into

different learning styles (Schmeck, 1988; Gömleksiz & Kan, 2007). It can be said that these differences affect the attitudes towards learning and affect the personal growth initiatives.

Attitude towards learning

Individuals' thoughts, feelings, and behaviors about a psychological object can be formed by their attitudes and these attitudes occur with individual tendencies. At the same time, these tendencies draw attention as learned tendencies that lead individuals to show different behaviors against situations, objects, and other individuals. Attitudes can take shape as positive or negative tendencies according to the situations encountered. In this way, people can attribute meanings to what is happening around them and the different situations they encounter and use each of them as different experiences in the future. The concept of attitude is formed when these experiences shape beliefs and approaches (Gawronski, 2007). Attitudes can be learnt and can change over time. Attitude influences people's self-evaluation and their ability to manage their reflective thinking. However, attitudes acquired in childhood do not change unless serious factors are encountered (Doop, 1947).

While the positive attitudes of individuals in the education process affect success positively, negative attitudes can lead to failure. It is thought that individuals' attitudes towards learning will significantly affect success (Guido, 2018). The success of individuals in educational processes is affected by two factors, psychological and sociological. Sociological variables consist of factors such as the environment and other individuals with whom they interact, while psychological factors consist of individuals' self-values covering both affective and cognitive domains. At the same time, sociological and psychological factors are interrelated (Awang et al., 2013). Attitudes and interests of individuals are very important in the learning process. Affective behaviors will continue to have lasting effects on students' subsequent learning (Kidman, 2009).

Personal Growth Initiatives

Personal growth is all the various activities that can ensure the development of individuals in many subjects that they feel as a need in themselves, their awareness, and their ability to cope with the problems they face (Dovbnia, Melnyk, Shulyhina, et al., 2022). In the most general definition, it can be explained as the self – development of individuals through various activities. This comprehensive process requires a planned training in a professional organization. This education can include many specialized areas such as cognitive, affective, and psychomotor. Individuals need to gain experience with various problems encountered in daily life and gain the ability to reflect these experiences to other problems that may be experienced. At this point, personal growth supports individuals to look at alternative perspectives by using reflective thinking in all situations they encounter (Genç & Fidan, 2019).

Personal growth is effective in guiding pre-service teachers to success by increasing their motivation and attitudes towards learning. The self – confidence of pre-service teachers who are trained for this purpose, their plans, and the tactics they will develop in achieving their goals contribute positively to their academic success (Bohdick et al., 2022). Individuals with advanced personal growth are expected to be more energetic, participatory, and social in learning environments. They can keep their thoughts and emotions under control to increase their motivation for learning (Dunn & Shriner, 1999).

As in many sectors, personal growth in education is the tendency of individuals to realize themselves in every aspect of the whole process and to reveal these potentials (Genç & Fidan, 2019). Based on this definition, individuals deliberate, planned, and voluntary organization of their self-development can be defined as their personal growth initiatives. Personal growth initiatives are individuals' efforts to organize their self-development by being aware of their inner potentials and using these characteristics (Şimşek, 2020). It is known that students with high personal growth initiatives have higher competences regarding their professional development and attitudes towards

learning. Students with these characteristics also can take responsibility for their own learning and focus on their goals (Niles, Gutierrez, Dukes, et al. 2022).

In this meaning, pre-service teacher attitudes towards learning and their personal growth initiatives have been tried to examine with this study. It is thought that personal growth initiatives, pre-service teachers' learning attitudes towards the courses they take in faculties will reflect positive effects on the learning of their students in the schools where they will serve in the future. For this purpose, the relationship between the attitudes and personal growth initiatives has been handled and the problem statement of the study has been decided.

“What is the level of pre-service teacher attitudes towards learning and their personal growth initiatives?”.

According to the problem statement the sub problems of the study have been formed as listed below.

1. What are the descriptive statistics of pre-service teacher attitudes towards learning and their personal growth initiatives?
2. Is there a meaningful difference in the gender of pre-service teachers according to their attitudes towards learning and their personal growth initiatives?
3. Is there a meaningful difference in the teaching divisions of pre-service teachers according to their attitudes towards learning and their personal growth initiatives?
4. Is there a meaningful difference in the grade levels of pre-service teachers according to their attitudes towards learning and their personal growth initiatives?
5. Is there a meaningful difference in the cumulative grade point averages of pre-service teachers according to their attitudes towards learning and their personal growth initiatives?
6. Is there a relationship between the pre-service teacher attitudes towards learning and their personal growth initiatives?

With this research, the relationship between attitudes towards learning and personal growth initiatives of pre-service teachers studying in Faculties of Education in their academic processes have been investigated according to different variables. In this direction, attitudes towards learning and personal growth initiatives of pre-service teachers have been compared according to their gender, departments, grade levels and grade point averages.

By the help of the findings of the sub problems and the results of the study it has been aimed to be given some contributions to the pre-service teachers' developments during their education processes. The findings and the results of the study are limited with the population of the study and to the collected data. Moreover, the evolution of pre-service teacher attitudes towards learning and their personal growth initiatives are limited with the measurement tools and the sub dimensions of these measurement tools used in the study.

METHODOLOGY

With this part, the model of the study, population and sampling of the study, data collection tools of the study, data collection process and the analysis of the data have been tried to explain.

Model of the Study

Quantitative research method has been used in this study. Research methods in social sciences can be generally classified into two groups as named quantitative and qualitative methods. This

classification is made according to nature of the data whether it is quantitative or qualitative (Karakaya, 2014). According to Arslanoğlu (2016) quantitative research method is the research plan includes the population, sample, axiom, and hypotheses. It is a method in which information is collected by observation, interview, questionnaire and tests and this information is analyzed with statistical measurement and evaluation techniques. This study has been designed in quantitative research method and general survey model. General survey model reveals the reality as it is by reaching the whole population or the sample representing the population.

Population and Sampling of the Study

The researchers have determined Manisa Celal Bayar University Faculty of Education as the population of the study in the meaning of convenience sampling method. In preferring convenience sampling method, researchers' proximity to the population and having advantages for sampling have played role (Gürbüz & Şahin, 2018). In the fall semester of 2022 education year, there were 1349 pre-service teachers getting education from 6 different teaching division in the Faculty of Education as the population of the study. And the number of the sampling should be 300 at least as in the meaning of 95% confidence level and 5% margin of error. The number of samplings was determined according to Şahin's (2012) and Gürbüz & Şahin's (2018) sampling calculation table. In this study 378 pre-service teachers have been reached as the sampling with the stratified sampling and simple random sampling methods. According to Yıldırım and Şimşek (2011) stratified sampling means the subgroups of the population. While collecting data by using the stratified sampling method, number of the subgroups and the number of the subgroup members determines the sampling process. The number of the participants due to stratified sampling method according to teaching divisions, grade level and the genders has been given as a sequential stage with Table 1. And the participants have been reached by simple random sampling method. According to Gürbüz & Şahin (2018) simple random sampling method can be applied by noticing the sampling numbers. In this study the sampling numbers of each group have been determined according to the stratified sampling method and then the participants who had equal chances have been assigned with a draw. (Karakaya, 2014; Şimşek, 2012).

Table 1. Population and Sampling of the Study

Teaching Division / Grade Level	Female (N)	Male (N)	Total (N)	Female (n)	Male (n)	Total (n)
Science teaching / Freshman	20	11	31	6	3	9
Science teaching / Sophomore	22	9	31	6	3	9
Science teaching / Junior	23	8	31	6	2	8
Science teaching / Senior	10	4	14	3	1	4
Primary school mathematics teaching / Freshman	30	22	52	8	6	14
Primary school mathematics teaching / Sophomore	32	20	52	9	6	15
Primary school mathematics teaching / Junior	43	19	62	12	5	17
Primary school mathematics teaching / Senior	45	17	62	13	5	18
Guidance and psychological counseling / Freshman	68	25	93	19	7	26
Guidance and psychological counseling / Sophomore	69	24	93	19	7	26
Guidance and psychological counseling / Junior	49	23	72	14	6	20
Guidance and psychological counseling / Senior	53	19	72	15	5	20
Primary school teaching / Freshman	39	13	52	11	4	15
Primary school teaching / Sophomore	39	13	52	11	4	15
Primary school teaching / Junior	44	18	62	12	5	17
Primary school teaching / Senior	44	18	62	12	5	17
Social studies teaching / Freshman	34	18	52	9	5	14
Social studies teaching / Sophomore	35	17	52	10	5	15
Social studies teaching / Junior	40	22	62	12	6	18
Social studies teaching / Senior	42	20	62	12	6	18
Turkish language teaching / Freshman	32	20	52	9	6	15
Turkish language teaching / Sophomore	33	19	52	9	5	14
Turkish language teaching / Junior	40	22	62	11	6	17
Turkish language teaching / Senior	41	21	62	11	6	17
Total	927	422	1349	259	119	378

Data Collection Tools of the Study

This study has been designed by using two data collection tools for the purpose of looking for the pre-service teacher attitudes towards learning and their personal growth initiative levels. Also, the relationship between the attitudes towards learning and personal growth initiative is one of the most important sub problems of the study. Attitudes towards learning has been studied with the help of “Attitudes Towards Learning Scale” which has developed by Kara (2010). And personal growth initiative has been studied with the help of “Personal Growth Initiative Scale – II” which has been adapted into Turkish by Yalçın & Malkoç (2013). These two data collection tools have been introduced in this part.

Attitudes Towards Learning Scale

Kara (2010) has aimed to develop a reliable and valid scale for measuring the learners' attitudes toward learning in this study. At the beginning of the study, the literature has been scanned and 119 draft items have been composed with the help of the compositions had written by the students about the feelings, expectations, and anxieties about learning. Then, those 119 items have been collapsed in four categories as based in the related literature and those four categories categorized as emotions, thoughts, and reactions regarding the nature of learning, expectations from learning, openness to learning and anxiety in a new learning situation. Then with the help of expert views the items have been limited into 77 items. Again, expert views have been consulted and the pre – application form has been prepared. For the pre - application purpose, 285 students have been reached from İnönü University Faculty of education as the participants of the study. 285 participants had been representing the %81,43 of the population in the fall term of 2006 – 2007 education year. Firstly, exploratory factor analysis has been applied for the subject of the study with the help of the data obtained from the participants and high KMO values has been observed and 37 items have been eliminated. With that process the values were like that; KMO= .79, Bartlett test of Sphericity= 3101.363, and Cronbach Alpha= .726. Then for reliability analysis of the scale development process, the test – retest has been applied for correlation coefficients with the help of 120 participants' responses from same sampling. The internal consistency coefficient and test – retest correlation values were calculated for the reliability analysis. After the analysis four sub – dimensions which has 40 items at total has been constructed. The internal consistency of the scale has been found as “.73”. Test – retest correlation coefficient has been found as “.87”. As seen at the results "Attitude Towards Learning Scale" has been developed as a valid and reliable structure and has been presented for measuring the participants' attitudes towards learning.

Personal Growth Initiative Scale – II

The second data collection tool has been adapted into Turkish Language by Yalçın & Malkoç (2013) from an original scale which belongs to Robitschek et al. (2012). Personal growth initiative scale – II has been adopted into Turkish with a study group from Ankara University Faculty of Education students. 279 students had voluntarily attended the study in 2012 – 2013 education year. First the researchers have contacted to the original scale developers and got permission. Then translation process has been done with four instructors who had good English skills and back translation has also been done with another instructor who had a Ph.D. degree on language from USA. Back translation items have been shared with the original scale authors and got consent about the translation process. After finishing translation process 41 senior class students from Department of English Language Teaching had answered Turkish and English forms of the scale twice in three weeks. A positive and significant correlation had been observed ($r=.79$, $p < .01$). Then factor analysis had been applied with the study group and the items four sub – dimensions had been seen as distributed into four groups which are called as readiness for change, being regular in planning, using resources, and intentional behavior. After that process test – retest analysis had been done and reliability coefficients has been found between .62 and .82. and Cronbach alpha internal consistency coefficients of the sub – dimensions were from .81 to .89. Cronbach alpha internal consistency coefficient of the whole scale was .92. According to confirmatory factor analysis (CFA) results were

acceptable; RMSEA was between .05 and .08, SRMR was lower than .08, CFI, NFI, IFI and RFI values were over .90. With the adaptation process as summarized, the personal growth initiative scale – II has been adapted into Turkish with its four sub -dimensions and 16 items.

Data Collection Process and Data Analysis of the Study

Data collection process has begun with researchers' interest on pre-service teachers' learning attitudes and their personal growth initiatives. For this subject two scale have been chosen and got permission from the authors of the scales. Then the data collection forms have been prepared within three parts which were named as personal information, learning attitudes and personal growth initiatives. The data collection form, which had a personal information part and the items of two scale, has been loaded on Microsoft Forms. And the data has been collected from the participants, who were described in population and sampling part, by having read QR code links with the help of their mobile phones. With the voluntary attendance of answering the data items, the data collection process has been finished.

After finishing the data collection, the analysis process has been started with SPSS25 packet program by taking significance level as .05 and it has seen that 378 participants had given answers to the online forms. Kolmogorov Smirnov Test results has showed that; while the data has been distributing normally for the whole of attitudes towards learning scale ($p > .05$), the data, which belongs to whole personal growth initiative scale and all sub – dimensions of the scales, hasn't distributed normally ($p < .05$). So, the nonparametric tests have been decided to apply in the analysis process.

Before applying nonparametric tests, descriptive statistics have been analyzed for the first sub – problem of the study by using minimum, maximum, arithmetic mean, and standard deviation values.

Then for the purpose of looking if there is a differ according to the gender, Mann Whitney U Analysis has been used for the second sub – problem of the study. Following test have been orderly used for the other sub – problems; teaching division differ has been checked with Kruskal Wallis Analysis, grade level differ has been checked with Kruskal Wallis Analysis, cumulative grade point average differ has been checked with Whitney U Analysis. The relationship between the pre-service teacher attitudes towards learning and their personal growth initiatives has been checked with Spearman's Rank Correlation Coefficient Analysis. When differs have been found in the results of Kruskal Wallis Analysis, the direction of the differ has been analyzed with Dunn Analysis. The direction of differ in Mann Whitney U Analysis have been observed with the average of the ranks of each group.

Ethical Procedures of the Study

First the permissions have been taken for the usage of the data collection tools from their authors with an e – mail request. Then the permission has been taken for collecting the data from MCBU Faculty of Education (28.04.2022 - E-57363641-199-296113). At the end the ethic permission has been taken from MCBU Ethics Committee (23.06.2022 – E-050.01.04-328641). All ethical procedures have been completed in this way for beginning the implementation of the study.

FINDINGS

With this part the findings of the analysis, which were obtained from the direction of the sub – problems about evaluating pre-service teachers' learning attitudes and their personal growth initiatives, have been presented.

1st Sub – Problem

“What are the descriptive statistics of pre-service teacher attitudes towards learning and their personal growth initiatives?” has been asked as the question of the first sub – problem and the findings have been shown in Table 2.

Table 2. Descriptive Statistics of pre-service Teacher Attitudes Towards Learning and Their Personal Growth Initiatives

Dimensions / Scales	<i>n</i>	<i>Minimum</i>	<i>Maximum</i>	\bar{x}	<i>sd</i>
Expectation about learning	378	13	45	38,48	5,594
Nature of learning	378	11	35	28,87	3,906
Openness to learning	378	24	55	46,52	6,236
Anxiety about learning	378	13	59	33,10	8,267
Readiness for change	378	4	20	15,33	3,252
Being regular in planning	378	5	25	18,74	4,227
Using resources	378	3	15	10,84	2,531
Intentional behaviors	378	4	20	15,28	3,406
Attitudes towards learning	378	84	179	146,96	12,035
Personal growth initiative	378	16	80	60,18	11,950

The descriptive statistics show that pre-service teacher attitudes towards learning and their personal growth initiatives are in high scores with both sub-dimensions and the whole of the scales.

Attitudes Towards Learning Scale

The pre-service teachers have got 146.96 (often) points as the arithmetic mean from the whole scale which is about the attitudes towards learning. It can be said that they have strong habits in towards learning. The item “*Learning continues lifelong*” has the highest point ($\bar{x}=4.84$) which means “*always*” as the importance degree. The item “*I feel uncomfortable when new topics are studied*” has the lowest point ($\bar{x}=1.85$) which means “*rarely*” as the importance degree.

“Expectation about learning” Dimension. The first dimension of the attitudes towards learning scale is “*Expectation about learning*”. The pre-service teachers have got 38.48 (always) points as the arithmetic mean from the dimension which is about the expectation about learning. It can be said that they have very strong habits in expectation about learning. The item “*What I have learned changes my perspective on life*” has the highest point ($\bar{x}=4.39$) which means “*always*” as the importance degree. The item “*As I learn, the number of my wrong decisions decreases*” has the lowest point ($\bar{x}=3.97$) which means “*often*” as the importance degree.

“Nature of learning” Dimension. The second dimension of the attitudes towards learning scale is “*Nature of learning*”. The pre-service teachers have got 28.87 (often) points as the arithmetic mean from the dimension which is about the nature of learning. It can be said that they have strong habits in the nature of learning. The item “*Learning continues lifelong*” has the highest point ($\bar{x}=4.84$) which means “*always*” as the importance degree. The item “*Intelligent people learn better*” has the lowest point ($\bar{x}=3.18$) which means “*sometimes*” as the importance degree.

“Openness to learning” Dimension. The third dimension of the attitudes towards learning scale is “*Openness to learning*”. The pre-service teachers have got 46.52 (always) points as the arithmetic mean from the dimension which is about being openness to learning. It can be said that they have very strong habits in being openness to learning. The item “*I still have a lot to learn*” has the highest point ($\bar{x}=4.69$) which means “*always*” as the importance degree. The item “*Learning difficult subjects gives me pleasure*” has the lowest point ($\bar{x}=3.81$) which means “*often*” as the importance degree.

“Anxiety about learning” Dimension. The fourth dimension of the attitudes towards learning scale is “*Anxiety about learning*”. The pre-service teachers have got 33.10 (sometimes) points as the

arithmetic mean from the dimension which is about the anxiety about learning. It can be said that they have some anxieties about learning. The item *"Forgetting what I have learned so quickly makes me worry"* has the highest point ($\bar{x}=3.51$) which means "often" as the importance degree. The item *"I feel uncomfortable when new topics are studied"* has the lowest point ($\bar{x}=1.85$) which means "rarely" as the importance degree.

Personal Growth Initiative Scale

The pre-service teachers have got 60.18 (often) points as the arithmetic mean from the whole scale which is about personal growth initiative. It can be said that they have strong habits in personal growth initiative. The items *"I can determine what I need to change about myself"* and *"I am constantly trying to improve myself as an individual"* have the highest point ($\bar{x}=3.96$) which means "often" as the importance degree. The item *"I seek help from others when I try to make changes about myself"* has the lowest point ($\bar{x}=3.36$) which means "sometimes" as the importance degree.

"Readiness for change" Dimension. The first dimension of the personal growth initiative scale is *"Readiness for change"*. The pre-service teachers have got 15.33 (often) points as the arithmetic mean from the dimension which is about the readiness for change. It can be said that they have strong habits in readiness for change. The item *"I can determine what I need to change about myself"* has the highest point ($\bar{x}=3.96$) which means "often" as the importance degree. The item *"I know when to make a certain change about myself"* has the lowest point ($\bar{x}=3.75$) which means "often" as the importance degree.

"Being regular in planning" Dimension. The second dimension of the personal growth initiatives scale is *"being regular in planning"*. The pre-service teachers have got 18.74 (often) points as the arithmetic mean from the dimension which is about being regular in planning. It can be said that they have strong habits in being regular in planning. The item *"I set realistic goals for the things I want to change about myself"* has the highest point ($\bar{x}=3.95$) which means "often" as the importance degree. The item *"I know how to make a realistic plan for making changes about myself"* has the lowest point ($\bar{x}=3.60$) which means "often" as the importance degree.

"Using resources" Dimension. The third dimension of the attitudes personal growth initiatives scale is *"Using resources"*. The pre-service teachers have got 10.84 (often) points as the arithmetic mean from the dimension which is about using resources. It can be said that they have strong habits in using resources. The item *"When I try to improve myself, I use the available possibilities"* has the highest point ($\bar{x}=3.94$) which means "often" as the importance degree. The item *"I seek help from others when I try to make changes about myself"* has the lowest point ($\bar{x}=3.36$) which means "sometimes" as the importance degree.

"Intentional behaviors" Dimension. The fourth dimension of the personal growth initiatives scale is *"Intentional behaviors"*. The pre-service teachers have got 15.28 (often) points as the arithmetic mean from the dimension which is about intentional behaviors. It can be said that they have strong habits about intentional behaviors. The item *"I am constantly trying to improve myself as an individual"* has the highest point ($\bar{x}=3.96$) which means "often" as the importance degree. The items *"I take every opportunity that arises to improve myself"* and *"I work actively to improve myself"* have the lowest point ($\bar{x}=3.70$) which means "often" as the importance degree. Two items have shared the lowest point.

2nd Sub – Problem

"Is there a meaningful differ in the gender of pre-service teachers according to their attitudes towards learning and their personal growth initiatives?" has been asked as the question of the second sub – problem and the findings have been shown in Table 3.

Table 3. Mann Whitney U Analysis About Attitudes Towards Learning and Personal Growth Initiatives According to Gender

Dimensions / Scales	Gender	n	Mean Rank	Rank Sum	U	p
Expectation about learning	Female	259	196,60	50920,50	13570,50	.061
	Male	119	174,04	20710,50		
Nature of learning	Female	259	179,97	46611,00	12941,00	.012
	Male	119	210,25	25020,00		
Openness to learning	Female	259	195,77	50705,50	13785,50	.099
	Male	119	175,84	20925,50		
Anxiety about learning	Female	259	188,63	48854,00	15184,00	.818
	Male	119	191,40	22777,00		
Readiness for change	Female	259	186,25	48340,50	14569,50	.391
	Male	119	196,57	23290,50		
Being regular in planning	Female	259	186,64	48340,50	14670,50	.452
	Male	119	195,72	23290,50		
Using resources	Female	259	194,97	50497,50	13993,50	.148
	Male	119	177,59	21133,50		
Intentional behaviors	Female	259	191,16	49510,00	14981,00	.662
	Male	119	185,89	22121,00		
Attitudes towards learning	Female	259	193,12	50018,00	14473,00	.342
	Male	119	181,62	21613,00		
Personal growth initiative	Female	259	189,37	49047,50	15377,50	.973
	Male	119	189,78	22583,50		

The results of the Mann Whitney U Analysis about attitudes towards learning and personal growth initiatives according to gender show that whole of the scales and their sub – dimensions ($p>.05$) don't have significant differs expect “*nature of learning*” dimension ($p<.05$). Nature of learning dimension shows significant differ according to the gender of pre-service teachers in the favor of males as seen on mean rank values.

3rd Sub – Problem

“*Is there a meaningful differ in the teaching divisions of pre-service teachers according to their attitudes towards learning and their personal growth initiatives?*” has been asked as the question of the third sub – problem and the findings have been shown in Table 4 and Table 5.

Table 4. Kruskal Wallis Analysis About Attitudes Towards Learning According to The Teaching Divisions

Teaching Divisions	n	Mean Rank	X ²	df	p
Science teaching education	30	169,93	4,351	5	.500
Primary school mathematics teaching education	64	183,26			
Guidance and psychological counseling education	92	182,01			
Primary school teaching education	64	204,72			
Social studies teaching education	65	184,66			
Turkish language teaching education	63	205,63			

The results of the Kruskal Wallis Analysis about attitudes towards learning according to the teaching divisions show that there is no significant differ ($X^2=4.351$, $df=5$, $p>.05$). Total points of pre-service teachers got from the whole of the attitudes towards learning scale don't give any significant differ according to their teaching divisions.

Table 5. Kruskal Wallis Analysis About Personal Growth Initiatives According to The Teaching Divisions

Teaching Divisions	n	Mean Rank	X ²	df	p
Science teaching education	30	189,92	10,123	5	.072
Primary school mathematics teaching education	64	154,16			
Guidance and psychological counseling education	92	208,88			
Primary school teaching education	64	184,72			
Social studies teaching education	65	194,56			
Turkish language teaching education	63	196,54			

The results of the Kruskal Wallis Analysis about personal growth initiatives according to the teaching divisions show that there is no significant differ ($X^2=10.123$, $df=5$, $p>.05$). Total points of pre-service teachers got from the whole of the personal growth initiatives scale don't give any significant differ according to their teaching divisions.

4th Sub – Problem

“Is there a meaningful differ in the grade levels of pre-service teachers according to their attitudes towards learning and their personal growth initiatives?” has been asked as the question of the fourth sub – problem and the findings have been shown in Table 6 and Table 7.

Table 6. Kruskal Wallis Analysis About Attitudes Towards Learning According to Grade Levels

Grade Levels	n	Mean Rank	X ²	df	p
Freshman	93	176,22	2,433	3	.488
Sophomore	94	194,14			
Junior	97	187,61			
Senior	94	199,94			

The results of the Kruskal Wallis Analysis about attitudes towards learning according to the grade levels show that there is no significant differ ($X^2=2.433$, $df=3$, $p>.05$). Total points of pre-service teachers got from the whole of the attitudes towards learning scale don't give any significant differ according to their grade levels.

Table 7. Kruskal Wallis Analysis About Personal Growth Initiatives According to Grade Levels

Grade Levels	n	Mean Rank	X ²	df	p
Freshman	93	172,63	5,650	3	.130
Sophomore	94	210,14			
Junior	97	186,65			
Senior	94	188,49			

The results of the Kruskal Wallis Analysis about personal growth initiatives according to the grade levels show that there is no significant differ ($X^2=5.650$, $df=3$, $p>.05$). Total points of pre-service teachers got from the whole of the personal growth initiatives scale don't give any significant differ according to their grade levels.

5th Sub – Problem:

“Is there a meaningful differ in the cumulative grade point averages of pre-service teachers according to their attitudes towards learning and their personal growth initiatives?” has been asked as the question of the fifth sub – problem and the findings have been shown in Table 8.

Table 8. Mann Whitney U Analysis About Attitudes Towards Learning and Personal Growth Initiatives According to Cumulative Grade Point Averages

Dimensions / Scales	GPA	n	Mean Rank	Rank Sum	U	p
Expectation about learning	GPA (0-2)	55	138,58	7622,00	6082,20	.000
	GPA (3-4)	323	198,17	64009,00		
Nature of learning	GPA (0-2)	55	172,06	9463,50	7923,50	.199
	GPA (3-4)	323	192,47	62167,50		
Openness to learning	GPA (0-2)	55	145,35	7994,00	6554,00	.001
	GPA (3-4)	323	197,02	63637,00		
Anxiety about learning	GPA (0-2)	55	211,58	11637,00	7668,00	.105
	GPA (3-4)	323	185,74	59994,00		
Readiness for change	GPA (0-2)	55	169,04	9297,00	7757,00	.131
	GPA (3-4)	323	192,98	62334,00		
Being regular in planning	GPA (0-2)	55	169,29	9311,00	7771,00	.136
	GPA (3-4)	323	192,94	62320,00		
Using resources	GPA (0-2)	55	160,60	8833,00	7293,00	.033
	GPA (3-4)	323	194,42	62798,00		
Intentional behaviors	GPA (0-2)	55	154,26	8484,50	6944,50	.009
	GPA (3-4)	323	195,50	63146,50		
Attitudes towards learning	GPA (0-2)	55	150,55	8280,00	6740,00	.004
	GPA (3-4)	323	196,13	63351,00		
Personal growth initiative	GPA (0-2)	55	160,85	8846,50	7306,50	.035
	GPA (3-4)	323	194,38	62784,50		

The results of Mann Whitney U Analysis about attitudes towards learning and personal growth initiatives according to the cumulative grade point averages show significant differ ($p < .05$) on the dimension of “*expectation about learning*”, “*openness to learning*”, “*using resources*”, “*intentional behaviors*”. The significant differ ($p < .05$) has been also seen on whole scales of “*attitudes towards learning*”, “*personal growth initiative*”. The observed differs are in the favor of high cumulative grade point averages (3 – 4). It can be said that as seen on the significant differs, pre-service teachers, who have high GPA mean rank values, have strong habits about “attitudes towards learning” and “personal growth initiative” than who have low GPA mean rank values.

And another important point according to the results of the analysis, it can be said that the pre-service teachers, who have low GPA, have high mean rank values in “*anxiety about learning*” dimension. Having anxiety about learning can be one of the factors of getting low GPA according to the limitation of the results presented here.

6th Sub – Problem

“*Is there a relationship between the pre-service teacher attitudes towards learning and their personal growth initiatives?*” has been asked as the question of the sixth sub – problem and the findings have been shown in Table 9.

Table 9. Spearman’s Rank Correlation Analysis Between Attitudes Towards Learning and Personal Growth Initiatives

Correlation of Dimensions / Scales	n	r _s	P
Expectation about learning - Readiness for change	378	.502	.000
Expectation about learning - Being regular in planning	378	.533	.000
Expectation about learning - Using resources	378	.478	.000
Expectation about learning - Intentional behaviors	378	.629	.000
Expectation about learning - Total personal growth initiative	378	.596	.000
Nature of learning - Readiness for change	378	.248	.000
Nature of learning - Being regular in planning	378	.216	.000
Nature of learning - Using resources	378	.211	.000
Nature of learning - Intentional behaviors	378	.181	.000
Nature of learning - Total personal growth initiative	378	.240	.000
Openness to learning - Readiness for change	378	.324	.000
Openness to learning - Being regular in planning	378	.382	.000
Openness to learning - Using resources	378	.273	.000

Openness to learning - Intentional behaviors	378	.495	.000
Openness to learning - Total personal growth initiative	378	.411	.000
Anxiety about learning - Readiness for change	378	-.246	.000
Anxiety about learning - Being regular in planning	378	-.308	.000
Anxiety about learning - Using resources	378	-.136	.008
Anxiety about learning - Intentional behaviors	378	-.307	.000
Anxiety about learning - Total personal growth initiative	378	-.291	.000
Readiness for change - Total attitudes towards learning	378	.278	.000
Being regular in planning - Total attitudes towards learning	378	.284	.000
Using resources - Total attitudes towards learning	378	.310	.000
Intentional behaviors - Total attitudes towards learning	378	.363	.000
Total attitudes towards learning - Total personal growth initiative	378	.335	.000

Table 9 shows that all dimensions and scale between each other have relationship ($p < .05$). Most important points about these relations can be summarized like that. Whole of both two scales have relation as regarded as near to normal level ($r_s = .33$, $p = .00$). In general view the relation value between .50 and .65 accepted as normal level. This relation points out that attitudes towards learning play role on personal growth initiatives. According to the descriptive statistics as mentioned in the first sub – problem statement pre-service teachers who have strong attitudes towards learning have strong personal growth initiatives. The highest relationship between the dimensions of attitudes towards learning scale and the whole of personal growth initiative scale is seen in “*Expectation about learning*” dimension ($r_s = .59$, $p = .00$). The lowest one is also in “*Nature of learning*” dimension ($r_s = .24$, $p = .00$). The highest relationship seen in Table 9 is between “*expectation about learning*” dimension of attitudes towards learning scale and “*Intentional behaviors*” dimension of personal growth initiative scale ($r_s = .62$, $p = .00$). The lowest relationship seen again in Table 9 is between “*Anxiety about learning*” dimension of attitudes towards learning scale and “*Using resources*” dimension of personal growth initiative scale in a negative way ($r_s = -.13$, $p = .008$). The highest relationship between the dimensions of personal growth initiative scale and the whole of attitudes towards learning scale is seen in “*Intentional behaviors*” dimension ($r_s = .36$, $p = .00$).

RESULTS AND DISCUSSION

In this study, in which the relationship between pre-service teachers' attitudes towards learning and personal growth initiatives was tried to be examined, the question "What are the descriptive statistics about pre-service teachers' attitudes towards learning and personal growth initiatives?" was determined as the first sub-problem and it was concluded that pre-service teachers' attitudes towards learning and personal growth initiatives were at high scores both in sub-dimensions and in all scales.

Results Related to "Attitude towards Learning Scale"

The averages obtained from the scale of attitudes towards learning reveal that pre-service teachers have strong habits towards learning. While the item "Learning continues throughout life" has the highest score in terms of importance, the item "I feel uncomfortable when new subjects are studied" has the lowest score. The result that pre-service teachers who continue their education in the faculty of education have positive attitudes towards learning in the education process is also supported by the research (Dikbaş, 2006; Mdikana, Ntshangase, & Mayekiso, 2007; Teo, 2008; Adıgüzel & Dolmacı, 2018). Mdikana, Ntshangase, & Mayekiso (2007), in their research with pre-service teachers, concluded that high attitudes towards learning will positively affect their academic achievement and willingness to learn. In another study, Izgar (2016) examined the relationship between pre-service teachers' stress in the education process and their attitudes towards learning and concluded that they generally had positive attitudes towards learning in their academic courses. Adıgüzel and Dolmacı (2018) examined pre-service teachers' attitudes towards learning according to different variables and concluded that they were generally high. It was stated that the high attitudes of pre-service teachers towards learning stem from the desire to be willing to know new things and to be eager to develop. These results support our research findings.

With the findings obtained from the first dimension of the attitude towards learning scale, "Expectation towards learning" dimension, it was concluded that pre-service teachers have quite strong habits in terms of expectations towards learning. This result is also supported in the study conducted by Wasburn-Moses (2009) on pre-service teachers' expectations about their future roles. In the related study, pre-service teachers also had strong expectations towards learning.

In the second dimension of the attitude towards learning scale, it was concluded that pre-service teachers had strong habits about the nature of learning. It will not only be sufficient for pre-service teachers to understand the subjects in learning situations, but also their awareness of how these learnings is realized should be high. In this direction, their high attitudes towards learning also show that they have tendencies about the nature of learning. Learners who discover the nature of learning also could organize their learning in a more desirable way (Michalski, 1986; Humphrey, 2013).

It was concluded that pre-service teachers had quite strong habits in the third dimension of the attitude towards learning scale, which is "openness to learning". It can be said that learners who think that they are open to learning also have high learning attitudes. Aktürk (2012) concluded in his study that being open to learning will positively affect learning attitudes. Denat (2019), on the other hand, shared the result that nurse candidates' openness to learning will affect their learning attitudes and willingness levels at a very important level. This supports the result obtained in these studies.

When the findings related to the fourth dimension of the attitude towards learning scale "Anxiety about learning" were analyzed, it was concluded that pre-service teachers were sometimes anxious about learning. This interesting result may reveal that their anxiety about learning is a situation that can positively affect their attitudes towards learning. In their study, Ergen and Durmuş (2022) examined the relationship between teachers' beliefs about learning and learning anxiety and concluded that moderate anxiety levels can positively affect learning beliefs. In another study, Sloan et al. (2002) stated that pre-service teachers' anxiety about some courses may positively increase their learning and tendency towards studying. These studies support the result obtained for the related dimension.

Results Related To " Personal Growth Initiatives Scale"

When the findings obtained were analyzed, it was concluded that pre-service teachers' personal growth initiatives were quite high. Among the items in the scale, the items "I can determine what I need to change about myself" and "I try to improve myself continuously as an individual" had the highest mean score, while the item "I ask for help from others when I try to make changes about myself" had the lowest mean score. The findings obtained according to the sub-dimensions of the scale can be interpreted as follows.

In the first dimension of the scale, "Readiness for Change", it can be said that pre-service teachers have strong habits. Pre-service teachers studying in faculties of education stated that they are open to innovations due to the expectations of the education process they will be in the following years. Gür Erdoğan et al. (2018) examined the relationship between pre-service teachers' readiness for change and their lifelong learning tendencies.

As a result of the findings related to the other dimensions of the " Personal Growth Initiatives Scale", namely "Planning", "Using Resources" and "Deliberate Behaviors", it is seen that pre-service teachers have effective characteristics in directing their behaviors related to their future. It is also important for pre-service teachers to exhibit self-regulated behaviors towards their learning in learning-teaching processes in terms of their personal development. These results are also supported by the research conducted by Genç and Fidan (2019), in which the effect of students' personal growth initiatives on their career adaptability is examined.

In the second sub-problem, which investigated the relationship between pre-service teachers' attitudes towards learning and personal growth initiatives according to their gender, it was determined

that there was no significant difference except for the "nature of learning" dimension. The nature of learning dimension shows a significant difference in favor of men as seen in the mean rank values according to the gender of the pre-service teachers. This result obtained from the research was also found in the study conducted by Genç and Fidan (2019), and the averages of personal development orientations and career adaptability skills of students according to their gender were very close to each other. However, when the relationship between personal growth initiatives and attitude towards learning is examined in many studies, the significant difference found in favor of women draws attention (Yüksek Şahin & Taşkın, 2019; Nathans & Brown, 2022).

It is seen that there is no significant difference between the attitudes towards learning and personal growth initiatives of pre-service teachers according to the departments they study. Likewise, no significant difference was found in the total scores of pre-service teachers' personal growth initiatives scale according to the departments they were studying. It can be concluded from these findings that the relationship between attitudes towards learning and personal growth initiatives of pre-service teachers does not change with the fields of study and that pre-service teachers in all fields have the same structure in general. In the same way, the fourth sub-problem of the study, which was analyzed within the scope of the fourth sub-problem of the research, did not find a significant difference between pre-service teachers' attitudes towards learning and personal growth initiatives according to their grade levels. Related variables may lead to the interpretation that pre-service teachers have the same competences at each grade level.

Do the GPAs of pre-service teachers show a significant difference according to their attitudes towards learning and personal growth initiatives?" was asked as the question of the fifth sub-problem and significant differences were observed in all the scales of "attitudes towards learning" and "personal growth initiatives ". The observed differences were in favor of higher-grade point averages. As can be seen from the significant differences, it can be said that pre-service teachers with high GPA have stronger habits in "attitudes towards learning" and "personal growth initiatives" compared to those with low GPA. This result coincides with the studies in the literature (Vogel et al., 1999; Lea et al., 2003; Rao, 2004; Kara, 2009; Helena-Martins et al., 2019; Diez-Palomar et al., 2020). It is seen that the academic achievements of pre-service teachers are related to many variables in their learning processes as well as their future personal tendencies. Another important point according to the results of the analyses is that pre-service teachers with low grade point averages have high rank averages in the "learning anxiety" dimension. According to the limitation of the results presented here, having learning anxiety can be considered as one of the factors of obtaining a low-grade point average. This idea is also supported by the studies (Lama, 2011; Amiri & Ghonsooly, 2015; Demir, 2022). It can be said that high anxiety levels of pre-service teachers and, in generalization, university students negatively affect their attitudes towards learning and personal growth initiatives.

