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Letter from the Chief Editor/Baş Editörden Mektup

Dear Readers,

The last issue of TAY Journal 2024 includes articles on consumer environmental consciousness, refugee students, violence against teachers, textbooks, teacher's guidebooks, cognitive demand, cultural heritage, virtual museum, visual summaries and articles in the fields of social studies education, teacher education, mathematics education, classroom management, educational technology and computing. We would like to thank our authors who sent their original works to our journal, our referees for their detailed reviews and reports, the academicians who took part in our editorial and editorial advisory boards and who did not spare their help in every step of the articles, Dr. Lecturer Murat Baş (Editor), who meticulously prepared the articles for publication, Research Assist. Gör. Eylem Çoban (Copy Editing Editor) and Esra Nihlenur Şen (Copy Editing Editor). We hope that our journal will contribute to scientific accumulation and we look forward to your comments and suggestions.

As a last word:

I dedicate this issue to **Cihan KARACA**, the photographer, classroom teacher, my friend, my dear friend, my brother, who took the photograph at the bottom of my article and allowed me to use it in one of my published works, and who passed away on November 23rd.

Değerli Okuyucularımız,

TAY Journal 2024 yılının son sayısı; tüketici çevre bilinci, mülteci öğrenci, öğretmene yönelik şiddet, ders kitapları, öğretmen kılavuz kitapları, bilişsel istem, kültürel miras, sanal müze, görsel özetler konularında ve sosyal bilgiler eğitimi, öğretmen eğitimi, matematik eğitimi, sınıf yönetimi, eğitim teknolojisi ve bilgi işlem alanlarında makaleleri içermektedir. Özgün eserlerini dergimize gönderen yazarlarımıza, detaylı incelemeleri ve raporları için hakemlerimize, editör ve yayın danışma kurullarımızda yer alan ve makalelerin her bir adımında yardımlarını esirgemeyen akademisyenlere, makaleleri titizlikle yayına hazırlayan Dr. Öğretim Üyesi Murat Baş'a (Editör), Araş. Gör. Eylem Çoban'a (Dizgi ve Mizanpaj Editörü) ve Esra Nihlenur Şen'e (Dizgi ve Mizanpaj Editörü) teşekkür ederiz. Dergimizin bilimsel birikime katkı sağlamasını diler, görüş ve önerilerinizi bekleriz.

Back home from work/İşten eve dönüş, March/Mart, 2007, Nazilli, Aydın, Türkiye, **Cihan KARACA**

Son söz olarak:
Bu sayımızı, yanda yer alan fotoğrafı çeken, yayımladığım bir eserimde kullanmama izin veren ve 23 Kasım'da hayata gözlerini yuman fotoğraf sanatçısı, sınıf öğretmeni, arkadaşım, can dostum, kardeşim **Cihan KARACA**'ya ithaf ediyorum.

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Consumer Environmental Consciousness Perceptions of Social Studies Teacher Candidates: Mixed Method Research

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Abstract

The aim of the research is to determine the consumer environmental awareness perception levels of social studies teacher candidates and their views on the issue. For this reason, the research was carried out using the combining pattern, which is one of the mixed research methods. The study group of the research consisted of 357 social studies teacher candidates determined by convenient sampling method in the quantitative section, and 20 social studies teacher candidates determined through easily accessible case sampling, one of the purposive sampling methods, in the qualitative section. In this context, "Consumer Environmental Awareness Perception Scale", "Semi-Structured Interview" and "Personal Information Form" were used as data collection tools. Quantitative and qualitative data were analysed by descriptive statistical methods and content analysis respectively and the collected data were combined and interpreted. As a result of the research, it was determined that the social studies teacher candidates' perceptions of consumer environmental awareness were high. Similarly, it was found that a statistically significant difference existed in the participating in environmental activities variable in favor of those who participated in environmental activities. It was also determined that the results obtained from the quantitative findings of the research were similar to the results obtained from the qualitative findings.

Keywords: Consumer environmental awareness, perception, social studies, teacher candidate.

Introduction

The place where living things maintain their relationships and interact with each other throughout their lives is called environment (Keleş & Hamamcı, 2002). It is seen that the environment is examined under two main headings: natural and artificial. The environment formed by human intervention is called as artificial environment while natural environment refers to the environment where there is no human intervention (Görmez, 2015).

The endless consumption ambition of human beings has led to a series of problems expressed as "environmental problems" in both environmental types. So much so that when environmental problems are mentioned, "The problems resulting from the pressures of the artificial environments developed by the people on the natural environment and the negativities seen in both environments" (Özer, 1974) come to mind. It is seen that environmental problems have undergone a change in terms of quality and quantity especially since the second half of the 19th century. Briefly, the industrial revolution at the time, the two world wars that followed, and the subsequent developments in science and technology have led to the handling of different problems such as radioactive, visual, noise and light pollution in the context of environmental problems, apart from soil, air and water pollution. It is stated in the literature that it is important to increase environmental awareness and sensitivity of individuals (Gordon-Wilson and Modi, 2015) and adopt environmentally friendly behaviors in eliminating environmental problems (Coelho et al., 2017; Demirbaş & Pektaş, 2009).

Based on the view that such problems can be solved by changing attitudes and behaviors towards the environment (Sinha and Watters, 1985), it is stated that it is of great importance for individuals to exhibit environmentally responsible and consumption-conscious behaviors and to be educated on this issue (Çelik et al., 2016). When the relevant literature is examined, it is asserted that education plays an important role in the formation of environmental awareness (Gül and Özay-Köse, 2015) and is effective in displaying

environmentally sensitive behaviors (Fernandez-Manzanal et al., 2007). Another point that should not be overlooked at this stage is the relationship between education and consumer behavior. Although, when it comes to consumption, the act of using existing resources to meet people's needs and desires comes to mind, the results of consumption include not only economic but also social, cultural and physical elements (Aksu, 2014), which also requires it be considered within education.

The fact that consumption is a phenomenon affected by human behavior brings with it the view that it should be shaped by education. Özsungur and Güven (2017) explained this view by stating that one of the most important factors in shaping consumer behavior is education. One of the main objectives of this kind of training is to raise environmentally conscious individuals (Dikmenli and Konca, 2016) who purchase and use environmentally friendly products (Mostafa, 2006). In the international literature, these individuals are also referred to as green consumers or environmentally conscious consumers (Coddington, 1993; Ottman, 1992).

Cordes and Miller (2000), who stated that the prerequisite for consumers to exhibit positive behaviors towards the environment is that they have positive perceptions about the environment, urged that such education should start at an early age. With the education to be carried out, students will be able to protect nature, have positive attitudes, values, skills and perceptions towards the environment (Ardoin et al., 2020; Carleton-Hug and Hug, 2010) and gain awareness about the environment as well as becoming citizens who value the environment. In the process of achieving these goals, while environmental education is given in the content of courses such as citizenship, science and social studies in schools around the world (Carleton-Hug and Hug, 2010), in Türkiye students are tried to be structured through various achievements in the curriculum of courses such as life science, social studies, science, geography, biology, health sciences and chemistry in primary, secondary and high school (Demir & Yalçın, 2014).

What makes social studies course stand out among these courses is its mission in raising citizens (Kırıkçı, 2013). Because the concept of citizenship covers not only the relations of individuals with each other, society or the state, but also with the environment. This situation is expressed within the special objectives of the Social Studies Curriculum as "Recognizing the limitations of the natural environment and resources, trying to protect natural resources with environmental awareness and having a sustainable environmental understanding" (Ministry of National Education [MoNE], 2018).

As it can be understood from this special purpose, it is also aimed that the students become citizens with consumer environmental awareness through the social studies course. At this stage, it cannot be ignored that social studies teachers, who are in the position of guide and role-model, will affect the consumer environmental awareness perception levels of their students. Determining the perception levels of social studies teacher candidates is important in terms of evaluating the undergraduate education given to them and eliminating the problems that arise. However, while studies conducted to measure the environmental awareness of teacher candidates (Akçay and Pekel, 2017; Diken and Çıbık, 2009; Dolenc-Orbanić and Kovač, 2021; Ergin, 2019) and their consumption awareness related to

environmental responsibility (Bhatia and Jain, 2017; Gül and Özay-Köse, 2015; Karademir, 2016; Ichsan et al., 2018) exist in literature, no study has been found that directly addresses the consumer environmental awareness perceptions of social studies teacher candidates and their views on the issue. This study is thought to contribute to the literature in this sense. The sub-problems of the research can be listed as follows:

1. What is the level of consumer environmental awareness perceptions of social studies teacher candidates?

2. Do social studies teacher candidates' perception levels of consumer environmental awareness differ significantly according to the variables of gender, grade, whether they take environmental education courses, whether they follow visual and printed publications on the environment, whether they participate in activities on the environment, and whether they are members of non-governmental organizations for protecting the environment?

3. Do social studies teacher candidates' perception levels of consumer environmental awareness and their views on consumer environmental awareness support each other?

Method

Research Design

The mixed research method was used in the research conducted to determine the consumer environmental awareness perception levels of social studies teacher candidates and their views on the subject. Mixed research is a method in which both quantitative and qualitative data are integrated to understand research problems (Creswell, 2021). It is thought that quantitative methods are insufficient in revealing consumer environmental awareness in Social Studies teacher candidates in detail. For this reason, the research was carried out by combining quantitative and qualitative findings.

A mixed method design, "Combining Pattern", was used in the research. Combination pattern is defined as combining the results obtained from the analysis of quantitative and qualitative research data. In this context, quantitative results reveal general tendencies, and qualitative results reveal the personal views of individuals (Creswell, 2021).

Figure 1.

Integrative Mixed Research Process
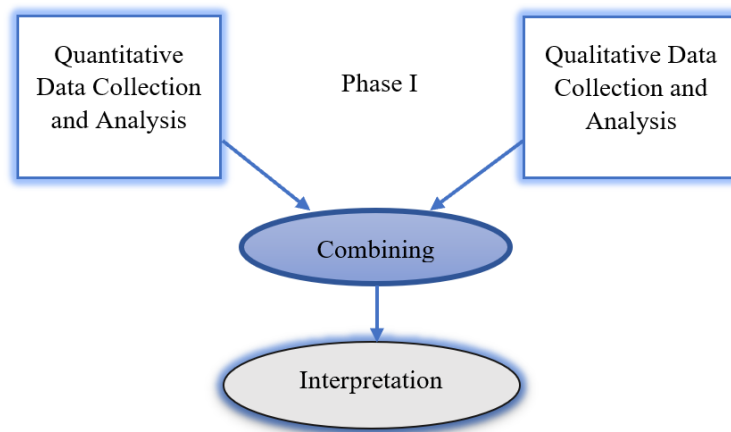
Study Group

In this research conducted with mixed research method, different study groups determined by different sampling methods were used for the qualitative and quantitative parts. Convenience sampling method, one of the non-random sampling types, was used in the quantitative section. This type of sampling can be described as a type that makes it easier for researchers to access the sampling. 357 teacher candidates studying in 1, 2, 3 and 4. grades in the department of Social Studies Education in the Faculties of Education at Niğde Ömer Halisdemir, Nevşehir Hacı Bektaş Veli and Konya Necmettin Erbakan Universities constitute the study group of the quantitative part of the research. In the qualitative part of the research, the study group that consists of 20 teacher candidates studying in 1, 2, 3 and 4. grades in the department of Social Sciences Education in the Faculty of Education at Niğde Ömer Halisdemir University was determined through easily accessible case sampling, one of the purposeful sampling methods. Conveniently accessible situation sampling is expressed as a preferred sampling type when it is close to the researchers and easy to access and when other sampling types cannot be used (Baltacı, 2019).

Data Collection Tools

In this research, the "Consumer Environmental Consciousness Perception Scale" by Dikmenli and Konca (2016), the "Semi-Structured Interview Form" developed by the researchers, and the "Personal Information Form" prepared based on the relevant literature were used as data collection tools.

Consumer Environmental Awareness Perception Scale

The "Consumer Environmental Awareness Perception Scale" developed by Dikmenli and Konca (2016) was used in the quantitative part of the research. In the exploratory factor analysis conducted by Dikmenli and Konca (2016), the KMO value of the scale, which consists of 28 items and 4 factors, was calculated as .901 and the Bartlett value was calculated as $χ2=2905.957$ (p<.001). Cronbach alpha reliability coefficient was found to be .87.

Following the exploratory factor analysis, confirmatory factor analysis was performed and Chi-square fit test, GFI, RMSEA, CFI, NFI, RFI, IFI and AGFI fit indices were examined. According to the first level confirmatory factor analysis performed on the scale, AGFI: .90, NFI: .89, CFI: .92, GFI: .84, RFI: .88, IFI: .92 were calculated to be at acceptable level. Participants were asked to evaluate the items in the scale as totally disagree, disagree, undecided, agree and totally agree.

Personal Information Form

The relevant literature was examined and variables such as participants' gender, grade level, taking environmental education courses, following visual and printed publications on the environment, participating in environmental activities, and being members of non-governmental organizations aimed at protecting the environment, which could be effective on the participants' consumer environmental awareness perception levels, were added to the personal information form so that the quantitative data could be combined with the qualitative data.

Semi-Structured Interview Form

In the qualitative part of the research, a semi-structured interview form was prepared for consumer environmental awareness. In the first stage, draft interview questions were prepared by the researchers and the prepared questions were directed to two experts working as faculty members in the field of Social Studies Education. The questions were arranged in terms of content in line with the feedback from experts. In the second stage, the interview form was forwarded to an expert who works as a lecturer in the field of Turkish Education for language appropriateness and the necessary corrections were made. In the third stage, a pilot application was conducted with two students studying in the social studies education department and the semi-structured interview form was finalized to be used in the research.

Analysis of Data

The Analysis of Consumer Environmental Awareness Perception Scale

After the scale was applied to the study group, confirmatory factor analysis was performed. According to confirmatory factor analysis, the values of AGFI: .91, NFI: .90, GFI: .93 were calculated to be at an acceptable level while the X^2/df: 1.21, IFI:.98 CFI: .98 were found at perfect fit index level. Table 1 includes the fit index values stated by Schermelleh-Engel et al. (2003).

Table 1.

Confirmatory Factor Analysis Fit Indexes

Fit indexes	Good fit index	Acceptable fit index
X^2/df	<3	$3<(X^2/df)<5$
IFI	.95<IFI<.00	.90<IFI<.95
GFI	.95<GFI<.00	.90<GFI<.95
AGFI	.90<AGFI<.00	.85<AGFI<.90
NFI	.95<NFI<.00	.90<NFI<.95
CFI	.95<CFI<.00	.90<CFI<.95

SPSS 21 and AMOS 24 package programs were used to analyze the data. After deleting extreme values from the scale, Skewness and Kurtosis values were examined to determine distribution normality. Skewness and Kurtosis values of the data obtained from the personal information form and the consumer environmental awareness perception scale were examined and it was determined that the values were in the range of -1.5/+1.5, which means that the distribution is normal (Fidell et al., 2013).