The question "Is there a relationship between pre-service teachers' attitudes towards learning and personal growth initiatives?" was asked as the question of the sixth sub-problem and it was concluded that there was a relationship between all dimensions and scales. This relationship indicates that attitudes towards learning play a role in personal growth initiatives. As a result, pre-service teachers with strong attitudes towards learning also have strong personal growth initiatives. This coincides with the results obtained in the literature (Weigold, et al., 2014; de Jager-van Straaten, et al., 2016; van Woerkom & Meyers, 2019). As an important result, the fact that pre-service teachers with high attitudes towards learning also have high personal growth initiatives supports the conclusion that the academic knowledge they receive during their university education processes also increases their personal growth initiatives for the future.

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Effect of Hope-Focused Intervention Based on the Creative Art Approach on the University Students' Levels of Hope

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Abstract

The aim of this study was to examine the effect of hope-focused intervention based on the creative art approach on the level of hope of university students. The exploratory sequential design, among mixed patterns, was used in this study. In this experimental study, the random assignment Solomon 4-group design was used. The participants (n = 60) consisted of university students enrolled in an educational program at a public university in western Turkey. The Dispositional Hope Scale, Interview Forms, and Personal Information Forms were used as data collection tools. The hope-focused intervention based on the creative art approach was conducted with experimental groups for 6 weeks, once a week for 90 min. In order to determine the effect of the intervention, the quantitative data obtained were analyzed by two-way ANOVA and the t-test. Qualitative data were obtained by semi-structured interviews and analyzed via content analysis. The results of the analyses showed that hope-focused intervention based on the creative art approach had a significant positive effect on the participants' hope levels, regardless of the pre-test and post-test sensitivity.

Keywords: Creative, Art, Hope, Intervention, University Students

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INTRODUCTION

Nowadays, the path from a dependent child to an independent adult that individuals follow is so long and complicated when compared to any time in history (Arnett 2014). This change in course of life has brought a new development period. Arnett (2000) defined the period of human life covering the ages of 18 and 25 as “emerging adulthood” in industrialized societies. Individuals living through this period experience simultaneous changes in many dimensions of their lives (Schulenberg, Bryant, & O'Malley, 2004). Young people at this stage of life face many stressors, such as leaving their home for education or careers, and adapting to new situations. The transition from adolescence to adulthood can be a difficult developmental task for many young people, because the developmental stages of human life present some special difficulties and demands for inducing successful functioning and well-being (Steca et al., 2009). The emerging adulthood period is also considered to provide many opportunities for developing identities on love, career, and worldviews (Arnett 2000). During this period, individuals begin to develop qualities, skills and self-efficacy that will be used for initiating mature and stable relationships, and assuming more adult roles and responsibilities (Wood et al., 2018, p.123-143). One of the most important predictors of beliefs of self-efficacy is hope (Feldman & Kubota, 2015). Hope plays a very important role in the lives of individuals experiencing emerging adulthood, which is full of opportunities (Dwivedi & Rastogi, 2017). Hope also helps young people to make regular assessments of their current and future selves and set goals (Wood et al., 2018).

Many definitions have been made about the concept of hope in the literature. A group of scientists defined hope as the perception that one's goals can be achieved (Melges & Bowlby, 1969; Frank, 1975). On the other hand, Snyder's (1995) theory of hope is the most accepted theory in the field to date. According to the theory of hope, hope signifies the perceptions of individuals regarding their capacities. This theory consists of three components, which are: clearly conceptualizing goals, developing specific strategies to achieve these goals (thinking about ways to accomplish this), and gaining and maintaining motivation to use these strategies (Snyder et al. 1991; Snyder 2000, Snyder 2002). The theory of hope involves the beliefs of a person that they know how to achieve their goals and then having the motivation to utilize these ways they believe in to achieve these goals (Snyder et al. 2005, p.257–276). In other words, hope encompasses both the will to pursue certain goals, and the way or ways to achieve these goals effectively. In addition to having belief that they can succeed, the individual has beliefs that they have the means to act upon these beliefs successfully (Snyder, 1995). The results of the research conducted on the subject of hope indicated that individuals with a high level of hope have a high level of life satisfaction (Bailey et al., 2007; Cole, 2008; Hutz et al., 2014; Dwivedi and Rastogi, 2017), well-being (Tsukasa and Snyder, 2005), self-efficacy (Snyder, 2002), motivation (Snyder et al., 1998), quality of life (Miller, 2007), and self-esteem (Cotter et al., 2018; Mashiach-Eizenberg, et al., 2013), and that they have a lower level of depression (Schrack et al., 2014) and psychiatric symptoms (Waynor et al., 2012). At the same time, a high level of hope leads to a decrease in stress responses and leads to more effective emotional recovery of individuals (Ong et al., 2006). Taking all of these research results into consideration, it is thought that it is important and necessary to carry out hope-focused interventions.

As a result of the moderation analysis of Speridakos and Weis's (2011) meta-analysis of research on hope-focused interventions, it was shown that hope intervention programs aimed at students or employed adults have a higher degree of effect when compared to intervention programs employed by hospitals and clinics, and for other at-risk populations. In this meta-analysis study, it was reported that hope-focused interventions for students may be effective in increasing hope. In addition to hope-focused interventions conducted with individuals in emerging adulthood period being effective in raising the level of hope of students (Feldman & Dreher, 2011), it was seen that these interventions are also effective in pain tolerance (Berg & Dig., 2008), and improving academic compliance, academic achievement, and self-efficacy levels (Davidson & Dig., 2012; Tian et al., 2018). The intervention techniques used in these studies consisted of creating goals, talking about strategies and motivations used to achieve these goals, listing to these goals, creating a working paper that reflects positive self-talk, mapping goals, imagination, and muscle relaxation, psychoeducation on components of hope, telling one's personal story (Berg et al., 2008; Davidson et al., 2012; Feldman &

Dreher, 2011; Tian et al., 2018). In addition, the common point of these studies was that they were conducted in the form of short-term and group studies. On the other hand, it was seen that creative art practices, which are among approaches that are effective in increasing hope (Bishop & Willis, 2014; Fairchild & McFerran, 2019; Larsen et al., 2018), were included in these group studies.

According to the American Art Therapy Association (2022), the creative art approach integrated with psychological counseling helps to increase the psychosocial well-being of clients. It was also determined that psychological counseling practices based on the creative art approach leads to various positive psychological changes in individuals, such as hope, flow, positive emotions, etc. (Forgeard & Eichner, 2014, p. 137–154; Wilkinson & Chilton, 2013). Creative and expressive art, integrated with psychological counseling, encourages the client to ascend speech-based counseling and deepen counselling further (Bishop & Willis, 2014; Fairchild & McFerran, 2019). In the research conducted by Bishop and Willis (2014), it was aimed to help young individuals to gain insight about what they hope for in the future and the role of hope in their lives using poems, which are used in the techniques used in creative and expressive art. As a result of the research, young people expressed that hope was important for them and that reading poetry themselves out loud was an effective technique. In addition, it was observed that the participants' use of metaphors, such as the smell, taste, and emotion that hope evokes in them, makes hope turn into a more tangible concept (Bishop & Willis, 2014). Larsen et al. (2018) determined that it is also important to focus on the positive aspects of people's lives instead of focusing on the negative aspects, and that it would be more beneficial to use hope-focused work together with interventions based on art.

The aim of this study was to examine the effect of hope-focused intervention based on the creative art approach on the level of hope of university students. The hypotheses of this study created for this purpose are presented below:

1. When the pre-test effect is examined, it will be seen that the difference between the Dispositional Hope Scale (DHS) total post-test score averages of the university students in experimental groups 1 and 2 and the DHS total post-test score averages of the university students in control groups 1 and 2, who participated in the hope-focused intervention based on the creative art approach, will be statistically significant. This difference will be in favor of experimental groups 1 and 2.
2. When the pre-test effect is examined, it will be seen that the difference between the Actuating Thinking Scale (ATS) total post-test score averages of the university students in experimental groups 1 and 2 and ATS total post-test score averages of the university students in control groups 1 and 2, who participated in the hope-focused intervention based on the creative art approach, will be statistically significant. This difference will be in favor of experimental groups 1 and 2.
3. When the pre-test effect is examined, it will be seen that the difference between the Alternative Ways Thinking Scale (AWTS) total post-test score averages of the university students in experimental groups 1 and 2 and the AWTS total post-test score averages of the university students in control groups 1 and 2, who participated in the hope-focused intervention based on the creative art approach, will be statistically significant. This difference will be in favor of experimental groups 1 and 2.

METHOD

Research Model

The research was modeled with an exploratory sequential design that is among the mixed methods, in which the qualitative and quantitative methods are used together. Since the problem of the study was more oriented towards quantitative values, quantitative data were collected and analyzed in the first stage of the study. Then, in order to support the data obtained, to obtain specific results and a

deeper explanation, the qualitative data were collected and analyzed in the second stage of the study (Creswell & Plano Clark, 2017, p. 77). The findings obtained from quantitative and qualitative data were interpreted through correlation.

The Solomon 4-group design, among the true experimental models, was selected for the evaluation of the effectiveness of the hope-focused intervention based on the creative art approach developed for university students that was included in the quantitative dimension of this study (Table 1).

Table 1. Solomon 4-Group Design.

Groups	Pre-test	Process	Post-test
Experimental 1	DHS	Hope-focused intervention based on creative art approach	DHS
Control 1	DHS	X	DHS
Experimental 2	X	Hope-focused intervention based on creative art approach	DHS
Control 2	X	X	DHS

The reason why the Solomon 4-group design was selected was the possibility to define the pre-test interaction. Defining the pre-test interaction allows for controlling the effect of the pre-test application on the participants. Therefore, it is a technique with high internal validity (Heppner et al., 2007, p.155-157). The independent variable of the research was hope-focused intervention based on the creative art approach. The dependent variables of the research were the levels of dispositional hope, pathways thinking, and agency thinking. The Solomon 4-group design used to evaluate the effectiveness of the intervention is presented in Table 1, where it can be seen that there were 2 experimental groups and 2 control groups in the study. The DHS was applied to experimental group 1 and control group 1 before the intervention. No measurement tools were applied to experimental group 2 and control group 2 prior to the intervention. Then, hope-focused intervention based on the creative approach was applied to the experimental groups. After the intervention, the DHS was applied to all of the groups.

For the qualitative dimension of the research, a case study was conducted. Case studies conducted to determine the results related to a specific purpose are studies conducted on cases such as individuals, institutions, groups, or environments, which can be used in tandem with quantitative or qualitative methods (Yıldırım & Şimşek, 2011, p.77). Qualitative data were collected as part of the research in order to support the quantitative data obtained with the experimental design, and to provide more in-depth information and holistically evaluate the perceptions formed throughout the study. For this purpose, semi-structured interviews were conducted with 9 participants in the experimental groups who voluntarily agreed to be interviewed. The data obtained were then analyzed via content analysis.

Participants

The participants of this study consisted of university students who were attending Dokuz Eylül University, Buca Faculty of Education in the 2021–2022 academic year. The study was conducted with a total of 60 students, 15 (3 males, 12 females) in experimental group 1 ($\bar{x} = 21.2$, $SD = 1.2$), 15 (4 males, 11 females) in control group 1 ($\bar{x} = 20.9$, $SD = 1.09$), 15 (4 males, 11 females) in experimental group 2 ($\bar{x} = 20.4$, $SD = 1.18$), and 15 (4 males, 11 females) in control group 2 ($\bar{x} = 20.6$, $SD = 1.05$).

Data Collection Tools:

Personal Information Form

This form was developed by the researcher for the purpose of obtaining information about the age and gender of the participants and the purpose of their participation in the study.

Dispositional Hope Scale

The DHS, developed by Snyder et al. in 1991 to measure the dispositional hope levels of individuals over the age of 15, consists of 12 items. There are 2 sub-dimensions of the scale, namely actuating thinking and alternative ways thinking. The scale consists of 4 items for both sub-dimensions with statements that aim to measure these sub-dimensions, as well as 4 filler items. The score range of the 8-point Likert-type scale ranges from a maximum score of 64 points to a minimum score of 8 points. The internal reliability coefficient of the scale was determined to be between 0.71 to 0.76 for the actuating thinking sub-dimension, between 0.63 to 0.80 for the alternative ways thinking sub-dimension and between 0.74 to 0.84 for the entirety of the scale. In the reliability study conducted using the test-retest method, the reliability coefficients were determined to be 0.85 for an interval of 3 weeks, 0.73 for an interval of 8 weeks, and 0.76 for an interval of 10 weeks. In the exploratory factor analysis, it was seen that 61% of the total variance was explained and the items were collected in two factors. As a result of confirmatory factor analysis, fit index values were found as GFI = .96, AGFI = .92, RMR = .08, NNFI = .94, RFI = .90, CFI = .96 and RMSEA = .077. The psychometric properties of the Turkish adaptation of the scale, adapted by Bacanlı and Tarhan (2015), were deemed acceptable and it was concluded that the scale was a usable tool for measuring the level of people's hope.

Semi-Structured Interview Form

The semi-structured interview form was prepared by the researcher. The opinions of 3 field experts were taken related to the prepared form. The final form of the document was prepared in accordance with the opinions of 3 experts. The questions included in the form are as follows:

- 1) Has the hope-focused intervention based on the creative art approach been effective in increasing your hope? If so, how?
- 2) What are the factors that affect you when you evaluate the whole process? Can you elaborate?"

Process

Prior to the initiation of this study, ethical permission was obtained from the Dokuz Eylül University Ethics Committee (Protocol number: 10042736-659; Approval date: 01/03/2020, Decision number: 17) to conduct the study. Later, it was announced that a hope-focused intervention study based on the creative art approach would be conducted across the faculty by Dokuz Eylül University, Buca Faculty of Education, Guidance and Psychological Counseling Department and Fine Arts Education Department, during the 2021–2022 academic year. Then, applications from students who wanted to participate in this study were taken for a 1-week period. After this period, there were 65 applicants in total.

Applicants for the study were contacted for a preliminary interview. A total of 60 individuals attended the preliminary meetings. In the preliminary interviews, personal information forms were obtained. In addition, information about whether the participants had any previous psychological diagnoses, had undergone psychological treatment, and their reason for application were obtained. It was determined that none of the applicants had a psychological diagnosis and none had received psychological treatment. Then, information about the purpose, scope, and duration of the study, group rules, and the method to be applied were given to the applicants and their written consent was obtained. Finally, the applicants who attended the preliminary interviews were randomly assigned to the experimental and control groups via a draw, while making sure that there was an equal number of male and female members in both the experimental and control groups.

Before the beginning of the experimental process, the DHS was applied to the students in experimental group 1 and control group 1 as a pre-test. Then, a total of 6 group sessions were held with the experimental groups, 1 day a week, for 90 min of hope-focused intervention based on the

creative art approach. In the meantime, no work was conducted with the control groups. After the completion of these sessions with the experimental groups, the DHS was applied to all of the groups as a post-test.

All of the group sessions were conducted by the lead author who completed their psychodrama training at the Abdülkadir Özbek Psychodrama Institute and is an expert psychodramatist, who participated in art therapy workshops. Additionally, the configuration and execution of all of the sessions were supervised. It was thought that the participants would not expect favoritism or extra scores from the researcher, since the researcher did not teach any of the courses that the participants attended and thus, this would not affect the experimental process results or the internal validity of the experimental study. Additionally, it was thought that factors such as a new physical environment would not affect the outcome of the experimental process due to the fact that the experimental process was executed in the school environment that the students were studying in.

A semi-structured interview was conducted as part of the qualitative data collection process 1 week after the group sessions were completed. These interviews were conducted with 21 participants who were in the experimental groups and volunteered to participate in the interviews.

Validity and Reliability of the Study

In order to increase the reliability of the study, these semi-structured interviews were conducted by other researchers who were involved in the study, but did not take part in the intervention study. Some necessary measures were taken regarding the validity and reliability of the data obtained from the semi-structured interviews of the study. The first internal validity measure was preparing interview questions after the related literature was searched through (Bishop & Willis, 2014; Fairchild & McFerran, 2019). Another internal validity measure was receiving expert opinion on the prepared questions. Providing a detailed description of the data obtained from the interviews and including direct quotations in the study were taken as external validity measures. In addition, it was observed that the research results were compatible with theories and concepts contained in the relevant literature.

The conduct of this study by four studies, the collection and analysis of data are evaluated within the scope of the reliability of the research. In the analysis process, the answers of the participants were first read by four researchers, common points were found in the answers and separate codes were created. Finally, certain themes and sub-themes were created based on the codes determined by all three researchers, and the data were interpreted. The answers given by the students to the interview questions were presented through direct quotations. In direct quotations, information about the students is given by abbreviated as “K” to show the participant number.

Application of Hope-Focused Intervention Through Creative Art

The aim of this study was to examine the effect of hope-focused intervention through creative art on the level of hope of university students. For this purpose, a total of 6 sessions of 90 min were conducted for 2 experimental groups, once a week. The same intervention was applied to both experimental groups. Both active and passive exercises of creative art practices were included in each session.

In the first session: Group members were met with and information was given about the group rules, and the process and purpose of the intervention program. Afterwards, a consent form stating that they voluntarily participated in the study and that the ethical rules were written was filled in and then the session was finalized.

In the second session: In this session, 10 pictures with the theme of hope, selected by the expert, who holds the title of associate professor in the field of art history and one of the researchers of this study, were shown to the participants in two minutes. These pictures are respectively; Jean-

Auguste-Dominique Ingres (1842) - Faith, John William Waterhouse (1896) - Pandora, John Everett Millais (1856) - The Blind Girl, Lawrence Alma Tadema (1909) - Hopeful, Thomas Cole (1842) - The Journey of Life: Youth, Caspar David Friedrich (1818) - The Woman Before the Rising Sun, Henri Fantin Latour (1888) - Roses and Lilies, Claude Monet (1873) - A Field of Poppy, Pierre Auguste Renoir (1881) - Lunch on the Cruise, Henri Matisse (1910) - Dance. Then, they were asked to share the words with the group and the projections of these in the participants' own lives and their life goals were shared. Next, the group members were asked to choose the pictures that evoked the most hope among these pictures. Afterwards, the feelings associated with the picture they chose were shared. Then, they were asked to write a quatrain consisting of the words they wrote about the pictures by dividing into small groups of 3 people. The quatrains they wrote were shared with the experimental group, giving feedback about the verses, and then the session was finalized.

In the third session: Music pieces that evoke hope were requested from two faculty members from Dokuz Eylül University, Buca Education Faculty, Department of Music Education. The selected 5 pieces of music (Eleni Karaindrou (1988)- By the sea, Al Di Meola (1977)- Mediterranean Sundance, Jetro Tall (1969)-Bouree, The Dave Brubeck Quartet (1959)-Take Five) were played to the participants for two and a half minute. The selected music tracks were chosen with attention to them not having lyrics and being largely unknown. The participants were asked which musical work or works influenced them the most among the musical works they listened to, considering their life goals, ways to achieve these goals, and sources of motivation, and they were asked to write words about the music they chose. They were then asked to read the words to the experimental group. Then, participants were divided into 5 small groups of 3 and asked to write stories containing the words they wrote. The stories they wrote were shared with the experimental group, feedback was given about the verses, and then the session was finalized.

In the fourth session: The Participants were asked to move freely in the area where the group gathered and to think about the movie and movie character that impressed them the most. Afterwards, they were asked to share the movies and movie characters they chose with the group. Then, they were divided into groups and asked to play the role of the character they chose and act like them. Then, these roles were asked to communicate with each other and to act by thinking about how the movie character would act, what they would say to them in order to reach their current goals in life, and how they would act in the face of obstacles that would arise in reaching these goals. Afterwards, they were asked to identify the common themes occurring within the group and to create body sculptures related to these themes. Finally, the session was ended after receiving feedback about what the sculptures mean to them and their common thoughts.

In the fifth session: The group members were asked to paint a picture of hope, taking into account their purpose in life, ways to achieve those goals, and sources of motivation. They were instructed that the important thing in their painting was to reflect themselves and they were not professional artists, and they should paint as they feel. This study took approximately 35 minutes. After painting, each group member was asked to share with the group what the pictures meant, paying attention to their choice of colors and symbols, and what these colors and symbols meant to them. Afterwards, they were allowed to take pictures of the pictures they had made and to take their pictures with them. The session was ended after the common thoughts and feedback of the participants were received.

In the sixth session: The participants were asked to evaluate the whole group process. Good wishes were made after the group members' evaluations and feedback. Afterwards, the group process was finalized by the post-test application.

Data Analysis

Herein, the pre-test and final test scores of the totality of the DHS, and its sub-dimensions, the ATS and AWTs, were distributed normally, and the group variances were similar. With these results, it was decided that parametric tests could be applied in the study. The 2-way ANOVA technique was

used to examine the interaction of the final test score averages of the groups, which is the first analysis step of the Solomon experimental design. Then, whether the differences between the final test score averages of the pre-tested experimental group 1 and control group 1, and the non-pre-tested experimental group 2 and control group 2 were significant or not was examined via t-test. The data were analyzed using IBM SPSS Statistics for Windows 23.0 (IBM Corp., Armonk, NY, USA) and statistical significance was accepted as $p < 0.05$.

The second stage of the research was the process of collecting the qualitative data. Two open-ended questions were asked to the group members in a semi-structured interview 1 week after the end of the experimental procedure conducted with the experimental group. The interviews lasted an average of 15 min. Each of the questions was prepared to be main themes. In the analysis process, first, the data recorded on the voice recorder were deciphered. Then, the codes were determined by finding the common points across the answers given to the questions by the participants. Finally, based on the common codes determined by the researcher, the main themes were established and the data were interpreted. The real names of the participants were not used in the analysis or presentation of the data. The answers of the participants to the interview questions were given in the form of direct quotations. Information on the direct quotations was encoded with the letter “K” to indicate the names and numbers of the participants.

FINDINGS

Quantitative Findings

The descriptive statistics of the experimental and control groups and the normality test are presented in Table 2.

Table 2. DHS, ATS, and AWTs Mean Scores of the Experimental and Control Groups, Standard Deviation Values, and Normality Test.

	Kolmogorov -Smirnov test					Shapiro-Wilk test			
	n	M	SD	Statistic	df	p	Statistic	df	p
Experimental 1 DHS Pre-test	15	38.8	6.2	0.112	15	0.20	0.97	15	0.90
Control 1 DHS Pre-test	15	37.6	5.2	0.187	15	0.16	0.88	15	0.06
Experimental 1 DHS Post-test	15	53.2	5.3	0.16	15	0.20	0.92	15	0.22
Control 1 DHS Post-test	15	37.4	4.7	0.12	15	0.20	0.96	15	0.80
Experimental 2 DHS Post-test	15	53.3	4.6	0.17	15	0.20	0.94	15	0.46
Control 2 DHS Post-test	15	37.8	4.7	0.14	15	0.20	0.91	15	0.11
Experimental 1 ATS Pre-test	15	19.4	3.4	0.12	15	0.20	0.95	15	0.61
Control 1 ATS Pre-test	15	19.4	3.4	0.13	15	0.20	0.958	15	0.64
Experimental 1 ATS Post-test	15	27.1	2.6	0.13	15	0.20	0.95	15	0.61
Control 1 ATS Post-test	15	19.7	2.8	0.12	15	0.20	0.95	15	0.52
Experimental 2 ATS Post-test	15	26.7	3.1	0.14	15	0.20	0.94	15	0.44
Control 2 ATS Post-test	15	20.2	3.1	0.22	15	0.07	0.94	15	0.48
Experimental 1 AWTs Pre-test	15	19.4	3.2	0.16	15	0.20	0.95	15	0.58
Control 1 AWTs Pre-test	15	18.2	2.7	0.13	15	0.20	0.95	15	0.63
Experimental 1 AWTs Post-test	15	26.1	3.4	0.20	15	0.10	0.89	15	0.07
Control 1 AWTs Post-test	15	17.7	2.5	0.15	15	0.20	0.89	15	0.09
Experimental 2 AWTs Post-test	15	25.4	2.6	0.16	15	0.20	0.92	15	0.22
Control 2 AWTs Post-test	15	17.6	2.8	0.21	15	0.06	0.92	15	0.21

As can be seen in Table 2, the DHS pre-test average was 38.8 (SD = 6.2), the DHS post-test average was 53.2 (SD = 3.4), the ATS pre-test average was 19.4 (SD = 3.4), the ATS post-test average was 27.6 (SD = 2.6), the AWTs pre-test average was 19.4 (SD = 3.2), and the AWTs post-test average was 26.1 (SD = 3.4) for experimental group 1. The DHS pre-test average was 37.6 (SD = 5.2), the DHS post-test average 37.4 (SD = 4.7), the ATS pre-test average was 19.4 (SD = 3.4), the ATS post-test average was 19.7 (SD = 2.8), the AWTs pre-test average was 18.2 (SD = 2.7), and the AWTs post-test average was 17.7 (SD = 2.5) for control group 1. The DHS post-test average was 53.3 (SD = 4.6), the ATS post-test average was 26.7 (SD = 3.1), and the AWTs post-test average was 25.4

(SD = 2.6) for experimental group 2. The DHS post-test average was 37.8 (SD = 4.7), the ATS post-test average was 20.2 (SD = 3.1), and the AWTS post-test average was 17.6 (SD = 2.8) for control group 2.

The data obtained in this study were examined using the Kolmogorov-Smirnov and Shapiro-Wilk tests to determine whether the data met the prerequisite of normality in order to be able to perform 2-way ANOVA for the post-test comparison of the groups, which is the first step of the Solomon model. As shown in Table 2, the DHS pre-test scores ($p > 0.05$), ATS pre-test scores ($p > 0.05$), AWTS pre-test scores ($p > 0.05$), DHS post-test total scores ($p > 0.05$), ATS post-test scores ($p > 0.05$) and AWTS post-test scores ($p > 0.05$) of the experimental and control groups were determined to be distributed normally.

The homogeneity of the variances of the pre-test and post-test scores of the groups, which is the second prerequisite of 2-way ANOVA, were examined via the Levene test. The values obtained as a result of the DHS pre-test ($F = 0.9$, $p > 0.05$), DHS post-test ($F = 0.4$, $p > 0.05$), ATS pre-test ($F = 0.0$, $p > 0.05$), ATS post-test ($F = 0.2$, $p > 0.05$), AWTS pre-test ($F = 0.1$, $p > 0.05$) and AWTS post-test ($F = 1.9$, $p > 0.05$) showed that the variances were homogeneous. Given that the necessary prerequisites were met, 2-way ANOVA was conducted between groups to determine whether the expressionist hope-focused intervention had any effect on the DHS total scores and scores of its subscales, ATS, and AWTS. The findings obtained are presented in Table 3.

Table 3. Results of the 2-way Intergroup ANOVA on the Total Score of Dispositional Hope.

Scale	Source of Variance	Sum of Squares	df	Mean of Squares	F	p	η^2
DHS	Process	2066.309	3	688.770	34.689	0.00	0.658
	Pre-test	248.289	1	248.289	12.505	0.01	0.188
	Process \times Pre-test	0.293	1	0.293	0.15	0.904	0.00
	Error	1072.214	54	21.526			
	Total	12886.00	60	19.856			
ATS	Process	336.070	3	112.023	13.523	0.00	0.429
	Pre-test	14.528	1	14.528	1.754	0.00	0.031
	Process \times Pre-test	23.352	1	23.352	0.931	0.99	0.04
	Error	447.320	54	8.284			
	Total	34156.00	60				
AWTS	Process	594.933	3	198.311	34.099	0.00	0.655
	Pre-test	152.197	1	152.197	26.170	0.00	0.326
	Process \times Pre-test	0.854	1	0.854	0.147	0.703	0.003
	Error	314.047	54	5.816			
	Total	29788.00	60				

As suggested by Braver and Braver (1988), it is necessary to examine the main effect of pre-test and the interaction of the pre-test and the process first. Accordingly, as can be seen from Table 3, the interaction between the pre-test and process also did not differ significantly in the DHS score averages ($F_{(1,54)} = 0.15$; $p = 0.904$). The interaction between the pre-test and process also did not differ significantly in the ATS score averages ($F_{(1,54)} = 0.931$; $p = 0.99$). The interaction between pre-test and process did not differ significantly in the AWTS score averages ($F_{(1,54)} = 0.147$; $p = 0.703$). According to these results, it was seen that there was no pre-test sensitivity of the DHS, ATS, or AWTS.

On the other hand, it was seen that the main effect of the process did show a significant difference in the DHS ($F_{(3,54)} = 34.689$; $p = 0.00$), ATS ($F_{(3,54)} = 13.523$; $p = 0.00$), and AWTS ($F_{(3,54)} = 34.099$; $p = 0.003$) mean scores. The mean scores of the participants in the experimental groups were higher than the mean scores of the subjects in the control groups.

For the second step of the analysis in the Solomon 4-group design, the independent group t-test was applied to experimental group 1 and control group 1, which were pre-tested, and experimental group 2 and control group 2, which were not pre-tested. Then, the independent group t-test was applied to experimental group 1, which was pre-tested, and experimental group 2, which was not pre-

tested, and to control group 1, which was pre-tested, and control group 2, which was not pre-tested. The findings obtained are presented in Table 4.

Table 4. T-Test Results for the Independent Measurements of the Post-Test Scores of the Experimental and Control Groups.

Scale	Group	n	t	df	p	Mean Difference
DHS Post-Test	Experimental 1- Control 1	30	8.53	28	0.00	15.8
	Experimental 2-Control 2	30	9.10	28	0.00	15.3
	Experimental 1-Experiment 2	30	-0.73	28	0.95	0.13
	Control 1-Control 2	30	-0.231	28	0.81	-0.40
ATS Post-Test	Experimental 1- Control 1	30	7.33	28	0.00	7.33
	Experimental 2-Control 2	30	5.70	28	0.00	6.53
	Experimental1- Experimental 2	30	0.31	28	0.75	0.33
	Control 1-Control 2	30	-0.42	28	0.67	-0.46
AWTS Post-Test	Experimental 1- Control 1	30	7.59	28	0.00	8.44
	Experimental 2-Control 2	30	7.71	28	0.00	7.33
	Experimental 1-Experimental 2	30	0.65	28	0.51	0.71
	Control 1-Control 2	30	0.64	28	0.94	0.66

As can be seen in Table 4, the total post-test scores of experimental group 1 and control group 1, in which the DHS pre-test was applied, showed a significant difference ($t_{(28)} = 8.533$, $p = 0.00$). At the same time, the total post-test scores of experimental group 2 and control group 2, which were not pre-tested, also showed a significant difference ($t_{(28)} = 9.101$, $p = 0.00$). However, the total DHS post-test scores of experimental group 1, which was pre-tested, and experiment group 2, which was not pre-tested ($t_{(28)} = -0.73$, $p = 0.952$), and the total DHS post-test scores of control group 1, which was pre-tested, and control group 2, which was not pre-tested ($t_{(28)} = -0.231$, $p = -0.819$), did not show any significant difference. The ATS post-test scores of experimental group 1 and control group 1, in which the DHS pre-test was applied, showed a significant difference ($t_{(28)} = 7.33$, $p = 0.00$). The ATS post-test scores of experimental group 2 and control group 2, which were not pre-tested, also showed a significant difference ($t_{(28)} = 5.706$, $p = 0.00$). However, the ATS post-test scores of experimental group 1, which was pre-tested, and experiment group 2, which was not pre-tested ($t_{(28)} = -0.315$, $p = 0.755$), and the ATS post-test scores of control group 1, which was pre-tested, and control group 2, which was not pre-tested ($t_{(28)} = -0.428$, $p = 0.672$), did not show any significant difference. The AWTS post-test scores of experimental group 1 and control group 1, in which the DHS pre-test was applied, showed a significant difference ($t_{(28)} = 7.591$, $p = 0.00$). The AWTS post-test scores of experimental group 2 and control group 2, which were not pre-tested, also showed a significant difference ($t_{(28)} = 7.716$, $p = 0.00$). However, the AWTS post-test scores of experimental group 1, which was pre-tested, and experiment group 2, which was not pre-tested ($t_{(28)} = -0.657$, $p = 0.516$), and the AWTS post-test scores of control group 1, which was pre-tested, and control group 2, which was not pre-tested ($t_{(28)} = -0.647$, $p = 0.947$), did not show any significant difference. These findings indicated that the hope-focused intervention based on the creative art approach was effective.

Qualitative Findings

The first question in the interview form is “Has the hope-focused intervention based on creative art approach been effective in increasing your hope? If so, how?” It was determined that the work was effective in increasing the hopes of the participants under 2 main themes: career and personal development. The code under the career theme was determined to be a clarification of goals ($f = 20$). The codes under the personal development theme were determined to be self-efficacy ($f = 9$), perseverance ($f = 8$), awareness ($f = 6$), and gratitude ($f = 4$). The opinions of some of the participants on this topic are presented below.

K1: “The work was instrumental in creating my academic career plans. Before this work, I didn't have a clear idea of what I wanted. I wanted to pursue an academic career, but my faith about whether it would happen was decreasing from time to time. With this work, I realized that what I

really wanted was an academic career. I also realized that I needed to work more systematically and planned. My self-confidence has increased. The work helped me to better understand that I should not be defeated by setbacks, that everyone can face difficulties in life”.

The code under the career theme was determined to be the clarification of goals. This result of the research supported Snyder's (1994) theory of hope. According to Davidson et al. (2012), hope is a form of cognition oriented towards goals.

K4: *“I attended this work so that I could go somewhere on my own. Before this work, I couldn't go anywhere alone. The work helped me form beliefs that I could do what I set out to do. It also showed me that I was not as weak as I thought I was, but strong. Now I can go anywhere on my own without the need for others”.*

Another code under the theme of personal development is perseverance. Perseverance is recognized as one of the character strengths (Peterson, & Seligman, 2004, p.229-249). Hope and perseverance are connected with each other and support each other (Hugman, & Pawar, 2021).

K7: *“The pandemic period had distracted me from school. I had no idea about what to do or how to improve myself. Since this work was an out-of-class activity, it helped me to attend school with more pleasure, to understand what I wanted and to choose my field. In addition, it helped me form the belief that I can develop more by working tirelessly and knowing the value of what I have, regardless of the conditions of the country I live in or my own condition”.*

Another code under the theme of personal development is awareness. The results of the study conducted by Larsen et al. (2015) showed that during sessions of hope-focused group work, the participants reported moments of a change in perspective or experiencing newfound awareness of their strengths, and that these moments were generally enlightening and had a positive, hopeful effect on thoughts of their personal resources or the difficulties they faced.

K3: *“With this work, I realized that what I really wanted was a more peaceful, serene, and calm life. I realized that I put the daily hassle of life and the needs of others before my own needs and that I needed to do more for myself, that the biggest obstacle on the way to doing what I wanted was me, and that I should work on myself”.*

Another code under the theme of personal development of the research is gratitude. There is a positive relationship between hope and gratitude (Feng, & Yin, 2021; Kardaş et al., 2019, Witvliet et al., 2019). Gratitude is a positive assessment of what is already present in the lives of individuals, and hope is a positive expectation of future results (Scioli et al., 2011).

The second question in the interview form is “What are the factors that affect you when you evaluate the whole process? Can you elaborate?” It was determined that the intervention was effective under 2 main themes: artistic activities and group work. Codes under the artistic activities theme were determined to be interpreting images (f = 15), listening to music (f = 8), writing stories and poetry (f = 7), acting as movie characters (f = 6), painting (f = 5), and creating body sculptures (f = 4). Codes under the group work theme were determined to be sharing feelings and thoughts (f = 20) and having common feelings (f = 16). The opinions of some of the participants on this topic are presented below.

K5: *“In the second session, selecting images made it possible to ask myself questions about my own life, what I expect, what I want and what my goal is. In addition, the music exercise enhanced my positive emotions, which calmed me down and made me think about what path I should take and that I should step up by working on myself. Sharing these feelings within the group, writing verses and stories together, and seeing that we shared common feelings also affected me”.*

K2: *“The movie I chose and acting as a character in that movie had a great effect on me. The character in the movie was also moving through obstacles in their life. Getting in his place and*

thinking about what they would tell me right then and hearing their words in my head really had an effect on me. In addition, seeing the characters that other people in the group had chosen was also like a preview of these people for me. The idea that most of us chose the characters we wanted to be and taking on their strengths to move through life without stopping like them felt very good. Creating body sculptures of the common themes we chose also made the process tangible by showing me that we had common feelings”.

Codes under the artistic activities theme were determined to be interpreting images, listening to music, writing stories and poetry, acting as movie characters, painting, and creating body sculptures. In a 4-hour musical workshop conducted by Fairchild and McFerran (2019), with young people who were domestic violence victims and homeless, the methods of musical warm-up exercises, sharing a song that was meaningful to the participants, drawing exercises based on the inspiration participants gained from earlier exercises, collaborative song writing focusing on the relationship with music were used.

K9: *“The painting we created in the last session had a deep effect on me. It made my goal in life, the path I have taken to achieve this goal, and my sources of motivation clear and concrete. Sharing my thoughts and feelings with the group and hearing about their thoughts and feelings influenced me and increased my self-awareness”.*

K8: *“Working together with other people in the group, writing poems and stories together, creating body sculptures, having common feelings despite our differences, and expressing them without judgment or criticism and sharing the same feelings were very effective in my process”.*

Codes under the group work theme were determined to be sharing feelings and thoughts and having common feelings. According to Yalom (2002, p. 21–22), one of the therapeutic factors of group psychological counseling is instilling hope in the group members. According to Larsen et al. (2018), the participants can reconnect with their pre-existing sense of hope and gain awareness through the communication they have established with other group members and sharing.

DISCUSSION

The aim of this study was to examine the effect of hope-focused intervention based on the creative art approach on the level of hope of university students. The research results showed that there was an increase in the total DHS, ATS, and AWTs scores, which are sub-dimensions of dispositional hope, of the participants who took part in the hope-focused intervention based on the creative art approach.