In this case, parametric tests such as independent samples t-test and one-way analysis of variance [ANOVA] tests are used. ANOVA was used for the class level variable. On the other hand, independent samples t-test was used for the variables of gender, taking an environmental education course or not, following visual and printed publications on the environment or not, participating in environmental-themed events or not and being a member of non-governmental organizations aimed at protecting the environment or not. The Cronbach alpha reliability coefficient of the Consumer Environmental Awareness Perception Scale was calculated as .84.

Semi-Structured Interview Process and Data Analysis

A semi-structured interview form was used for the qualitative data of the research. Semi-structured interview is defined as a data collection tool prepared to obtain detailed information by adhering to pre-prepared questions and to obtain the same type of information from different people (Baltacı, 2019). In this research, 20 teacher candidates studying in the department of social studies education were asked to answer a semi-structured interview form in a quiet environment. The participants' answers to the semi-structured interview form were transferred to the computer environment for analysis. content analysis method was used to analyze the data. Content analysis is expressed as a systematic technique that helps to make inferences in order to determine human behavior and nature (Boyraz & Tepe, 2019). Categories and codes were created in line with the content analysis.

In the qualitative part of the research, the relevant literature was taken as a basis in the preparation of the data collection tool used to ensure the credibility of the data in an objective manner. To achieve transferability, the steps of the process are presented to the reader in detail and direct quotations are given. In order to check the consistency of the codes obtained during the analysis process, a separate coding was requested by a different researcher. To calculate the consistency of the coding made by two different researchers, the [Reliability= Agreement/(Agreement+Disagreement) x 100] formula prepared by Miles and Huberman (1994) was used. The calculation concluded that there was a consistency between 92% and 96%. Finally, the data obtained in the research are stored by the researchers to ensure confirmability, which is external validity.

Ethical Permits of Research:

In this study, all the rules specified to be followed within the scope of "Higher Education Institutions Scientific Research and Publication Ethics Directive" were complied with. None of the actions specified under the heading "Actions Contrary to Scientific Research and Publication Ethics", which is the second part of the directive, have been taken.

Ethics Committee Permission Information:

Name of the committee that made the ethical evaluation = Niğde Ömer Halisdemir University Ethics Committee

Date of ethical review decision = 23.11.2022

Ethics assessment document issue number = 2022/13-43

Findings

The findings obtained as a result of the analysis of the data collected in order to determine the consumer environmental awareness perception levels of social studies teacher candidates are presented in this section.

Findings from the Quantitative Part of the Research

Based on the general purpose of the research, first of all, social studies teacher candidates' consumer environmental awareness perception levels were determined. As a result of the analysis of the data obtained, the findings in Table 2 were obtained.

Table 2.

Findings Regarding Social Studies Teacher Candidates' Consumer Environmental Awareness Perception Levels

Consumer environmental awareness perception scale	*n*	*M*	Level
Total score average	357	3.54	High

In Table 2, the arithmetic average scores of the answers given by social studies teacher candidates to the questions on the Consumer Environmental Awareness Perception Scale were evaluated based on the frequencies from "Very Low (Strongly Disagree) ($1.00 < M \leq 1.80$), Low (Disagree) ($1.81 < M \leq 2.60$), Medium (Undecided), ($2.61 < M \leq 3.40$), High (Agree) ($3.41 < M \leq 4.20$) to Very High (Strongly Agree) ($4.21 < M \leq 5.00$)". In line with these findings, it can be interpreted that the total score average obtained from the social studies teacher candidates' consumer environmental awareness perception scale is at a high level (M=3.54 (I agree) ($3.41 < M \leq 4.20$). Based on this finding, it can be stated that social studies teacher candidates' consumer environmental awareness perceptions are high.

Table 3.

Independent Samples t-test Results regarding Social Studies Teacher Candidates' Consumer Environmental Awareness Perception Levels in terms of Gender Variable

Gender	*n*	*M*	*SD*	*df*	*t*	*p*
Female	262	3.57	.46	355	1.75	.081
Male	95	3.46	.56			

No statistically significant difference was detected between social studies teacher candidates' consumer environmental awareness perception levels in terms of gender. In Table 3 ($t_{(355)}=1.75$; p>.05). Based on this finding, it can be stated that gender does not affect social studies teacher candidates' consumer environmental awareness perception levels.

Table 4.

One-Way ANOVA Results regarding the Consumer Environmental Awareness Perception Levels of Social Studies Teacher Candidates in terms of the Grade Variable

	Sum of squares	*df*	Mean squares	*F*	*p*
Between groups	1.242	3	.414	1.728	.161
Within groups	84.589	353	.240		
Total	85.831	356			

Table 4 shows that there is no statistically significant difference between the grade level of social studies teacher candidates and their consumer environmental awareness perception levels ($F_{(3-353)}=1.728$; p>.05).

Table 5.

Independent t-test Results regarding the Consumer Environmental Awareness Perception Levels of Social Studies Teacher Candidates in terms of the Environmental Education Course Variable

Taking courses on environmental education	*n*	*M*	*SD*	*df*	*t*	*p*
Yes	180	3.55	.519	354	.335	.738
No	176	3.53	.461			

According to the data in Table 5, no statistically significant difference exists between social studies teacher candidates' consumer environmental awareness perception levels in terms of taking environmental education course variable ($t_{(354)}=335$; p>.05). This finding can be interpreted as whether or not taking courses on environmental education is not effective on social studies teacher candidates' consumer environmental awareness perception levels.

Table 6.

Independent t-test Results regarding Social Studies Teacher Candidates' Consumer Environmental Awareness Perception Levels in terms of the Following Environmental Visual Publications Variable

Following visual publications	n	M	SD	df	t	p
Yes	241	3.62	.482	355	4.60	.000*
No	116	3.37	.459			

Table 6 shows that there is a statistically significant difference between social studies teacher candidates' consumer environmental awareness perception levels in terms of the variable of following visual publications on the environment ($t_{(355)}$=4.60; p<.05). This finding, obtained in line with statistical analysis, indicates that visual content publications are effective in social studies teacher candidates' perception of consumer environmental awareness.

Table 7.

Independent t-test Results regarding the Consumer Environmental Awareness Perception Levels of Social Studies Teacher Candidates in terms of the Following Printed Publications on the Environment Variable

Following printed publications	n	M	SD	df	t	p
Yes	112	3.68	.474	355	3.64	.000*
No	245	3.48	.486			

It is seen in Table 7 that there is a statistically significant difference between social studies teacher candidates' consumer environmental awareness perception levels in terms of the variable of following printed publications on the environment ($t_{(355)}$=3.64; p<.05). With reference to this finding obtained in line with statistical analysis, it can be expressed that printed publications are effective in social studies teacher candidates' perception of consumer environmental awareness.

Table 8.

Independent t-test Results regarding the Consumer Environmental Awareness Perception Levels of Social Studies Teacher Candidates in terms of the Participation in Environmental Activities Variable

Participation in environmental activities	n	M	SD	df	t	p
Yes	183	3.60	.467	355	3.65	.008*
No	174	3.47	.507			

Table 8 shows that there is a statistically significant difference between social studies teacher candidates' consumer environmental awareness perception levels in terms of the participation in environmental activities variable ($t_{(355)}$=3.65; p<.05). Accordingly, it can be stated as participating in environmentally-themed activities is effective in social studies teacher candidates' perception of consumer environmental awareness.

Table 9.