As part of the second stage of the research, the collection and processing of qualitative data, semi-structured interviews were carried out with the students. The first question in the interview form was: "Has the hope-focused intervention based on the creative art approach been effective in increasing your hope? If so, how?" As a result of the content analysis conducted for the answers to this question, it was determined that the intervention was effective in increasing the hopes of the participants under 2 main themes: career and personal development.

The code under the career theme was determined to be the clarification of goals. This result of the research supported Snyder's (1994) theory of hope. According to Davidson et al. (2012), hope is a form of cognition oriented towards goals. According to the theory of hope, high hope is also associated with setting more specific goals (Snyder et al., 1997; Snyder, 2002). While students with high levels of hope can clearly conceptualize their goals, students with low levels of hope have more uncertainty and contradictions about their goals (Snyder, 1994). The results of a study by Chevans et al. (2019), conducted with university students, showed that individuals with a high level of hope are more likely to engage in behaviors aimed at setting successful goals than those with a lower level of hope. In addition, it is anticipated that university students with a high level of hope may be more successful in achieving their goals (Feldman et al., 2009). College years can pose various difficulties,

and setting a goal in these years can help students to cope with difficulties (Pfund et al., 2020). Thus, it is thought that hope-focused work aimed at university youth may help young people to set goals for themselves.

The codes under the personal development theme were determined to be self-efficacy, perseverance, awareness, and gratitude. Similar to hope, self-efficacy is oriented towards the future and plays an important role in goal-oriented behavior (Gallagher et al., 2019). Self-efficacy includes perceptions that one can perform certain behaviors that are necessary to achieve a desired result (Bandura, 1982a). The results of hope-focused intervention studies conducted with university students have shown that the self-efficacy levels of students, as well as their academic achievement and score averages, increase with an increasing level of hope. (Davidson et al., 2012; Tian et al., 2018). Advancing the personal resources of university students, such as self-efficacy, to help them attune themselves with their new roles and their expectations, can also help them develop skills of hopeful thinking (Shade, 2006).

Another code under the theme of personal development is perseverance. Perseverance is recognized as one of the character strengths (Peterson, & Seligman, 2004, p.229-249). Hope and perseverance are connected with each other and support each other (Hugman, & Pawar, 2021). People with a high level of hope are more determined in the process of achieving their desired goals (Snyder, 2002). Perseverance is also keeping the expectation that the future will be better through our own efforts by depending on hope. The hope that determined individuals have is not about luck, but about being able to stand up again after falling down (Duckworth, 2019, p.195). In this study, it was thought that the participants developed feelings of perseverance along with hope that would help them to achieve their goals and overcome the obstacles in the way of these goals.

Another code under the theme of personal development is awareness. The results of the study conducted by Larsen et al. (2015) showed that during sessions of hope-focused group work, the participants reported moments of a change in perspective or experiencing newfound awareness of their strengths, and that these moments were generally enlightening and had a positive, hopeful effect on thoughts of their personal resources or the difficulties they faced. In addition, awareness helps individuals to identify their goals and define obstacles in the way of achieving these goals. Awareness is a predictor of identifying obstacles in the way of a goal. With an increase in awareness, goal-oriented effort (Cowden & Meyer-Weitz, 2016), problem solving strategies (Burwell & Shirk, 2007), and showing better performance to achieve goals also increase (Donovan et al., 2015). Based on all of these research results, it is thought that the relationship between hope and awareness obtained in this study is creating goals that are components of hope and defining obstacles on this way and realizing one's own potential to overcome these obstacles.

Another code under the theme of personal development of the research is gratitude. There is a positive relationship between hope and gratitude (Feng, & Yin, 2021; Kardaş et al., 2019, Witvliet et al., 2019). Gratitude is a positive assessment of what is already present in the lives of individuals, and hope is a positive expectation of future results (Scioli et al., 2011). McCullough et al. (2002) argued that people with gratitude and hope enjoy their lives and look at the past positively, pursue their goals for a meaningful future, and that the inner social orientation of gratitude contributes to forming hope. Witvliet et al. (2019) argued that individuals who are grateful for their past can also have their hopes for the future improved.

The second question in the interview form is "What are the factors that affect you when you evaluate the whole process? Can you elaborate? It was determined that the intervention work was effective under 2 main themes: artistic activities and group work.

Codes under the artistic activities theme were determined to be interpreting images, listening to music, writing stories and poetry, acting as movie characters, painting, and creating body sculptures. In a 4-hour musical workshop conducted by Fairchild and McFerran (2019), with young people who were domestic violence victims and homeless, the methods of musical warm-up exercises, sharing a

song that was meaningful to the participants, drawing exercises based on the inspiration participants gained from earlier exercises, collaborative song writing focusing on the relationship with music were used. As a result of the study, 2 themes emerged. These themes were using music as an escape and that music increases hope. In another group study conducted by Larsen et al. (2018), stories were told through collage work representing hope in each of the 3 sessions. As a result of the study, it was determined that the participants' feelings of hope increased and their chronic pain decreased. In another study conducted by Bishop and Willis (2014), the researchers used poems, which is one of the techniques among creative and expressive art. As a result of the research, the young people expressed that hope is important for them and that reading poetry themselves out loud was an effective technique. In addition, it was observed that the participants' use of metaphors, such as the smell, taste, and emotion that hope evokes in, them made hope turn into a more tangible concept (Bishop & Willis, 2014). In light of the results obtained from all of these studies and the current research, it can be said that hope-focused studies based on the creative art approach are effective. In addition, it is rarely effective to only tell clients to think positively (Wilkinson & Kitzinger, 2000). Clinton and Wilkinson (2009) state that art therapy is effective in focusing on the positive and restoring the mood, as well as expressing themselves through art. Using creative approaches instead can be much more effective.

Codes under the group work theme were determined to be sharing feelings and thoughts and having common feelings. According to Yalom (2002, p. 21–22), one of the therapeutic factors of group psychological counseling is instilling hope in the group members. According to Larsen et al. (2018), the participants can reconnect with their pre-existing sense of hope and gain awareness through the communication they have established with other group members and sharing. During group sessions, people share their thoughts and feelings out loud, while also discovering their strengths, by having the opportunity to compare themselves with others (Larsen et al., 2018). In another study conducted by Larsen et al. (2015), the participants reported that their experiences of "integrity with the group" increased the sense of hope within the group. The same research also showed that the acceptance of group members by other group members during sessions and the fact that they feel comfortable and safe strengthen the sense of hope. The results of this research, that doing collaborative artistic activities, expressing their feelings and thoughts freely, listening to each other without judgment, and seeing from the perspectives of others helps to increase the hopes of group members, was in agreement with the findings of other studies (Larsen et al., 2015; Larsen et al., 2018).

Based on the results obtained from this research, it is suggested that hope-focused intervention based on creative art exercises should be applied to individuals from different age groups. In addition, this research was conducted with young people who did not have a mental health disorder or a chronic condition. Considering the positive results obtained from hope-focused research with individuals experiencing health problems (Scheinberg, 2012; Larsen et al., 2015; Larsen et al., 2018; Chan et al., 2019), it is suggested that hope-focused intervention based on creative art exercises should be applied to more individuals experiencing different health problems. It is also thought that integrating programs that will be applied in hope-focused interventions with artistic activities will increase the effectiveness of the program. In addition, it is suggested that the relationships between other concepts related to hope (clarification of goals, self-efficacy, perseverance, awareness, and gratitude) obtained from the qualitative findings of this study should be investigated with quantitative measurements and compared.

Limitations and Future Research

Not performing follow-up measurement after the experimental study was among the limitations of this study. Follow-up tests can also be performed to determine whether the effectiveness continues in future studies. Another limitation of this study was that no work was conducted with the control group. Comparing the effectiveness of hope-focused intervention based on different psychological counseling approaches would provide more information on the subject.

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Communication Issues and Practices of Syrian Students Receiving Education in Turkey

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Abstract

The influx of refugees from Syria to Turkey started in April, following the Syria crisis, which began with the demonstrations known as the Arab Spring in 2011. Concerning the distribution of refugees who took refuge in Turkey after the Syrian crisis by country, it is observed that Syrians are in the first place. It is seen that intensive works are carried out especially in the fields of integration and education for Syrian families and their children who live in Turkey at the present time. The aim of this study is to determine the communication status and daily life communication problems of Syrian students who have come from Syria and study at schools in Turkey together with Turkish students, with their Syrian and Turkish friends. In this research using a case study, one of the qualitative research designs, semi-structured interviews were held with 20 Syrian students studying at a state secondary school of a middle socioeconomic level in the Marmara region. The data obtained were subjected to content analysis. As a result of the study, it was determined that the most important problem faced by Syrian children was the language issue and this problem also affected other communication areas. Syrian students stated that they had problems with other students, teachers, and school administrators in their daily life and at school due to their insufficient level of knowing Turkish. Therefore, they indicated that they frequently met their Syrian friends both at school and outside the school, and they would like to spend more time with their Syrian friends if they were to make a choice. As a result of the study, it was also revealed that Syrian students had fewer communication problems and they tended to spend more time with Turkish students as the time they spent in Turkey increased.

Keywords: Immigration, Syrian Students, Communication, Communication Problems, Educational Settings, Refugees

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INTRODUCTION

Individuals desire to continue their lives in places where they believe that they can meet their needs such as nutrition, shelter, security and education, can be at peace and can live in better conditions in the future. Occasionally, these conditions cannot be completely or partially fulfilled due to individual and political, economic, social or cultural reasons (Ünal, 2014; Sevinç et al., 2018). In this context, people have migrated to different geographies for different reasons from past to present. Migration is defined as "the movement of individuals or communities from one country to another, from one settlement to another for economic, social and political reasons, moving, emigration" (Turkish Language Institution [TDK], 2018). The concept of migration implicitly involves moving from one socio-economic system to another, from one cultural system to another (Bal, 2008). Along with migrations, individuals face different cultures, and the obligation to live together arises. As a result of living together, conflicts and various adaptation problems arise (Aksoy, 2012). Nowadays, the concepts of "asylum-seeker" and "refugee" are most frequently used for migrating people.

The concept of refugee used for migrating people refers to individuals who are outside the country of their nationality because of a well-founded fear of being persecuted because of their race, religion, nationality, membership of a particular social group, or political opinion and who cannot benefit from the protection of this country (United Nations [UN], 1951).

The influx of refugees from Syria to Turkey started in April, following the Syria crisis, which began with the demonstrations known as the Arab Spring in 2011 (Tunç, 2015). Syrian refugees have preferred Turkey because of its location at the intersection of migration routes in the Middle East, its democratic structure, and its high development level and economic potential compared to neighboring countries (Tarman & Gürel, 2017). According to statistics dated July 12, 2021, provided by the United Nations High Commissioner for Refugees (UNHCR), it was emphasized that 3 million 650 thousand refugees took refuge in Turkey and that Turkey was the country with the highest number of refugees around the world. Considering the distribution of the number of refugees, Syria ranks first by 3 million 574 thousand, followed by Iraq (173 thousand), Afghanistan (116 thousand), Iran (27 thousand) and Somalia (5700), respectively (UNHCR, 2021).

Adult refugees can create a safe and familiar environment for themselves by living together with individuals of the same origin in the new environment and society where they have just arrived. However, when considered from the point of view of children of those families, difficulties increase even more. Although the school environment in the society where refugee children have just arrived provides a stable and safe environment for them, these children have to exert extra efforts to adapt to school for reasons such as the sudden and difficult migration processes they have experienced, having different backgrounds and cultural characteristics, and not sharing a common language (Hart, 2009; Rutter, 2003).

Massfeller and Hamm (2019) suggested that the feelings of loneliness and alienation felt by many immigrant students and the studies on the arrival and harmony of asylum-seeker students to schools should be revealed. When considering educational institutions' context, the increasing demographic change and diversity can create additional difficulties and complexities. Syrian children may have difficulty adapting to life in a foreign country because of their feelings of alienation, concern for losing their identity, and longing to return home (Moussa, 2014). Syrian children's social isolation can intensify more to discrimination against them (Boswall & Al Akash, 2015).

Concerning the social integration of children, schools are the places where the dominant culture is gained. In this context, schools have an important function for the integration of refugee children into the society they have just joined (Kağnıcı, 2017). The phenomenon of refugee and the policies toward these people have become important with the arrival of Syrian refugees in Turkey. In particular, the high number of Syrian refugees requires that the educational services to be provided to them should be systematically structured. When considered from this point of view, it was attempted to improve the policies followed for the education of Syrian children on the assumption that the

Syrians would return, their education was maintained with an Arabic curriculum instead of the Turkish curriculum, and thus, it was aimed that the Syrians would not have any problems when they returned. However, along with the change of the relevant assumption in line with the changing political conjuncture and socio-economic conditions, intensive works have been started to prepare the legal ground and the necessary infrastructure for the schooling of refugee children in our country since 2014 and steps have been taken for permanent solutions (Aksakal, 2017). One of these steps was the establishment of the Foreign Students Information System (YÖBİS) for the easy tracking of students' enrollment, success, and attendance-absence. Although the legal regulations concerning the educational services to be provided to refugee children were prepared based on Syrian refugees, it has also been made possible for other refugees to benefit from these services (Arslan, 2015). It is observed that academic publications on the problems of Syrian refugees have also increased in recent years, although they are few in number. However, it is striking that these publications mainly focus on general problems. There are also studies on the education of Syrian children and the difficulties they experience in educational environments.

It is of great importance for educators who will work with refugees to have special training in this field and to provide these people with an efficient and accurate education (Aydın et al., 2017; Canales & Harris, 2004). Despite this fact, previous studies show that teachers who teach refugees do not receive a quality education, and after a brief training period, they start to teach students. Moreover, they try to overcome their deficiencies in this area with their efforts and the support of their colleagues (Sirin & Rogers-Sirin, 2015).

In previous studies on the challenges experienced by Syrian children (Gülüm & Akçalı, 2017; Erdoğan & Erdoğan, 2017; Çerçi & Canalcı, 2019; Baloglu Uğurlu & Akdovan, 2019; Çoban et al., 2020; Tunga et al., 2020; Ünal & Aladağ, 2020; Sarier, 2020; Topaloğlu & Özdemir, 2020; Abay & Güllüpınar, 2020; Biçer & Özaltun, 2020; Yenen & Ulucan, 2020; Koşar & Aslan, 2020; Kandemir & Aydın, 2020; Cülha & Demirtaş, 2020; Hallaçlı & Gül, 2021; Yıldız-Yılmaz & Demir, 2021; Sözer & Işıker, 2021; Alkalay et al., 2021; Yiğit et al., 2021), the biggest problem was found that they did not know the common language spoken in Turkey. As a phenomenon that can be turned into an advantage at this stage, refugee children's being talented to learn the language of their new country of origin compared to their parents when they are given a good training can be used to accelerate the process of learning the new language (Durón, 2004; Zhao, 2001).

Cultural difference appears as another important problem that Syrian students have in school settings. Students who have been educated according to the culture of their own country have problems in the process of adapting to the Turkish culture they have just entered (Uzun & Bütün, 2016; Külekçi et al., 2020; Koşar & Aslan, 2020; Sözer & Işıker, 2021; Yiğit et al., 2021).

Another important problem of Syrian students in school settings is the problem of school adaptation. Students who have entered into a new education system and do not know the school culture have difficulties in school adaptation, which brings along problems with other students, teachers, and school administrators (Biçer & Özaltun, 2020; Yıldız et al., 2021; Alkalay et al., 2021; Hallaçlı & Gül, 2021). Exposure to exclusion and prejudices is another important problem experienced by Syrian students in school settings. Syrian students are excluded due to the influence of various prejudices and the lack of knowledge and have difficulty in joining the circle of friends (Uzun & Bütün, 2016; Topaloğlu & Özdemir, 2020; Abay & Güllüpınar, 2020).

McBrien (2005) states that since 1975, the United States has resettled more than 2 million refugees, about half of whom were children. Refugee children are more prone to traumatic experiences that may hinder their learning. The United Nations has stated in its conventions that training is necessary for the psychosocial adaptation of refugee children. However, government officials, public opinion, and researchers often have differed on what is best for the healthy acculturation of refugees.

When the relations of Syrian students in educational environments are examined, it is seen that most of them have behavioral disorders containing violence and psychological problems. It has also

been revealed that it is crucial to support the emotional needs of these students (Gürel & Büyüksahin, 2020; Ünal & Aladağ, 2020; Hallaçlı & Gül, 2021; Topaloğlu & Özdemir, 2020). The trauma levels experienced by these children were also revealed in a study conducted in a refugee camp in Turkey (Sirin & Rogers-Sirin, 2015). Again, some studies have revealed a high prevalence of post-traumatic stress disorder (PTSD) and other mental disorders among refugee adolescents and associated these symptoms with exposure to trauma before migration (Alpak et al., 2015; Nehring et al., 2021). More specifically, Alpak et al. (2015) revealed that PTSD among Syrian refugees in Turkey may be an important mental health issue among refugees in refugee camps, especially female refugees who have been exposed to two or more traumatic events and have a personal or family history of psychiatric disorders.

Salam et al. (2019) classified behavioral and emotional problems of parents (IEP) into two categories as emotional and destructive behaviors. Emotional problems, also known as internalizing behavior problems, can be evaluated as anxiety, sadness, or social deprivation. Common disruptive behavior problems include aggressive and impulsive behaviors called externalizing behavior problems, compulsive and non-adaptive. It has been determined that internalizing problems outnumber externalizing problems.

For young people born from traumatic and fragmented pasts, it was the focus of their prosperity to re-establish their order and to reveal a clear view of the future. Similarly, areas, where people who have not experienced such turmoil need in their lives, can make theoretical to promote personal development, self-respect, and trust. Therefore, balancing stability and more dynamic prosperity is a conceptual challenge that requires more analysis. However, the impact of the ontological security lens on future debates surrounding prosperity is extensive (Chase, 2013).

Another study reveals how they have only partially been responsible for explaining the following aspects of their lives since they arrived in the United Kingdom and the conditions surrounding their search for asylum in the UK. It indicates that young people's decisions about how much they share their present or past lives with others are more complex than mentioned in previous research. In terms of selective explanation, the dominant driving force of many young people wants to take part in an active role in society while they are passing through immigration, asylum, social care, health and education systems and trying to take place in that society at the same time (Chase, 2010).

In addition to those mentioned above, Syrian students living in Turkey have violence and behavioral problems (Ünal & Aladağ, 2020; Hallaçlı & Gül, 2021; Topaloğlu & Özdemir, 2020), and they also face various problems for reasons such as low schooling rate (Yenen & Ulucan, 2020; Tunga et al., 2020), their insufficient level of academic readiness (Kandemir & Aydın, 2020; Yiğit et al., 2021), the lack of orientation in schools (Yenen & Ulucan, 2020; Kandemir & Aydın, 2020), physical barriers (Külekcı et al., 2020), the lack of qualified teachers (Tunga et al., 2020), the lack of orientation to schools (Yenen & Ulucan, 2020), negative teacher attitudes (Yiğit et al., 2021), indifference and lack of education of families (Koşar & Aslan, 2020), and peer relationships (Yiğit et al., 2021). This study has tried to determine the communication problems of Syrian refugee children in the school environment and their reasons, their making friends, their choice of Turkish and Syrian friends, and what level of issues they have with which group of friends. In this context, it is thought that the study will contribute to the field.

METHOD

Research Design

This study was conducted to determine the communication status and daily life communication problems of Syrian students who have come from Syria and study at schools in Turkey together with Turkish students, with their Syrian and Turkish friends. The study was conducted using the case study design, one of the qualitative research methods. As is known, with the case study design, the researcher performs an in-depth analysis without intervening in an event and

attempts to understand the case in this way. Furthermore, he has the opportunity to make inferences about the effect or relationship of the investigated case on the individual, participant, or society. With the case study, answers are sought to the questions of how or why, specifically to a current situation investigated, and the researcher is allowed to collect in-depth and rich data (Yin, 2004; cited by Akar, 2017). In the case study, based on the experiences of individuals, how they consider themselves, and their perceptions and emotions that may change depending on the context are examined in depth along with their underlying causes (Gillham, 2000). In brief, factors related to a situation are investigated with a holistic approach by focusing on how they affect the relevant situation and how they are affected by the relevant situation (Yıldırım & Şimşek, 2005: 77). In this regard, interviews were held with 20 students from different schools in line with the aim of the study. Based on the availability of the students, interviews were held with 2 students in their schools every day. During interviews with the students, the semi-structured interview form was used. Here, the goal is to provide more in-depth data with drilling questions when necessary. Before the interview, students were given information about the aim of the study and explained that their answers would be kept confidential and used only in scientific research to relieve students. After the interviews were completed in this way, the visual records were transcribed, and the participant students were allowed to read them and they were allowed to add or remove the parts where they found necessary. After this stage was completed, the analysis process was started. Case studies are designed in themselves according to the dimensions of the cases. The holistic multiple case design was preferred in this study. The aim of preferring this design was to have more than one case that could be perceived as holistic by itself, to consider each case holistically in itself, and then to compare them with each other (Yıldırım & Şimşek, 2005).

Study Group

The study group consisted of 20 Syrian students, including 12 male and 8 female students, who migrated to Turkey as refugees and were studying at a secondary school (5th, 6th, 7th, and 8th grades) in public schools of different socio-economic levels in the Marmara Region. When the duration of stay of the study group in Turkey was examined, it was observed that 18 participants lived in Turkey for 5 years or more, and the remaining two participants lived in Turkey for 4 years. In particular, it was observed that 7 participants lived in Turkey for 7-8 years. Considering the time they spent in Turkey, it can be said that the vast majority of the participants had sufficient time to adapt to the new country and environment. It was observed that 30% of the participants took a language course when they came to Turkey; however, the remaining 70% of them did not take it. The participants indicated that they learned Turkish by communicating with people around them and after being involved in the education system in Turkey. As is known, the sample size varies by the focus of the study, the amount of data and theoretical sampling (Yıldırım & Şimşek, 2005: 114-115). Therefore, the participant group was limited to 20 students to collect more in-depth data.

Data Collection Process and Analysis

The interview form was used as the main data collection tool in the study. The interview form was developed by consulting a specialist in social sciences education who has fifteen years of experience in the field and has studies on Syrian refugees and an assessment and evaluation specialist with twenty years of experience in the field. Interview questions were applied to five participant students in total for two weeks. The interview form was finalized after this preliminary application. Convenience sampling, one of the purposive sampling methods, was used based on voluntariness and considering the aim of the study. Thus, it was attempted to communicate with the students more easily. The interviews were completed within 10 working days in the participants' schools. After the interviews, the audio recordings made with the permission of the students were transcribed and analyzed. Each question was analyzed under its heading. During the analysis, they were subjected to descriptive analysis. During the descriptive analysis, a framework was first created for descriptive analysis, and it was determined under which themes the data would be organized and presented. Secondly, the data were organized and processed according to the thematic framework created. Thirdly, the organized data were identified and supported by direct quotations when necessary.

Finally, the results identified were explained, associated, interpreted, and reported (Yıldırım & Şimşek, 2005).

Validity and Reliability

Depth-based data collection, expert review and participant confirmation were employed to ensure the credibility of the study. In the interviews held with the students, detailed questions were asked, and an attempt was made to collect in-depth data using probe questions when necessary. In this process, it was also attempted to minimize the margin of error through expert review. Interview transcripts were read together with the social studies specialist, and a similarity rate of 0.93 was obtained by calculating the similarity rate according to Miles & Huberman (1994) formula. Moreover, participant confirmation was used. After completing the transcription of the interview recordings, the interviewed students were allowed to read them, and they were allowed to make corrections if they wanted to add or remove something. Detailed description and purposive sampling were used to reveal the transferability of the study. The detailed description refers to the transfer of the raw data as faithfully as possible to the nature of the data without adding comments to the reader in a rearranged way according to the emerging concept and data. Purposive sampling methods, which aim to reveal both events and phenomena that typically occur and their varying characteristics, are used in purposive sampling. It was attempted to ensure the confirmability of the study through confirmation review. In this review, it is aimed to compare the results of the study with raw data and to examine whether the confirmation mechanism works (Yıldırım & Şimşek, 2005).

RESULTS AND INTERPRETATION

In this section, the data obtained as a result of the interviews with the students were tabulated, and it was attempted to present them to the reader with a holistic perspective. The results of the study were divided into themes as general communication status/problems in school settings, preferences for choosing friends at school, preferences for spending time in the circle of friends at school, problems of Syrian students according to friend groups in school settings, problems of Syrian students with Turkish students due to language difference.

Theme I: General communication status/problems in school settings

Concerning the first sub-theme of the study, the question "Do you have communication problems with other students at school?" was asked to the students in the study group. The answers to this question are presented in Table 1.

Table 1. Whether Syrian students have communication problems or not

Opinions	f	%
I have communication problems	13	65
I don't have communication problems	7	35

When Table 1 was examined, 65% of the participants indicated that they had problems in the school setting. On the other hand, 35% of the participants indicated that they did not have any problems. The participants who had problems in school settings gave their reasons by stating "they make fun of us because we don't know Turkish" as the first reason and "inability to make friends easily" as the second reason. With regard to difficulties pointed out by the participants, while KK4 stated, "Yes, I have because I am a little bit withdrawn and shy. I have difficulties communicating with my friends. I cannot make friends easily.", KK1 stated, "I had some difficulties with the students. They think they are better than us. Some of the students think they are polite. They do not include us in the team while playing football since we are strangers." KK8 stated, "Yes, I have. Students say that you are ignorant, you are not human. They say there is war. Like these bad things." KK5 said, "Sometimes. I am also a little bit shy. I have difficulty communicating with teachers to whom I have difficulty in responding in some courses." EK2 indicated, "Yes. Some of the students make fun of us because we did

not [do not] understand Turkish." EK11 stated, *"I feel that my classroom teacher discriminates against us when our turn comes. My math teacher does not call me to the blackboard. I raise my hand when he asks a question, but he never calls me to the blackboard."*, and EK6 said, *"Students, teachers, and administrators make fun of us because we don't speak Turkish well."* On the other hand, with regard to the participants who emphasized that they did not have any problems, while EK12 stated, *"No, I don't have any difficulties."*, EK10 indicated, *"No, I don't have adverse difficulties. I just have difficulties outside of school."*, and KK7 said, *"No, there is no difficulty. We get along and understand each other very well. I have no problem with anyone. No one has a problem with me."*

Theme II: Preferences for choosing friends at school

Concerning the second sub-theme of the study, the question "What about your preferences for choosing friends at school?" was asked to the students in the study group. The distribution of the answers given by the students to this question is presented in Table 2.

Table 2. Syrian students' preferences for choosing friends

Opinions	f	%
I choose a Syrian friend	13	65
I choose a Turkish friend	5	25
I choose from both of them	2	10

When Table 2 was examined, it was observed that 65% of the participants would like to spend time with their Syrian friends at school. The most mentioned reasons were the statements, *"I get along better"* and *"They understand me better."* With regard to the participants who clearly mentioned that they would like to spend time with their Syrian friends at school, EK11 stated, *"I think my Syrian friends because they understand me better."* EK4 stated, *"I would like to spend time with my Syrian friends."*, and KK7 said, *"I would like to spend time with my Syrian friends. However, I do not want to spend time with my Turkish friends."*

It was observed that 25% of the participants would like to spend time with their Turkish friends at school. The most mentioned issues as a reason were the statements, *"I like to spend time with my Turkish buddy"* and *"I spend more time with my Turkish friends."* With regard to the participants who indicated that they would like to spend time with their Turkish friends at school, KK4 stated, *"I would like to spend more time with my Turkish friends if I were to make a choice because now we are living with them, spending time with them and studying with them and my language is close to theirs."* KK5 indicated, *"I would like to spend time with my Turkish friends because I want to learn more information."* KK8 said, *"Of course I want my Turkish friend because I love all people. Turkish people are very lovely, but Syrians did not like."* EK12 stated, *"I choose my Turkish friends because they get on well with me. If I ask the meaning of the word, they will tell."*, and EK8 said, *"Because I get along better with my Turkish friends."*

It was observed that 10% of the participants would like to spend time with both their Turkish and Syrian friends at school. The issue mentioned as a reason was the statement, *"Both of them are very good."* Concerning this situation, EK5 stated, *"I will choose both of them because both of them are good."* and EK6 said, *"I would like to spend time with both of them."* Hence, they revealed that they would like to spend time with both their Turkish and Syrian friends at school.

Theme III: Preferences for spending time in the circle of friends at school

With regard to the third theme of the study, the question "What about your preferences for spending time with your friends at school?" was asked to the students in the study group. The participants' answers to this question are presented in Table 3.

Table 3. Syrian students' preferences for spending time in the circle of friends at school

Opinions	f	%	Reasons
I spend time with my Syrian friends	10	50	We meet more We also meet outside of school We do our homework
I spend time with Turkish friends	5	25	We play games together I spend more time
I spend time with friends from both groups	5	25	We study together We play games We don't meet outside of school

When Table 3 was examined, it was observed that 50% of the participants spent time with their Syrian friends at school. The most mentioned issues as a reason were the statements *"we meet more," "we meet outside of school,"* and *"we do our homework."* Concerning this situation, EK4 stated, *"I spend time with my Syrian friends. We play with them, we talk. We don't meet outside of school."* EK3 said, *"I meet more with my Syrian friends. We do our homework. Yes, we meet outside of school."* EK11 indicated, *"I spend more time with my Syrian friend,"* and KK6 stated, *"I spend time with my Syrian friends. Yes, we also meet outside."* Thus, they revealed that they spent more time with their Syrian friends at school.

It was observed that 25% of the participants spent time with their Turkish friends at school. The most mentioned issues as a reason were the statements *"we play games together"* and *"I spend more time."* With regard to this situation, KK1 stated, *"I hang out with my Turkish buddy. We eat together, just like this. His house is near me. Sometimes, we play with a ball."* KK1 said, *"I spend more time with my Turkish friend. We play together and solve questions. I don't meet anyone outside of school."* EK12 indicated, *"I spend time with Turkish people. We play football, we ride bikes. I also meet them outside of school,"* and EK8 stated, *"I spend better time with my Turkish friends. We play with a ball together."* Therefore, they revealed that they spent time with their Turkish friends at school.

It was observed that 25% of the participants spent time with both their Turkish and Syrian friends at school. The most mentioned issues as a reason were the statements *"we play games together"* and *"we do our homework."* Concerning this situation, KK4 stated, *"I spend time with my Syrian and Turkish friends at school. We study together, we play games. We don't meet outside of school."* KK5 said, *"I like to spend time with my Turkish and Syrian friends. I meet by chance outside of school."* EK5 indicated, *"I choose my Turkish friends when I am in the classroom. When I take a break, I pass on to my Syrian friends."* EK6 stated, *"I spend time with both. We do our homework. No, we don't meet outside of school,"* and EK1 said, *"I have both Syrian friends and Turkish friends. Sometimes, we meet on the way out."* Hence, they revealed that they spent time with both their Turkish and Syrian friends when they were at school.

In relation to the main question above, the question "How many Syrian friends do you have at school and how do you spend time with them?" was asked to the students in the study group. The analysis of the answers to this question is presented in Table 4.

Table 4. The number of Syrian friends of Syrian students and their reasons for choosing them

Number of Syrian friends	f	%	Reasons for meeting with Syrian friends	f
2	3	15	Sharing	14
3-4	6	30	Chatting	6
7-9	2	10	Playing games	5
9 and more	9	45	Doing homework	4
			Singing	1

When Table 4 was examined, it was observed that while 45% of the participants had 9 and more Syrian friends, 30% had 3-4 Syrian friends, 15% had 2 Syrian friends, and 10% had 7-9 Syrian friends. When their reasons for meeting with their Syrian friends were examined, the reasons were chatting, playing games, doing homework, and singing, respectively. With regard to this situation, KK5 indicated, *"I have got many friends. Yes, I meet with them. My relationship with them is very positive. I have a good time."* KK5 indicated, *"Yes, I have got Syrian friends at school. Every Syrian at school is my friend. Yes, I meet with them. My relationships are good."* KK2 said, *"I have got three Syrian friends. I meet with them, my relations are OK. We study together."* KK8 said, *"I have got two friends. Yes, I meet with them. Every break, we chat and sing."* EK11 stated, *"I have got four friends. Yes, I meet with them every day. We play games during breaks. Sometimes, we chat."* EK6 indicated, *"I have got twenty-one friends. I sometimes meet with them. My relations are good. Sometimes, we do homework."*, and EK10 stated, *"I have got seven friends at school. I love them. We play games together during breaks."* Thus, they indicated that their communication status with their Syrian friends was going well.

Theme IV: Problems of Syrian students according to friend groups in school settings

With regard to the fourth theme of the study, the question "What about your status of having problems according to friend groups at school?" was asked to the students in the study group. The participants' answers to this question are presented in Table 5.

Table 5. The number of Syrian friends of Syrian students and their reasons for choosing them

Opinions	f	%	Reasons
I have problems with Turkish friends	8	40	Occurrence of fighting Making fun of us
I have problems with Syrian friends	5	25	Occurrence of fighting I have a problem of misunderstanding There may be offenses
I have problems with friends from both groups	5	25	Occurrence of fighting I have difficulties in communicating
I don't have any problems	2	10	I have difficulties in making friends

When Table 5 was examined, it was observed that 90% of the Syrian participants had problems with their friends at school. It was found that 10% of the participants did not have problems with their friends from both groups.

Among 90% of the participants with problems, 40% of them stated that they had problems mainly with their Turkish friends. The most mentioned issues as a reason were the statements *"occurrence of fighting"* and *"they are making fun of us."* Concerning this situation, EK3 said, *"I have more problems than the Turks. They make fun of us and swear at us. As if we don't understand them."* EK1 indicated, *"I have more problems with my Turkish friends. For instance, I had a fight with my friend. So, the minutes were taken."* EK4 stated, *"I have more problems with the Turks. I don't understand, it seems as if they don't like us."* Hence, they revealed that they mostly had problems with their Turkish friends at school.

Of the participants who had problems with their friends at school, 25% stated that they had problems with their Syrian friends. They indicated their reasons with the statements of *"occurrence of fighting," "I have a problem of misunderstanding,"* and *"there may be offenses."* Concerning this situation, KK2 indicated, *"I have more problems with my Syrian friends. Arguments, offenses etc."* KK7 said, *"There is no problem with my Turkish friends at school. However, there is a problem with my Syrian friends. Like fighting, like saying bad words, like hitting."* EK10 stated, *"I have more problems with Syrian friends. So they slander me, that's why I don't like them very much. Because it is a sin."* EK8 indicated, *"I have more problems with my Syrian friends. I have a problem of misunderstanding. Fighting may occur."* Therefore, they indicated that they had problems mostly with their Syrian friends at school.

Of the participants who had problems with their friends at school, 25% stated that they had problems with both their Syrian and Turkish friends. They indicated their reasons with the statements of "occurrence of fighting," "I have difficulties in communicating," and "I have difficulties in making friends." Concerning this situation, *EK7* stated, *"No one realizes. Problems may arise with both my Syrian and Turkish friends."* *KK4* said, *"I sometimes have problems with my Syrian and sometimes with Turkish friends. Sometimes, I have difficulties communicating. I never know the reason. I have difficulty in making friends."* *KK12* stated, *"I sometimes have problems with my Turkish friends and sometimes with my Syrian friends. Sometimes, we have small arguments since we react to each other without understanding each other very well."* *KK1* indicated, *"I mean, I don't go out with people with whom I have problems. I mean, not necessarily Turkish or Syrian, some people hit me, they swear, and someone grabbed me while I was walking around during the break and said why did you do that and then started hitting me."*, and they indicated that they had problems with both their Turkish and Syrian friends at school.

Theme V: Problems of Syrian students with Turkish students due to language difference

Concerning the fifth theme of the study, the question "Do you have problems with Turkish students due to language difference at school?" was asked to the students in the study group. The students' answers to this question are presented in Table 6, and their reasons are presented just below the table.

Table 6. Syrian students' status of having language problems with Turkish students

Opinions	f	%
I do not have language problems with Turkish friends	12	60
I have language problems with Turkish friends	8	40

When Table 6 was examined, 60% of the participants indicated that they did not have language problems in their relations with their Turkish friends at school. They indicated their reasons with the statements "I know Turkish well" and "our languages are close to each other." With regard to this situation, *KK4* said, *"No, I do not have any because our languages are close to each other. We do not have problems in our communication."* *KK1* stated, *"No, not. Sounds normal, never."* *EK10* indicated, *"No, I have just learned. I had had troubles before I learned. First, I had a problem in the spoken language."*, and *EK8* stated, *"No, I do not have because my Turkish is good. I have no difficulties."* Thus, they indicated that they did not have any problems in their relations with their Turkish friends due to language difference at school.

Of the participants, 40% indicated that they had problems in their relations with their Turkish friends at school. They indicated their reasons with the statements "I have difficulties establishing relationships with my Turkish friends" and "they laugh at me when I don't know a word." Concerning this situation, *EK6* said, *"Yes, I have problems. My friends sometimes laugh at me when I don't know a word. They laugh at me when I make a mistake while speaking Turkish."*, and *KK8* stated, *"Yes, I have. I have difficulties chatting. I have difficulties teaching."* Hence, they indicated that they had problems in their relations with their Turkish friends due to language difference at school.

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

When the study results were examined holistically, it was observed that the vast majority of the Syrian participants had been living in Turkey for five years and more. A significant part, namely 70% of the participants, indicated that they did not attend any course to learn Turkish when they first came to Turkey. The participants stated that they had significant difficulties in their daily lives, could not express themselves and were misunderstood since they could not speak a common language with people in Turkey. This result of the study is also supported by other studies (Akgül et al., 2015; Baloğlu Uğurlu & Akdovan, 2019; Başar et al., 2018; Candappa, 2000; Cirit-Karaağaç & Güvenç, 2019; Çerçi & Canalcı, 2019; Çetin, 2016; Emin, 2018; Kirova, 2001; Tosun et al., 2018; Şeker &

Aslan, 2015; Solak & Çelik, 2018; Sarıtaş et al., 2016; Uzun & Bütün, 2016; Levent & Çayak, 2017; Emin, 2018; Cırtı-Karaağaç & Güvenç, 2019; Kultas, 2017; Tamer, 2017; Cığerci & Güngör, 2016; Ereş, 2016; Şeker & Sirkeci, 2015; Saklan & Erginer, 2017; Doğutaş, 2016; Tösten et al., 2017; Özenç & Saat, 2019; Çoban et al., 2020; Tunga et al., 2020; Ünal & Aladağ, 2020; Sarier, 2020; Topaloğlu & Özdemir, 2020; Abay & Güllüpnar, 2020; Biçer & Özaltun, 2020; Yenen & Ulucan, 2020; Koşar & Aslan, 2020; Kandemir & Aydın, 2020; Cülha & Demirtaş, 2020; Tunga, Engin & Çağıltay, 2020; Hallaçlı & Gül, 2021; Yıldız et al., 2021; Sözer & Işiker, 2021; Alkalay et al., 2021; Yiğit et al., 2021). In this regard, it is necessary to open Turkish language courses for students who have just arrived in Turkey and will participate in education life and their families by establishing a national education program. In this process, only opening courses for students does not provide a very good result because the learning process of students who continue to speak their mother tongue with their families at home is extended. Only in cases when it is not possible to open separate Turkish language courses, Turkish language courses can be supported after school or at weekends. The significant reason for the language barrier to be an essential problem for Syrian students has been revealed as the lack of the course materials used in the Turkish education system (Beyhan & Epçaçan, 2018; Biçer & Kılıç, 2017; Doğan & Ateş, 2018; Eren 2019; Gerçek, Alkan, Aloğlu & Kurtuluş, 2018; Koçoğlu & Yanpar Yelken, 2018; Sevilay Kanat Özlem & Demet, 2018). For example, Ereş (2016) revealed in his study that the language barrier adversely affects friendship relations.

According to the study results, it was concluded that the participants had problems due to their language inadequacy in daily life and at school with other students, teachers, and school administrators. This result is also consistent with the results of various studies (Börü & Boyacı, 2016; Emin, 2018; Erdem, 2017; Levent & Çayak, 2017). In this regard, students can be supported in terms of effective communication skills in addition to a basic language course. Moreover, it may be useful to provide information about Turkish culture and life. Similarly, Taştan and Çelik (2017) have also shown that multicultural and migration-themed in-service training can help develop a positive attitude. In this process, they stated that the media developed a positive language for Syrian students and that the Ministry of National Education should take the necessary measures regarding the attitudes of school administrators because these measures will facilitate reaching the goals. The most frequent problems that Syrian students and Turkish teachers experience are caused by the inability to communicate with each other and cultural conflict. This result is similar to the study results of Şimşir and Dilmaç (2018).

The participants indicated that they largely (65%) had problems in their school settings. As the most significant problem they faced, they stated that other students made fun of them, they could not make friends easily, and, accordingly, they felt lonely since they did not know Turkish. This result of the study is consistent with the results of previous studies (Uzun & Bütün, 2016; Şimşir & Dilmaç, 2018; Topaloğlu & Özdemir, 2020; Abay & Güllüpnar, 2020; Biçer & Özaltun, 2020; Yıldız et al., 2021; Alkalay et al., 2021; Hallaçlı & Gül, 2021). In this regard, it should be ensured that Syrian students learn Turkish quickly, and it may be useful to provide education on empathetic thinking for other students.

The participants indicated that they had at least two and more Syrian friends at school, that they had good communication with these friends at school and that they also met with them outside of school. They stated that they mostly met outside to do their homework. In this context, it may be useful to provide training by experts for both Syrian and Turkish students to eliminate prejudices and stereotypes.

The participants said that they would like to spend more time mostly (65%) with their Syrian friends if they were to make a choice. As a reason for this, they put forward the reasons that they could get along better and understand themselves better. The ratio of those who would like to spend time with their Turkish friends (25%) and both Turkish and Syrian friends (10%) was 35%. The participants who stated that they would like to spend time with their Turkish friends indicated that they enjoyed spending time with them and wanted to learn more from them. From this point of view, the

rate of spending time with each other of Syrian and Turkish students will increase by increasing the opportunities for communication among students.

Half of the participants (50%) indicated that they spent time with their Syrian friends at school. On the other hand, while 25% of them stated that they spent time with their Turkish friends, 25% of them stated that they spent time with both their Syrian and Turkish friends. In total, half of the participants indicated that they communicated and spent time with their Turkish friends. This result revealed that the participants who lived in Turkey for a long time and overcame their communication problems also made friends with Turkish students and enjoyed spending time with them. In this context, training can be provided by school counselors or more professional trainers so that both Turkish and Syrian students can better understand each other.

The participants indicated that they had problems at school by 90%. When the distribution was examined, the answers were Turkish friends by 40%, Syrian friends by 25%, and both of them by 25%. These rates increased the rate of the participants who had problems with their Syrian friends to 50%, which indicated that the participants had similar problems with both Turkish students and their Syrian friends. In this context, it may be beneficial to provide training to both Syrian and Turkish students to increase their problem-solving skills.

It was observed that a significant part of the participants (60%) did not have language problems with Turkish students. However, 40% of them had problems. This result reveals that some of the participants living in Turkey for a long time still have language difficulties. Concerning this situation, it may be useful to provide language support to Syrian students during the process and adopt a continuous language teaching policy in this regard.

When study results are examined holistically, it is seen that the findings are primarily in line with the results of previous research. On the other hand, unlike other studies, it has been determined that many Syrian students have problems in their school environment, have at least two or more Syrian friends, and mostly come together to do their homework. Regarding the choice of friends, it was concluded that 65% of the participants wanted to choose Syrian friends, while 25% of them wanted to choose Turkish friends. Furthermore, when the participants' spending time at school was examined, it was concluded that 50% of them wanted to spend time with Syrian, 25% with Turkish, and 25% of them with both their Syrian and Turkish friends. Considering the participants' having problems at school, it has been determined that 90% of them had various problems. 40% of them experienced these problems with Turkish students, 25% with Syrian, and 25% with both Turkish and Syrian friends.. However, since most of the participants have been living in Turkey for a long time, it was concluded that more than half (60%) did not have language problems.

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Practice, Teaching, and Research Ethics in Special Education

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Abstract

Considering the lives of individuals with special needs, perhaps the most critical of the services provided is special education services. Having an extremely important place in the lives of these individuals and their relatives, special education services should be carried out within the framework of certain standards and ethical principles. Professional ethics, which pertain to the standards of conduct that individuals working in the realm of business should or should not exhibit, are of paramount importance in guiding employees on the principles that should be adhered to. Given that the field of special education is particularly sensitive in comparison to other disciplines, it is crucial for both teachers working in special education and researchers in this field to possess knowledge and skills pertaining to ethical principles. Despite its significance, there is a dearth of studies on the subject of special education ethics in Turkey. In light of the importance of this topic and the present situation in Turkey, this study aims to explore the concepts of ethics and professional ethics at a fundamental level. Specifically, the study delves into the specific realms of special education practice ethics, special education teaching ethics, and special education research ethics, and examines their place within the broader field of special education in the context of international literature. It is believed that the research conducted on this subject will be beneficial for both teachers, researchers, and service recipients in the interdisciplinary field of special education.

Keywords: Special Education, Practise Ethics, Teaching Ethics, Research Ethics

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INTRODUCTION

The word ethics, which derives from the Greek word root "ethos" meaning character and behavior (Köprü, 2007; Özdemir, 2008; Özmen & Güngör, 2008), is a branch of philosophy that is concerned with the foundations of morality (Çevikbaş, 2006). The study area of ethics consists of values, principles, and standards that decide what is good and bad. The field of ethics explores the systematic assessment and interpretation of individuals' decisions and behaviors in the present, past, and future (Ülman, 2010). At this point, it is appropriate to underline that there are quite extensive discussions in the literature on ethics on what is good and bad and their limits.

The focal point of ethics is to examine the moral problems in individuals' personal and social life (Akarsu, 1998, as cited in Altinkurt & Yılmaz, 2011), and ethical debates are fed by situations that make individuals' behaviors morally valuable or worthless (Aydın, 2016). For this reason, ethics does not aim to moralize or reach a worldview, but it explains the ways of making good judgments rather than just explaining what is good to people (Pieper, 2009).

Furthermore, the concept of ethics is considered as individuals' beliefs about how their behavior should be rather than how their behavior should be (Barker, 2002). All behaviors exhibited in society are subjected to an ethical assessment by people (Pass & Willingham, 2008). Considering that the behaviors of individuals, who are social beings and generally live in a social structure, will also affect their environment, ethics also emerges as a discipline drawing attention to taking into account the rights of other people (Haynes, 2002). Accordingly, Clarkburn (2002) stated that the underlying behaviors that are considered ethical are tendencies such as being tolerant and understanding, accepting cultural developments, being respectful of other individuals' beliefs, and acceptance of these beliefs.

Ethics as a discipline is divided into three different types as normative, descriptive, and meta. Each of these three types is subdivided into private and general ethics (De George, 2013). While normative ethics addresses the basic moral system values, descriptive ethics address recognizing the morality of society and carrying out studies related to it. Meta-ethics, on the other hand, is concerned with the nature of ethics and analyzes moral justifications or causality. On the other hand, private ethics concentrates on specific issues while general ethics discusses broader issues.

Ethics of the Teaching Profession

The word profession in the literature is defined as all of the activities that are based on the knowledge and skills acquired as a result of a certain education, and that have rules determined by the society, including ethical values (Kuzgun, 2000). In order for any occupation to be called a profession, it must have some rules. These rules are listed by Sokolwski (1991) as responding to a need of the society, needing knowledge and skills, providing financial gain, and complying with professional ethical principles (as cited by Aydın, 2016). In short, in order for an occupation to be considered a profession, it is necessary for the occupation to have some standards and ethical principles.

The concept of professional ethics emerged as a result of ethical problems that sprang in some occupational groups or that were noticed later (Gündüz & Coşkun, 2012). In the literature, the concept of professional ethics refers to the principles, standards, values, concepts, and principles guiding and directing the behaviors in professional life (Duke, 1990; İşgüden & Çabuk, 2006; Özgür, 2004).

Professional ethics principles not only determine the principles to be followed while performing the profession but also determine the unethical behaviors that should not be done (Aydın, 2021). In short, the field of ethics covers both what should be followed and what should not be done while performing professions. For example, giving gifts to each other is a desirable and "good" behavior in social life, whereas public officials accepting gifts can be seen as unethical behavior.

According to Kayıkçı and Uygur (2012), there are three approaches to determine professional ethical principles. According to the first approach, the pragmatic approach, the benefits, and results the ethical rules will provide should be taken as a basis while forming these ethical rules. According to the second approach, the rights approach, human rights, and freedoms should be taken as the basis when determining ethical rules. Finally, according to the third approach, the justice approach, while determining the ethical rules, the equal rights granted by the laws to all individuals and all the individuals benefiting from these laws should be taken as the basis.

Aydın (2021) listed the functions of professional ethics rules as identifying incompetent and unprincipled members, regulating professional competition, and protecting ideals related to service. While performing the professions, the level of commitment of the professionals to their profession positively affects the society's respect and trust in these professions (Kınacı-İnce, 2014). Although there are differences between professions, general rules regarding professional ethical principles were determined by Akdoğan (2003). According to Akdoğan, these rules are as follows.

1. Persons in the profession are required to act at or above the level set by the law and maintain the current level.
2. The ethical rules to be formed should encourage members of the profession to act honestly and leave a positive impression.
3. Members of the profession who act outside the determined ethical rules should be penalized by professional groups.

Ethical rules are of great importance in the teaching profession, whose focus is on people. Since the quality of the teaching profession directly affects the generations that are brought up, ensuring the professional quality imposes the responsibility of behaving in accordance with ethical rules on the teachers (Pelit & Güçlü, 2006). Teachers' behaving in the light of the stated ethical principles will improve their learning processes and contribute to students' learning their responsibilities (Gündüz & Coşkun, 2012). Accordingly, professional ethical principles were determined in the teaching profession by some institutions, as in many other professions. However, it is important to emphasize that the discussions and works on this subject still continue and that the ethical principles of the teaching profession are changing and developing in line with the spirit of the time. Despite being a vital and frequently examined topic in the international literature, there is a scarcity of research on the subject within the Turkish context. Given this, it is imperative to increase the number of studies conducted on this topic in Turkey. In order to address this need, this study endeavors to provide a fundamental examination of the concepts of ethics and professional ethics. Specifically, the study delves into the specific realms of special education practice ethics, special education teaching ethics, and special education research ethics, and examines their place within the broader field of special education in the context of international literature. Furthermore, this research aims to raise the awareness of special education teachers in Turkey regarding professional ethics.

According to Aydın (2021), ethical principles regarding the teaching profession are “professionalism, responsibility in service, justice, equality, providing a healthy and safe environment, not committing corruption, honesty, righteousness and trust, objectivity, professional commitment, and continuous improvement, respect, and effective use of resources”. The National Education Association in the U.S. lists the ethical principles that educators are obliged to follow as follows (NEA, 1975):

1. Commitment to the student

- 1.1. The educator shall not unreasonably prevent the student from taking independent action in the pursuit of learning,

- 1.2. The educator shall not unreasonably deny a student's access to different points of view,
 - 1.3. The educator shall not deliberately suppress subject matter that is relevant to the student's progress,
 - 1.4. The educator shall make a reasonable effort to protect the student from conditions that are damaging to his or her learning or health and safety,
 - 1.5. The educator shall not deliberately cause shame,
 - 1.6. The educator shall not bar any student from participating in any program because of their race, color, creed, sex, national origin, marital status, political or religious beliefs, family, social or cultural background, or sexual orientation,
 - 1.7. The educator shall not deny any student benefits,
 - 1.8. The educator shall not use Professional relationships for personal gains,
 - 1.9. The educator shall keep information on students gained during professional service unless disclosure is required by law,
2. Commitment to the Profession
- 2.1. The educator shall not deliberately make a false statement in an application for a professional position,
 - 2.2. The educator shall not misrepresent his or her professional credentials,
 - 2.3. The educator shall not aid any individual who is known to be unqualified in terms of character, education, or any other relevant attribute in entering the profession,
 - 2.4. The educator shall not make a false statement about a candidate's qualifications for a professional position,
 - 2.5. The educator shall not assist an unauthorized educator,
 - 2.6. The educator shall protect the information about colleagues unless disclosure is compelled by law,
 - 2.7. The educator shall not deliberately make untrue or malicious statements about a colleague,
 - 2.8. The educator shall not accept any tip, gift, or favor that could sway or appear to sway professional decisions or actions.

Special Education and Ethics in Special Education

In our country, special education is defined as education carried out in appropriate environments with specially trained personnel and education programs developed to meet the educational and social needs of individuals who differ significantly from their peers in terms of their individual and developmental characteristics and educational qualifications (Ministry of National Education, 2018). With the statement of “The state takes measures to make those who need special education due to their situation to be a productive member of the society.” in the 1982 Constitution, the State of the Republic of Turkey was held responsible for providing special education services to its citizens. Moreover, standards regarding the education services to be provided to individuals with

special needs were established in line with the national and international conventions signed on the rights of individuals with special needs. For example, according to The United Nations Convention on the Rights of Persons with Disabilities (CRPD), rights such as respecting the dignity and individual differences of individuals with special needs, ensuring their full participation in social life, not discriminating against individuals with special needs, and respecting their right to protect their own identities are guaranteed. is under. Students' individual differences, developmental characteristics, wishes, competencies, and educational needs are also taken into account in the provision of special education services according to the Special Education Services Regulation published in 2018. In addition, special education services are planned and carried out without separating the individuals with special needs from their social and physical environments as much as possible.

There are some challenges in putting forth ethical principles in the field of special education. Paul, French, and Cranston-Gingras (2001) focused on four challenges in ethical standards in special education. These challenges are: i) dependence on moral and political situations, ii) ethical dilemmas in special education, iii) the need to be studied in the context of democracy, and iii) the need for ethical foundations on the representation and nature of knowledge.

Ethics of Practice in Special Education

The aforementioned convention, laws, and regulations not only draw the framework of special education practices but also provide clues about the ethical principles for these practices. Treating the individual with respect, taking into account the needs, interests, and wishes of these individuals, and taking measures to ensure their full participation in social life can be considered as the main principles of these principles in the education services offered to individuals with special needs.

The field of special education is a field that can contain complex dilemmas. It seems that these dilemmas will exist in the future as well as today (Fiedler & Van Haren, 2009). For this reason, some standards and principles related to ethics in special education need to be determined and put into practice. As it is known, it is aimed to carry out evidence-based practices in accordance with some principles, theories, laws, and policies for the education of individuals with special needs in the field of special education in cooperation with other stakeholders. In this direction, first of all, special education teachers are expected to organize all instruction processes in an open, transparent, and careful way and to find and create the most suitable conditions for education (Goodlad, 1990). In addition to these expectations, special education teachers should respect their students and see them as individuals first and foremost (Council for Exceptional Children-CEC, 2010). Furthermore, special education teachers should take into account individual differences in the learning process, appropriate teaching strategies and environments, and social interactions in these environments, as well as professional practices such as planning and evaluation of the teaching (CEC, 2008). These practices are briefly discussed below.

Ethical principles related to the *individual learning differences* are mostly about special educators knowing the effects of the school and the learning environments on the lifelong development of individuals with special needs. Moreover, teachers should be aware that beliefs, traditions, and values within the culture can affect relationships between students, their families, and school-based stakeholders. However, ethical concerns about individual differences in learning are not limited to cultural variables. Teachers should provide education services with the awareness that the mother tongue and family background can affect the academic and social abilities, attitudes, values, and interests of the individual (Taylor, 2003).

The ethical principles related to the *teaching strategies* are mostly about choosing the most appropriate strategy, method, environment, and techniques for the learner. Special educators should have knowledge of evidence-based teaching methods and strategies based on applied behavior analysis in order to individualize the education of individuals with special needs. Teachers should be able to make changes or adaptations in the learning environments and processes developed for individuals with special needs to realize the targeted learning outcomes (Strickland & Turnbull, 1990).

Within the scope of *learning environments and social interactions*, special education teachers are expected to provide active learning environments that are positive, that increase social interaction, and encourage the participation of individuals with special needs in social life. In this context, environments that will enable individuals with special needs to defend their independence, self-efficacy, and rights should be created (Tindal & Marston, 1990).

Ethical principles related to the *planning of teaching* are about taking into account the individual characteristics and stakeholders in the planning process of teaching. Special education teachers should have a good grasp of the content of standards-based education programs and should be able to prepare and implement developmentally *individualized education plans* (IEP) at a good level. When preparing and implementing the IEPs, routine and effective collaboration should be made with the families, other educators, relevant service providers, and staff from community agencies impartially and unprejudiced in culturally sensitive ways (CEC, 2002). In addition, special educators should be able to set short-term goals based on these individualized plans based on the individual's abilities and needs, the characteristics of the learning environment, and the cultural and language factors (Kirk, Gallagher, Anastasiow, & Coleman; 2006).

Ethical principles related to *assessment* have critical importance in terms of taking the right steps in the whole teaching process. Assessment is an integral part of special educators in making decisions about the content of education and restructuring their teaching. Special educators use various assessment techniques and tools for individuals with special needs in the application, eligibility, planning, orientation, and placement processes. Special education teachers should know the functions of assessment and related ethical principles so that the right decisions can be made and the individuals with special needs benefit from the interventions/teachings at the highest level (Heward, 2006).

Special Education Professional Ethical Principles

There are various ethical principles that special education teachers, who are concerned with the education of individuals with differences, should consider and comply with while performing their duties. Compliance with these principles is necessary to obtain the maximum benefit from the education services provided, to protect the rights of individuals with special needs and their relatives, and to establish practice standards. The special education professional ethical principles also help the teacher to act coordinated (Harrison & Killion, 2007; CEC, 2002). However, unfortunately, special education professional ethical principles have not yet been established in our country. The field of special education being a relatively new field and the absence of a professional definition in the current laws can be given as the main reason behind this.

The study conducted by Akçamete et al. (2016) put forth that the majority of the participating special education teachers considered special education professional ethical principles of important or very important. Some ethical principles for special education teachers have been determined by the Council for Exceptional Children in the U.S., which is widely accepted internationally. Accordingly, the ethical principles that special education professionals (CEC, 2010) should abide by can be listed as follows:

1. Special education specialists should provide individuals with special needs with the highest possible education in line with their potential and try to improve their quality of life.
2. Special education specialists should have a high level of competence and a holistic perspective in the practice of their profession.
3. Special education specialists should participate in professional activities (congress, seminars, etc.) that benefit individuals with special needs and their families, other colleagues, and students.

4. Special education specialists should have an objective professional perspective and objective assessment while practicing their profession.

5. Special education specialists should strive to improve their knowledge and skills regarding the education of individuals with special needs.

6. Special education specialists should work in accordance with the standard procedures (principle, rule) of their profession.

7. Special education specialists are responsible for maintaining and developing, where necessary, the laws, regulations, and policies governing the provision of special education and related services and the practice of their profession.

8. Special education specialists should not engage in unethical or illegal actions, participate in activities that do not comply with professional ethics and violate professional standards.

It is believed that ethical standards that will help teachers, especially teachers who are new to the profession, to make decisions in professional processes are positive. However, although such standards are useful for teachers to learn ethical codes, they may be insufficient in solving ethical problems in the school environment (Luckowski, 1997). Therefore, the necessity and importance of teachers to have competencies related to the use of ethical standards in solving ethical problems come to the fore (Ungaretti et al., 1997). Yet, although special education teacher training programs seem to agree to comply with ethical standards, very few programs establish a deep relationship with ethical principles (Sileo, Sileo, & Pierce, 2008). In this context, Berkeley and Ludlow (2008) talk about discussion scenarios about ethical dilemmas in the field of special education. In one of these example scenarios, a mentally and physically disabled boy named Jonathan starts a school that is often attended by disadvantaged children. However, the opportunities of the family and the school are limited and they cannot find a physiotherapist to take care of Jonathan. So, with the permission of the family, the school teacher takes Jonathan to a nearby physiotherapist and applies the techniques he learned from the physiotherapist on Jonathan. One day, Jonathan's family notices bruises on Jonathan's body and notifies the school administration, suspecting that physiotherapy may be harming their child. After this scenario, the authors led the relevant people to a discussion on the subject by asking "What is happening in the scenario?", "What are the ethical dilemmas in the scenario?", "Is it right for the teacher to practice physiotherapy?", "Should the child's family sue the school administration?". It is believed that with such scenario-based and discussion-based activities, special education teachers can internalize the principles of professional ethics and transfer them to real situations.

In short, special education teachers should work towards introducing people with special needs into social life as "individuals" in line with their potential (Overton, 2006). Considering this main principle and the aforementioned ethical principles, the importance of special education teachers' competencies regarding ethical principles, as well as the importance of these teachers conducting their works in a transparent, objective, and evidence-based process, and the importance of the ongoing discussions on the subject comes to the surface.

Research Ethics in Special Education

The third main category of ethical principles related to the field of special education is scientific research. Although ethical principles to be followed in all kinds of scientific studies and guidelines for their implementation have been published by governments, higher education institutions, scientific publication journals, and professional organizations on scientific research, the application of these rules is ultimately closely related to the ethical values of the researcher (Merriam, 2009). Today, ethical principles, in general, require three criteria to be fulfilled in a study. These are: i) Protecting the participants from psychological or physical harm ii) ensuring the confidentiality of research data, and iii) informing the participants accurately about the relevant study (Fraenkel, Wallen, & Hyun, 2014). Providing and declaring these three criteria in studies conducted today will show the

stakeholders in question that ethical principles are followed at a minimum level. On the other hand, another ethical issue that should be taken into account by those conducting research in the field of special education is research designs. While designing the study, the researchers should pay regard so that each of the individuals with special needs benefits from the research at the maximum level. The basic principles of research ethics in the field of special education are discussed below.

Protection of Participants from Harm

The protection of individuals participating in scientific research from physical and psychological harm or danger that may arise due to research procedures should be ensured. This is the main responsibility of every researcher and should be minimized (Frankel, Wallen, & Hyun, 2012). Considering that the participants in special education research are usually children with special needs, this becomes even more important. Children with special needs may often be unable to express themselves or not be able to predict the harm that may be inflicted on them. This may cause children with special needs to experience physical or psychological distress. Participants should be informed of all possible dangers before being included in the study and that their participation in the study is not mandatory. It is extremely important to obtain the informed consent of the participants in case any risk arises (Neuman, 2013). In the case of children with special needs, informed consent should be taken from their parents or their primary caregivers. Researchers should carefully take into account whether there is any possibility of risk and, if so, provide all data after getting formal consent from the participants (or their guardians). Three important ethical questions to ask about harm in any study are as follows (Frankel et al., 2012):

1. Can people be harmed during the study (physically or psychologically)?
2. If so, can the researcher carry out the study in another way?
3. Is the information that can be obtained from this study important than potentially harming the participants?

The aforementioned questions are questions that can be difficult to answer. However, these are questions that need to be thoughtfully answered by all researchers working in the field of special education.

Confidentiality of Research Data

The second ethical issue to be considered in research is to ensure that after the study data is collected, no one except the researchers accesses the data and that the data are confidential. In this context, the names and identities of individual participants should not be used in publications describing the study (Frankel et al., 2012). Although this is valid for all studies in general, it is of particular significance for studies involving students with special needs. It is known that some families do not want to share their children's diagnoses even with their relatives and close circles, and they want to keep this situation a secret from other people. Kellet and Nind (2001) faced the following ethical questions in their study on the storage of collected research data:

1. Who will own the collected data (video recordings)?
2. Will all the stakeholders have the data?
3. Will the data be destroyed after the analysis is finished?

It can be believed that the data collected in the studies carried out in the field of special education should be protected as it may also benefit future studies. In addition, it can also be believed that researchers have the right to access research data, assuming that they have the responsibility of "unofficial archivists".

Kellet and Nind (2001) argued that the data obtained from a scientific study is valuable and will contribute to future studies. However, in order to prevent the participants from being recognized by third parties, some techniques (such as face blurring) that will relieve the concerns of all stakeholders can prevent the participants from being recognized. Thus, video recordings become available to every stakeholder and can contribute to various studies.

Failure to Provide Sufficient or Accurate Information about the Study

In research, it is accepted as a general principle to provide informed consent forms to the participants and all the details about the research and to get consent from the participants. Furthermore, it is an increasingly common practice to require ethics committee approval for the studies to be carried out. In addition to the university graduate schools or project departments requiring ethics committee approval from the researchers to start a thesis or project study, some peer-reviewed journals have also begun to ask for ethics committee approval of the study to be published.

Ethical Principles in terms of Research Designs

It is important to know the ethical violations that may occur when the research designs used in scientific studies are used in special education studies and to be able to apply alternatives to these ethical violations.

Experimental studies are carried out to test the effect of researcher-developed differences (usually intervention) and to test the cause-effect relationship. In order to talk about a complete cause-effect effect, it is necessary to randomly assign the experimental and control groups, manipulate the independent variable, and control the external variables (Büyüköztürk, Kılıç-Çakmak, Akgün, Karadeniz, & Demirel, 2018). Although the procedures in experimental studies are carried out meticulously, the failure of individuals in the control group to receive intervention can be considered as an ethical violation (Creswell, 2012). Neuman (2013) maintained that there is an inequality for individuals who do not receive intervention and that this can be eliminated in three ways:

1. The group that did not receive the intervention continues to receive the previously best acceptable intervention.
2. Crossover designs can be employed in such a way that in the first stage of the experiment, the experimental group receives the intervention and in the second stage, the control group receives the intervention or vice versa.
3. Results are monitored continuously and carefully. If the intervention is found to be highly effective at an early stage of the experiment, the intervention should also be offered to the control group.

In addition, the use of the multiple time series design is also suggested as a solution to the control group not receiving the intervention. For example, in a quasi-experimental study, instead of working directly on the experimental and control groups, Kellet and Nind (2001) employed multiple time series design not to do wrong to the individuals in the control group after assessing the study ethically. In the study in question, the students received the intervention after the 4th, 8th, and 12th weeks.

On the other hand, withdrawing an effective intervention in studies employing the ABA single-subject experimental design, which is one of the quasi-experimental research designs, can create an ethical problem (Byiers, Reichle, & Symons, 2012), in other words, it can lead to ethical problems (Frankel & Wallen, 2014). In ABAB single-subject experimental design, another quasi-experimental research design, although the problem of reversing the improvement of the subject, which was the case in the ABA design, was eliminated by re-application of the intervention, the

researcher also faces an ethical problem in this design since the intervention was withdrawn even for a short time (Büyüköztürk et al., 2018).

In experimental studies, the subject not showing a negative development, that is, not returning to the base level for ethical reasons may be desired. In such cases, the multiple baseline design, in which the effect of the same intervention on at least three different subjects is examined, can be used (Büyüköztürk et al., 2018; Tawney & Gast, 1984). In this design, while baseline data is collected from three subjects, the intervention phase begins after stable data are collected at the baseline level in the first subject. While the intervention is applied to the first subject, baseline data from the second and third subjects continue to be collected. As soon as the intervention is seen to be effective in the first subject, the intervention phase begins in the second subject while the baseline data continues to be collected from the third subject. Whenever the intervention applied to the second subject is found to be effective, then the intervention phase starts for the third subject. In this design, continuing to obtain baseline data from the other subjects while the intervention was applied to the first subject, and still obtaining baseline data from the third subject while the intervention was administered to the second subject leads to some ethical problems (Byiers, Reichle, & Symons, 2012). In this design, constantly obtaining baseline data from the subjects may cause learning or weariness in the subjects.

In addition to experimental studies, survey-type studies can also cause ethical problems. Creswell (2012) generally associated ethics in survey studies with good application. To put it more clearly, during data collection in survey studies, guidelines are written to enable individuals to answer the survey items sincerely, thus emphasizing the maximum benefit from the answers given. This can be considered an ethical problem.

As in experimental studies, the confidentiality and confidentiality of the collected data are also considered as a situation that should be paid attention to in survey-type studies. For example, Creswell (2012) stated that survey questionnaires must be destroyed after the study is completed. Creswell (2012) also argued that not measuring variables such as age, sex, and race in correlational studies is an ethical violation since this may lead to the neglect of some variables and emphasizing others. For the solution of this problem, using a model that will guide the selection of variables, considering all possible predictors, meeting the assumptions of the statistical analyzes to be used in the study, and reaching the required sample size in order to obtain sufficient statistical power is recommended.

Results and Recommendations

Considering that special education services are for individuals with special needs, it is a necessity that the educational activities to be carried out in this field are based on certain ethical standards. Moreover, special education is not only a practice field consisting of special education teachers and students but also an interdisciplinary practice field that includes other disciplines (psychology, social work, health, etc.). In addition, special education practices are affected by various factors such as family, language, social and cultural structure. This increases the importance of determining ethical standards in the field of special education and providing services in accordance with these standards.

Ethical principles and standards in special education are mainly about the fields of i) practice, ii) profession, and iii) research. The most important stakeholder in the formation of ethical standards in special education practices is undoubtedly special education teachers. Accordingly, professional ethical principles for special education teachers have been established in the international literature. These principles are generally about putting the interest of the students with special needs to the highest level, working to help these individuals to reach their highest potential, improving themselves professionally, collaborating, and complying with the relevant standards, procedures, and laws.

Although these ethical principles are mainly aimed at student learning objectives, they are also believed to be important in terms of ensuring teachers' satisfaction with their work and behaving more professionally. However, the mere determination of these principles may not be sufficient for

educational practitioners to transfer these principles to their professional lives. There is a need for discussions and practices on this subject.

A set of ethical principles or standards for special education teachers has not yet been formed in Turkey. In order to establish ethical principles in this regard, first of all, the definition of the profession of special education should be made and then ethical principles and standards should be established urgently with the participation of stakeholders such as non-governmental organizations or communities working in the field of special education.

Furthermore, ethical principles and standards for special education research are about not harming the participants, data confidentiality, and sharing of the research results. In addition, applications such as informed consent forms to be obtained from participants (or their guardians) and ethics committee reports will minimize ethical concerns in scientific research. In this context, it is believed that the ethical principles that are expected to be complied with will protect the interests of the participants and the stakeholders and reduce possible concerns.

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The Use of Error Based Activities to Improve the Mathematization Competency

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Abstract

The purpose of the study is to investigate how the error based activities improve the mathematization competency of preservice mathematics teachers. The study was designed as a case study which is one of the qualitative study design. The sample consists of 38 third grade elementary mathematics teacher candidates studying in a university in Turkey. The study group consisted of 20 pre-service teachers; the comparison group consisted of 18 pre-service teachers. Data were collected through PISA questions consisting of 11 questions total. Data were analysed through descriptive analysis. The findings of the study indicates that the study group performed better than the comparison group on getting the full score for most of the questions. Both of the groups performed mostly on getting full and zero scores and rarely getting partial scores. The study group performed mostly at level 3 when the comparison group performed mostly at level 2 and level 1.

Keywords: Error Based Activities, Mathematization, Mathematical Literacy, Preservice Mathematics Teachers

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INTRODUCTION

21st century citizens are expected to be creative and reflective and this increases the need for individuals having developed mathematical literacy skills (Edge, 2009; Jablonka, 2011; Steen, Turner & Burkhardt, 2007). Likewise, the Program for International Student Assessment (PISA) emphasizes the importance of mathematical literacy by aiming to determine the capacity of individuals to apply mathematics to life problems. In this connection, it is stated that today's newly published mathematics curriculum for primary and middle school students aims to teach students how to develop their mathematical literacy skills and use them effectively (Ministry of National Education, MEB, 2018a). This shows that the implemented mathematics curriculum focuses on how to develop the ability to apply mathematics to the real world and how to comprehend the role of mathematics in daily life. Mathematical literacy refers to the capacity of an individual to formulate, apply and interpret mathematics in order to solve various real-life problems. In other words, it is about understanding the role of mathematics in daily life and being able to use mathematics in solving problems encountered in daily life (McCrone & Dossey, 2007; Organisation for Economic Co-operation and Development (OECD, 2019). In this context, mathematical literacy is a multi-faceted and dynamic process that includes formulating, applying, interpreting and evaluating. As a product of this process, mathematical literacy can be perceived as a set of competencies that enable citizens to solve current problems they face by using mathematics in the century we live in. These competencies can be listed as mathematical communication, representation, strategy production, mathematization, reasoning and argument, using symbolic language and operations (PISA, 2016; OECD, 2019; Kabael et al., 2019).

In order for the mathematical competencies to be active in the student, it is necessary to learn how to transform a real-life problem into a mathematical format (Gould & Wasserman, 2014). This view is also supported by PISA data (Stacey & Turner, 2015). In order for this to happen, these competencies should be included in the teaching and learning of mathematics and efforts should be made for students to develop themselves consciously in this regard (Turner et al., 2015). These competencies should be directly targeted and promoted in mathematics lessons (Turner, 2010). De Lange (2003) stated that it was observed that in order to develop mathematical literacy, the educational objectives should also include these competencies.

In the learning environments in our country, importance is given to the teaching of the components of the competence of using the symbolic language and operations and the competence of representation, albeit partially (Ülger, 2021). Practice of the mathematization competency does not take place in most learning environments. In fact, in order for the individual to solve real life problems, he/she needs to be able to formulate the problem, solve it by applying it and mathematize it by interpreting it (OECD, 2019). Strong and relevant connections between realities, life contexts and students' mathematical learning are a key feature of Realistic Mathematics Education. Mathematization in Realistic Mathematics Education was expressed by Hans Freudenthal in two ways, horizontal and vertical. Horizontal mathematization is expressed as turning a real life problem into a mathematical formula and vertical mathematization is expressed as reaching a solution by establishing communication and relationships between mathematical expressions (Gravemeijer & Terwel, 2000). With horizontal mathematization, the targeted concept is reached while with vertical mathematization, this concept is used to progress onto more general concepts, the obtained concept is generalized and formulas are reached by working with symbols and establishing relationships between concepts (Van den Heuvel-Panhuizen & Drijvers, 2014). The knowledge generated by horizontal mathematization forms the basis for vertical mathematization. Therefore, in order for vertical mathematization to take place, horizontal mathematization must first be performed (Freudenthal, 1973). In this context, when the fact that mathematical literacy is important in all the stages of schooling from pre-school to adulthood is considered, it becomes clear that the necessary importance should be given to mathematization in each stage of education (Drabekova et al., 2014; OECD, 2019).

In order to train students who have the competency of mathematization, which is one of the competencies that mathematical literacy requires, first teachers should be trained in such a way as to have these competencies. To do so, the main responsibility should be taken by teacher educators. A

qualified teacher should seek for the ways of creating an environment suitable for mathematical meaning-making (Schoenfeld, 2002). At this point, it is expected from pre-service teachers to learn the ways of creating these environments before starting their professional career, to realize the importance of mathematical literacy and correspondingly the importance of mathematization and to improve themselves in this regard (Güneş & Gökçek, 2013; Hobden, 2007; Tekin & Tekin, 2004).

Being trained as mathematically literate and having the competency of mathematization depend on the reshaping of in-class relationships in such a way as to openly focus on researching, explanation and justification (Solomon, 2009). It is important to verify the claims of the individual or to make him/her realize the falsity of his/her own opinion during inquiries and discussions to be conducted in mathematical environments (Höfer & Beckmann, 2009; Johnson et al., 2011). In order for such mathematical environments to be formed, mathematical activities should be organized in the classrooms (Borasi, 1996; Gellert, 2004). Through mistake-handling activities, the individual can improve his/her mathematization skill by investigating different mathematical relationships by going over the problem when he/she has committed a mistake while solving the problem (Bilgili et al., 2021). Therefore, mathematization provides a two-way interaction, making mathematical processes more active. These activities, which lead the individual to questioning, also positively affect the individual's having different perspectives by trying different solutions (Borasi, 1987).

Mistake-handling activities allow the creation of correct information by presenting negative information to the individual alongside positive information (Heinze, 2005). Negative information is defined as the experiential knowledge of what is wrong and to be avoided (Gartmeier et al., 2008; Parviainen & Eriksson, 2006), while positive information is defined as information of what works (Martignoni, 2015). Learning involves positive information, but negative information is also needed. Mistake-handling activities make a dynamic contribution to the process of doing mathematics by enabling teachers, students and pre-service teachers to be engaged in higher-order thinking (Gedik & Konyalıoğlu, 2019; Özkaya & Konyalıoğlu, 2019; Santagata, 2005). Mistake-handling activities, which are thought to have a positive effect on the development of thinking skills, are believed to improve mathematical literacy and the competence of mathematization within the context of mathematical literacy.