Independent t-test Results regarding the Consumer Environmental Awareness Perception Levels of Social Studies Teacher Candidates in terms of Membership in Environmental Protection Organizations

Membership in environmental protection organizations	n	M	SD	df	t	p
Yes	85	3.61	.527	355	1.63	.104
No	272	3.52	.478			

When Table 9 is examined, no statistically significant difference was found between the consumer environmental awareness perception levels of social studies teacher candidates

according to their membership in environmental protection organizations (TEMA, ÇEVKO, Greenpeace etc.) ($t_{(355)}$=1.63; p<.05). It can be interpreted from this finding that being a member of environmental protection organizations is not effective on social studies teacher candidates' consumer environmental awareness perception levels.

Findings from the Qualitative Part of the Research

In this part of the research, the data obtained by analyzing the semi-structured interviews conducted with the participants regarding consumer environmental awareness using the content analysis method were interpreted by categorizing and coding them.

The opinions of social studies teacher candidates regarding their consumer environmental awareness perceptions were examined. In this context, the participants were first asked the question "How do you react when you see individuals whose consumption habits harm the environment?" and various codes related to the "Reaction" category presented in Table 10 were obtained.

Table 10.

Opinions of Social Studies Teacher Candidates regarding Their Reactions When They See Individuals Whose Consumption Habits Harm the Environment

Codes	Category	*f*
Warning		21
Reaction	Reaction	3
Complaint		2
Total		26

When the data is examined, it is seen that the participants' opinions about their reactions when they see individuals harming the environment are mostly limited to verbal warnings. In this context, participant with the nickname K13 said*; "I think that many people in our society harm the environment. In order to prevent it, I start by warning, and when I see that this method is not sufficient, I talk about the problems we will encounter in the future."* The participant with the nickname K21 expressed her reaction stating, *"When I see individuals harming the environment, I first warn them. I explain to them that the environment is important to us. If they do not heed my warnings, I will file a complaint to the relevant authorities."*

The participants were asked, "Do you pay attention for your consumption not to harm the environment?". The "Environmental awareness" category and codes in Table 11 were found as a result of the analysis of the participants' answers to the question.

Table 11.

Opinions of Social Studies Teacher Candidates on Whether Their Consumption Harms the Environment or Not

Codes	Category	*f*
Recycling		23
Trash		22
Awareness	Environmental awareness	20
I'm not paying attention.		3
Total		68

Accordingly, it is seen that the behavior of the participants as to whether their consumption harms the environment or not is limited to "not polluting the environment". The

participant nicknamed K3 verbalized her ideas on the issue by saying; *"Yes, I try to pay attention. When I come across it in the trash can, I throw it away. I take care to use recycling bins".* K23 expressed her reaction as; *"Although I try to buy products that do not harm the environment, it is not possible in today's conditions. Because environmentally friendly products are generally expensive".*

The participants were asked the question "Does the fact that the products you consume are current and well-known brands/products affect your consumption habits?" and the "Brand awareness" category and codes presented in Table 12 were obtained.

Table 12.

Opinions of Social Studies Teacher Candidates on the Effects of The Products' They Consume Being Current and Well-Known Brands/Products on Their Consumption Habits

Codes	Category	*f*
Quality		8
Environmentally friendly		7
It doesn't affect me because I'm not obsessed with brands.	Brand	7
Reliable	awareness	5
Popular		1
Total		28

When the data in Table 12 is examined, it is seen that the participants' opinions about the effects of the products they consume on their consumption habits are positive. With regard to the question, K7 said, *"No. Of course, quality is important in the product. I'm not very interested in what's current. Even if I were interested, this would not affect my consumption habits much."* Similarly, K12 remarked her opinion by stating; *"It affects. I try not to consume cheap or unknown brand items. Because there may be a high probability that it contains substances that will harm me and the environment."*

The participants were asked the question "Do other people's opinions affect your consumption habits?" and the categories and codes in Table 13 were obtained.

Table 13.

Opinions of Social Studies Teacher Candidates on Whether Others' Opinions Affect Their Consumption Habits.

Codes	Category	*f*
They impress because they are reliable.		8
It doesn't affect me, because I don't trust/care.	Being affected by the social	7
If he is an expert on the subject, it will affect.	environment	7
Sometimes it affects because I think it's popular.		4
Total		26

When Table 13 is examined, it can be seen that the participants' opinions on whether others' opinions affect their consumption habits are almost equal in positive and negative terms. Their ideas regarding the question; The participant K4 said, *"Effects. When you praise a product, I become curious and want to buy it. Also, I definitely take user comments into consideration before purchasing the product."* and the participant nicknamed K23 expressed her opinion with the statement *"Yes, it does. Because experts on the product or subject specifying products that have positive or negative effects on human health and the environment affects my consumption habits."*

The "Self-awareness" category and codes in Table 14 were found based on the fifth and the last question, which was "What are the situations that show whether you are an individual with consumer environmental consciousness?".

Table 14.

Opinions of Social Studies Teacher Candidates on Whether Others' Opinions Affect Their Consumption Habits.

Codes	Category	*f*
I don't throw garbage around me.		10
I try to consume recyclable products.		9
I do not consume more than I need/I am economical.		7
I engage in consumption behavior by thinking about the future of nature and humanity.	Self-awareness	3
I warn those who harm the environment.		3
I participate in organizations/events organized to protect the environment.		2
I don't think I have consumer environmental consciousness.		2
Total		36

When the data are examined, it is seen that the participants mostly have self-awareness about consumer environmental consciousness. To express its opinion regarding the question, the participant K9 said; *"I don't think I am a fully conscious consumer. I need to read and research a little more on this subject."* On the other hand, the participant K13 said, *"Although it is not very common in our society, I think I have environmental awareness. Because I am careful to keep my environment clean and use recyclable waste, and I do not hesitate to warn people who do not do these things."*

Combining and Interpreting Quantitative and Qualitative Findings

Based on the quantitative findings of the research, it is seen that social studies teacher candidates' consumer environmental consciousness perception average is at a high level. Similarly, the qualitative findings of the research obtained through interviews also show that social studies teacher candidates mostly have a perception of environmental awareness. It was found that teacher candidates, regardless of gender and grade level, had positive views on environmental awareness, especially regarding environmental consciousness awareness. As a result of the analysis of the qualitative findings, it is seen that the participants stated that they would mostly react against individuals defined as unconscious consumers and the way they defined themselves as conscious consumers coincided with the quantitative findings.

Discussion and Conclusion

In this section, it is aimed to reveal the consumer environmental awareness perceptions of social studies teacher candidates along with their opinions. Accordingly, "Combining Design", a mixed method design, was used in the research. The results are given below.

It was concluded that social studies teacher candidates' consumer environmental awareness perceptions were statistically high. In the relevant literature, no study has been found to determine the consumer environmental awareness perceptions of social studies teacher candidates. However, it is also thought that the environmental awareness of individuals as consumers is an important criterion. Individuals with high environmental awareness are also expected to have high consumer environmental awareness. It is seen that

there are studies in the literature aimed at determining the environmental literacy levels and environmental sensitivities of prospective teachers regarding the subject. In these studies (Artun, 2013; Daniel et al., 2022; Durmuş and Kınacı, 2021; Ergin, 2019; Dolenc-Orbanić and Kovač, 2021; Sumitro and Rohman, 2023) environmental literacy levels of teacher candidates were determined to be at a high level. Similarly, the results of the interviews with the participants and the quantitative findings also revealed that teacher candidates generally thought they had consumer environmental awareness. In particular, the participants' opinion that they will react to citizens who harm the environment and their self-criticism regarding environmental awareness also show that they have environmental awareness. It is thought that the behaviors expressed by teacher candidates towards protecting the environment and not polluting it are also a different indicator that they have self-awareness about environmental awareness.