Conceptual Framework

In the current study, it is thought that through mistake-handling activities, the pre-service teachers will try different ways, see different solutions, use different representations and think from different perspectives (Palincsar & Brown, 1984 as cited in Santagata, 2005). Considering that mathematization is the basis of solving a mathematical problem, it is thought that this application conducted on the basis of mistake-handling activities may have a positive effect on the development of the competence of mathematization. There are two types of mathematization in the literature: horizontal and vertical. In the current study, it was thought that the pre-service teachers had already mastered horizontal mathematization and it was aimed to examine how the vertical mathematization developed by applying mistake-handling activities that support the development of higher-order thinking skills. To this end, the theoretical framework created by Turner et al. (2015) by defining activities at four levels (0-3) in order to determine their vertical mathematization competency levels, was taken into consideration. This framework used in the study is given in detail below.

Level 0: Either the situation is purely intra-mathematical, or the relationship between the extra-mathematical situation and the model is not relevant to solving the problem.

Level 1: The individual constructs a model where the required assumptions, variables, relationships and constraints are given; or draws conclusions about the situation directly from a given model or from the mathematical results.

Level 2: The individual constructs a model where the required assumptions, variables, relationships and constraints can be readily identified; or modifies a given model to satisfy changed conditions; or interprets a model or mathematical results where consideration of the problem situation is essential.

Level 3: The individual constructs a model in a situation where the assumptions, variables, relationships and constraints need to be defined; or validate or evaluate models in relation to the problem situation; or link or compare different models.

METHOD

Research Model

The study is a case study, one of the qualitative research methods. As stated by Subaşı and Okumuş (2017), a case study aims to analyze an event in a short time of a few weeks or in a long period of one or two years and to describe and interpret it in depth on the basis of written documents. In the current study, from among the two groups taking a course focused on mathematics teaching, one was selected as the study group and the other as the comparison group. The academic grade point averages of the study group were found to be lower than those of the comparison group. Mistake-handling activities were administered to the study group for three weeks. The improvement caused by mistake-handling activities in mathematical literacy and mathematization competency is described.

Sample

The participants of the study are 38 third-year pre-service teachers attending the Department of Elementary Math Teaching in a university located in Central Anatolia. In the study, pre-service teachers' having taken essential mathematics field courses was taken as the criterion of inclusion, since it was thought that they would have a positive effect on the mathematization process and thus individuals who met this criterion were preferred. The pre-service teachers were taking the course of Special Teaching Methods in two different classes. Of these groups, one group was randomly selected as the study group and the other group was selected as the comparison group. While the study group consisted of 20 pre-service teachers, the comparison group consisted of 18 pre-service teachers.

Data collection tools

PISA questions are prepared by targeting mathematical literacy, which forms the basis of mathematics learning. Accordingly, a test consisting of four questions was prepared using the PISA exams in order to see the development of their mathematical literacy and mathematization competency after the administration of three-week mistake-handling activities to the group. Three of these four questions have three sub-questions and one has two sub-questions. In this context, eleven questions were presented to the pre-service teachers in total. The questions administered to the pre-service teachers during the data collection process are given in the findings section. The pre-service teachers were asked to solve these questions without any time restriction during the application.

Application process

The academic grade point averages of the study and comparison groups, which were randomly selected from among the students taking the course in which the application would be conducted, were checked before the application. It was determined that the academic grade point averages of the participants in the study group were lower than those of the participants in the comparison group.

In the three-week application, the mistake-handling activities were carried out within the scope of the course. No extra application was conducted on the comparison group other than what was required in the curriculum. After three weeks of application, necessary explanations were made by the researcher and the data collection tool consisting of PISA questions was filled under the supervision of the researcher. During the application process, necessary environmental conditions were provided for the students to individually respond to the prepared test. The pre-service teachers were told to solve the questions without any time restriction. It was observed that the study and comparison groups answered the test questions within one hour and handed them in to the researcher.

One of the points taken into consideration in the application was that the pre-service teachers could ask any question to the researcher whenever they needed to. The pre-service teachers were able to easily communicate with the researcher. Thus, it is thought that they seriously responded to the data collection tool. In this way, the validity of the study was increased and data loss was prevented.

Data Analysis

The data obtained from the pre-service teachers' solutions to the PISA questions were scored by assigning a full point, partial point and zero point, taking into account the scoring of PISA. Then, in order to determine the vertical mathematization levels of the pre-service teachers (Turner, Blum, & Niss, 2015), the conceptual framework of mathematization levels was used. In this framework, four levels were determined as Level 0, Level 1, Level 2 and Level 3. According to the determined levels, the level of the pre-service teachers in the vertical mathematization process depending on the scores they received from the answers they gave to the data collection tool is given in the tables in the findings section and explained in writing.

FINDINGS

While the participants in the study group were engaged in mistake-handling activities for three weeks, the participants in the comparison group were instructed as required in the curriculum of the course for the same period. After the application, the pre-service teachers were asked to answer the questions selected from the PISA exam. The answers given by the study and comparison groups were analyzed on the basis of the scoring of PISA. The scoring table of the groups is given below.

Table 1. Scoring Table of the Study and Comparison Groups (CG: Control group,SG: Study group)

Questions	Score	Full Score (f)			Partial Score (f)			Zero Score (f)		
		Q1	Q2	Q3	Q1	Q2	Q3	Q1	Q2	Q3
Ice Cream Shop	CG	12	0	0	1	1	0	5	17	18
	SG	15	7	0	2	3	0	3	10	20
Hale the Bike Rider	CG	15	10	2	0	0	0	3	8	16
	SG	17	13	5	0	0	0	3	7	15
Climbing Mount Fuji	CG	16	5	1	0	0	0	2	13	17
	SG	14	13	8	0	0	1	6	7	11
Drop Rate	CG	4	9		3	0		1	9	
	SG	16	10		3	0		1	10	

As can be seen in Table 1, when the solutions produced for the first one of the subcategory questions of the Ice Cream Shop question are examined, it is seen that 62% (12 people) of the comparison group have a full point, 6% partial point and 28% zero point while 75% of the study group have a full point, 11% partial point and 15% zero point. For the solutions produced for the second one of the subcategory questions of the Ice Cream Shop question, 6% of the comparison group received a partial point and 17% received a zero point, while 35% of the study group received a full point, 15% partial point and 50% zero point. For the third of the subcategory questions, all the participants in the study and comparison group received a zero point as they could not produce any solution and thus, related parts in the table are seen to be empty.

When Table 1 is examined for the scoring of the solutions to the Hale the Bike Rider question, it is seen that 83% of the comparison group received a full point and 17% zero point in the first sub-question, while 85% of the study group received a full point and 15% zero point. In the second sub-question, while 56% of the comparison group received a full point and 44% received a zero point, 65% of the study group received a full point and 35% received a zero point. In the third sub-question, while 11% of the comparison group received a full point and 89% received a zero point, 25% of the study group received a full point and 75% received a zero point.

When the scoring of the Climbing Mount Fuji question is examined, it is seen that in the first sub-question, 89% of the comparison group received a full point, 11% received a zero point, while 70% of the study group received a full point and 30% received a zero point. In the second sub-question, 28% of the comparison group received a full point and 72% received a zero point, while 65% of the study group received a full point and 35% received a zero point. When we examine the third sub-question, we see that 6% of the comparison group received a full point and 94% received a zero point, while 40% of the study group received a full point, 5% partial point and 55% zero point.

When the scores obtained for the Drop Rate question are examined, it is seen that in the first sub-question, 22% of the comparison group received a full point, 17% partial point and 6% zero point, while 55% did not answer the question. On the other hand, 80% of the study group received a full point, 15% partial point and 5% zero point. In the second sub-question, 50% of the comparison group received a full point and 50% received a zero point, while 50% of the study group received a full point and 50% zero point.

The answers given by the study and comparison groups to the PISA questions are given in a table based on the scoring key of PISA. The answers given by the groups to the questions were then analyzed according to the levels created by Turner, Blum, and Niss (2015) regarding the competency of mathematization. Table 2 shows how many people are in the groups and at what level they are. Afterwards, sample solutions showing the levels of some people in the study and comparison groups are included for each question.

Table 2. Level Graph of the Study and Comparison Groups

Groups Questions		<i>Comparison Group (f)</i>				<i>Study Group (f)</i>			
		Level0	Level 1	Level 2	Level 3	Level 0	Level 1	Level 2	Level 3
Ice Cream Shop	Q1	2	2	0	13	1	1	0	17
	Q2	1	4	9	1	1	5	4	9
	Q3	0	0	0	0	0	0	0	0
Hale the Bike Rider	Q3	15	10	2	0	3	3	9	5
Climbing Mount Fuji	Q1	0	12	2	4	1	3	0	14
	Q2	1	3	1	5	1	4	0	13
	Q3	5	7	1	0	2	6	3	8
Drop Rate	Q1	0	0	9	8	1	0	2	17
	Q2	1	1	4	9	0	2	5	12

When the responses given to the first sub-question of the Ice Cream Shop question are examined in Table 2, it is seen that 11% of the comparison group could perform mathematization at Level 0, 11% at Level 1 and 72% at Level 3, while 6% left the question unanswered and thus were not placed at any level. On the other hand, it is clearly seen that while 5% of the study group could perform mathematization at Level 0, 5% at Level 1 and 85% at Level 3, while 5% of them left the question unanswered and thus were not placed at any level. In both groups, the pre-service teachers mostly performed at Level 3.

Soru 1: DONDURMA DÜKKÂNI

Mine tezgâhın dış kenarı boyunca yeni bir kenarlık yapmak istemektedir. Mine'nin ihtiyacı olan kenarlığın toplam uzunluğu nedir? İşleminizi gösteriniz.

$$= (2 \times 0,5) + ((2 \times 0,5)^2 + (4 \times 0,5^2)) + (2 \times 0,5)$$

$$= 1 + 2,5 + 1 = 4,5 \text{ m}$$

doğru 3

Soru 1: DONDURMA DÜKKÂNI

Mine tezgâhın dış kenarı boyunca yeni bir kenarlık yapmak istemektedir. Mine'nin ihtiyacı olan kenarlığın toplam uzunluğu nedir? İşleminizi gösteriniz.

$$\frac{1}{2} + \frac{(1)^2}{2} + \frac{(4)^2}{2} + \frac{1}{2} \times 2 = 2 + \frac{5}{2} = \frac{9}{2}$$

doğru 3

Figure 1: A solution from the study group Figure 2: A solution from the comparison group

In the second sub-question of the Ice Cream Shop question, 6% of the comparison group were able to perform mathematization at Level 0, 22% at Level 1, 50% at Level 2 and 6% at Level 3, while 16% did not answer the question. On the other hand, in the same question, 5% of the study group were able to perform mathematization at Level 0, 25% at Level 1, 20% at Level 2 and 45% at Level 3 and 5% left the question unanswered. The biggest portion of the pre-service teachers in the comparison group performed at Level 2, while the biggest portion of the pre-service teachers in the study group performed at Level 3.

Soru 2: DONDURMA DÜKKÂNI

Mine dükkâna yeni bir zemin döşemesi yapacaktır. Servis alanı ve tezgâh haricindeki dükkânın döşeme yapılacak toplam alanı nedir? İşleminizi gösteriniz.

$$\left[\frac{(6 \times 0,5)}{3} \times \frac{(5 \times 0,5)}{2,5} \right] + \left[\frac{(3 \times 0,5)}{4,5} \times \frac{(2 \times 0,5)}{5} \right] + \left[\frac{(3 \times 0,5)}{2} \times \frac{(4 \times 0,5)}{2} \right]$$

$$= 2,5 + 2,5 + 1,5 = 6,5 \text{ m}$$

doğru 3

Soru 2: DONDURMA DÜKKÂNI

Mine dükkâna yeni bir zemin döşemesi yapacaktır. Servis alanı ve tezgâh haricindeki dükkânın döşeme yapılacak toplam alanı nedir? İşleminizi gösteriniz.

$$A = \frac{3}{2} + \frac{15}{4} + \frac{5}{2} + 20$$

$$A = \frac{3}{2} + \frac{15}{4} + \frac{5}{2} + 20 = \frac{51}{4} + 20 = \frac{131}{4}$$

doğru 3

Figure 3: A solution from the study group Figure 4: A solution from the comparison group

Since both groups did not answer the third question, the number of people at the levels related to this question is indicated as zero in Table 2.

In the Hale the Bike Rider question, first and the second sub-questions are multiple choice questions. In these questions, the pre-service teachers in the study and comparison groups marked an option but did not perform any operation or make any explanation. Therefore, the level of the answers given in these two questions could not be determined. When Table 2 is examined, it is seen that in the third sub-question of the Hale the Bike Rider question, 28% of the comparison group were at Level 0, 50% were at Level 1, while there were no pre-service teachers performing at Level 2 and Level 3 and 22% of the pre-service teachers did not answer the question. On the other hand, 15% of the study group performed at Level 0, 15% at Level 1, 45% at Level 2 and 25% at Level 3. For this question, it was observed that more pre-service teachers from the comparison group performed at Level 0 and Level 1, while more pre-service teachers from the study group performed at Level 2 and Level 3.

Soru 3: BİSİKLET SÜRÜCÜSÜ HALE

Hale, evinden 4 km uzaklıkta olan nehre kadar bisikletle gitmiş ve bu yolculuğu 9 dakika sürmüştür. Eve dönüşünde, 3 km'lik daha kısa bir yolu kullanmış ve bu yoldan dönmesi sadece 6 dakika sürmüştür.

Hale'nin nehre gidiş dönüş yolculuğundaki ortalama hızı kaç km/h'dir?

Yolculuğundaki ortalama hız:28.....km/h

$$\text{Ortalama hız} = \frac{\text{toplam yol}}{\text{geçen zaman}} = \frac{7}{0,25} = 28 \text{ km/h}$$

9 dk = 15 dakika = 0,25 saat

Soru 3: BİSİKLET SÜRÜCÜSÜ HALE

Hale, evinden 4 km uzaklıkta olan nehre kadar bisikletle gitmiş ve bu yolculuğu 9 dakika sürmüştür. Eve dönüşünde, 3 km'lik daha kısa bir yolu kullanmış ve bu yoldan dönmesi sadece 6 dakika sürmüştür.

Hale'nin nehre gidiş dönüş yolculuğundaki ortalama hızı kaç km/h'dir?

Yolculuğundaki ortalama hız: $\frac{35}{9}$km/h

$$\frac{40}{9} + \frac{45}{9} = \frac{85}{9}$$

$$\frac{4000}{300} = \frac{40}{3}$$

$$\frac{3000}{600} = 5$$

Figure 5: A solution from the study group Figure 6: A solution from the comparison group

When the data given for the Climbing Mount Fuji question in Table 2 are examined, it is seen that while there was no pre-service teacher performing at Level 0 in the comparison group for the first sub-question, 67% of the pre-service teachers performed at Level 1, 11% at Level 2 and 22% at Level 3. On the other hand, while 5% of the study group performed at Level 0, 15% at Level 1 and 70% at Level 3, there were no pre-service teacher performing at Level 2 and 10% of the pre-service teachers

left the question unanswered. According to the findings in Table 2, the majority of the comparison group performed at Level 1 and the majority of the study group performed at Level 3 for this question.

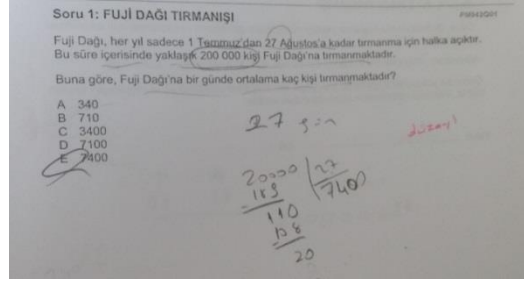
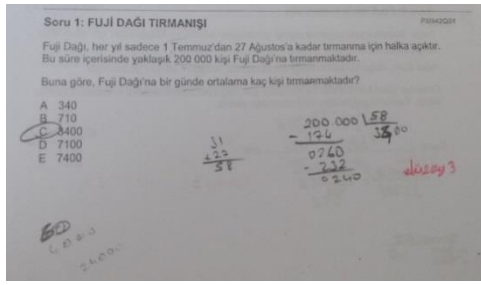


Figure 7: A solution from the study group Figure 8: A solution from the comparison group

In the second sub-question, 6% of the comparison group performed at Level 0, 17% at Level 1, 6% at Level 2 and 28% at Level 3 and 43% of them left the question unanswered. While 5% of the study group performed at Level 0, 20% at Level 1 and 65% at Level 3, there was no pre-service teacher performing at Level 2 and 10% of the pre-service teachers did not respond to this question. While the majority of the comparison group left the question unanswered, most of the participants who answered the question performed at Level 3. Although the number of the pre-service teachers who left the question unanswered in the study group was low, it was observed that the majority of the pre-service teachers giving an answer performed at Level 3.

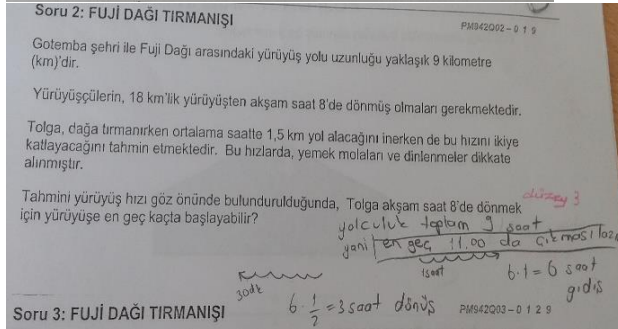
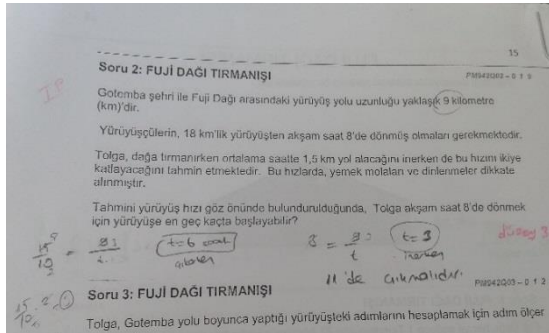


Figure 9: A solution from the study group Figure 10: A solution from the comparison group

In the third question, while 28% of the comparison group performed at Level 0, 39% at Level 1 and 6% at Level 2, there was no pre-service teacher who performed at Level 3 and 27% of the comparison group left the third question unanswered. On the other hand, 10% of the pre-service teachers in the study group performed at Level 0, 30% at Level 1, 15% at Level 2 and 40% at Level 3, 5% of the pre-service teachers did not answer the question. As can be seen in Table 2, while the majority of the participants in the comparison group performed at Level 1, the majority of the participants in the study group performed at Level 3.

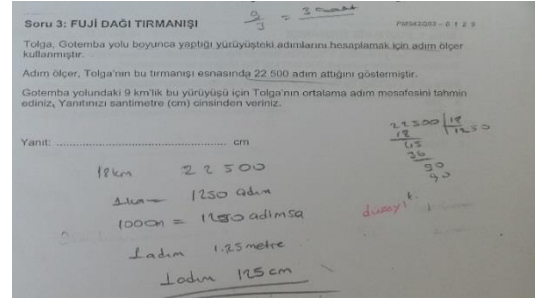
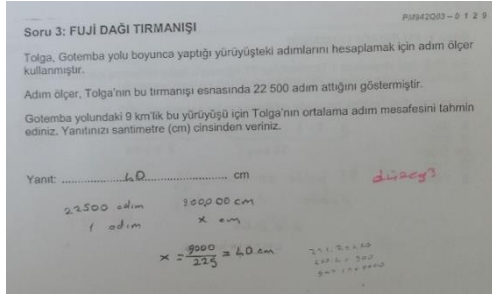


Figure 11: A solution from the study group Figure 12: A solution from the comparison group

In the first of the two sub-questions in the Drop Rate question, 50% of the participants in the comparison group performed at Level 2 and 44% at Level 3, while there was no pre-service teacher performing at Level 0 and Level 1 and 6% left the question unanswered. In the study group, while 5% of the pre-service teachers were at Level 0, 10% at Level 2 and 85% at Level 3, no pre-service teacher was found at Level 1. While the pre-service teachers in the comparison group mostly performed at Level 2, the majority of the pre-service teachers in the study group performed at Level 3.

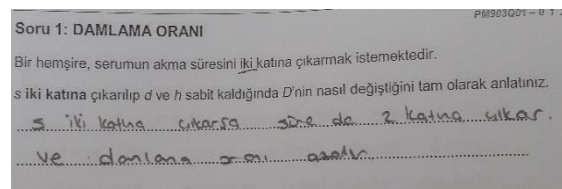
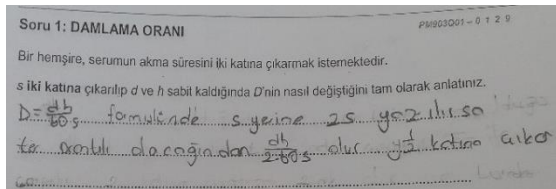


Figure 13: A solution from the study group Figure 14: A solution from the comparison group

In the second question, 6% of the comparison group performed at Level 0, 6% at Level 1, 22% at Level 2 and 50% at Level 3, while 16% of the pre-service teachers did not answer the question. On the other hand, 10% of the study group performed at Level 1, 25% at Level 2 and 60% at Level 3 and there was no pre-service teacher who performed at Level 0 and 5% of the pre-service teachers did not answer the question. According to these data, the majority of the pre-service teachers in both groups performed at Level 3.

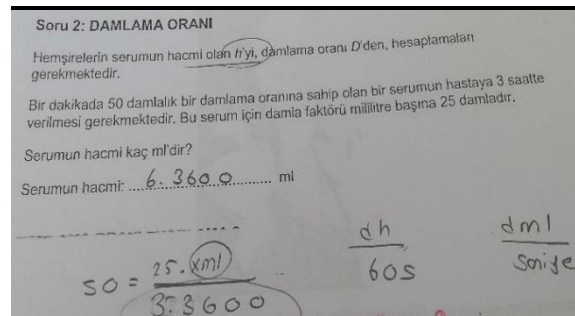
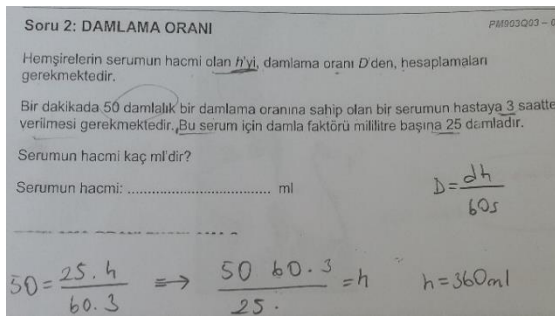


Figure 15: A solution from the study group Figure 16: A solution from the comparison group

CONCLUSIONS

When the results of the current study are evaluated considering the importance of mathematical literacy, according to the scoring of the answers they gave to the PISA questions used as a data collection tool, the pre-service teachers in the study group got more full points than the pre-service teachers in the comparison group and thus demonstrated more performances at Level 3. On the other hand, the majority of the pre-service teachers in the comparison group were intensely distributed across Levels 1 and 2.

When the answers given by the groups to the questions are examined in detail, it is seen that both groups performed mostly at Level 3 in the first sub-question of the Ice Cream Shop question. Therefore, they created a solution model by establishing relationships between the data they read and they expressed and validated this model operationally. When the answers they gave to the second sub-question were examined, it was seen that the pre-service teachers in the comparison group were mostly located at Level 2 and the participants in the study group were mostly located at Level 3. When the solutions of the pre-service teachers were examined, it was seen that those in the comparison group directly took action and came to the conclusion without showing the relationships expressed in the question, while those in the study group turned the problem statement into a mathematical form and expressed it in writing and then reached the solution. None of the pre-service teachers answered the third sub-question.

In the Hale the Bike Rider question, only the third sub-question was answered by pre-service teachers and it was seen that the comparison group demonstrated more performances at Level 0 and Level 1, while the study group demonstrated more performances at Level 2 and Level 3. It is obvious that the pre-service teachers in the study group used formulas with necessary assumptions, variables and relations in their solutions and interpreted the mathematical results. On the other hand, the pre-service teachers in the comparison group tried to reach the solution directly without using any solution model and without making any evaluation on the basis of the relations obtained from the data.

In the first sub-question of the Mount Fuji Climbing question, there were more pre-service teachers performing at Level 1 in the comparison group, while more pre-service teachers performing at Level 3 in the study group. From the solutions while it was seen that the pre-service teachers in the comparison group tried to reach direct conclusions about the situation with the solutions given to them, the pre-service teachers in the study group effectively read and understood the given problem and after establishing a relationship between the data and interpreting them, they were engaged in mathematization. About half of the pre-service teachers in the comparison group did not answer the second sub-question. On the other hand, most of the remaining pre-service teachers performed at Level 3. For the same question, it was observed that a small number of the pre-service teachers in the study group did not answer the question and that the majority of the pre-service teachers who answered the question performed at Level 3. When the solutions to the second sub-question were examined, it was seen that the pre-service teachers read and understood the question and they tried to find a solution by using and evaluating the assumptions and relationships among the data. In the third sub-question, while there was no pre-service teacher performing at Level 3 in the comparison group, the majority of the pre-service teachers performed at Level 1. The majority of the pre-service teachers in the study group on the other hand performed at Level 3. When the solutions of the pre-service teachers in the comparison group were analyzed, it was seen that they tried to reveal direct results about the given problem situation while the pre-service teachers the study group formed a solution model by establishing relationships and making interpretations about the problem situation.

In the first sub-question of the Drip Rate question, half of the pre-service teachers in the comparison group performed at Level 2 and the majority of the remaining half at Level 3. In the same question, the majority of the pre-service teachers in the study group performed at Level 3. When the solutions produced by the pre-service teachers were examined, it was seen that while the pre-service teachers in the comparison group did not state a definite result by making comments without using the formula given in the question, the pre-service teachers in the study group came to a conclusion by using the formula given in the question and making associations on the basis of the formula. In the second sub-question, the majority of the pre-service teachers in both the comparison group and the study group performed at Level 3. However, it was seen that some of the pre-service teachers in the comparison group used the given formula, but made the wrong association in the formula as a result of misinterpretation and thus they reached wrong solutions. It was observed that the pre-service teachers in the study group correctly evaluated the formula given in the solution of the problem and reached the right conclusion through the associations they made.

DISCUSSION AND SUGGESTIONS

Today, the importance of mathematical literacy and therefore mathematization has begun to be recognized more. Thus, both learners and teachers are expected to develop themselves in this regard (Kabael & Barak, 2016). In the current study, the contribution of mistake-handling activities to the development of pre-service elementary school mathematics teachers' competency of mathematization in the context of mathematical literacy is described.

When the results of the current study, which is thought to contribute to the development of mathematical literacy, are examined, it is seen that according to the scoring of the answers they gave to the PISA questions, the pre-service teachers in the study group received more full points than the pre-service teachers in the comparison group and demonstrated more performances at Level 3. In addition, the results revealed that the pre-service teachers in the study group answered more questions than the pre-service teachers in the comparison group. When the answers given by the groups to the questions are examined in detail, it is seen that the solutions of the pre-service teachers in the study group are more explanatory and include more mathematical expressions than those of the pre-service teachers in the comparison group. When the answers of the pre-service teachers given to the PISA questions are examined considering their scoring as a full, partial and zero point, it is seen that the pre-service teachers in the study group received more full points than partial and zero points, while the pre-service teachers in the comparison group received more partial and zero points. When both the PISA scoring and mathematization level results are examined, it is seen that the study group performed higher in seven questions out of a total of eleven questions directed to the pre-service teachers, while both groups performed close to each other in three questions. In the remaining one question, the comparison group performed better than the study group. Similarly, Breen et al. (2009) revealed that from the six-stage literacy level specified in PISA, 23% of the pre-service teachers are at Level 3 and below, 39% at Level 4, and 38% at Levels 5 and 6. Tarım et al. (2017) concluded in their study that the pre-service teachers have an average level of mathematical literacy. However, in a study conducted on the basis of activity design, it was noted that the mathematical literacy levels of pre-service primary teachers improved (Canbazoglu & Tarım, 2020). In another experimental study, it was concluded that the mathematical literacy levels of high school students subjected to realistic mathematics applications were significantly different when compared to those of the students subjected to standard education applications (Sumirattana, Mekanong & Thipkong, 2017).

When the mathematization levels of the pre-service teachers are examined, it is seen that the study group performed more at Level 3, while the comparison group performed mostly at Level 1. According to these results, it is seen that the pre-service teachers in the study group read the given questions more effectively, paid more attention to the root of the question, reached solutions more carefully and performed better in developing different solutions compared to the pre-service teachers in the comparison group. It can be concluded that development of the abilities of reading questions effectively, creating different solutions and paying attention was positively correlated with the engagement of mistake-handling activities by the pre-service teachers in the study group. It is seen that the positive changes occurred in how the pre-service teachers in study group perceive the root of a question and ways of solving a question as a result of their engagement with mistake-handling activities for three weeks. It can be thought that this change and development helped the pre-service teachers to understand, interpret and question the PISA questions they have solved. In fact, questioning and interpretation are among the important skills that mistake-handling activities will develop in pre-service teachers (Aksu et al., 2016; Borasi, 1987; Gedik & Konyalıoğlu, 2019; Heinze & Reiss, 2007; Santagata, 2005). In some previous studies, it was found that when mistake-handling activities were included in the implementation process, pre-service teachers' perceptions of and attention to questions and solutions improved positively (Bilgili et al., 2020; Lucero & Elmore, 2017; Özkaya & Konyalıoğlu, 2019). Yılmaz and Tekin-Dede (2015) observed that pre-service teachers actively validated throughout the process and were able to correct the mistakes they detected. Thus, they concluded that the pre-service teachers had performed extensive mathematization. As a result of their study investigating the mathematization of high school students in the context of mathematical literacy, Mariani and Hendikawati (2017) concluded that the group subjected to realistic mathematics education had better mathematization performance than the group subjected to traditional mathematics education.

In light of the results obtained in the current study, it is thought that such studies will be more effective if mistake-handling activities are applied in a longer time period and pre-service teachers are engaged in both horizontal and vertical mathematization activities. When the importance of mathematization competency is taken into consideration within the context of mathematical literacy, it can be suggested that mistake-handling activities should be applied to pre-service teachers for them to develop their other competencies influential on mathematical literacy.

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CRedit Author Statement: Author 1 : Conceptualization and Methodology, Author 2 : Writing- Original draft preparation.

Ethical Statement: We act in accordance with scientific ethical principles and rules from all stages of the study, including preparation, data collection, analysis, and presentation of information; we have cited all data and information not obtained within the scope of this study and we have included these sources in the bibliography; we have not made any changes in the data used and that we comply with ethical duties and responsibilities by accepting all the terms and conditions of the Committee on Publication Ethics (COPE). At any time, we declare that we consent to all moral and legal consequences that may arise in the event that a situation contrary to this statement we have made regarding the study is detected.

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The Analysis of Relationship Between Competition Styles and Play Skills of Preschool Children

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Abstract

Play is a tool that attunes children to the world and enables children to experience freedom. This tool is significant for children to get oriented with physical and social environment and learn. Children sharpen their emotions, enhance abilities, and develop skills as they play games (Ünal, 2009). There are various definitions of competition (Sheridan and Williams, 2006; Tsiakara and Digelidis, 2012) which is frequently observed in the behaviors of kindergarten children. Competition can be defined as an urge to win, willing to be better than the others can, enjoying competing with others, focusing on an objective and eliminating other individuals to reach that objective or not willing to share the determined objective with others (Yenidünya, 2005). Although competition often exist in preschool children's behavior it is observed that there is not adequate amount of study in the literature. Therefore, the aim of this study is to analyse the relationship between competition skills and playing skills of children that has active completion in their life. For data acquisition in the research The Preschool Competition Questionnaire – PCQ (Uyanık Balat, Akman and Arslan Çiftçi, 2017) and Revised Knox Preschool Play Scale (Değirmenci, 2016) is used. Research data is acquired from 202 children having preschool education in Istanbul in the 2016-2017 education term. Pearson Moment Product Correlation Coefficient and independent groups t-test are used for data analysis. Consequential to the research it is found that there is negative significant correlation ($r=-.358$, $p<.01$) between total score of Revised Knox Preschool Play Scale and Preschool Competition Questionnaire's sub-dimension called "Others-oriented Competition", while a positive significant correlation for "Task Oriented Competition" ($r=.357$, $p<.01$) is found. In the lights of these findings, it can be asserted that others-oriented competition levels decrease as the playing skills level increase and task/winning-oriented competition level increases.

Keywords: Preschool, Competition, Competition Styles, Play, Play Skills.

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INTRODUCTION

Play is a behavior that is commonly observed not only in humans but among all warm-blooded mammals' developmental process. Taking all creatures into consideration, play can be defined as the body of behaviors that prepares for the future, provides entertaining, voluntarily participated, helps developing social behavior and complying with the herb/community existed within (Henricks, 2014). Play is the most appropriate way of expressing self, especially in the first years of life, together with being an event that exists every moment of life, in order to recognize the world that the child lives in and express himself/herself and emotions such as happiness, anxiety, joy (Fazlıoğlu, Ilgaz & Papatğa, 2013). In addition to being a major factor in the healthy development of the child in social, physical and mental areas; play is an experiment room within that they test and try what they hear and what they see, and consolidate what they learn. For this reason, play is the child's most natural learning and practice environment (Ünal, 2009).

The child obtains emotional relief by acting independently in his/her own self-imperative, free world. In addition, several necessities of living is learned and applied such as cohabitation, comprehension of sexual role, respect for rights and freedoms, sharing, winning and losing together by the children through play (Tanrıverdi, 2012). Although different definitions are made about play, all researchers agree that play is the primary activity of the child, that free and voluntary participation is essential, it should be the main source of support for all development areas (Elias & Berk, 2002; Case-Smith, 2004; Canning, 2007; Berinstein & Magalhaes, 2009). In its broadest sense, the play which is based on physical, cognitive, language, emotional and social development, in which the child willingly and likes to take place in any case, with or without rules, with or without a certain purpose is a part of real life and the most efficient learning process (Kılıçoğlu, 2006).

Comenius has stated that the play is thought to have an important role on desire to be free, moving, establishing friendships, developing creativity, competing and changing desires but it has an impact also on discipline and systematization (Koçyiğit, Tuğluk & Kök, 2007). Previous to the analysis of the relationship between competition sense and competition and play that is hosted in the play competition should be defined appropriately. Competition is defined as one or more individuals' actions who are motivated for the same cause opposing another individual or a group to reach an objective (Salvador and Costa, 2009).

Competition, however prove to be a phenomenon that has existed in all beings since the past, is the competition between economic agents that generally examined (Akkaya, 2008). However, one of the areas where competition is a multidisciplinary field of study is social sciences. Because although human life seems to be controversial, it is a dynamic process based on cooperation and competition. It is supposed that there are competitive layers within the work based on many activities in human life (Schmidt, M., Hardecker Tomasello, 2016). Therefore it is possible to encounter competition in daily life dimension when the historical course of individual competition is researched (Akbayırılı, 1998).

Competition is a consequence of the characteristics exist in human nature. This emergence of nature comes after the appearance of imitation and self-direction, as a child's sense of competitiveness. When the self develops and becomes like the people imitated in the person, or even the desire to pass them, the competition comes to fruition (Akkaya, 2008). Competitive activities started to enter the lives of children even more since the late 20th century. In addition, with industrialization it started to have an important share in the home, work and school and encircle children (Paquette, Gagnon, Bouchard, Bigras & Schneider, 2013; Roberts, 2016). Children are not born with an urge of competition; they learn competition. Moreover, this learning is initiated in the preschool period when the social learning is developed (Akkaya, 2008). Similarly, emergence of competition is observable around the age of 5 according to Church (2007).

This life abound with competition is adapted since the childhood years. This adaptation is not external but is a fact of human nature. Roberts's (2016) study can be given as an example for this

situation. According to his research findings, regardless of age and gender, plays that comprise competition are preferred more. A similar study conducted by Sheridan and Williams (2006) showed that in the activities that has a competitive atmosphere children are more attentive, motivated and enthusiastic.

Play comprises inherent motivation in it (Erşan, 2006). This inherent motivation that occurs during the natural course of the play leads to the development of positive competition in suitable social environments. Positive competition supports social and emotional development and efficient learning of children (Brom, Šisler, Slussareff, Selmbacherová, & Hlávka, 2016).

As it is observed in the consequence of literature reviews, play and competition are two interlocked concepts. Despite this, neither in Turkey nor in the world there are adequate number of studies that analyses the relationship between the play and the competition (Akbayırılı, 1998; Akkaya, 2008; Fabes, Martin & Hanish, 2003; Paquette, Gagnon, Bouchard, Bigras & Schneider, 2013; Bozan, 2014; Pappert, Williams & Moore, 2016; Roberts, 2016; Schmidt, Hardecker & Tomasello, 2016). Therefore, the aim of this study is determined as the investigation of relationship between competition styles and play skills of the preschool children. The other two sub-objectives under this main purpose are such: Do the scores that the children in the study group take from Revised Knox Preschool Play Scale diverge according to gender and age variables? Do the scores that the children in the study group take from Preschool Competition Questionnaire differ according to gender and age variables?

METHOD

Research Model

In this study, it is aimed to determine the correlation between play skills and competitions of children aged 48-72 months. For this purpose, relational screening model as a quantitative research method is used in the research. Although the relational screening model does not provide a real cause-and-effect relationship, it enables the prediction of a variable when one of the variables is known (Karasar, 2000).

Research Group

The research group of the study consists a total of 202 children who are selected based on the easy accessibility principle. Thus the children are pre-schoolers that continue a pre-school institution in Istanbul province within 2016-2017 academic year.

Table 1: The frequency and percentage of the research group.

Values		Frequencies (f)	Percentages (%)
Gender	Girl	102	50.5%
	Boy	100	49.5%
Age	48-59 Months Old	74	36.6%
	60-72 Months Old	128	63.4%
School Type	Private Pre-School Institution	60	29.7%
	Public Institutions	142	70.3%

Family income level of the 14 children (6.9%) is lower, 118 (58.4%) children is middle level and 70 children's (34.7%) family income level is high. Mostly, the mothers' (n = 102, 50.5%) age ranges between 31-35 years, while fathers' (n = 106, 52.5%) age ranges between 36-40 years. The majority of the parents are university graduates; the ratio is (n=98, 48.5%) among mothers and (n=100, 49.5%) among fathers. In addition, 128 pre-school teachers of children (63.4%) have undergraduate degree while 74 (36.6%) of them have graduate degree. Of these teachers 132 (65.3%) have 6-10 years of professional experience and 70(34.7%) have 11-15 years of professional experience.

Data Collection Tools

The Revised Knox Pre-School Play Scale, and the Preschool Competition Questionnaire are used as data collection tools in the study.

Revised Knox Pre-School Play Scale: The first form of the scale used by Susan Knox to determine the developmental level of gaming behaviors from birth to the age of 6 was developed in 1968 and was then renewed and used by Knox in 2008. Scale; space management, material management, symbolic play and participation, and 12 sub-dimensions (Knox, 2008). The scale is filled by an observer who has observed the children for 15*2 sets period; that is 15 minutes of in-class free-play behavior and 15 minutes of out-of-class (garden) free-play behavior. In order for the observer to be able to reach the correct observation results, it is important to spend 1-2 hours with children ahead of the observation time with the aim of ensuring that children do not focus on the observer but exhibit natural play behaviors (Knox, 2008). In this research, the Revised Knox Pre-school Play Scale was filled by researchers. The result reached after the scoring process gives the "game age" of the child. It is thought that the child may be under developmental risk if a difference of 8 months or more is found between the child's chronological age and play age (Kennedy-Behr, Rodger, & Mickan, 2013). The adaptation of 48-59 months and 60-72 months forms of the Revised Knox Pre-school Play Scale to Turkish language has been realized by Değirmenci (2016). The internal consistency Cronbach Alpha value of the scale was found as .747. Internal consistency coefficient of this study was found as .782.

The Pre-school Competition Questionnaire: The Pre-school Competition Questionnaire was developed by Paquette, Gagnon, Bouchard, Bigras and Schneider in Canada in 2013 to assess the competitive behavior styles of children ages 3-6. The scale consists a total of 17 items that prescribe pre-school children's competitive behavior (e.g., "Will be annoyed if he/she cannot win in a game", "Tends to stop playing when he/she do not win", and "Stable when dealing with difficult tasks") that can be observed in everyday activities in kindergarten. The Pre-School Competition Scale is filled in by pre-school teachers for each child. The scale is constructed according to the 6-point rating method (1 = never, 2 = rarely, 3 = sometimes, 4 = occasionally, 5 = regularly, 6 = always). The original scale consists of three dimensions; 'Others Oriented Competition' (8 items), 'Task Oriented Competition' (6 items) and 'Hierarchy of Dominance Preservation' (3 items). Children are assessed with the scores they receive from each sub-dimension. The Cronbach's alpha reliability coefficients of the original scale are .89, .75 and .74 for each dimension, respectively. Test-retest reliability coefficients are found to be .92, .80 and .69($p < .001$), respectively. The adaptation of the scale to Turkish language is realized by Uyanık Balat, Akman and Arslan Çiftçi (2017) by including 16 schools in İstanbul province with a total of 208 children aged 48-72 months. The Cronbach's alpha coefficients of the factors range from 0.91 to 0.96, the test-retest reliability coefficients range from 0.85 to 0.95, and the corrected item-total score correlations range from 0.68 to 0.90. Concordance indices show good compliance between the model and data ($\chi^2 / sd = 3.01$, RMSEA = 0.099, SRMR = 0.08, CFI = 0.97, NNFI = 0.97, NFI = 0.96). The Cronbach alpha coefficients of the study are calculated as .843, .847 and .882, respectively.

Data Collection and Analysis

Research data is acquired from 48-72 months old 131 children that are included in the research group. The Knox Pre-school Play Scale, which is used as data collection tool, is filled in by a researcher who has observed the children for 15*2 sets period; that is 15 minutes of in-class free-play behavior and 15 minutes of out-of-class (garden) free-play behavior. Researchers have stayed around the children in the same positions that they will stand during the research for 1-2 hours ahead so that children can exhibit their natural play behaviors rather than focusing the observers. Competition Questionnaire is filled in by the preschool teachers of the children.

The data of the study were analyzed using a suitable statistical program in the computer environment. Before going into the analysis of the research data, deficiencies and mistakes in the dataset were determined and necessary corrections were made.

FINDINGS

In this section, findings regarding the relationship between the competition styles and play skills of the participant children are presented.

Table 1. Results of Correlation Analysis for the Relationship of Children's Play Knowledge and Competition

Revised Knox Preschool Play Scale	Preschool Competition Scale		
	Other-Oriented Competition	Task-Oriented Competition	Hierarchy of Dominance Protection
Field Management	-.077	.033	.209**
Material Management	-.148*	.227**	.019
Symbolic Play	-.275**	.271**	.011
Participation	-.465**	.415**	.046
Total	-.358**	.357**	.083

**p<.01. *p<.05

According to Table 1, significant relationships have been found between sub dimensions of Revised Knox Preschool Play Scale and Preschool Competition Scale. Based on this, a positively significant relationship ($r=.209$, $p<.01$) has been observed between "Field Management" sub dimension of Revised Knox Preschool Play Scale and "Hierarchy of Dominance Protection" sub dimension of Preschool Competition Scale. A negatively significant relationship ($r=-.148$, $p<.05$) has been found between "Material Management" sub dimension and "Others-Oriented Competition" sub dimensionwhile a positively significant ($r=.227$, $p<.01$) relationship has been found between "Material Management" sub dimension and "Task-Oriented Competition" sub dimension. A negatively significant relationship ($r=-.275$, $p<.07$) has been found between "Symbolic Play" sub dimension and "Others-Oriented Competition" sub dimensionwhile a positively significant ($r=.271$, $p<.01$) relationship has been found between "Symbolic Play" sub dimension and "Task-Oriented Competition" sub dimension. A negatively significant ($r=-.465$, $p<.01$) relationship has been observed between "Participation" sub dimension and "Others-Oriented Competition" sub dimensionwhile a positively significant ($r=.415$, $p<.01$) relationship has been observed between "Participation" sub dimension and "Task-Based Competition" sub dimension. In addition, a negatively significant relationship ($r=-.358$, $p<.01$) has been observed between total point of Revised Knox Preschool Play Scale and "Others-Oriented Competition" sub dimensionwhile a positively significant ($r=.357$, $p<.01$) relationship has been observed between "Task-Based Competition" sub dimension.

As a sub-purpose of the study, the findings examining the differentiation status of children's play skills in terms of gender and age variables in the light of the data obtained from the Knox Preschool Play Scale are presented in Table 2.

Table 2. t-Test Results of the Total Points of Children Received from the Revised Preschool Play Scale against the Gender and Age Variable

Gender	N	Avg.	S.S.	S.D.	t	p
Female	102	7.58	4.21	200	-.786	.433
Male	100	8.02	3.55			
Age Group	N	Avg.	S.S.	S.D.	t	p
48-59 months	74	10.37	2.34	200	8.23	.000**
60-72 months	128	6.31	3.85			

*p<.05**p<.01

As seen from Table 2, the points from Revised Knox Pre-school Play scale does not significantly differ by gender but significantly differ by age. Accordingly, points of the 48-59-month children, when compared to the points of 60-72-month children, are higher with $p<.01$.

As another sub-objective of the study, the findings examining the differentiation status of children's competition levels in terms of gender and age variables in the light of the data obtained from the Preschool Competition Scale are presented in Table 3.

Table 3. t-Test Results of the Comparison of Total Points Children Got from Preschool Competition Scale Sub Dimensions Against Gender and Age

Sub Dimensions of Preschool Competition Scale	Gender	N	Avg.	S.S.	S.D.	t	p
Other-Oriented Competition	Female	102	23.19	5.07	200	-1.73	0.84
	Male	100	24.74	7.38			
Task-Oriented Competition	Female	102	26.43	5.89	200	3.1	.002*
	Male	100	24.08	4.82			
Hierarchy of Dominance Protection	Female	102	12.98	3.14	200	-1.85	0.065
	Male	100	13.82	3.27			
Sub Dimensions of Preschool Competition Scale	Age Group	N	Avg.	S.S.	S.D.	t	p
Other-Oriented Competition	48-59 months	74	21.97	6.15	200	-3.46	.001**
	60-72 months	128	25.10	6.20			
Task-Oriented Competition	48-59 months	74	25.54	5.68	200	.536	.593
	60-72 months	128	25.10	5.40			
Hierarchy of Dominance Protection	48-59 months	74	12.94	2.94	200	-1.51	.132
	60-72 months	128	13.65	3.36			

*p<.05 **p<.01

According to Table 3, based on the sex variable of the children's score from the Preschool Competition Questionnaire, a significant ($p<.05$) difference is observed in favor of female children only between the scores taken from the sub-dimension of "Task-oriented competition." Also the age variable of the children's score from the Preschool Competition Questionnaire, a significant ($p<.01$) difference is observed in favor of children aged 60-72 months only between the scores taken from the sub-dimension of "Others-oriented competition."

RESULTS AND DISCUSSION

The initial aim of this study is to investigate the relationship between the competition styles and play knowledge of preschool children. As a result of the findings, significant relationships have been seen between sub dimensions of Revised Knox Preschool Play Scale and Preschool Competition Scale. It was concluded that while the play skills of the children increased, the level of task-oriented competition increased, while the competition focused on others decreased. This situation can be explained by the nature of the play. Having analyzed the literature, it is an expected result to reach significant relationships between play knowledge and competition styles. This is because children learn competition, sharing and their inner creativity through plays (Bulut & Yılmaz, 2008). It is needless to mention that competition is such an efficient activity factor in plays and classes. This is especially visible in plays where children are divided into two groups (Akkaya, 2008). In addition, competition scales used to determine the competition levels and styles of individuals also have entries including play behaviors (Akbaş, 1998; Uyanık Balat, Akman and Arslan Çiftçi, 2017). This situation can be explained by the close relationship between competition and play. After analyzing the findings in detail, a positively significant relationship has been observed between the total point of Revised Knox Preschool Play Scale, sub dimensions of "Material Management", "Symbolic Game" and "Participation", and "Task-Oriented Competition" sub dimension of Preschool Competition Scale while a negatively significant relationship has been observed between "Others-Oriented Competition" sub dimension. The significant relationship found between the total and sub dimensions of Revised Knox Preschool Play Scale and task-based competition sub dimension can be explained with the fact

that play skills are based on the task, and namely on the play. This means that plays contain competition by nature, however this sense of competition is based on the task which means the possibility of winning. A negatively significant relationship has been observed between total and sub dimensions of Revised Knox Preschool Play Scale and others-oriented competition sub dimension. It can be explained by the fact that a significant relationship between the Revised Knox Preschool Play Scale total and sub-dimensions and the relative competitive dimension is driven by the game's relative relevance ie game-oriented. In other words, the nature of the game has competition within the necessity, but this competition focuses on emotion, ie winning. There is a negative relationship between the revised Knox Pre-School Play Scale total and sub-dimensions and others focused competition dimension. When the relevant sub-dimensions are examined in detail, it can be predicted that the decrease in the points taken from the sub-dimensions of the social aspect of the play or the contradiction is expected when the focused competition increases. Parallel to this interpretation, as a result of the research conducted by Özçelik (2020), it was seen that there is a close relationship between the social competence levels of preschool children and their competitive skills. In addition, there are studies (Hayon, 2018, Santiago & Toppe, 2020) stating that there are significant relationships between communication and cooperation skills, which are included in the game skills and the participation sub-dimension within the scope of the research. Tsiakara and Digelidis (2021) stated that there is competition in the lives of children in early childhood and this competition usually shows itself in physical games, and they stated that competition is an important supporter in the development process. As a result of another study (Parlatan and Sığirtmaç, 2021), which focused on whether competition in the game is beneficial or harmful for the development of children, it was emphasized that competition is beneficial in the developmental processes of children, and that appropriate conditions should be created for these emotions to be experienced correctly.

As a result of the other research question aimed at investigating the relationship between pre-school children's competitive styles and play skills; the Revised Knox Preschool Play Scale do not differ significantly based on the sex variable. In another study using the same scale (Değirmenci, 2016) scale, a significant difference has been found between the total point received from the scale and the sex of the child in favor of female children. In line with the research results, according to the study carried by Karacan (2000), no sex-based difference has been observed between the play skills of 14 female and 14 male children during free play time. Similar to these results, there are studies which show that there is no significant difference in play skills of children based on their sex, however that there is a significant difference between the types of plays (dynamic, competitive, social, symbolic, etc.) (Nelson, 2011; Gagnon vd., 2013; Emolu, 2014). It shows parallel results regarding that there are no sex-based differences between the game skill levels of children in the study group. From these results, it can be said that the gender differs according to the game types rather than the game developments.

Points received from the Revised Knox Preschool Play Scale differ significantly based on the age variable. Accordingly, the points of children aged 48-59 months are higher than the points of children aged 60-72 months in terms of significance. It can be said that the reason for this is that children aged 48-59 months have to depend on the developmental period of the so-called "game age".

When we look at the competitive dimension of the study, based on the sex variable of the children's score from the Preschool Competition Questionnaire, a significant ($p<05$) difference is observed in favor of female children only between the scores taken from the sub-dimension of "Task-based competition." Although there are differences in the findings of studies investigating the relationship between sex and competition, it is possible to say that majority of studies show that male children exhibit more competitive behavior compared to female children (Maccoby, 1998; Green vd, 2003; Fabes, Martin, & Hanish, 2003; Gneezy & Rustichini, 2004). Unlike these results, there are also studies that show parallel results with our study. As a result of their study examining the competitive and non-competitive play styles on 64 preschool children in 2008, Weinberger and Stein concluded that male children prefer more competitive plays compared to female children. The study carried by Roy and Benenson (2002) also shows similar results to this study. According to this, female children have been observed to prefer less competitive plays. Whereas in Turkey, Uyanık Balat, Akman and

Arslan Çiftçi (2017) carried out a study evaluating the competition styles of preschool children on 208 children aged 48-72 months, which showed no significant difference based on the sex variable. All of these studies show that sex might have an influence on level and style of competition. Lindsay (1984) carried out a study in which he examined playground activities in 10 Alberta kindergarten in order to determine the sex difference in plays. As a result, he found that female children were more social and cooperative while playing and they were focused on the process rather than the result (Gül, 2012). Tsiakara and Digelidis (2014) carried out a study investigating the competitive behaviors through observation in 90 male and 86 female preschool children aged 5. As a result of this study, it is found that male children exhibited more competitive behaviors compared to female children. These behaviors were observed not only during competitive situations such as the organization of activities, but also during breakfast and free playing time. This result shows that male children in the study group often prefer to act in a competitive way during the course of their everyday life.

Based on the age variable of the children's score from the Preschool Competition Questionnaire, a significant ($p<01$) difference is observed in favor of children aged 60-72 months only between the scores taken from the sub-dimension of "Others-oriented competition. In another study in which the same scale was used (Mr., 2020), a similar result was obtained, and it was concluded that the other-oriented competition level of children increased with age. According to the study carried by Schmidt, M., Hardecker Tomasello (2016) on understanding the normality of competition in children aged 3 and 5, children aged 5 can perceive the form of competition and act accordingly, therefore they are found to be more dominant than children aged 3. Pappert, Williams, and Moore (2016) carried out an experimental study examining the competitive behaviors in children aged 4-7, and concluded that there is no significant difference between the age groups and that all age groups exhibit similar competitive behaviors when offered a reward. As a result of the study carried by Shaw, DeScioli, and Olson (2012) on competitiveness and fairness in children aged 6-8, it is found that children tend to act fairly in the absence of competition whereas their level of fairness significantly decreases when they personally get involved in the competition. As it is seen in the result of all these studies, it can be said that competition increases with age and shows itself more in behavior.

Identifying and responding appropriately to the sense of competitiveness of each child experiencing a healthy development process is of utmost importance for holistic development. Play, the most important learning method of the child, constitutes the basic philosophy and method of pre-school education program (MEB, 2013). Teachers should make use "play" that both develop social skills and provide opportunities for real life learning. It is recommended to increase the number of play activities, especially the free play times played by the games that the player has configured, with qualified materials. It is also suggested that new studies be conducted to investigate the relationship between play and competition from different angles.

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Preservice Science Teachers' Opinions and Argument Quality regarding COVID-19 Vaccines

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Abstract

This study aims to identify preservice science teachers' opinions and argument quality regarding the COVID-19 vaccines. The research was conducted with 18 4th year preservice science teachers studying at the Department of Science Education. The study was conducted with phenomenological design and the data were obtained using focus group interview and dilemma cards. The data obtained from the focus group interview were analyzed with content analysis. The argument components in the dilemma cards were analyzed using the "Argumentation Model Rating Scale" developed by Hiğde and Aktamış (2017). The findings obtained from the focus group interview showed that the majority of preservice science teachers were undecided about vaccination. The minority of the participants who expressed positive views on COVID-19 vaccines mentioned the health, social and scientific aspects of the vaccine (protection, reducing the rate of disease, facilitating the fight against epidemic, contributing to the advancement of science, etc.). On the other hand, it was underlined by the preservice science teachers that the COVID-19 vaccines still contained uncertainties (side effects, lack of protection on its own, lack of confidence, etc.) and created feelings of unease due to the new technological products. The results obtained from the dilemma cards demonstrated that the preservice science teachers were able to present their opinions (claims) and evidence successfully and were partially successful in supporting them. However, it was concluded that the preservice science teachers could not achieve the same level of success in the rebuttal part while presenting their arguments.

Keywords: COVID-19 Vaccine, Socio-scientific Issues, Preservice Science Teacher, Argument Quality

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INTRODUCTION

The COVID-19 epidemic, described as a global trauma, has affected all areas of human life (Chen & Bonanno, 2020). It is crucial to regard the epidemic not only as a health problem, but as a socio-scientific issue with multifaceted effects (Sadler et al., 2020). Discussing the social, political, economic and ethical dimensions of the epidemic creates a rich socio-scientific context. As with many such issues, there are points of agreement (hygiene, social distance, etc.) as well as points of disagreement. One of the subjects of disagreement that falls within the scope of socio-scientific issues is related to the COVID-19 vaccines. On one hand, studies for the vaccines are continuing rapidly. On the other hand, there are studies and news expressing the negative effects of the vaccines. Therefore, people cannot decide easily about the vaccines regardless of the wide coverage in the media and the scientific world. The World Health Organization (2020) uses the term "vaccine hesitancy" to express this type of indecision terminologically. Vaccine hesitancy is defined as "delays or refusals in accepting vaccines despite the availability of vaccine services". Vaccine hesitancy is a complex phenomenon that can be influenced by many factors and may vary according to time period, geography, age, trust in the government, the origin of the vaccine and even the religious beliefs (Erkekoğlu et al., 2020; Sallam et al., 2022). There are studies in the literature that focus on this phenomenon. A study conducted by Salali and Uysal (2020) concluded that vaccine hesitancy rate for COVID-19 vaccines is 31% in Turkey, while it is 14% in the United Kingdom. The study conducted by Lazarus et al. (2021) reported that elderly individuals are more willing to be vaccinated than young people, and young people experience higher vaccine hesitancy. This situation is similar for Turkey as well. For example, while the vaccination rate for the 18-25 age group was 53%, in the last months of 2021, this rate was around 84% for adults (25 years and over) (Ministry of Health, 2022). While some of the unvaccinated young people take an anti-vaccine (opposition) position, the majority of the youth is simply hesitant.

Vaccine hesitancy is getting stronger with the effect of news on social media as well as scientific studies. Höttecke and Allchin (2020) stated that, worryingly, social media is where fake news spreads the most. The study conducted by Pulido et al. (2020) examining COVID-19 related news on Twitter is a concrete example of this. The study showed that vaccine misinformation was tweeted more than science-based evidence or fact-checking tweets. In other words, untrue but interesting news about vaccines can spread faster than a statement made by a scientist. Reporting the research results of their study which examined the news contents about COVID-19, Topsakal and Ferik (2021) supported the above view and stated that too much and inconsistent information of the news contents has laid the groundwork for misinformation and conspiracy theories. From this point of view, it can be argued that this issue will be on the agenda for a while due to the influence of the media and the controversial nature of the issue. In this context Loomba et al. (2021) reported that vaccine acceptance is as important as the development of vaccines. Similarly, WHO (2020) reported that addressing the anti-vaccination movement is one of the top ten measures in the fight against COVID-19. Factors such as uncertainties regarding the vaccine, its side effects, conspiracy theories are some of the reasons that create the anti-vaccination movement (Megget, 2020).

At this point, the following question becomes significant: Is being vaccinated an individual freedom or is it civic duty that affects public health? This question constitutes the starting point of the current research. This controversial issue on the agenda is also reflected in science education and curriculum (MoNE, 2018). In fact, it is predicted that it has more comprehensive reflections in science education in the long run. The studies in the current literature support this prediction. In the last decade, studies on socio-scientific issues focused on themes such as nuclear power plants (Demircioğlu & Uçar, 2014), GMO (Khishfe, 2012) and global climate change (Herman, 2015). However, studies in the context of socio-scientific issues are centered more on the COVID-19 epidemic process and controversial situations in the last few years (Evren Yapıcıoğlu, 2020).

In order to make informed decisions on controversial issues, individuals must first reach information, share their arguments, and undergo a reasoning process. Many studies cited argumentation as an important factor in individuals' decision-making process on issues where there is

information pollution and confusion (Erduran, 2020; Lee, 2007) because argumentation is a mental activity laying the groundwork for realistic discussion. Argumentation is an effective scientific thinking method enabling individuals to reach a clear conclusion using key concepts such as claim, evidence, data, justification and reasoning based on existing knowledge (Chen et al., 2019). In particular, the literature presents studies dealing with the effectiveness of argumentation on controversial socio-scientific issues (Dawson & Carson, 2020; Evagorou & Osborne, 2013; Gülhan, 2012) that reflect positive results. Argumentation skills and its sub-components (reasoning, scientific thinking, decision making, etc.) are also in the realm of most socio-scientific issues and acquisitions (MoNE, 2018). At this point, it is considered that teachers and preservice science teachers play a key role in teaching students the argumentation process since making students think “like a scientist” is an important science literacy component which falls under teachers’ responsibility (Kim, Anthony & Blades, 2014). All the key concepts previously mentioned (such as epidemic vaccine, science literacy, argumentation, etc.) are closely related to the teacher factor. A socio-scientific issue such as a epidemic vaccine has a multidimensional structure. In this complex process, teachers have important duties such as raising awareness of their students and supporting them to make informed decisions. In fact, teachers’ duty and responsibility in this regard is not limited to socio-scientific issues. For example, teachers are believed to play key roles in many aspects during the COVID-19 epidemic (Daniel, 2020). In this process, teachers have shared scientific information announced by health authorities with their students, provided information about vaccination, social distance and hygiene rules, and guided the parents (Çakın & Akyavuz Külekçi, 2020).

With this regard, examining preservice science teachers’ opinions and arguments about the COVID-19 vaccines is important for three reasons: First, preservice science teachers’ argument quality will affect students’ argument quality and scientific decision making (Zhao et al., 2021). Second, since COVID-19 vaccines are a current and scientific issue, preservice teachers can be effective in developing a scientific perspective in their students and their parents (Kampourakis & McCain, 2019). Third, the subject of vaccines, indirectly included in the science curriculum before the epidemic, will now be directly included in the curriculum. The present study may contribute to the literature for these reasons. Some studies investigated the epidemic in relation to education (Cömert & Şahin Çakır, 2021; Görgülü Arı & Hayır Kanat, 2020; Maia, Justi & Santos, 2021; Sarıbaş & Çetinkaya, 2021). However, limited studies were found during literature review about the epidemic in the context of a socio-scientific issue (Dalyot et al., 2022; Evren Yapıcıoğlu, 2020; Ke et al., 2021; Rosawati & Rahayu, 2020) and there were two other studies that investigated the education and vaccine dimensions of the epidemic in connection with each other (Atabey, 2021; Salman et al., 2021). In addition, it was observed that teachers (Cömert & Şahin Çakır, 2021; Çakın & Akyavuz Külekçi, 2020) and students (Görgülü Arı & Arslan, 2020) were generally included in educational research about the epidemic. The studies (Ding et al., 2020; Seyhan, 2021) which included the preservice teachers’ as the study group is rather limited (sample). The number of studies which used dilemma cards as a data collection tool is rather limited as well (Cenk, 2020). In this respect, the study will be a valuable contribution to the literature. The purpose of using dilemma cards is to negotiate and discuss different human behaviors by drawing attention to the social effects of a scientific event. Akerson and Oldfield (2012) reported that as a technique, dilemma cards encourage students to question and support their decisions and to reveal their beliefs and actions. In this context, using dilemma cards was considered to be an appropriate data collection tool in revealing both the decisions and argument qualities of the participants. Evren Yapıcıoğlu (2016) did not use dilemma cards as a data collection tool as was the case in the current research but preferred to use them as a teaching technique and stated that dilemma cards are an effective way in teaching socioscientific issues. The pre-service teachers’ argumentation skills on socioscientific issues were examined within the context of the subject in Cenk’s (2020) study and 9 dilemma cards were developed. Hence, argument quality could also be presented while determining pre-service teachers’ opinions through dilemma cards.

This study aimed to establish preservice science teachers’ opinions and decisions about the COVID-19 vaccines and also to reveal the quality of preservice science teachers’ arguments. For this purpose, the research questions can be listed as follows:

1-What are the opinions of preservice science teachers regarding the COVID-19 vaccines?

2-What are the argument qualities of preservice science teachers regarding the COVID-19 vaccines?

METHOD

Research Design

This study was carried out with phenomenological design. According to Creswell (2013), phenomenological studies reveal how participants perceive and describe a certain phenomenon. In this study, it is thought that this research is suitable for the phenomenological pattern, as how the participants perceive the vaccines developed for the COVID-19 epidemic about the vaccine are discussed in detail.

Study group

This research was conducted with the participation of 18 preservice science teachers (15 females, 3 males) studying their 4th year in Mersin University Faculty of Education, Department of Science Education and enrolled in the socio-scientific issues in science teaching course. Participants were included in the research process according to criterion sampling, one of the purposive sampling methods. Criterion sampling is the process of determining participants according to a set of criteria predetermined by the researcher (Yıldırım & Şimşek, 2016). Here, the criterion was identified as registering to "Socioscientific issues in science teaching" course.

Eighteen preservice science teachers who participated in the study on a voluntary basis did not take another course that directly addressed argumentation and socio-scientific issues before taking the relevant course for this study.

Data Collection Tools

The data were obtained through a focus group interview and dilemma cards. First, participants' opinions and decisions on COVID-19 vaccines were established in the focus group interview defined as "a series of planned discussions held in a democratic and genial setting to reveal participants' perceptions about a specific issue" (Krueger & Casey, 2000). The researcher acted as the moderator and tried to create the right setting for all participants to present their views. Focus group interview was used because the issue of COVID-19 vaccines is open to dispute and the study aimed to reveal the quality of arguments used by the participants. The question "What do you think about the vaccines developed for the COVID-19 epidemic?" was the primary question during the focus group interview. The interview lasted about two hours and was recorded with a camera. Then, the participants were asked to fill in the dilemma cards (Annex 1) individually.

Data Analysis

In the first analysis phase, the results obtained from the focus group interview were analyzed with content analysis to reach concepts and relationships that can explain the collected data (Miles & Huberman, 1994). First, participant statements in the interview were written down and raw data were obtained. Then, codes and themes were created by recurrent readings of the raw data. Matrices were used in the generation of codes and themes. Then, tables and concept maps were generated to present the findings in a more understandable and visual manner. Table 1 presents an example of content analysis obtained during the analysis phase of the dilemma card.

Table 1. Codes and Themes

Theme	Code	Subcode	Participant opinion
Positive Opinions	Health Dimension	Protective Effect	<i>Vaccination should be used in prevention of the disease. (P11)</i>
		Reducing the Disease	<i>We know that vaccines alleviate the epidemic and reduce the case numbers. (P2)</i>
	Social Dimension	Strengthening Immunity	<i>Although the vaccine doesn't provide 100% protection, I think it would be good for boosting immunity. (P9)</i>
		Shortening the Epidemic	<i>How much longer can we stay at home? We need to normalize the process and we can achieve it with a vaccine. (P17)</i>
	Scientific Dimension	Facilitating the Fight against the Epidemic	<i>When there is vaccination, the transmission rate will decrease and the fight against the disease will be easier. (P2)</i>
		Trusting Science	
		Being Open to Scientific Innovations	<i>We must adapt to the innovations in science and technology. Scientists won't try to kill us. (P17)</i>
Undecided Opinions	Vaccine+ Other Methods	Not Sufficient	<i>Vaccination alone is not the solution. (P1)</i>
		Not a Definitive Solution	<i>We can overcome the disease without vaccination. (P7)</i>
	Uncertainty	Existence of Unvaccinated People	<i>What is important is obeying the rules. Vaccine isn't a definitive solution anyway. (P8)</i>
			<i>Unless all people in the world are vaccinated, we won't be able to get rid of this virus (P13)</i>
	Side effect	Limited Information	<i>We don't know much about the results of the vaccine, but now we want to get rid of this issue (P16)</i>
	Lack of Trust	New Technological Product	<i>The vaccine is a new technological product and we can look at this innovation as the invention of the century. We can also regard it as an invention with many side effects. Time will show that. (P3)</i>
		Cause of Death	<i>There may be people who cannot tolerate the side effects of the vaccine and may die. (P6)</i>
		Permanent Damage	<i>The side effects of the vaccine may appear after a long time and leave permanent damage. (P4)</i>
		Distrust towards the Vaccine	<i>We don't know exactly what the vaccine will cause or for what purpose it's actually made (P8)</i>
		Distrust towards Leaders and the Media	<i>The effects of the vaccine may appear after a long time and leave permanent damage (P5)</i>
Negative Opinions	Natural Methods without Vaccines Conspiracy Theories	Following the Rules	<i>Vaccination isn't a definitive solution and the possibilities aren't very reliable. (P15)</i>
		Capitalism	<i>I think that the crisis hasn't been managed well in the 2-years period and the vaccination rate is quite low (P2)</i>
		Game of China	<i>What is the need for vaccination when the rules are followed? (P1)</i>
			<i>It could be the game of the capitalist system to sell vaccines. There are even those who say that there is a project to reduce the population (P15).</i>

Coding was used to present the data in a visual format with the help of figures and quotations. Coding frequency is provided in parentheses. In the second analysis phase, the argument components in the dilemma cards were analyzed through the “Argumentation Model Rating Scale” developed by Hiğde and Aktamış (2017), which used a rating scale with 3 different levels to evaluate individuals’ argumentation quality, similar to the basic components in Toulmin’s (1958) model (Aktamış & Hiğde, 2015). The rating scale is scored between 0 and 2. The rubric contains claims, evidence, supporting, and rebuttal components and rated as follows: 0 = not existent, 1 = weak, and 2 = strong.

The research process was described as in detail as possible to ensure validity, reliability, plausibility and transferability. Before data collection, opinions were sought from experts in science education and qualitative analysis to determine the suitability of the focus group interview method and the dilemma card.

While presenting the text on the vaccine (newspaper article) in line with the expert opinion, efforts were made to find an impartial text in order not to create bias in participants. In this process, it was concluded by the experts that the text content and length in the dilemma card were appropriate. On the other hand, it was concluded that the number of options should be increased to represent the opinions regarding the vaccine in a wider range.

The raw data, findings, comments and suggestions were recorded and inspected recurrently. To increase the validity, reliability and verifiability, participant confirmation was employed to avoid researcher's subjective assumptions and misinterpretation of the data. During participant confirmation, the researcher presented the data to participants and asked them to express their thoughts on its accuracy. The research process was explained in detail to ensure credibility and transferability.

Research Ethics

Ethics committee approval was obtained before the research process in line with the legislative research ethics. Participants were informed about the research and the voluntary nature of participation at the beginning of the process. In the reporting phase, the names of the participants were not used for privacy. Codes such as P1, P2 were used for the participants. It was emphasized by the researchers that the participants could easily express their opinions and should not have grade concerns in this process. In addition, it was stated that when participants talked about religious, political, cultural issues in the argumentation process, the researchers would not make any intervention. Researchers also have an ethical responsibility to the reader. The research content was described in as much detail as possible and the data was adhered to during the reporting process of the research. As a result of all these actions, it can be said that ethical rules are adhered to.

The Role of the Researcher

When the focus group interview was conducted, the researcher acted as a moderator and tried to create a suitable setting for all participants to express their opinions freely. When dilemma cards were filled by participants, the researcher emphasized that a right or wrong answer did not exist in the dilemma cards. In this context, the researcher stated that scoring was not based on the selected answer and asked the participants to pay attention to the components (claim, evidence, justification, supporting, rebuttal, etc.) while expressing their opinions.

FINDINGS

Findings Regarding the Focus Group Interviews

The majority of the 18 participants (11 people) expressed that they were undecided. Five participants had positive statements about the vaccines while two expressed negative opinions. Figure 1 presents the participants' opinions in detail.

The majority of participants was undecided about the COVID-19 vaccines and believed that the vaccine alone would not be a sufficient or definitive solution. They expressed that the vaccine should be included in the process alongside other protection methods: *"I do not think that the vaccine alone will be sufficient where there are no measures. However, the fact that it is protective also helps me to regard the vaccine positively in a way. That's why I'm undecided."* (P3)

Emphasizing the uncertainties about vaccination, six participants believed that the epidemic would not be over as long as there were unvaccinated people. They stated that they had limited information about the vaccine as it was a new technological product. By emphasizing the uncertainties P10 stated: *"We don't know much about the results of the vaccine. Work on the vaccine continues and it is too early to talk about the effects of a new technology."*

Participants who were undecided due to the possible side effects of the vaccines used the expressions "causing death" and "leaving permanent damage" when expressing their opinions. Touching on the theme of lack of trust, six stated that the vaccine did not provide 100% protection: *"The risk of contracting COVID-19 doesn't disappear 100% with vaccination. At this point, I don't see it positively, but the fact that it is mostly protective makes me indecisive."* (P14).

Some participants stated that which vaccines were completely suitable for the virus couldn't be fully determined due to the constant mutation of the virus: *"A vaccine is being developed according to the current virus, but when you think about mutations, there are thousands of possibilities. I don't think the current vaccines will really help. If a vaccine that is resistant to all possibilities is produced in the future, then I can consider to be vaccinated."* (P13)

In addition, participants who found the leaders to be unsuccessful crisis managers and the news to be biased also stated that they experienced trust issues: *"Even when we want to view the vaccine positively, the lack of clear explanations about it, as well as the distrust towards the media and leaders, makes us prejudiced against the vaccine."* (P16)

Five participants with positive opinions about the vaccine declared that it had positive effects on health, social and scientific dimensions. All participants, whether they were positive, undecided or negative about the issue of vaccination, addressed the health dimension. Ten participants mentioned the protective effect of the vaccine; seven stated that the vaccines reduced the disease rate and six emphasized that the vaccines strengthened immunity. At this point, participants expressed that the vaccines could reduce the risk and rate of disease. Some participants who mentioned that the vaccines boosted immunity addressed herd immunity and discussed the health and social dimensions of the vaccine in conjunction. P2's contribution to the discussion on this point is found to be significant: *"The purpose of vaccination is to provide herd immunity. When most of the society is vaccinated, the rate of transmission will decrease and the fight against the disease will be easier."* (P2)

Participants who emphasized the social dimension of the vaccines stated that it could stop the epidemic. P18, who referred to the positive effects of the vaccines in terms of shortening the process and relieving society psychologically, said: *"We have been at home for about 1.5 years now and everyone wants to return to normal life. We are overwhelmed and especially the healthcare workers are exhausted. I think that with the discovery of the vaccine, our time at home will not be prolonged and the society will feel relieved sooner. For this reason, I am positive about the vaccines."* (P18)

Six participants who referred to the scientific dimension stated that it was necessary to trust science and be open to scientific developments: *"We have to trust the scientists. We must act according to scientific data and be open to innovations. I don't understand why ordinary citizens view the vaccines negatively when scientists are positive."* (P9)

Two participants with negative opinions believed that the epidemic would be over when the rules (mask, social distance and hygiene) were followed and natural methods were used: *"I had COVID-19. It was possible to get better without vaccination. Frankly, I think that other measures*

(hygiene, mask, etc.) are more important than vaccination. What is the need for a vaccine when the rules are followed?” (P1)

Two participants, who argued that the capitalist order and conspiracy theories were the leading forces in this epidemic, regarded the vaccines as a part of this order: *“From past to present, people are engaged in many immoral activities to get rich. Strangely enough, China sells the vaccine for the virus that originated in China. Also, the rate of COVID-19 cases in China right now is very low. I think China deliberately started everything in this game. A new world order is trying to be created.” (P4)*

When focus group interview findings are evaluated in general, the majority of the participants were undecided. Uncertainty about the vaccines, possible side effects, and feelings of insecurity were cited as sources of indecision. Participants who had positive opinions constituted approximately one-third of the participants. Participants in this group talked about the positive effects of the vaccine in regards to social, scientific and health aspects. Participants with negative opinions about the vaccine were in the minority. Two participants in this group believed that the process could be controlled with natural methods and this epidemic was a conspiracy to create a new world order.

Findings Regarding the Dilemma Card

There are eight options in the dilemma card. The first seven options are the statements created by the researcher. The 8th option (other) was included for participants who could not find a suitable option. Table 2 presents the general results obtained from the dilemma cards. The opinions of the participants regarding the vaccines were classified and tabulated.

Table 2. General Results Obtained from Dilemma Cards

Options	Opinions	Participants
1.Option	Negative	P ₁
2. Option	Negative	P ₄
3. Option	Positive	P ₂ , P ₉ , P ₁₁ , P ₁₈
4. Option	Positive	P ₁₇
5. Option	Undecided	P ₁₀
6. Option	Undecided	None
7. Option	Undecided	P ₃ , P ₇ , P ₈ , P ₁₃ , P ₁₄
8. Option	Undecided (Other)	P ₅ , P ₆ , P ₁₂ , P ₁₅ , P ₁₆

Table 2 shows that eleven participants were undecided about the vaccines, five had positive opinions and two had negative opinions. Findings obtained from the focus group interview and the dilemma cards were consistent. The dilemma cards allowed us to observe the choices of participants and their justifications. For example, participants who chose options 1 and 2 reported negative opinions about the vaccines. However, the starting points (reasons) of these opinions were found to differ. Based on this, options 1 and 2 indicated negative opinions; options 3 and 4 indicated positive opinions and options 5, 6 and 7 indicated indecision. Five participants who chose option 8 expressed vaccine hesitancy and stated that this was not a black and white issue, but contained gray areas. Thus, Option 8 can also be considered in the category of indecision. Nearly half of the participants selected options 7 and 8.