In the relevant literature, it is seen that there are studies examining social studies teacher candidates' views on the environment (Bülbül & Yılmaz, 2019; Meral et al., 2016). According to the results obtained from these studies, it has been determined that although social studies teacher candidates generally have an environmentally-centered thinking tendency, this thinking tendency differs depending on the grade level. Researchers have determined that raising public awareness about the environment is mostly achieved through mass media such as television, radio, mobile phones and computers. It can be stated that the findings obtained as a result of the literature review are similar to the opinions expressed by social studies teacher candidates in this study and support each other (Xie, 2015). It can be stated that the determination of the high consumer environmental awareness of social studies teacher candidates in this study is an indication that teacher candidates will raise students with this awareness in their professional lives. It is thought that the research will contribute to the literature both in this aspect and by filling the gap in the relevant literature.

Besides, it was concluded that the impact of environmental organizations is important in informing individuals about the environment, in helping them become environmentally conscious and responsible individuals, and in solving environmental problems. It was stated that the contents covered in mass media such as TV, radio and mobile phones make the most contribution to raising public awareness about the environment. It can be stated that the results obtained in this research are similar to the abovementioned findings and support each other.

It was concluded that gender and grade variables had no statistical effect on social studies teacher candidates' consumer environmental awareness perception levels. In the interviews conducted with the participants, it was seen that the grade level and gender of the participants did not make a difference in their views on environmental awareness, which also supports the result obtained from quantitative findings (Diken & Çıbık, 2009). In their studies, Noordin and Sulaiman (2010) and Sivamoorthy et al. (2013), unlike this study, found that female students' environmental awareness levels were higher than male students. The reason for this situation can be stated as the fact that environmental awareness is a phenomenon specific to the individual rather than gender and university grade and is acquired at a younger age.

Another result obtained from the research is that taking environmental courses does not have any statistical effect on social studies teacher candidates' consumer environmental awareness perception levels. This can be interpreted as that consumer environmental awareness is rather an indicator of affective behavior. In the interviews conducted with the participants, it can be stated that the fact that they did not express their opinions about the training on consumer environmental awareness is an indicator of the quantitative result obtained. However, in the relevant literature (Elliott et al., 2020; Karrow et al., 2022; McGregor et al., 2022), it is stated that environmental courses given to prospective teachers contribute to environmental awareness.

It was determined that the consumer environmental awareness perception level of social studies teacher candidates who follow printed or visual publications on the environment was statistically significantly higher than that of teacher candidates who do not follow such publications. In the qualitative findings, the fact that the participants stated that they prefer products with high brand awareness is thought to be related to the fact that there is a significant difference in the consumer environmental awareness perceptions of social studies teacher candidates in favor of those who follow printed and visual publications. Relevant literature (Xie, 2015; León et al., 2022; Rabitz et al., 2021) also supports this result. These results show that advertisements in social media and printed publications affect consumers' product preferences. It is thought that the reason for this situation is that content producers take into account consumers' needs and interests in product advertisements.

As a result of the research, it was found that the environmental awareness perceptions of teacher candidates who participated in environmental activities were significant and high. In the interviews with the participants, it was seen that many of the teacher candidates stated that they were influenced by the views of the social environment they were in. Therefore, environmental-themed activities carried out with the social environment are thought to be effective in creating participants' perception of consumer environmental awareness.

Recommendations

Some recommendations that can be made on this issue are:

Environment-related visuals and news can be included more in various course contents in the social studies teaching undergraduate program.

Various environmental-themed activities can be organized for social studies teacher candidates to create consumer environmental awareness.

Research can be conducted using action research or experimental methods on how to raise the consumer environmental awareness levels of social studies teacher candidates to a higher level.

Studies can also be conducted in different teaching branches and applications can be made for groups with low consumer environmental awareness.

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Author 2: 33%

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There is no conflict of interest that the authors will declare in the research.

Sosyal Bilgiler Öğretmen Adaylarının Tüketici Çevre Bilinci Algılarının İncelenmesi: Karma Yöntem Araştırması

Özet

Araştırmanın amacı sosyal bilgiler öğretmen adaylarının küresel iklim değişikliği farkındalıklarını incelemek ve konuya yönelik görüşlerini tespit etmektir. Bu nedenle araştırma karma araştırma yöntemlerinden açıklayıcı ardışık desen kullanılarak yürütülmüştür. Katılımcıların belirlenmesinde kolay ulaşılabilir örnekleme yöntemi kullanılmıştır. Buna göre, 357 sosyal bilgiler öğretmen adayından nicel veri toplanmış, nicel veriler analiz edildikten sonra aynı grubun içinden farkındalık düzeyi yüksek çıkan adaylardan 20 kişi gönüllük esasına göre seçilerek görüşme yapılmıştır. Bu kapsamda veri toplama aracı olarak "Küresel İklim Değişikliği Farkındalık Ölçeği", "Yarı Yapılandırılmış Görüşme Formu" ve "Kişisel Bilgi Formu" kullanılmıştır. Nicel veriler betimsel istatistik yöntemleriyle nitel veriler ise içerik analiziyle çözümlenmiş ve toplanan veriler birleştirilerek yorumlanmıştır. Araştırma sonucunda sosyal bilgiler öğretmen adaylarının küresel iklim değişikliği farkındalıklarının yüksek düzeyde olduğu tespit edilmiştir. Sosyal bilgiler öğretmen adaylarının küresel iklim değişikliği farkındalık düzeylerinin cinsiyet, sınıf, çevre eğitimi ile ilgili ders alma ve çevre koruma amaçlı kuruluşlara üye olma değişkenlerinde istatistiksel olarak anlamlı bir fark olmadığı belirlenirken küresel iklim değişikliği farkındalık düzeyleri ile çevre konulu görsel yayınları takip etme değişkeni arasında istatistiksel olarak anlamlı bir farklılık olduğu sonucuna ulaşılmıştır. Araştırmanın nitel bulgularından elde edilen sonuçların nicel bulgulardan elde edilen sonuçlarla benzerlik gösterdiği belirlenmiştir.

Anahtar Kelimeler: Tüketici çevre bilinci, algı, sosyal bilgiler, öğretmen adayı.

Giriş

İnsanoğlunun bitmek bilmeyen tüketim hırsı, her iki çevre türünde de "çevre sorunları" olarak dile getirilen bir dizi problemle karşılaşılmasına yol açmıştır. Öyle ki çevre sorunları dendiğinde "insanların zamanla geliştirdiği yapay ortamların doğal çevre üzerine baskılarıyla yapay çevrede bulunan sorunlar ve her iki çevrede de görülen olumsuzluklar" (Özer, 1974) akla gelmektedir. Ortaya çıkan çevre sorunlarının giderilmesinde ise bireylerin çevre bilinç ve duyarlılıklarının artırılmasının (Gordon-Wilson ve Modi, 2015) ve çevre dostu davranışlar benimsemelerinin önemli olduğu alan yazında dile getirilmektedir (Coelho vd., 2017; Demirbaş & Pektaş, 2009). Çevreye yönelik tutum ve davranış değişikliğiyle yaşanan problemlerin giderilebileceği (Sinha ve Watters, 1985) görüşünden hareketle, bireylerin çevreye karşı sorumlu, tüketim bilincine sahip davranışlar sergilemelerinin ve konu ile ilgili eğitilmelerinin büyük önem taşıdığı ifade edilmektedir (Çelik vd., 2016). İlgili alan yazın incelendiğinde de benzer bir şekilde eğitimin, çevre bilincinin oluşmasında önemli rol oynadığı (Gül ve Özay-Köse, 2015) ve çevreye yönelik duyarlı davranışlar sergilemede etkili olduğu (Fernandez-Manzanal vd., 2007) belirtilmiştir. Bu aşamada dikkatlerden kaçırılmaması gereken hususlardan bir diğeri ise eğitim ile tüketici davranışları arasındaki ilişkidir. Her ne kadar tüketim dendiğinde insanların ihtiyaçlarını ve isteklerini karşılamak için mevcut kaynakları kullanma eylemi akla gelse bile sonuçları itibariyle tüketimin sadece ekonomik değil

aynı zamanda sosyal, kültürel ve fiziksel unsurları da içermesi (Aksu, 2014) onun eğitim kapsamında ele alınmasını da gerekli kılmaktadır.

Tüketicilerin çevreye karşı olumlu davranışlar sergilemelerinin ön şartının çevreye yönelik olumlu algılara sahip olmaları olduğunu ifade eden Cordes ve Miller (2000), verilecek olan eğitimin erken yaşlarda başlatılması gerektiğini dile getirmişlerdir. Gerçekleştirilecek olan eğitimle öğrencilerin doğayı koruma, çevreye yönelik olumlu tutum, değer, beceri ve algılara sahip olma (Ardoin vd., 2020; Carleton-Hug ve Hug, 2010), çevreye yönelik farkındalık kazanmalarının yanı sıra, çevreye değer veren birer vatandaş olmaları da amaçlanmaktadır. Bu amaçlara ulaşılması aşamasında çevre eğitimi, dünya genelinde okullarda özellikle vatandaşlık, fen bilgisi ve sosyal bilgiler gibi derslerin içeriğinde verilirken (Carleton-Hug ve Hug, 2010) Türkiye'de ise ilköğretim, ortaöğretim ve lise ders programlarında hayat bilgisi, sosyal bilgiler, fen bilgisi, coğrafya, biyoloji, sağlık bilgisi ve kimya derslerinde çeşitli kazanımlar aracılığıyla öğrencilerde yapılandırılmaya çalışılmaktadır (Demir & Yalçın, 2014). Bu dersler içerisinde sosyal bilgiler derslerini öne çıkaran husus ise onun vatandaş yetiştirme konusunda yüklendiği misyondur (Kırıkçı, 2013). Bu özel amaçtan da anlaşılacağı üzere sosyal bilgiler dersi ile öğrencilerin tüketici çevre bilincine sahip vatandaşlar olmaları da hedeflenmektedir. Bu aşamada rehber ve rol-model konumunda bulunan sosyal bilgiler öğretmenlerinin, öğrencilerinin tüketici çevre bilinci algı düzeylerine etkide bulunacağı ise göz ardı edilemez bir durumdur.

Sosyal bilgiler öğretmen adaylarının konu ile ilgili algı düzeylerinin belirlenmesi ise onlara verilen lisans eğitiminin değerlendirilmesi ve ortaya çıkan aksaklıkların giderilmesi açısından önemlidir. Ancak alan yazında öğretmen adaylarının çevre bilinçleri (Akçay ve Pekel, 2017; Diken ve Çıbık, 2009; Dolenc-Orbanic ve Kovac, 2021; Ergin, 2019) ile çevre sorumluluğuna bağlı tüketim bilinçlerini ölçme amaçlı yapılan çalışmalar (Bhatia ve Jain, 2017; Gül ve Özay-Köse, 2015; Ichsan vd., 2018; Karademir, 2016) bulunmasına rağmen doğrudan sosyal bilgiler öğretmen adaylarının tüketici çevre bilinci algılarının ve konuya ilişkin görüşlerinin ele alındığı herhangi bir çalışmaya rastlanılmamıştır. Çalışmanın bu yönüyle alan yazına katkı sağlayacağı düşünülmektedir. Araştırmanın alt problemleri şu şekildedir:

1. Sosyal bilgiler öğretmen adaylarının tüketici çevre bilinci algıları ne düzeydedir?

2. Sosyal bilgiler öğretmen adaylarının tüketici çevre bilinci algı düzeyleri; cinsiyet, sınıf, çevre eğitimi dersi alıp almama, çevre konulu görsel ve basılı yayınları takip edip etmeme, çevre konulu etkinliklere katılıp katılmama ve çevreyi korumaya yönelik sivil toplum kuruluşlarına üye olup olmama değişkenlerine göre anlamlı farklılık göstermekte midir?

3. Sosyal bilgiler öğretmen adaylarının tüketici çevre bilinci algı düzeyleri ile tüketici çevre bilincine yönelik görüşleri birbirini desteklemekte midir?

Yöntem

Araştırmada bir karma yöntem deseni olan birleştirme deseni kullanılmıştır. Birleştirme deseni, nicel ve nitel araştırma verilerinin analizinden elde edilen sonuçların birleştirilmesi olarak tanımlanmaktadır. Bu bağlamda, nicel sonuçlar genel eğilimleri nitel sonuçlar ise bireylerin kişisel görüşlerini ortaya koymaktadır (Creswell, 2021). Nitel ve nicel

kısımlar için farklı örnekleme yöntemleriyle farklı çalışma grupları kullanılmıştır. Nicel bölümde, seçkisiz olmayan örnekleme türlerinden uygun örnekleme yöntemi kullanılmıştır. Bu örnekleme türü araştırmacılara örneklemeye ulaşma noktasında kolaylık sağlayan bir tür olarak ifade edilebilir. Niğde Ömer Halisdemir, Nevşehir Hacı Bektaş Veli ve Konya Necmettin Erbakan Üniversiteleri, Eğitim Fakülteleri, Türkçe ve Sosyal Bilimler Eğitimi Bölümü, Sosyal Bilgiler Eğitimi Ana Bilim Dalı'nda 1, 2, 3 ve 4. sınıflarda öğrenim gören 357 öğretmen adayı araştırmanın nicel kısmının çalışma grubunu oluşturmaktadır. Araştırmanın nitel kısmında ise Niğde Ömer Halisdemir Üniversitesi Eğitim Fakültesi Türkçe ve Sosyal Bilimler Eğitimi Bölümü, Sosyal Bilgiler Eğitimi Ana Bilim Dalı'nda 1, 2, 3 ve 4. sınıflarda öğrenim gören 20 öğretmen adayı amaçlı örnekleme yöntemlerinden kolay ulaşılabilir durum örneklemesi yoluyla çalışma grubu olarak belirlenmiştir.