While filling out the dilemma card, participants were asked to present their arguments in written form and pay attention to the components of the argumentation process. After determining the general opinions of the participants through dilemma cards, the answers were analyzed in line with argument components. In this way, the views of the participants could be determined in detail and the quality of their arguments could be evaluated. Table 3 demonstrates the results of the argument components obtained through the dilemma cards.

Table 3. Components of the Arguments for and against the Vaccines

Participant	Claim	Evidence	Supporting	Rebuttal
P ₁	1	1	2	0
P ₂	2	2	2	2
P ₃	2	2	0	0
P ₄	2	2	1	1
P ₅	2	2	2	1
P ₆	2	2	2	1
P ₇	2	2	2	1
P ₈	2	1	1	0
P ₉	2	1	1	0
P ₁₀	2	1	2	1
P ₁₁	2	2	1	1
P ₁₂	2	1	1	2
P ₁₃	2	2	2	2
P ₁₄	2	2	1	2
P ₁₅	2	2	2	1
P ₁₆	2	2	2	0
P ₁₇	2	2	2	2
P ₁₈	2	2	1	1
Mean	35/18= 1,94	31/18=1,72	27/18=1,50	18/18=1,00

According to Table 3, participants were able to successfully put forward their claims by choosing one of the options in the dilemma card (Max point. 2, mean claim 1.94): *"I am undecided about the vaccines. There is currently an unknown side to this issue. Side effects are not mentioned. That's why I can't fully trust it. I also don't see it as a definitive solution. Other measures are as important as the vaccine."* (P15, Claim, 2 points)

The participants had a mean score of 1.72 (max. 2 points) while talking about evidence using the template:" because.....": *"I think we need to take precautions to avoid getting COVID-19 and infecting others."* (P1, Evidence, 1 point)

It can be said that participants who were asked to support their claims by making use of scientific data had lower means at this point and achieved partial success with a mean of 1.50: *"I do not support the vaccines. To people who claims the opposite, I would give the example that epidemics in the past disappeared by themselves. The disease disappears after companies sell their vaccines. Is this a coincidence?"* (P4, Supporting, 1 point)

It was determined that participants' partial success so far had decreased even further in the rebuttal portion, the last step of the argumentation process, and they were only able to make weak rebuttals with a mean of 1.0: *"I support the vaccines. But a friend who opposes the vaccines may confute me because, at the moment, we don't know the effectiveness of each vaccine. If the scientific data or the course of the epidemic changes, my opinion may change as well. If there are no visible positive effects (for example, if the number of cases does not drop), my opinion may change."* (P2, Rebuttal, 2 points) *"I trust science. Those with unfounded thoughts cannot refute me."* (P9, Rebuttal, 0 points)

Two general findings emerged when the findings were evaluated. First, the majority of participants were undecided about the COVID-19 vaccines. Second, participants were more successful in presenting their claims and evidence, and were moderately successful in presenting supporting opinions. It was also identified that the participants were weak in rebuttals.

DISCUSSION AND CONCLUSION

This study investigated the opinions, decisions and arguments of preservice science teachers about COVID-19 vaccines. Based on the results of the focus group interviews, the majority of the participants were undecided about the vaccines. There are studies with similar results (Edwards et al., 2021; Salali & Uysal, 2020). Positive participants stated that the vaccine would have positive effects

on social, health and scientific aspects. When the positive aspects were examined more in-depth, several key concepts emerged such as gaining herd immunity, relieving the health system, reducing the rate of disease and risk and relieving the society emerged. As a matter of fact, some researchers (Handebo et al., 2021; Salman et al., 2021) think like the participants in this study and believe that the vaccine is the most important factor that changes the epidemic process. In addition, the participants who expressed a positive opinion about the vaccine were around 27% (partially low) in this study. There are research findings in line with these results (Campo-Arias & Pedrozo-Pupo, 2021) in the literature, as well as research findings that argue the opposite (Saied et al., 2021). For example, a study conducted by Campo-Arias and Pedrozo-Pupo (2021) with university students in Colombia concluded that 79% of the participants distrusted the vaccine and 14% viewed it positively. Contrary to this, the study conducted by Saied et al. (2021) with university students in Egypt found that 90% of the participants viewed the vaccine positively. These differences in results may be related to participant profiles and the geography where the research was conducted. The large-scale study conducted by Sallam et al. (2022), which collected data from 114 different countries, reported that in addition to geographical factors; the media, trust in the government or even religious structure may be effective in making decisions about the COVID-19 vaccine.

Although some participants argued that people should be open to scientific developments and new technologies, it was also reported that ongoing uncertainty with continuing innovation and studies generated concerns. This concern or caution towards the vaccines may be related to the participant profile. Participants' perspectives on scientific developments are thought to be shaped by the "nature of science" course they took one year before this study. The course covered the principles that scientific knowledge progresses cumulatively and that science has a subjective nature; it is assumed participants knew these principles based on the principle that science knowledge can change over time. This can explain trust in science coexisting with concerns about new scientific information. It was found that the concerns of the undecided participants were also partially present in negative participants. Participants believed that the epidemic can be fought without vaccination if rules were followed. Erkekoğlu et al. (2020) reported results supporting this view and cited the reasons for vaccine hesitancy as the distrust for the content of the vaccine, being influenced by the statements of anti-vaccine opponents, and negative news in the media. Obtaining parallel results in a conducted with a large sample, Yılmaz et al. (2021) concluded that the participants distrusted the vaccine and vaccine companies and reported the reasons for vaccine hesitancy as not believing that the vaccine would protect them, experiencing fear, distrusting the vaccine because it is imported and waiting for the domestic vaccine. Similarly, Gök and Güzel Baydoğan (2022) concluded in their research that the most important factor causing vaccine hesitancy was related to the fear of side effects and believing that the vaccine was not protective. In addition to providing the reasons for vaccine hesitancy, this study also addressed conspiracy theories.

Although not high in number, some participants were found to believe in conspiracy theories. This was also confirmed in other studies (Douglas, 2021; Sarıbaş & Çetinkaya, 2021; Yılmaz et al., 2021). For example, the study conducted by Salman et al. (2021) with preservice teachers found that 70% of the participants believed that the COVID-19 virus was artificially produced. The same study reported the rate of vaccine acceptance as quite low. Similarly, the studies of Salali and Uysal (2020) reported that there is a segment of population (12%) in the UK who thought that the virus was produced artificially.

Based on the evaluation of the results of the first sub-goal in general, it can be stated that the participants were mostly undecided. It can be argued that vaccine acceptance by people is as important as the development of the vaccine in determining the progress of the epidemic. In other words, unity between science and society is the most important element in the process and it certainly ensures their safety as well.

Findings regarding the argumentation process were analyzed qualitatively in context of the second sub-goal (see Table 3). It was concluded that participants could not develop an argument paying attention to all the components of the process. It was observed that the participants in the

argumentation process were partially more successful in presenting claims and evidence; they were moderately successful in finding supporting ideas, and they were not very successful with rebuttals. The relevant studies in the literature reported that most individuals experienced difficulties in the rebuttal portion and could not utilize all components in the argumentation process (Cenk, 2020; Kuhn & Udell, 2007; Topçu, 2008). This finding may be associated with the fact that argumentation is a high-level intellectual mental skill. Therefore, argumentation skills may not be developed in all individuals. Türköz and Öztürk (2020) found that preservice science teachers could present their arguments on socio-scientific issues using simple claims and had difficulties in refuting arguments. Anisa et al. (2019) reported that rebuttal was a more complex skill because a high quality rebuttal required knowing all sub-components. Acquisition of argumentation skills may be considered difficult when the literature is considered. However, most researchers agreed that it is possible to develop. However, the findings of this study were worrying since they showed lack of argumentation skills in 4th year students. The fact that the argument components were not developed may be related to the content knowledge. Although no clear consensus was found in the literature, most studies reported a positive relationship between content knowledge and argument level (Cenk, 2020; Sampson & Clark, 2011). It is possible that participants experienced confusion due to ongoing vaccine studies and news reports. Thus, the results obtained in the first sub-goal may have affected the results of the second sub-goal. It is stated above that the participants experienced mental confusion or hesitancy as a result of being influenced by the discussions on the agenda. However, this has an advantage as well. The participants were observed to address the issue holistically (in regards to science, society, economy, health and ethics) in both the focus group interviews and the expressions on the dilemma cards. Türköz and Öztürk (2020) and Topçu (2008) describe this as an opportunity and emphasize that the multidimensional perspective of the participants on socio-scientific issues will be effective in decision making.

The focus group interview findings showed that the participants with positive and negative opinions about COVID-19 vaccines were in the minority and the undecided participants were in the majority. Positive participants expressed that the vaccines would offer a solution for the epidemic and that people should trust technology and science. Negative participants stated that other measures (social distancing, masks, hygiene) were as important as the vaccines and could be as protective. These participants also didn't disregard conspiracy theories. On the other hand, undecided participants stated that although they trusted science and technology, the uncertainties due to the ongoing studies and possible side effects were worrying and created distrust. The fact that the vaccines did not offer protection from the disease on their own and cannot offer a final end to the epidemic contributed to participants' indecisiveness.

RECOMMENDATIONS

The current study identified the opinions and decisions about epidemic vaccines first and then focused on the quality of the arguments in the decision-making process. However, since epidemic vaccines are a socio-scientific issue, it is possible to argue that they have complex and multifaceted dimensions. In this context, many factors (demographic, political, cultural, religious, ethical, etc.) that affect individuals' vaccine acceptance or vaccine refusal should be examined in depth. Hence, conducting further studies on this subject will be important and it is recommended to researchers to conduct studies on related themes.

The findings obtained from the dilemma cards are not satisfying. Since the study was conducted with a small study group, the results cannot be generalized. Therefore, two recommendations are given. First, argumentation skills can be examined with larger samples to carry out studies with high representativeness. Secondly, courses and activities to improve argumentation skills can be included in undergraduate programs in faculties of education to increase preservice teachers' quality of argumentation.

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Annex 1: Dilemma Card Used as Data Collection Tool

<p>Will the coronavirus vaccine bring back our previous life? WHO Director-General Tedros Ghebreyesus stated that “The vaccine will not replace our current measures, but will supplement them” adding that “Vaccines alone cannot end a epidemic. We need to continue monitoring, testing, follow-up, quarantine and precautions.”</p> <p>This disparity between the optimism of some of the public and politicians and the realism of scientists may be due to the inability to fully understand how difficult the task is to vaccinate sufficient number of people. What many of us don’t realize is that a large number of people are required to be vaccinated in order to truly protect everyone from diseases transmittable from human to human. This is the social dimension of this disease. There is also a medical dimension. For example, the efficiency rate of COVID-19 vaccines from Pfizer/BioNTech and Moderna has been announced as over 90 percent. We do not know whether this rate will decrease when the experimental conditions are over. This means that about one in 10 people who get vaccinated will continue to be unprotected against COVID -19.</p> <p>Taking into account that not everyone in the society will be vaccinated, the rate of people who are unprotected against COVID -19 will be more than 10 percent. (BBC, 11 December 2021)</p> <p>The news above points out the role of vaccines in the epidemic. From this point of view, what do you think about getting the COVID-19 vaccine?</p>	<p>I do not want to be vaccinated. When I take care of my health and follow the rules, I am already protected.</p> <p>I do not want to be vaccinated. Vaccine is one of the reflections of the capitalist regime. I wouldn’t be a pawn in this game. The people who presented the virus and the vaccine are the same people.</p> <p>I would like to be vaccinated. The vaccine will strengthen my immunity against a deadly disease.</p> <p>I would like to be vaccinated. It is necessary to be open to innovations in science and technology.</p> <p>I am undecided. I believe and trust that scientists work in good faith, but I can’t look kindly upon the vaccines due to the new technology.</p> <p>I am undecided. Maybe I will never get sick. Getting vaccinated for a possible condition doesn't seem very appropriate.</p> <p>I am undecided. I believe that the vaccine alone will not be enough and I do not lean towards it. However, their protective aspect makes me look at the vaccines favorably.</p> <p>Other.....</p>
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I choose option

Evidence

Supporting evidence

Rebuttal.....

The Effect of Activities Based on Interaction With Turkish Peers on the Acculturative Stress Levels of Migrant Preservice Teachers*

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Abstract

This study had two objectives: (1) allowing migrant preservice teachers to interact with their Turkish peers to help them gain pre-professional experiences and (2) using interactive activities to reduce migrant preservice teachers' acculturative stress levels. The study adopted a mixed-method research design (quantitative and qualitative). Participants attended eight weeks of interactive activity workshops on migration (intervention). The quantitative part adopted a pretest-posttest pre-experimental design. The qualitative part adopted a case study. Data were collected using activity evaluation forms, semi-structured interviews, and the Acculturative Stress Scale (ASS). The sample consisted of 11 migrant students from the education faculty of Ondokuz Mayıs University. The quantitative data were analyzed using descriptive statistics, dependent-groups t-test, and Wilcoxon signed-rank test. The quantitative data were analyzed using descriptive analysis. The quantitative data showed that participants had a lower mean posttest ASS subscale score than the pretest score. They also had a significantly lower mean posttest ASS "social isolation" and "perceived discrimination" subscale score than the pretest score. Participants stated that the intervention helped them value and socialize with people more. We think that our results will guide authorities in developing activities to help migrant preservice teachers cope with cultural adaptation and student-related problems.

Keywords: Migrant, Preservice Teacher, Acculturation, Acculturative Stress.

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INTRODUCTION

Intercultural communication, which is on the rise due to globalization and population movements, makes the concept of “intercultural tolerance” more relevant today than ever. Intercultural tolerance is defined as the propensity toward accepting other cultures without bias. Teachers play a key role in turning children into people who respect and cherish other cultures without prejudice and discrimination (Meyer, Sherman & Makinster, 2004). However, teachers should be interculturally tolerant and positively inclined towards intercultural experiences before they can help their students acquire those qualities (Boran & Arcagök, 2017). Universities are culturally diverse environments where students meet new people from different socio-cultural backgrounds, helping them overcome prejudices (Gürsoy, 2018). Moreover, students attend seminars and conferences and do internships, which also helps them interact with people from different socio-cultural backgrounds and get to know them well. These activities turn them into open-minded individuals who understand and respect cultural differences (Kaya, 2019). No matter how they end up in another country, all migrant students should be supported and accepted. Teachers play a vital role in this process. Migrant students supported by their teachers are more likely to overcome language barriers, adapt to school quickly, and interact with the host society more effectively (Atlıhan, 2019).

Immigrants are people who leave their country of origin to settle in another country permanently. Refugees are people who have been forced to flee their home country because of war, conflict, persecution, violence, or socioeconomic problems (Aslan, 2015; Harrell-Bond, 2000; Roxas, 2010; Şeker & Pynoos, Kinzie & Gordon, 2001). There are different types of immigrants: (1) foreigners who move to another country for tourism, health, and education purposes, (2) foreign entrepreneurs and workers, (3) legal foreigners who consider settling in another country, (4) illegal aliens who move to another country illegally, and (5) refugees (Akıncı, Nergiz & Gedik, 2015). According to the Turkish Statistical Institute (TSI, 2019), 677 thousand 42 people migrated to Turkey in 2019. However, Turkey has received millions of refugees from Syria since the war broke out in 2011 (Ereş, 2015). The number of international students in higher education institutions increased from 185,047 to 224,048 in 2021, 21% compared to the previous year (Sağıroğlu, Ünsal & Özenci, 2022).

Migrants need to adapt to a culture and language largely foreign to them. One of the most critical factors that may arise in this process is acculturative stress. Acculturative stress, expressed as the physical and psychological reaction of the individual to a new culture, is also one of the situations expected to affect the whole of life (Bekteshi ve Kang, 2020). School is the best place for migrants to learn the host language and adapt to the host culture. Migrant students who feel safe and confident are more likely to go through the adaptation process. Schools should be safe places where students can solve their problems (Şimşek & Kula, 2018). Therefore, both undergraduate education and in-service training should encourage students to communicate with those from other cultures (Esen, 2009; Sakız, 2016; Akman, 2020). Students who graduate with intercultural communication skills can solve problems that arise from cultural differences in their classrooms. Teachers who do not know how to deal with cultural differences face various problems. Therefore, teachers with intercultural communication skills are more likely to develop positive attitudes toward migrant students. Teachers should adopt multicultural education approaches to create a conflict-free school environment for migrant students (Akman, 2020). Migrant students have difficulty adapting to school due to language and cultural differences. Although they get along well with their classmates, they face problems due to cultural differences (Erdem, 2017; Yıldız, 2018; Çevik Kansu, 2019). Teachers should help migrant students adapt to the host culture and interact effectively with their classmates (Kardeş ve Akman, 2022). Although migration is a current issue, undergraduate curricula do not address it adequately. Therefore, this study aimed to raise public awareness of migration.

Arslan and Uslu (2020) found that almost half the migrant students understood some of their courses (46%), whereas a quarter understood the courses well (26%). However, less than a quarter of the migrant students had difficulty understanding the courses (13%), while less than a quarter understood the courses but could not perform well in exams. The researchers aimed to enable migrant

students to create an environment where they could get help by becoming sociable and help them face the problems they might experience in communicating with their students. Undergraduate students from different countries experience loneliness, incompatibility, shyness, and cultural shock. Therefore, we recruited migrant students with very few Turkish friends.

There is a large body of research on the adaptation process that migrant college students go through. Researchers have focused on socio-cultural problems (Bigss, 1999; Karaoğlu, 2007; Pirliyev, 2010; Üstün, 2011; Özçetin, 2013; Çevik-Kansu, 2019), academic problems (Allaberdiyev, 2007; Şahin & Demirtaş, 2014), language problems (Açık, 2008; Özyürek, 2009; Derman, 2010; Topsakal, Merey & Keçe, 2013), housing problems (Kıroğlu, Kesten & Elma, 2010; Dzansi & Mapesela, 2012), and economic problems (Sherry, Thomas & Chui, 2009; Perşembe, 2010; Malaklolunthu & Selan, 2011; Dzansi & Mapesela, 2012; Kılıçlar, Sarı & Seçilmiş, 2012). Some researchers have also investigated how satisfied migrant students are with college education (Karadağ & Yücel, 2017; Altunbaş, 2020; Koyuncu & Güneş, 2020).

These studies are primarily descriptive studies focusing on problems faced by migrant students. However, the present study adopted a mixed-method research design (quantitative and qualitative) to better understand the effect of interactive activities on acculturative stress in migrant preservice teachers. Despite two facts, there is limited research on migrant primary school students and teachers. First, there is a high number of migrant primary school students. Second, the teachers of migrant primary school students face numerous challenges. Preservice teachers can overcome those challenges before starting their profession or even during their undergraduate education. However, colleges do not offer undergraduate courses on migrant students and their education. Therefore, we think the activities prepared and implemented in this study will be exemplary. The goal was to allow migrant preservice teachers and peer Turkish preservice teachers to interact during workshops and find solutions to the challenges of the pre-professional adaptation process.

Purpose of the research

This study aimed to enable immigrant teacher candidates to gain pre-professional experiences by interacting with their Turkish peers and reduce their acculturative stress levels. Pre-service teachers should be able to cope with the problems of cultural differences experienced by immigrant and immigrant students. This project aims to bring migrant pre-service teachers together with their peers (Turkish pre-service teachers) to make them feel what they are going through, to develop their feelings of empathy and to gain experience on how they can guide their students as a pre-service teacher in solving this current problem. The following are research questions:

1. Is there a significant difference between the pretest and posttest acculturative stress levels scores?
2. What do participants think about the interactive activities?
3. What do participants think are the contributions of the interactive activities?

METHOD

This study adopted the exploratory sequential-mixed method design. In the first stage, quantitative data are collected and analyzed. In the second stage, qualitative data are included (Creswell, 2014, p.79). This study also had two stages: quantitative and qualitative. The quantitative stage adopted a pretest-posttest pre-experimental design. The qualitative stage adopted a case-study design. Researchers who adopt experimental designs can manipulate independent variables and establish cause-effect relationships by comparing scores. A pre-experimental design is a one-group pretest-posttest design with no random assignment and no control group (Büyüköztürk et al., 2013). In the study, the level of acculturative stress for migrant preservice teachers was taken as the dependent variable and the effect of the education given on this variable was examined. A case study is a research

approach used to generate an in-depth and multi-faceted understanding of a complex issue in its real-life context (Ozan Leymun, Odabaşı & Kabakçı Yurdakul, 2017). Researchers can employ a case study to explore individual, societal, and political situations and acquire more comprehensive data than other techniques (Yin, 2003).

Participants

Since the research was carried out as a project, the researchers made an announcement within the scope of the faculty for the prospective teachers who wanted to participate in the training to apply. Then, candidates who applied to this post voluntarily were determined. Participants were recruited using criterion sampling. During the application, students were administered the pretests [Acculturative Stress Scale (ASS)] and were interviewed (semi-structured interview form). The sample consisted of 16 students (preservice teachers) who received the highest ASS scores and had very few to no Turkish friends. However, five students were excluded from the study because they started working or had to work part-time during the first two weeks of the intervention. Therefore, the final sample consisted of 11 students. Table 1 shows all participants' sociodemographic characteristics.

Table 1. Sociodemographic Characteristics

Major		Classroom Teaching		Guidance and Psychological Counseling		Special Education Teaching		Science Teaching		Social Science Teaching		Preschool Teaching		Total	
		f	%	f	%	f	%	f	%	f	%	f	%	f	%
Gender	Woman	4	36.36	1	9.09	-	-	-	-	1	9.09	1	9.09	7	63.63
	Man	2	18.18	-	-	1	9.09	1	9.09	-	-	-	-	4	36.37
Grade level (year)	2	4	36.36	1	9.09	-	-	-	-	1	9.09	1	9.09	7	63.63
	4	2	18.18	-	-	1	9.09	1	9.09	-	-	-	-	4	36.36

All of the migrant preservice teachers aged between 20 and 34 have not seen their families for a long time due to the pandemic. Seven participants had Turkish friends but had not previously attended any projects with Turkish peers.

Data Collection Tools

The semi-structured interview questionnaire was based on expert feedback. It consisted of open-ended questions on the meaning of the word "migrant," possible intercultural problems, recommendations for activities on migration and migrants, and the contributions of the intervention.

The Acculturative Stress Scale (ASS) was developed by Bai (2012) and adapted into Turkish by Akdağ and Koçak (2020). The scale consists of 32 items and five subscales: inadequacy (ten items), social isolation (eight items), perceived discrimination (seven items), academic pressure (four items), and guilt towards the family (three items). The items are rated on a five-point Likert-type scale ("1=Never" to "5=Always"). Higher scores indicate higher acculturative stress levels. In the present study, the scale had a Cronbach's alpha of 0.95.

The participants, the project manager, and the research students filled out the activity evaluation form at the end of the activities. The form consisted of questions on what participants learned from the activities that week, how they performed in the activities, whether they had any difficulty, and how they could go over what they learned. The researcher also took notes and photographs to analyze student interaction more deeply.

Limitations

This study was produced from the project carried out within the scope of TÜBİTAK 2020/2, 2209-A University Students Research Projects Support Program. Only the data of migrant preservice teachers who participated in the activities in the project during the process were included in the study.

Data Collection and Analysis

Participants were interviewed and administered the pretest before the intervention. They were interviewed and administered the posttest after the intervention. Two scores were compared to determine the effect of the intervention on participants' acculturative stress levels. The quantitative data were analyzed together with the qualitative data to determine whether they supported each other. The quantitative data were analyzed using nonparametric tests on a statistical package program. The qualitative data were analyzed using descriptive analysis. Direct quotes provided an accurate and coherent picture of participants' views.

The skewness, kurtosis coefficients, and Kolmogorov-Smirnov/Shapiro Wilk values were used for normality testing. Table 2 shows the results.

Table 2. Skewness and Kurtosis coefficients and Kolmogorov-Smirnov/Shapiro Wilk Values

Acculturative Stress Scale (ASS)		Skewness	Kurtosis	Kolmogorov-Smirnov	Shapiro-Wilk
Language inadequacy	Pretest	.780	-1.043	.107	.052
	Posttest	.691	-.345	.200	.407
Social isolation	Pretest	.854	.107	.200	.315
	Posttest	.282	-.717	.200	.958
Perceived discrimination	Pretest	1.753	3.893	.096	.023
	Posttest	-.140	-.789	.200	.495
Academic pressure	Pretest	.193	-1.691	.200	.152
	Posttest	.178	-1.102	.200	.388
Guilt towards the family	Pretest	.395	-.133	.200	.975
	Posttest	-.427	.266	.200	.880
Total	Pretest	1.054	.306	.115	.108
	Posttest	-.046	-1.078	.200	.676

The Shapiro Wilk values were greater than .05 for two reasons. First, the skewness and kurtosis coefficients were between -2 and +2. Second, the sample was smaller than 30. Therefore, all but the third ASS subscale scores were normally distributed (Table 2).

Intervention

The intervention (workshops) lasted eight weeks. Participants attended the workshops for 3-4 hours every week. Participants took the pretest and posttest. They were also asked to describe what they learned from the workshops. Their views were noted and video-recorded. A literature review was conducted to determine the key points regarding migration. The intervention involved different methods and techniques (drama, educational game, drawing, demonstration, question and answer, discussion, STEM+A, improvisation, exhibition) to help participants develop 21st-century skills.

The intervention was applied for eight weeks after setting an appropriate day and hour. At the end of the intervention, participants were given certificates of participation. The project team and volunteers who supported the intervention received certificates of appreciation. The products developed by all participants were exhibited at the end of the intervention. Moreover, a primary school was visited, and cloth dolls made during the intervention were given to the migrant students as gifts.

The workshops' activities, interview forms and activity evaluation forms were prepared by taking the opinions of 1 assessment and evaluation expert, 1 program development expert, 1 classroom

education expert and 3 teachers. Experts were consulted prior to the intervention. The workshops and assessment forms were revised based on expert feedback. The activities were reviewed each week and performed with a sufficient number of consumables purchased based on the budget.

FINDINGS

This section addressed the results. First, the quantitative data were presented. Second, the qualitative data were presented. Third, the activity evaluation forms and records were analyzed.

Quantitative Findings

The descriptive and scale findings were presented, respectively.

Pretest and Posttest Acculturative Stress Scale Scores

This section presented the pretest and posttest ASS scores and related findings.

Table 3. Pretest and Posttest Acculturative Stress Scale Scores

Scale	Pretest					Posttest			
	n	\bar{x}	S	Median	Level	\bar{x}	S	Median	Level
Language inadequacy	11	2.71	1.34	2.20	Moderate	2.31	.98	2.10	Rarely
Social isolation	11	2.63	.89	2.50	Moderate	2.01	.69	2.00	Rarely
Perceived discrimination	11	2.87	.84	2.57	Moderate	2.06	.74	2.14	Rarely
Academic pressure	11	3.31	.88	3.25	Moderate	2.93	1.20	2.75	Moderate
Guilt towards the family	11	3.33	.88	3.33	Moderate	2.84	.95	3.00	Moderate
Total	11	2.86	.89	2.43	Moderate	2.31	.71	2.18	Rarely

The results showed that participants had a lower posttest mean ASS score than the pretest score, suggesting that the intervention reduced their acculturative stress levels.

Findings regarding Pretest and Posttest Scale Scores

Participants' pretest and posttest scale scores were analyzed using the Wilcoxon signed ranks test. Table 4 shows the results.

Table 4. Wilcoxon Signed Ranks Test Results

Scale	Posttest-pretest	n	Mean rank	Sum of ranks	Z	p	Sig.	r
Language inadequacy	Negative ranks	7	6.57	46	-1.15	.247	Insignificant	-
	Positive ranks	4	5.00	20				
	Ties	0						
Social isolation	Negative ranks	8	7.38	59	-2.32	.020	Significant	-0.70
	Positive ranks	3	2.33	7				
	Ties	0						
Perceived discrimination	Negative ranks	8	6.13	49	-2.19	.028	Significant	-0.66
	Positive ranks	2	3.00	6				
	Ties	1						
Academic pressure	Negative ranks	6	5.33	32	-1.13	.256	Insignificant	-
	Positive ranks	3	4.33	13				
	Ties	2						
Guilt towards the family	Negative ranks	7	6.71	47	-1.25	.208	Insignificant	-
	Positive ranks	4	4.75	19				
	Ties	0						
Total	Negative ranks	8	6.75	54	-1.86	.062	Insignificant	-
	Positive ranks	3	4.00	12				
	Ties	0						

Participants had a significantly lower mean posttest ASS “social isolation” ($Z=-2.32$ $p=.020$; $p<.05$, $r=.70$) and “perceived discrimination” ($Z=-2.19$, $p=.028$; $p<.05$, $r=.66$) subscale score than the pretest score. This result showed that the intervention helped participants become less socially isolated and reduced their perceived discrimination against other cultures.

Findings regarding Qualitative Data

This section presented the findings regarding the activity evaluation forms and interviews.

Findings regarding the First Week of the Intervention

Table 5 shows the participants’ views on the contributions of the first week of the intervention.

Table 5. Participants’ Views on the Contributions of the First Week of the Intervention

f	Participants’ Views	Quotes
8	Making new friends	“I’ve learned what friendship is and what it’s like to be together.” (P10) “I’ve learned how to be happy about the little things in life, and I’ve learned that what matters is to be together, no matter where you’re from. I’ve learned how to enjoy things together, and that communication is pleasing when there is mutual love and respect. I’ve also learned to laugh no matter the situation.” (P4)
7	Professional competence	“The workshops have made me realize that everybody loves their childhood. Toys play a key role in child development. Games are a way of teaching things. Everybody has a little child in them. You can see that little child with love.” (P3) “If I were a teacher, I would use these activities because they’ve made me realize that getting foreign students all together is a great activity.” (P10) “I’ll be a classroom teacher. I would like to do these activities with my students.” (P11)
7	Creativity	“It was so much fun, but I’ve realized I’m not that creative. It was at the last moment that I could think of what to do with the Legos. It was all great. I will work hard to be creative. Hopefully. I’d never played such games before. I can say that I participated in all of them, and I enjoyed them all.” (P6)

In general, participants liked the first week of the intervention. Most participants stated that the activities made them feel at home and helped them make new friends. They noted that the activities stimulated their creativity and encouraged them to develop professional skills. They added that they would like to provide their students with similar activities in their lectures when they start their careers as teachers.

Findings regarding the Second Week of the Intervention

Table 6 shows the participants’ views on the contributions of the second week of the intervention.

Table 6. Participants’ Views on the Contributions of the Second Week of the Intervention

f	Participants’ Views	Quotes
6	Creativity	“We’ve learned about paper marbling and ceramics. The intervention allowed us to develop creative thinking skills and come up with original work of arts.” (P9) “Manual skills and imagination, I mean, the intervention helped me develop manual skills and boosted my imagination because I was supposed to come up with something in a certain period.” (P2)
4	Professional competence	“I wanted to use the clay to create what I had in mind. I made a cactus out of the clay. I’ve always wanted to give it a try; I mean; I’ve watched a lot of videos on the Internet. But this workshop gave me the opportunity. I would like to thank you for that. Besides, things got easier thanks to those who walked us through things.” (P11) “With ceramics, I can do fun things for my students, also with the clay. I did it in two activities. I made a man, roses, and a bear.” (P10)

2	Cooperation	“It was the first time I made paper marbling. A friend of mine helped me with it. I enjoyed it a lot.” (P7) “The project team consisted of older students, so there’s a lot I’m gonna learn from them.” (P4)
1	Sociability	“I learned a lot about clay, and friends helped me with it. I would like to thank them. The video about paper marbling was very instructive.” (P5)

In general, participants liked the second week of the intervention. Most participants stated that the intervention helped them develop professional, collaboration, and social skills.

Findings regarding the Third Week of the Intervention

Table 7 shows the participants’ views on the contributions of the third week of the intervention.

Table 7. Participants’ Views on the Contributions of the Third Week of the Intervention

f	Participants’ Views	Quotes
3	Professional competence	“I’ve learned how to use materials, write stories, and put them on stage. The intervention also helped me develop manual skills.” (P2) “I’ve learned how to write stories, and I’ve learned about drama.” (P11) “I’ve learned how to act and perform.” (P7)
3	Cooperation	“Now I know that cooperation is very important because we got to do many activities together.” (P2) “I’ve learned some stuff, like making paper planes. I did it with a friend. He is from a different country. We met and worked together.” (P7)
2	Sociability	“We came together and came up with a story, which helped me express myself.” (P5) “I’ve learned about friendship.” (P3)
2	Creativity	“I’ve learned how to act and use my imagination.” (P2) “I’ve learned how to turn my imagination into reality by making paper planes.” (P5)

In general, participants liked the third week of the intervention. Most participants noted that the intervention helped them develop professional and cooperation skills. They also added that the intervention made them more sociable and creative.

Findings regarding the Fourth Week of the Intervention

Table 8 shows the participants’ views on the contributions of the fourth week of the intervention.

Table 8. Participants’ Views on the Contributions of the Fourth Week of the Intervention

f	Participants’ Views	Quotes
8	Professional competence	“I’ve learned how to dance <i>zeybek</i> and <i>halay</i> . I’ve also learned about the origin of different kinds of <i>halay</i> . Now I know a lot about Turkish culture.” (P5) “Today, I’ve learned about Turkish <i>zeybek</i> and <i>dabke</i> . At first, they were hard, but they got easier with practice. I want my students to do the same activities because they’re so much fun.” (P7)
5	Sociability	“The workshop’s taught me the importance of friendship and culture.” (P10) “I’ve got dance skills and learned more about culture.” (P2) “I’ve learned the importance of folk dances for society.” (P3)

In general, participants liked the fourth week of the intervention. Most participants stated that the intervention helped them develop professional and social skills.

Findings regarding the Fifth Week of the Intervention

Table 9 shows the participants’ views on the contributions of the fifth week of the intervention.

Table 9. Participants' Views on the Contributions of the Fifth Week of the Intervention

f	Participants' Views	Quotes
6	Sociability	<p>"I've learned what it's like to think like a human being. I've learned about love and humanity and how to put them into practice." (P11)</p> <p>"The workshop allowed me to socialize with people from different cultures." (P3)</p> <p>"I've learned how to socialize and express myself." (P9)</p> <p>"The workshop has helped me realize that our race or where we come from is not important. I've also learned that we're one big family and that we can get altogether and make common decisions." (P1)</p>
3	Respecting differences	<p>"The workshop's taught me that we shouldn't discriminate against people because of their differences." (P3)</p> <p>"I've learned the names and characteristics of different countries, and I've also learned that no matter where we're from, we're all humans with the same wants and needs." (P1)</p>
3	Professional competence	<p>"The workshop has taught me the importance of freedom. I've also learned how to use drawings to teach things to children. I think that we should use objects to teach what we need to teach our students." (P10)</p> <p>"I've learned how to solve puzzles and play group games." (P7)</p>
1	Cooperation	"I think that the workshop has taught me how to work in groups, boosted my imagination, and helped me develop communication skills." (P2)
1	Empathy	"Working in groups. I've realized that migrant students need attention and help." (P6)

In general, participants liked the fifth week of the intervention. Most participants stated that the intervention made them more sociable and taught them to respect differences. They also noted that the intervention helped them develop professional, cooperation, and empathy skills.

Findings regarding the Sixth Week of the Intervention

Table 10 shows the participants' views on the contributions of the sixth week of the intervention.

Table 10. Participants' Views on the Contributions of the Sixth Week of the Intervention

f	Participants' Views	Quotes
4	Professional competence	<p>"I've learned how to play group games, like 'find your home.'" (P9)</p> <p>"I've learned about the existence of projects like PIKTES (Promoting Integration of Syrian Kids into the Education System) and the studies carried out in Turkey." (P3)</p> <p>"I've learned a lot about migration. I've learned what Turkey has been doing about migration, migrants, and refugees." (P8)</p> <p>"I've learned how Turkey has been helping out migrants and refugees, and I've learned all about the ongoing projects. I've realized that some things I thought were right are actually wrong." (P6)</p>
3	Sociability	<p>"I've appreciated humanity once again." (P9)</p> <p>"I can't speak much because of the language barrier, but it's getting much easier as I spend more time with people from different cultures." (P11)</p>
1	Importance of family	"I've realized that family matters a lot. The workshop has made me think that the things I dream about will come true one day" (P10)
1	Empathy	"I've learned that I shouldn't hurt people's feelings for nothing" (P4)

In general, participants liked the sixth week of the intervention. Most participants stated that the workshop helped them develop professional and social skills. They also noted that the intervention made them realize the importance of family and empathy.

Findings regarding the Seventh Week of the Intervention

Table 11 shows the participants' views on the contributions of the seventh week of the intervention.

Table 11. Participants' Views on the Contributions of the Seventh Week of the Intervention

f	Participants' Views	Quotes
9	Professional competence	"I think I can get my students to draw pictures to help them express themselves." (P10) "I've learned how to make a kite. I can teach that to my students, too." (P3) "I've developed some professional skills like I've learned how to draw pictures, make a kite, and work in groups." (P2) "It'd been so long since I did activities where I could share my stories with my peers. I believe that I can get my students to find pen pals." (P7)
4	Cooperation	"The workshop's taught me the importance of cooperative learning." (P9) "I've learned how to cooperate with others and work in groups. The workshop has also helped me develop manual skills." (P2) "We can cooperate in any shape and form. There is neither language nor cultural barriers between us." (P7)
1	Sociability	"The workshop reminded me of my childhood and the times when I used to dream about things. It's not easy for me to talk to a stranger about myself, but I've realized that it made me feel good writing a letter to a friend of mine. I mean, writing down my dreams in letters, talking about my family to strangers, and finding out about their dreams is like a whole different dimension of friendship." (P1)

In general, participants liked the seventh week of the intervention. Most participants stated that the workshop helped them develop professional and cooperation skills. They also noted that the intervention made them more creative and sociable.