Bu araştırmada Dikmenli ve Konca (2016) tarafından geliştirilen "Tüketici Çevre Bilinci Algı Ölçeği", araştırmacılar tarafından geliştirilen "Yarı Yapılandırılmış Görüşme Formu" ve ilgili alan yazın incelenerek oluşturulmuş "Kişisel Bilgi Formu" veri toplama araçları olarak kullanılmıştır. Nicel verilerin analizinde SPSS 21 ile AMOS 24 paket programları kullanılmıştır. Kullanılan ölçekten uç değerlerin silinmesinin ardından dağılım normalliğinin belirlenmesi için Skewness ve Kurtosis değerlerine bakılmıştır. Kişisel Bilgi Formu'ndan ve Tüketici Çevre Bilinci Algı Ölçeği'nden elde edilen verilerin Skewness ile Kurtosis değerleri incelenmiş ve değerlerin -1.5/+1.5 aralığında olduğu saptanmıştır. Skewness ve Kurtosis değerlerinin -1.5/+1.5 aralığında olması normal dağılım gösterdiği anlamına gelmektedir (Fidell vd., 2013). Bu durumda parametrik testlerden bağımsız gruplar t-testi ve tek yönlü varyans analizi [ANOVA] testlerinden yararlanılmaktadır. Nitel verilerin çözümlenmesinde ise içerik analizi yöntemi kullanılmıştır. İçerik analizi, insan davranışlarını ve doğasını belirlemek amacıyla çıkarımlarda bulunmaya yarayan sistematik bir teknik olarak ifade edilmektedir (Boyraz & Tepe, 2019). Yapılan içerik analizi doğrultusunda kod ve kategoriler oluşturulmuştur.

Araştırmanın Etik İzinleri:

Bu çalışmada "Yükseköğretim Kurumları Bilimsel Araştırma ve Yayın Etiği Yönergesi" kapsamında uyulması gerektiği belirtilen tüm kurallara uyulmuştur. Yönergenin ikinci bölümü olan "Bilimsel Araştırma ve Yayın Etiğine Aykırı Eylemler" başlığı altında belirtilen eylemlerin hiçbiri gerçekleştirilmemiştir.

Etik Kurul İzin Bilgileri:

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Bulgular

Sosyal bilgiler öğretmen adaylarının Tüketici Çevre Bilinci Algı Ölçeği'nden elde edilen toplam puan ortalamasının yüksek düzeyde olduğu belirlenmiştir. Kişisel Bilgi Formu'nda yer alan değişkenlere göre ele alındığında ise, sosyal bilgiler öğretmen adaylarının tüketici çevre

bilinci algı düzeyleri ile cinsiyet, sınıf, çevre dersi alma değişkenleri arasında istatistiksel olarak anlamlı bir farklılık tespit edilmemiştir. Çevre ile ilgili görsel, basılı yayınları takip etme ve çevre konulu etkinliklere katılma değişkenlerinde ise istatistiksel olarak anlamlı bir farklılık olduğu bulgularına ulaşılmıştır.

Araştırmanın nitel bölümünde, 5 ayrı tema çerçevesinde farklı kategori ve kodlara ulaşılmıştır. Katılımcıların çevreye zarar veren bireyler gördüklerinde verecekleri tepkilere ilişkin görüşlerinin "Tepki" kategorisinde çoğunlukla yalnızca sözel uyarı ile sınırlı olduğu belirlenmiştir. "Çevre bilinci" kategorisinde katılımcıların yapmış oldukları tüketimlerin çevreye zarar verip vermeme davranışının "çevreyi kirletmeme" ile sınırlı kaldığı görülmektedir. "Marka bilinirliği" kategorisinde katılımcıların tükettikleri ürünlerin güncel ve bilinir marka/ürün olmasının tüketim alışkanlıklarına etkilerine ilişkin görüşlerinin olumlu yönde olduğu saptanmıştır. "Sosyal çevreden etkilenme" kategorisinde katılımcıların başkalarının görüşlerinin tüketim alışkanlıklarını etkileyip etkilemediğine ilişkin görüşlerinin olumlu ve olumsuz anlamda hemen hemen eşit olduğu belirlenmiştir. "Öz farkındalık" kategorisinde ise katılımcıların çoğunlukla tüketici çevre bilinci konusunda öz farkındalığa sahip olduğu saptanmıştır.

Nicel ve nitel verilerin çözümlenmesinin ardından elde edilen bulgular birleştirilmiştir. Buna göre, sosyal bilgiler öğretmen adaylarının tüketici çevre bilinci algı ortalamasının yüksek düzeyde olduğu araştırmanın nicel bulguları ile elde edilmiştir. Araştırmanın nitel kısmında ise yapılan görüşmeler neticesinde sosyal bilgiler öğretmen adaylarının cinsiyet ve sınıf düzeyi gözetmeksizin çevresel farkındalıklarına yönelik olumlu görüşlere sahip oldukları bulgusuna ulaşılmıştır. Nitel bulguların analizi sonucunda katılımcıların çoğunlukla bilinçsiz tüketici olarak tanımlanan bireylere karşı tepki gösterme davranışında bulunacağını ifade etmesi ve kendilerini bilinçli tüketici olarak tanımlama şekillerinin nicel bulgularla bütünleştiği görülmektedir.

Tartışma ve Sonuç

Sosyal bilgiler öğretmen adaylarının tüketici çevre bilinci algılarının istatistiksel olarak yüksek düzeyde oluğu sonucuna ulaşılmıştır. İlgili alan yazında sosyal bilgiler öğretmen adaylarının tüketici çevre bilinci algılarını tespit etmeye yönelik herhangi bir çalışmaya rastlanmamıştır. Ancak konu ile ilişkili olarak öğretmen adaylarının çevre okuryazarlığı düzeylerini ve çevresel duyarlılıklarını tespit etmek amacıyla yapılan çalışmaların alan yazında var olduğu görülmektedir. Bu araştırmalarda da (Artun, 2013; Daniel vd., 2022; Dolenc-Orbanic ve Kovac, 2021; Durmuş ve Kınacı, 2021; Ergin, 2019; Sumitro ve Rohman, 2023) öğretmen adaylarının çevre okuryazarlık düzeylerinin yüksek seviyede olduğu belirlenmiştir. Katılımcılarla yapılan görüşmeler sonucunda da nicel bulgulara benzer şekilde öğretmen adaylarının genellikle tüketici çevre bilincine sahip olduklarına yönelik görüşleri olduğu sonucuna ulaşılmıştır. Özellikle katılımcıların çevreye zarar veren vatandaşlara tepki göstereceğini ifade etmesi ve çevre bilinci konusunda yapmış oldukları öz eleştiri de çevre bilincine sahip olduklarını gösterir niteliktedir. Öğretmen adaylarının çevreyi koruma ve kirletmeme yönünde ifade ettikleri davranışların da onların çevre bilinci konusunda öz farkındalığa sahip olduğunun farklı bir göstergesi olduğu düşünülmektedir.

İlgili alan yazında sosyal bilgiler öğretmen adaylarının çevreye yönelik görüşlerini ele alan çalışmaların olduğu görülmektedir (Bülbül & Yılmaz, 2019; Meral vd., 2016). Gerçekleştirilen bu araştırmalardan elde edilen sonuçlara göre sosyal bilgiler öğretmen adayları genel anlamda çevre merkezli düşünme eğilimine sahip olsalar da sınıf seviyesine göre bu düşünme eğiliminin farklılaştığı belirlenmiştir. Araştırmacılar tarafından toplumun çevre konusunda bilinçlendirilmesinin çoğunlukla televizyon, radyo, cep telefonu, bilgisayar gibi kitle iletişim araçları aracılığıyla sağlandığı belirlenmiştir. Alan yazın incelemesi sonucunda elde edilen bulguların bu araştırmada sosyal bilgiler öğretmen adaylarının ifade ettikleri görüşlerle benzerlik gösterdiği ve birbirlerini desteklediği dile getirilebilir (Xie, 2015).