Findings regarding the Eighth Week of the Intervention

Table 12 shows the participants' views on the contributions of the eighth week of the intervention.

Table 12. Participants' Views on the Contributions of the Eighth Week of the Intervention

f	Participants' Views	Quotes
6	Professional competence	"I've learned how to make baby dolls and fix hair." (P5) "I've learned how to make toys. I think I'll teach it to my students and children, too." (P3) "I've learned how to make toys, like all stages of it. It was the first time I used a thread and a needle to make a toy." (P2) "I've developed manual skills. The workshop was an exemplary activity that could help children develop manual skills." (P9)
5	Sociability	"The workshop made me happy and felt like I just can do anything I set my mind to." (P10) "Today was pretty different. Our teachers also participated in the activities. I am happy that the children will get the dolls we made during the activities. We socialized and mingled and became friends. We had so much fun. Most importantly, we were on a project. I hope we'll get to participate in similar projects." (P4) "I would like to participate in similar projects in the future. I would like to contribute to them. I'm happy I attended this project, which was very motivating." (P6) "I've made new friends, which has made me so happy." (P8)
3	Cooperation	"I've learned how to cooperate with others." (P2) "I've learned that helping each other and doing things I like make me happy." (P10) "We made baby dolls together." (P8)
2	Creativity	"I've discovered the power of imagination and creative thinking." (P2) "The workshop has taught me to be brave and confident, to think about creativity. I will work harder to improve myself in that respect." (P6)

In general, participants liked the eighth week of the intervention. Most participants stated that the workshop helped them develop professional, cooperation, and social skills. They also noted that the intervention made them more creative. This may be because the types of activities included in the 8-week practices both cooperate with Turkish preservice teachers and that the activities are mostly carried out as group work.

Interview Findings

Participants were asked what the word “migrant” made them feel. Table 13 shows the results.

Table 13. Participants’ Feelings of the Word “Migrant”

f	Participants’ Feelings	Quotes
3	Those who leave their homeland	“A migrant is a person who moves from one place to another for a certain reason.” (P1) “A migrant is a person who has to leave their country for problems and special situations. A migrant is a person who is forced to leave their homeland.” (P4) A migrant is a person who is forced to leave their homeland. Someone who moved from their country to here.” (P6)
3	Guest	“Being a nomadic, a student.” (P3) “It reminds me that I’m a guest.” (P5) “It’d be more reasonable to use the word ‘guest’ instead of the word ‘migrant.’ A migrant is someone who has been excluded.” (P9)
2	Stranger	“Statelessness, foreign land.” (P2) “It reminds me that I’m a stranger.” (P5)
1	Cultural change	“I feel lucky because I get to learn about new cultures and customs.” (P10)
1	Friendship	Migrants are people who come from different cultures and geographies. It makes me think about good friendships and fraternity.” (P10)
1	Weakness	“The word ‘migrant’ makes me feel weak and needy.” (P7)
2	Other	“The word ‘migrant’ doesn’t make me feel good. It makes me feel weird.” (P8) “The word ‘migrant’ makes me feel bad, very sad.” (P11)

Most participants stated that they longed for their families. Most participants had to leave their homeland for various reasons and study abroad. Some participants noted that leaving their homeland adversely affected their interpersonal relationships, while others remarked that living in a different country improved their lives.

Participants were asked what the word “Turkish” made them feel. Table 14 shows the results

Table 14. Participants’ Feelings of the Word “Turkish”

f	Participants’ Feelings	Quotes
	Power	“Powerful, disciplined, conventional...” (P1) A free country. It’s like my own country because I’m originally from Turkmenistan.” (P6) “It reminds me of the actual Turkishness. Spiritual values.” (P9)
	Pride	“I’m a Turkman, too, and I’m proud of being a Turk. I’m a Turkman, too. I’m proud of that word. We have a glorious history.” (P4)
	Nation	“A unity of a nation” (P2) “A nation” (P3)
	Hospitality	“A hospitable country” (P3)
	Trust	“To me, the word ‘Turkish’ means trust, helping those in need, and brothers of the desolate.” (P7) “To me, the word “Turkish” means love and trust.” (P8)
	Cooperation	“Brotherhood, cooperation” (P2)
	Unity	Unity, togetherness, and peace make you feel every possibility of learning about life. The word ‘Turkish’ means a state. (P10)
2	Other	“The word ‘Turkish’ makes me feel like I don’t belong to it.” (P5)

Most participants stated that they liked Turkey and the Turkish people because they were originally from Turkic Republics. Most participants noted that the word “Turkish” made them feel happy.

Participants were asked what problems they thought might arise between two people from different countries. Table 15 shows the results.

Table 15. Participants' Views of Possible Problems between Two People from Different Countries

f	Possible problems	Quotes
12	Culture	"There may be a cultural problem." (P1) "I think that when two people from different countries come together, they may sometimes argue and misunderstand each other because they have different traditions." (P7) "At first, there may be some problems because of cultural differences." (P8) "There may be some conflicts at first, but they can overcome them with time." (P9) "Cultural differences may cause problems from time to time." (P2) "Cultural differences, like food culture." (P4) "Cultural differences" (P6)
10	Language	"There may be language problems because they don't know each other's language. So, only language problems" (P6) "There may be language problems." (P1) "Language problems" (P2) "Language problems" (P4) "Some language problems and some anxiety. I mean, language and speaking" (P10) "I'm shy when it comes to talking to Turkish people, so, I can't speak Turkish well. It's the language barrier; that's the cause of all problems. (P11) "Language problems" (P5) "There may be some language problems at first, but they can overcome them with time." (P9)
1	Communication	"Communication problems because it's not their mother tongue, so they can't express themselves properly" (P5) "They may have difficulty meeting and getting to know each other." (P3)
1	Alienation	"Alienation" (P3)
3	None	"I don't think they'll have any problems. There are many cultural similarities." (P8)

Participants stated that they had at least one migrant student in their classrooms. They noted that those migrant students got along well with teachers and Turkish and other migrant classmates. However, they remarked that they had been unable to socialize with Turkish peers for three semesters due to distance learning introduced as a response to the COVID-19 pandemic. For participants, the greatest challenge was language and communication. In this context, they were asked what should be done to help them improve their relationships with Turkish peers. Table 16 shows the results.

Table 16. Participants' Recommendations

f	Recommendations	Quotes
6	Orientation activities	"Universities should offer orientation activities about countries, cultures, languages, and education." (P4) "Students should be encouraged to share their cultures and traditions." (P7) "There should be activities on cultural differences. I think that such activities are important for acculturation." (P2) "There should be activities where students meet and get to know one another. (P3) There should be activities where students get to know one another. (P5)
4	Projects	"Group activities. Universities should offer projects to help migrant students feel welcome and make sure that they don't feel excluded. It could be picnics, going out, taking walks on the beach, etc." (P6) "Universities should offer projects where students work in groups on different subjects. There should be trips, group games, and activities that would strengthen communication." (P9) "Projects have a great impact on such situations. There should be like free-style things, like activities and training programs." (P4) "Universities should offer different types of projects like the TUBITAK project, like trips, activities, and competitions." (P8)
2	Courses	"Universities should provide migrant students with courses to help them develop academic skills. They should provide them with different activities and programs." (P1) "Course-related activities" (P3)
1	Professional activities	"I wanna speak for my department. It should provide attractive materials or mock-ups to migrant students to motivate them." (P10)
1	Other	"I would like to thank you. I suggest that universities offer projects, such as the one we've participated in." (P2)

Participants recommended that universities offer projects and activities to reduce migrant students' acculturative stress levels. They noted that such activities could help them develop communication and adaptation skills. Participants were asked what the intervention contributed to them. Table 17 shows the results.

Table 17. Participants' Views of the Contribution of the Intervention

f	Contribution	Quotes
6	Sociability	<p>"The intervention has taught us that we can be friends even though we're from different countries" (P1)</p> <p>"I've learned about Turkish culture and the cultures of other countries. I've realized that I can make friends with people from other countries" (P2)</p> <p>"The workshop's allowed me to make new friends and socialize with them. (P3)</p> <p>"More than I can count...because the intervention has had numerous contributions, like communication, culture, getting to know others, social activities..."(P6)</p> <p>"Most importantly, the workshop's taught me the importance of friendship and making new friends." (P10)</p> <p>"I've made new friends and socialized with them." (P11)</p>
4	Human value	<p>"The workshop's helped me learn that we're all human beings, regardless of color, age, and race, and that we can love one another and become friends because we're all human beings. The most important thing is love." (P4)</p> <p>"I've learned to look into the concept of 'human.'" (P5)</p> <p>"I've learned the value of humanity and that getting to know people from different cultures is important. (P9)</p> <p>"The workshop's helped me develop a different perspective." (P8)</p>
1	Other	<p>"The workshop's made significant contributions, like language skills and getting to know different cultures." (P11)</p>

Participants stated that the intervention helped them appreciate humanity and respect differences. They noted that the intervention helped them develop social and language skills and get to know people from different cultures. The photographs and video records supported the participants' statements as they treated each other with respect, love, and understanding.

CONCLUSION, DISCUSSION, AND RECOMMENDATIONS

Every year, more and more international students prefer to study in Turkey (Mete & Özgenel, 2021; Yılmaz, 2018; Yılmaz & Güçlü, 2021; YÖK, 2020). Therefore, it is necessary to reduce migrant preservice teachers' acculturative stress levels before entering the profession. This study provided an intervention involving interactive activities and workshops.

Acculturative stress affects how migrant preservice teachers, especially international students, adapt to the host culture. Our participants had a lower mean posttest ASS score than the pretest score, suggesting that the intervention reduced their acculturative stress levels. Participants also had a significantly lower mean posttest ASS "social isolation" and "perceived discrimination" subscale score than the pretest score. However, there was no significant difference between the pretest and posttest ASS "guilt towards the family" subscale scores. This may be because all participants live far from their families. This is supported by the fact that they talked a lot about their longing for their families. There was also no significant difference between the pretest and posttest ASS "academic pressure" subscale scores. This may be because participants cannot express themselves academically because they have difficulty understanding their courses due to the language barrier. Therefore, they suggested that universities offer in-class activities to help them develop language skills. Akdağ and Koçak (2020) also found that migrant preservice teachers experienced acculturative stress because they had a guilty conscience about their families. Başaran Alagöz and Geçkil (2017) also observed that migrant students longed for their families and countries.

Although research shows that the language barrier is the greatest challenge for international college students (Aubrey, 1991; Oropeza & Fitzgibbon, 1991; Redmond & Bunyi, 1993; Yeh & Inose, 2003), they have moderate difficulty communicating with their teachers and peers. In this respect, our

results are different from what has been reported by Akdağ and Koçak (2020). We can state that migrant preservice teachers who experience moderate social isolation are socially challenged. Our interviews showed that participants socialized mostly with their fellow country people and spoke their native languages when they spent time together. Although some researchers report social isolation as a critical stressor (Eustace, 2007; Chen, 1999; Bradley, 2000), others argue that it is rarely a stressor (Akdağ & Koçak, 2020)

Our participants had moderate acculturative stress levels regarding perceived discrimination for two reasons. First, participants are treated lovingly and respectfully by their peers and supported by their teachers. Second, their university has a significantly high number of international students. Researchers argue that perceived discrimination is prevalent among migrant students (Westwood & Ishiyama, 1990; Pedersen, 1995; Baker, 2011; Snoubar, 2015; Zavalısz & Gündag, 2017; Dinler, Hacifazlıoğlu, 2020). However, our participants noted that they never discriminated against their teachers and peers and were never discriminated against by them.

Our qualitative results showed that most participants liked the interactive activities. Research shows that preservice teachers meet new people, understand them better, and communicate better with them when they work together in activities (Sezgin & Yolcu, 2016; Yılmaz, 2020; Çetin & Ağçam, 2021; De Jong, 2020). Research also shows that interactive activities help preservice teachers develop professional and social skills (Sezgin & Yolcu, 2016).

The effect of migration on the social structure depends on its reason. For example, refugees sometimes cause socioeconomic and psychological problems because they flee their homeland without any preparation or prior knowledge of the country of destination (Tümtaş & Ergun, 2016; Altunbaş, 2020; Sarvan & Efe, 2020; Ulaş, Baydaş & Demi, 2020). Cultural differences and adaptation problems affect the education of refugee students. We must avoid racist rhetorics and provide refugee students with well-equipped teachers to help them have better academic experiences. Most research emphasizes that we must create an inclusive cultural atmosphere for refugee students (Alkalay, 2020; Çetin & Ağçam, 2021). Teachers who respect multiculturalism are more likely to provide their students with an inclusive classroom setting (Soylu, Kaysılı & Sever, 2020). We should inform teachers about the integration problems that refugee children might experience (EU, 2012; Ereş, 2015; Sakız, 2016; Kiremit, Akpınar & Tüfekci Akcan, 2018; Ağcadağ Çelik, 2019; Dolapcı & Kavgacı, 2020; Gülceğül, 2020; Şahin, 2020). Teachers who are in one-to-one contact with students and monitor their mental health, adaptation, and acculturation are more likely to have positive attitudes toward their migrant students and their parents (İşigüzel & Baldık, 2019; Öztürk, 2019; Keleş, 2020).

Researchers should conduct further studies and develop projects to ensure that migrant children can adapt to the host culture quickly and smoothly. More research is warranted about inclusive education and multiculturalism. Future studies should focus on the components of "academic pressure" and "guilt towards the family." Authorities should design psychosocial support programs. Universities should provide international preservice teachers with activities to help them learn by doing and living with their peers. Researchers should also focus on active citizenship and provide teachers, preservice teachers, and even parents with opportunities where they can work together with international students.

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The Effect of Person-Organization Fit on Organizational Agility: The Mediating Role of Organizational Happiness

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Abstract

In today's world, where person-organization fit, organizational agility, and organizational happiness are becoming increasingly important, we conducted a study to investigate the mediating role of organizational happiness in the relationship between person-organization fit and organizational agility. For this purpose, the research was carried out according to the relational survey and mediation models. Data were collected from 338 teachers using three scales: the Person-Organization Fit Scale, the Organizational Agility Scale, and the Organizational Happiness Scale. The correlation analysis revealed that person-organization fit is strongly and positively correlated with organizational agility. Additionally, there is a moderate positive correlation between person-organization fit and organizational happiness, as well as between organizational happiness and organizational agility. Finally, the mediation test found that organizational happiness partially mediates the effect of person-organization fit on organizational agility.

Key Words: Person-Organization Fit, Organizational Agility, Organizational Happiness, School Happiness, Organizational Agility

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INTRODUCTION

In today's rapidly changing world, it is increasingly difficult for organizations to keep up with the pace of change and innovation. As a result, competition between organizations is intensifying. In order to stay ahead of the competition, organizations need to be able to adapt quickly to change. This is where the concept of "organizational agility" comes in. Organizational agility is the ability of an organization to rapidly adapt to change. This includes the ability to:

- Respond quickly to unexpected changes
- Be flexible in the face of reorganizations
- Be open to new ideas and development
- Adapt to new situations

Organizations that are able to be agile are better positioned to succeed in today's rapidly changing world. (Brosseau et al., 2019; Doğan and Baloglu, 2018; Yıldırım, 2022). Individuals need to be in harmony with the organization's external environment as well as within itself to provide integrity within the same goals, values, and expectations and to gain the success and continuity of the organization with this integrity. The concept of "person-organization harmony," which emphasizes the similarity of the characteristics of the individual and the organization, basically includes the harmony between the individual and the organization's values and, within this harmony, being compatible and harmonious with mutual goals, personality, attitudes, abilities, and skills (Aksoy-Kuru, 2020; Pattnaik et al., 2020). An individual who spends most of their life at work also contributes to the effectiveness and development of the organization. 'Happiness,' which we can call the state of feeling good and pleasant in the essence of the individual, is also handled as "organizational happiness" within the organization with inter-individual interaction. It can be said that organizational happiness is positively effective in increasing the motivation and performance of individuals, revealing their potential, and increasing the efficiency of institutions (Çetin and Polat, 2021; Polatçı and Ünüvar, 2021). The concepts of person-organization harmony and happiness in the organization have recently come to the fore as mutually essential issues for employers and employees (Demirer, 2019). In this sense, it is thought that the relationship between person-organization fit, organizational agility, and organizational happiness should be examined for organizations to protect and maintain their efficiency and effectiveness in the face of rapid change. In this study, we aimed to examine the mediating role of organizational happiness in the effect of teachers' person-organization fit on organizational agility based on the bilateral relations of the concepts of "*person-organization fit*," "*organizational agility*," and "*organizational happiness*."

Person-Organization Fit

The 21st century is a period in which individuals are concerned and searching for the organizations they will work for, as well as choosing the most suitable jobs for them. At the same time, in recruitment, organizations look for the harmony between the personality, beliefs, and values of the individual and their own culture, norms, and values; It is observed that individuals are also interested in organizations with a similar structure (Cable and Judge, 1996; Schneider, 2001). The previous search is conceptualized as person-organization fit (P-O Fit) and is briefly defined as "the fit of person and organization values" (Kristof-Brown et al., 2005). It is stated that this harmony is not independent and should be supported by the relationship between the two parties. For this reason, the harmony of values alone is insufficient to explain the person-organization fit. Person-organization fit includes the employee's ability, knowledge, needs, personality, and the job requirements of the organization, the harmony of the organizational structure, and the perceived image of the organization (Morley, 2007; Westerman and Vanka, 2005). In line with these explanations, the concept of person-organization fit, which has increased interest in scientific and managerial fields (Kristof, 1996), is considered as the harmony/overlap of the needs, structure, and values adopted by the individual and

the organization (Can and Kerse, 2020; Chatman, 1989; Dos Santos and De Domenico, 2015; Jehanzeb and Mohanty, 2018; Kerse et al., 2016). Many research results provide empirical evidence that person-organization fit is effective on organizational outcomes and employees. For example, it has been reported that there is a significant relationship between person-organization fit and employees' performance (Demirer, 2019; Hamstra et al., 2019; Sorlie et al., 2022), motivation (Saether, 2019), employee retention (Miller et al., 2020; Naz et al., 2020), job satisfaction (Jehanzeb and Mohanty, 2018), organizational commitment and citizenship levels (Polatçı and Cindiloğlu, 2013), organizational culture (Güleryüz and Aydın, 2020), leadership styles (Aksoy-Kuru, 2020; Halbusi et al., 2020; Sökmen and Benk, 2020; Sudibjo and Prameswari, 2021). The concept of person-organization fit, which is considered as the "holistic harmony" of the person in the organization, expresses the harmony with the general rather than the position (Sorlie et al., 2022). This is one of the most important criteria sought in an organization because agile organizations need speed and harmony in the context of this speed.

Organizational Agility

In a healthy competitive environment, organizations are in a dynamic structure in line with the impact of environmental changes, rapid changes, and demands. In this context, organizations must adapt to and respond to change appropriately. These dynamic business environments have revealed the concept of "agility." First, agility was defined as "*the ability to react quickly to rapid change*" (Brown and Agnew, 1982). Organizational agility can be defined as "*the ability of the organization to adapt to rapid changes and developments*" (Meinhardt et al., 2018; Vinodh et al., 2012). In other words, organizations need to be 'agile' to survive and compete today (De Smet et al., 2018) and to innovate in fast-growing areas (Rigby et al., 2019). Thus, organizations can succeed with their human and material resources and the ability to respond quickly to unexpected and unplanned situations (Meyer, 2011). It is seen that agile organizations increase productivity, employee satisfaction, organizational performance, experience with cooperation, trust, and morale development positively (Ahlbäck et al., 2017; Biçer, 2021). In addition, organizational agility increases the organizational commitment of employees while decreasing their organizational cynicism (Gözcü, 2020) and turnover intentions (Tarakçı, 2021).

Agile organizations are seen as 'living systems' and aim to keep up with the pace of change. Agile organizations, which are stable simultaneously with their dynamic structure, are in continuous development and change with their open, inclusive, dynamic human structure, quick decision-making and learning cycle, and using the developing technology (De Smet et al., 2018). Organizations operating in various sectors have begun to believe that their employees should adopt agile methods (Ahlbäck et al., 2017). It has been determined that organizations with organizational agility have four main characteristics. These are responsiveness, flexibility, speed, and competence. The organization's ability to "respond" is responding quickly and proactively to the customer's change-oriented requests in all sectors. In this way, they can take part in the competition. The organization's "flexibility" concept is to evaluate alternatives for leaders, use different methods to adapt to conditions and be able to do things. "Speed," on the other hand, can be defined as developing innovation in the process of rapidly responding to rapid change. At this stage, the sooner the organization decides its answer, the faster it must be implemented. Finally, "competence" includes three dimensions: how and in what dynamics the three dimensions are used (Akkaya and Tabak, 2018; Zhang and Sharifi, 1999; Tarakçı, 2021).

While the concept of organizational agility has been taken seriously in for-profit organizations for a long time, it appears as a much newer concept in education. Educational organizations and school leaders can't ignore the change while addressing education in the rapidly changing world. When "change and speed" come together, "agility" comes to the fore. The ability of agile organizations to detect changes quickly and respond accurately and more rapidly than their competitors will always ensure that they are ahead (Conboy, 2009; Sull, 2010; Tallon and Pinsonneault, 2011). For example, Altalhi (2018) stated that, according to a study conducted in higher education, institutions accept the importance of organizational agility in order to adapt to innovations in education quickly and to

continue to exist in a competitive environment to attract the attention of students, parents, and investors in line with developing technology. Ghasemi (2015) revealed that organizational agility positively relates to organizational effectiveness. Mukerjee (2014), on the other hand, concluded in her study that organizational agility is important in the fight against uncertainties in higher education. Hazzan and Dubinsky (2014) emphasized that agility is a response to change and adaptation in educational organizations, as in every organization. They stated that the Finnish Education System adopts the agile approach in education and is thriving.

Organizational Happiness

Although happiness is perceived as an individual feature, it can be said that the happiness of individuals owned by an organization directs "organizational happiness" and depends on individuals (Fisher, 2010; Harris, 2018; Seligman, 2002). Pryce-Jones (2010) emphasizes that organizational happiness is the most effective way for employees to increase their performance and reveal their potential. Christakis and Fowler (2008) stated that happiness could be a collective phenomenon and that the good feelings that spread from person to person are spread among colleagues, as well as siblings, spouses, and people living in the same place. It is claimed that happiness, which has a contagious quality, positively affects teamwork and organizational communication. The fact that negative emotions cause employees to display cynical attitudes towards the organization and the emergence of toxic actions and situations makes it necessary for organizations to develop different employee happiness strategies (Korkut, 2019). In organizations where positive emotions are dominant, employees develop problem-solving skills, are open to new information, and perform operations easily (Fredrickson, 2003). In other words, in organizations with high organizational happiness, employees play an important role in achieving organizational goals quickly by contributing more to organizational performance. Harter et al. (2003) argue that the performance and motivation of employees with high organizational happiness perceptions will be high, and these employees will contribute more to the effectiveness and efficiency of the organization. The studies have determined that organizational happiness increases employee productivity and the related organizational profitability and cooperation (Arslan and Polat, 2017; Juul, 2018).

"Agility" in organizations brings with it being innovative, strategic, and proactive (Alzoubi et al., 2011). Agility, the inevitable priority of organizations that want to manage change, needs cooperation, flexibility, transparency, harmony, creativity, accountability, empowerment, and trust. In organizations with these characteristics, the employees' performance, motivation, and organizational harmony are high (Harraf et al., 2015; Karlstedt and Hellenborg, 2020). At the same time, organizational happiness is essential in employee performance, motivation, cooperation, organizational commitment, and job satisfaction (Fatima et al., 2017; Uzun and Kesecioğlu, 2019). In this context, it is predicted that organizational happiness will have a high relationship with organizational agility.

Since organizational happiness is of great importance in increasing efficiency and productivity in organizations, it is emphasized that the features required by organizational agility will reach a high level (Wesarat et al., 2015). Assuming that organizational agility requires employees to keep up with innovations by performing fast in the face of uncertainties and changes, person-organization harmony comes into play at this point and can affect this situation; In this study it is aimed to reveal its reflections in educational organizations to examine whether organizational happiness has a mediating role in this interaction. The theoretical model proposed in this direction is given in Figure 1.

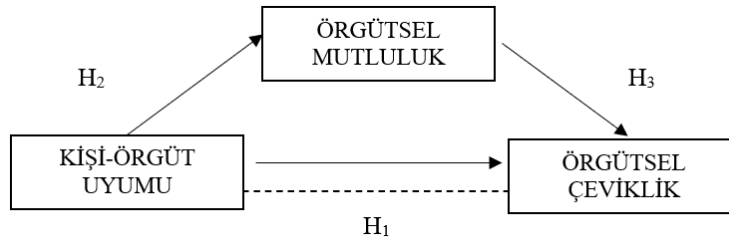


Figure 1. Theoretical model

Figure 1 (H₁) shows that person-organization fit positively affects organizational agility. (H₂) Person-organization fit positively affects organizational happiness. (H₃) Organizational happiness positively affects organizational agility. (H₄) Organizational happiness has a mediating role in the relationship between person-organization fit and organizational agility.

METHOD

Model of the Research

This research aims to determine the mediating role of organizational happiness in the effect of person-organization fit on organizational agility. The study was carried out according to the quantitative research method and the relational survey model, and the proposed theoretical model was tested with the mediation model. The Relational survey model determines the strength and direction of the relationship between variables (Martella et al., 2013).

Study Group

The study group of the research consisted of 338 teachers working in the Anatolian side of Istanbul. 67.5% of the participants are female, and 32.5% are male. The average age of the teachers participating in the research is ± 40.38 .

Data Collection Tools

In this study, the "Information Form," "Person-Organization Fit Scale," "Organizational Agility Scale," and "Organizational Happiness Scale" were used as data collection tools.

Person-Organization Fit Scale: The Person-Organization Fit Scale, developed by Netemeyer et al. (1997) and adapted into Turkish by Turunç and Çelik (2012), consists of 4 items. The sample item of the 5-point Likert scale (1. Strongly disagree, 5. Strongly agree): "I feel that my values are quite compatible with the values of my school." Turunç and Çelik (2012) determined the reliability coefficient of the scale as .81. In this study, the reliability coefficient of the scale was determined as .92.

Organizational Agility Scale: The Organizational Agility Scale, developed by Sharifi and Zhang (1999) and adapted into Turkish by Akkaya and Tabak (2018), consists of 17 items and 4 sub-dimensions. The sample item of the 5-point Likert scale (1. Never, 5. Always) is: "Our school has a strategic vision to achieve its long-term goals." Akkaya and Tabak (2018) determined the reliability coefficient of the scale as .92. In this study, the reliability coefficient of the scale was found to be .96.

Organizational Happiness Scale: The Organizational Happiness Scale, developed by Demo and Paschoal (2013) and adapted into Turkish by Arslan and Polat (2017), consists of 29 items and 3 sub-dimensions. Sample items of the 5-Likert scale (1. Never, 5. Totally /1. Totally Disagree, 5. Totally Agree): "I have been feeling happy at my job for the last six months. / I use my potential in my work". Arslan and Polat (2017) found the reliability coefficient of the scale to be .96. In this study, the reliability coefficient of the scale was calculated as .73.

Data Analysis

As a result of the analysis, it was first checked whether the data were normally distributed, the reliability values were calculated, and the results are given in Table 1.

Table 1: The Kurtosis and Skewness Values of the Scales and their Confidence Coefficients

Variables	Skewness	Kurtosis	Cronbach Alpha	Number of Items
Person-Organization Fit	-.965	1.016	.921	4
Organizational Agility	-.724	.530	.961	17
Organizational Happiness	-.625	.308	.731	29

According to Table 1, it is seen that the kurtosis and skewness values of the scales are between ± 1 . According to George and Mallery (2019), the data show a "perfect distribution" when the kurtosis and skewness values of the data are within the range of ± 1 . In addition, since the reliability values of the scales are .70 and above, it is understood that the scales are reliable.

SPSS and AMOS programs were used in the analysis of the data. First, Pearson correlation analysis was performed to determine the relationship between the variables. Then the theoretical model was tested with the mediation analysis suggested by Baron and Kenny (1986). There are three variables in the model: dependent (organizational agility), independent (person-organization fit), and mediator (organizational happiness). Three criteria are suggested for this analysis: (i) The independent variable should affect the dependent and mediating variable, (ii) the mediating variable should affect the dependent variable, (iii) the effect of the independent variable on the dependent variable should disappear or decrease noticeably when a mediating variable is added to the model. If the effect of the independent variable on the dependent variable disappears, "full mediation" or if there is a noticeable decrease/decrease in the effect, "partial mediation" can be mentioned (Baron & Kenny, 1986).

RESULTS

The correlation analysis findings between person-organization fit and organizational agility and organizational happiness variables are given in Table 2.

Table 2. Correlation Values Between Variables

		Mean	sd	1	2	3
1-Person-Organization Fit	R	3.998	.869	1		
2- Organizational Agility	R	3.861	.742	.731**	1	
3-Organizational Happiness	R	3.843	.756	.583**	.588**	1

N=338; **p<0.01

When the correlation analysis results were examined, there was a high and positive correlation between person-organization fit and organizational agility ($r=.731$; $p<.01$); between person-organization fit and organizational happiness in a moderate and positive direction ($r=.583$; $p<.01$); it is seen that there is a moderate and positive ($r=.588$; $p<.01$) a significant correlation between organizational agility and organizational happiness. These findings support the mediation test's H1, H2, and H3 hypotheses (Baron and Kenny, 1986) and research. The relationship between the variables was determined, and mediation analysis was performed in the second stage. First, the effect of person-organization fit on organizational happiness was calculated. The analysis was done by adding organizational happiness to the model, and the findings are presented in Figure 2.

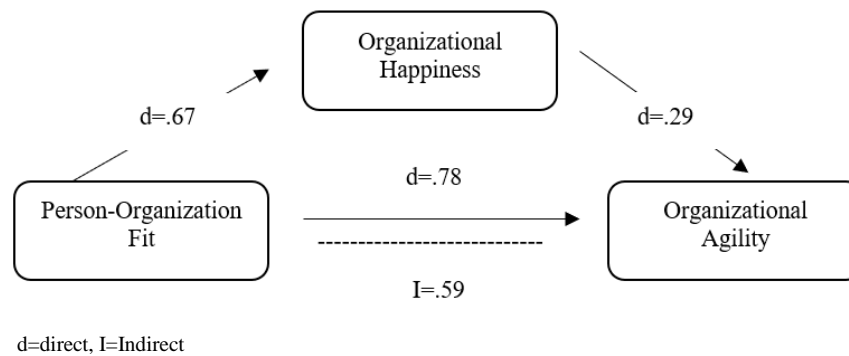


Figure 2. Research Model

As seen in Figure 2, the direct effect of person-organization fit on organizational agility ($\beta=.78$, $p<.01$) and the direct effect of person-organization fit on organizational happiness decreased with the addition of organizational happiness to the model ($\beta=.59$, $p<.01$). The regression path coefficients in the model were found to be significant, and the direct and indirect effect values between the variables given in Table 3 were examined.

Table 3: Standardized Direct And Indirect Effect Coefficients Between Variables

Standardized Direct Effects	P-O Fit	Org. Hap.	Org. Ag.
Organizational Happiness	,674	,000	,000
Organizational Agility	,585	,294	,000
Standardized Indirect Effects	P-O Fit	Org. Hap.	Org. Ag.
Organizational Happiness	,000	,000	,000
Organizational Agility	,198	,000	,000

d= direct/direct effect; I=Direct/indirect effect

As seen in Table 3, person-organization fit directly affects organizational happiness ($\beta=.674$) and organizational agility ($\beta=.585$). In addition, organizational happiness directly affects organizational agility ($\beta=.294$). Person-organization fit indirectly affects organizational agility through organizational happiness ($\beta=.198$). In other words, organizational happiness is partially mediated in the relationship between person-organization fit and organizational agility. The fit indices presented in Table 4 were examined for model validity.

Table 4. Fit Indexes

Indexes	Model values	Excellent Values	Acceptable Values	Evaluation
χ^2/df	2.522	$0 \leq \chi^2/df < 3$	$3 < \chi^2/df \leq 5$	Excellent
RMR	.025	$0 \leq RMR \leq .05$	$.05 < RMR \leq .08$	Excellent
SRMR	.031	$0 \leq SRMR \leq .05$	$.05 < SRMR \leq .08$	Excellent
GFI	.948	$.95 \leq GFI \leq 1.0$	$.90 \leq GFI < .95$	Acceptable
AGFI	.914	$.90 \leq AGFI \leq 1.0$	$.85 \leq AGFI < .90$	Excellent
TLI	.974	$.90 \leq TLI \leq 1.0$	$.90 \leq TLI < .95$	Excellent
CFI	.981	$.95 \leq CFI \leq 1.0$	$.90 \leq CFI < .95$	Excellent
RMSEA	.067	$0 \leq RMSEA \leq .05$	$.05 < RMSEA \leq .08$	Acceptable
$\chi^2=100.868$; $df=40$; $p=.000$				

According to the fit indices given in Table 4, the theoretical model presented is compatible with the collected data, and the proposed theoretical model has the reference intervals specified in the mediation analysis of the fit indices (Barret, 2007; Bentler & Bonett, 1980; Byrne, 2008, 2010, 2012; Kline, 2011; Maydeu-Olivares & Garcí'a-Forero, 2010; Schumacker & Lomax, 2010). Along with all these, it is understood that organizational happiness "partially mediates" the effect of person-organization fit on organizational agility.

DISCUSSION, CONCLUSION, AND SUGGESTIONS

Person-organization fit is expressed as the common norm, belief, value, and goal harmony between employees and the organization (Chatman, 1989; Kristof-Brown et al., 2005). The fact that an organization is in harmony with its employees is an essential factor that will facilitate the achievement of its goals. Agility is seen as a separate and superior quality for organizations to gain an advantage in change and competition, and agility requires flexibility, adaptability, and proactiveness (Obeidat et al., 2021). In addition, organizations that want to achieve excellence in their fields of activity prioritize their employees' happiness (Obeidat et al., 2021). Myers and Diener (1995) stated that a person's relationships, work experiences, and culture stem from the person's well-being. In this context, workplace happiness stems from workplace relationships (Cited by Özen, 2018). On the other hand, organizational happiness expresses the individual's happiness in the workplace where they spend the most time. Paschoal and Tamayo (2008) explain organizational happiness as high positive emotions (moods and emotions) of employees in the organization and progress in improving themselves and reaching their goals (self-actualization). For this reason, employees' happiness during their work in the organization can be considered an important factor that increases organizational commitment (Singh et al., 2017), productivity, motivation, and performance (Al-Ali et al., 2019; Demirer, 2019; Wright, 2004). Likewise, employees with a harmonious working environment will have a happier work atmosphere. It has been revealed that the highly positive relationship between harmony and happiness (Töre and Uysal, 2022) brings efficiency and productivity (Jeong and Park, 2020). It has been demonstrated that adaptability is a factor that positively affects agility (Junker et al., 2021). Seligman (2020) pointed out that all actors in the field of education feed on "happiness" (Cited by Puiu, 2021). In this sense, we aimed to test the mediating role of organizational happiness in the effect of teachers' person-organization fit on organizational agility.

Although the bilateral relations between teachers' person-organization fit and organizational happiness and organizational agility were significant, it was revealed that organizational happiness partially mediated the relationship between person-organization fit and organizational agility. In other words, the agility of schools increases when the goals, abilities, values, structure, and needs of teachers are compatible with the school's goals, abilities, values, design, and needs. In addition, this harmony leads to an increase in school happiness. Finally, teacher-school harmony increases school/organization agility more together with school happiness. Person-organization fit (Demirer, 2019; Sousa & Porto, 2015; Yıldız & Uzunbacak, 2021) shows that strong relationships between employees and managers (Turan, 2019) positively affect employees' perceptions of organizational happiness and that employees' happiness is in the relationship between person-organization fit and performance. Empirical evidence reporting a partial mediating role (Demirer, 2019) strengthens our current research findings. In addition, the positive effect of organizational happiness on employees' willingness, dynamism, development, and openness to innovation (Erer, 2021), productivity, creativity, and efficiency (Jeong and Park, 2020) indicates the importance and necessity of organizational happiness in terms of organizational effectiveness and efficiency. In this context, the fact that teachers are in harmony with the values, assumptions, and goals of the school they work in contributes to their happiness and the school's adaptability by acting agile in times of crisis or change. In addition, teacher-school harmony and school happiness increase school agility's effect on school and teacher outcomes. It can be said that teachers who feel happy at school will make more efforts for the school's goals and student outcomes and will show higher performance. Remarkably, the fact that school happiness partially mediates the relationship between school-teacher harmony and school agility can be delivered as evidence of a primary factor affecting school agility. The more compatible the cultural objectives of the schools and the teachers are, the more the schools' organizational happiness and ability to act agile increase. In summary, high school-teacher harmony and happiness can strengthen schools' agility structures.

It is emphasized that organizations should have agile organizational characteristics in order to protect their existence in today's competitive environment (İnanır, 2020). According to Menon and Suresh (2020), the organization's structure is one of the primary factors affecting organizational agility. In this respect, the current research provides empirical evidence that person-organization fit

and organizational happiness contribute positively to organizational agility. However, it has been determined that organizational happiness partially mediates the relationship between person-organization fit and organizational agility. That is, it does not have a full mediator role. Determining the partial mediation effect of organizational happiness suggests that there may be other variables between person-organization fit and organizational agility or that the relationship between person-organization fit and organizational agility is extreme. However, when the literature is examined, it is seen that there is not enough theoretical knowledge in the field of organizational happiness and organizational agility, especially in the field of education, and there is an empirical gap. In this study, data were collected from teachers. In this sense, the fact that the study group consisted of only teachers limits the generalization of the relationship between the variables discussed in the research. Taking the opinions of other groups that make up the school community can enable comparison. It can be said that the high level of harmony and happiness of the teachers in the school will play an important role in the agile action of the school against uncertainties and challenging situations in uncertain conditions such as Covid-19, sudden developments, and changes. In a world experiencing rapid change and transformation, as in every organization, agile action in schools with a sustainable, innovative, and qualified education approach can provide school effectiveness.

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