Sosyal bilgiler öğretmen adaylarının tüketici çevre bilinci algı düzeylerinin cinsiyet ve sınıf değişkenlerine göre anlamlı farklılık göstermediği sonucuna ulaşılmıştır. Katılımcılar ile yapılan görüşmelerde katılımcıların öğrenim gördükleri sınıf düzeyinin ve cinsiyetlerinin çevre bilincine yönelik görüşlerinde bir farklılık oluşturmadığı görülmektedir. Bu durum nicel bulgulardan elde edilen sonucu da destekler niteliktedir. Bununla birlikte bu araştırmadan farklı olarak çeşitli araştırmalarda kız öğrencilerin çevresel farkındalık düzeylerinin erkek öğrencilerden daha yüksek olduğu tespit edilmiştir (Diken & Çıbık, 2009; Noordin & Sulaiman, 2010; Sivamoorthy vd., 2013).

Araştırmadan elde edilen diğer bir sonuç, çevre içerikli ders almalarının sosyal bilgiler öğretmen adaylarının tüketici çevre bilinci algı düzeylerinde anlamlı bir fark oluşturmadığıdır. Elde edilen bu sonucun, tüketici çevre bilinci farkındalığının daha çok duyuşsal davranışın bir göstergesi olmasıyla ilgili olduğu ifade edilebilir. Katılımcılarla gerçekleştirilen görüşmelerde onların tüketici çevre bilinci konusunda eğitimle ilgili görüş bildirmemelerinin, elde edilen nicel sonucun bir göstergesi olduğu dile getirilebilir. Ancak ilgili alan yazında (Elliott vd., 2020; Karrow vd., 2022; McGregor vd., 2022) öğretmen adaylarına verilmiş olan çevre içerikli derslerin çevre bilincine katkı sağladığı ifade edilmektedir.

Çevre konulu basılı veya görsel yayınları takip eden sosyal bilgiler öğretmen adaylarının tüketici çevre bilinci algı düzeyinin bu yayınları takip etmeyen öğretmen adaylarına göre istatistiksel olarak anlamlı bir şekilde yüksek olduğu belirlenmiştir. Nitel bulgularda da katılımcıların marka bilinirliği yüksek ürünler tercih ettiğini ifade etmesinin de sosyal bilgiler öğretmen adaylarının tüketici çevre bilinci algılarında basılı ve görsel yayınları takip edenlerin lehine anlamlı bir farkın olması ile ilişkili olduğu düşünülmektedir. İlgili alan yazın da (León vd., 2022; Rabitz vd., 2021; Xie, 2015;) bu sonucu desteklemektedir.

Araştırma sonucunda çevre ile ilgili düzenlenen etkinliklere katılan öğretmen adaylarının çevre bilinci algılarının anlamlı düzeyde yüksek olduğu tespit edilmiştir. Katılımcılarla yapılan görüşmelerde de öğretmen adaylarının birçoğunun içinde bulunduğu sosyal çevrenin görüşlerinden etkilendiklerini ifade ettiği görülmektedir. Dolayısıyla sosyal çevre ile yapılan çevre temalı etkinliklerin katılımcıların tüketici çevre bilinci algılarının oluşmasında etkili olduğu düşünülmektedir.

Öneriler

Araştırma bulgularından elde edilen sonuçlara göre;

Sosyal bilgiler öğretmenliği lisans programında çeşitli ders içeriklerinde çevre konulu görsellere ve haberlere daha çok yer verilmesi,

Sosyal bilgiler öğretmen adaylarına tüketici çevre bilinci oluşturmaya yönelik çevre konulu çeşitli etkinlikler yapılması,

Sosyal bilgiler öğretmen adaylarının tüketici çevre bilinç düzeylerinin hangi yöntemlerle daha yüksek seviyeye getirilebileceğine ilişkin eylem araştırması veya deneysel yöntemler kullanılarak araştırmalar yapılması,

Farklı öğretmenlik branşlarında da çalışmalar yapılması ve tüketici çevre bilincinin düşük olduğu gruplara yönelik uygulamaların yapılması önerilmektedir.

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Examining Classroom Teachers' Views About Violence against Teachers

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Abstract

Teachers have always played an important role and had a special place in society. While teachers are so valuable, violence against them should not be accepted. However, today, this situation can even reach the schools and classrooms where teachers teach. This study was conducted to obtain the opinions of classroom teachers about the increasing violence against teachers. A case study design, one of the qualitative research designs, was used in the study. 27 classroom teachers participated in the study. The sample of the study was determined by the criterion sampling method from the purposeful sampling technique. The data was obtained with a semi-structured interview form prepared by the researchers by consulting expert opinions. The data obtained at the end of the data collection process was analyzed with the content analysis technique. As a result of the research, it was concluded that classroom teachers were negatively affected by the news of violence against teachers, that the profession was discredited and that deterrent sanctions should be applied as a solution to this issue, and that they thought that the discrediting of the profession was the cause of the violent incidents. Based on the results obtained, suggestions such as securing teachers' rights through legal means, showing the necessary importance to teachers in terms of material and moral aspects, increasing security measures in schools and holding parent meetings in a safe environment by appointment come to the fore.

Keywords: Teacher, violence, violence in education, teacher opinions.

Introduction

In the realm of education, the role of a teacher is not merely to impart knowledge but also to instill skills and character in individuals towards specific goals (Campbell, 2008). Teaching is considered a profession distinct from others due to its pivotal position in transmitting universal and local cultural heritage and striving to help individuals fully realize their potential (Goldie et al., 2002). This distinction underscores the need for teachers to undergo specialized training and pedagogical formation to meet the educational needs of society effectively (Campbell, 2008). Moreover, teaching is characterized by its scientific foundation, requiring expertise and adherence to ethical principles, which are essential components of the profession.

The teaching profession has gone through various stages and varied across societies throughout history. This profession, which has existed since the Sumerian period, was practiced for religious and socio-economic purposes in a process that began with the discovery of cuneiform in 3300 BC (Çelik et al., 2019). With the opening of madrasahs during the Seljuk period, the teaching profession became more prominent, and the teachers who provided education became respected individuals in society (Bursal & Buldur, 2016). Although Fatih Sultan Mehmet implemented a special program for primary school teachers during the Ottoman period, sufficient importance was not given to teacher education in the following periods (Avcı & Kayıran, 2023). In the Republican period, various institutions that trained teachers were established and teacher education was institutionalized (Sönmez & Cemaloğlu, 2017).

The self-evaluations of classroom teachers and teacher candidates in terms of general competencies of the teaching profession were examined, and these evaluations became an important indicator of the general competencies of the profession (Kahyaoğlu & Kırıktaş,

2017). Studies on the prestige of the teaching profession in society have shown that the image of the teaching profession is at a moderate level (Ünsal et al., 2023). It has been emphasized that various regulations should be made to increase the prestige of the teaching profession in society and to increase the value of the profession (Güçlü et al., 2023).

Studies on the competencies of the teaching profession and the professional skills and teacher competencies of prospective teachers have revealed that teachers are generally sufficient but differ in certain dimensions (Aksoy & Taşkın, 2023). The fact that the teaching profession is a profession that develops with experience may affect the relationship between teachers' perceptions of professional commitment and professional competence skills (Kıyat & Yayla, 2023). In this context, it has been emphasized that the teaching profession is a continuous learning and development process and that teachers must constantly renew themselves (Beyaz et al., 2020).

It has been stated that various measures should be taken to increase the prestige of the teaching profession in society, to increase the value of the profession and to improve the working conditions of teachers (Polat & Özdemir, 2018). The acceptance and increasing the prestige of the teaching profession in society is important in terms of the efficiency of the education system and the training of qualified human resources needed by society (Gülay-Ogelman et al., 2023). Therefore, it is expected that the regulations made for the teaching profession will contribute to the professional development of teachers and the quality of education of society (Yılan & Yılan, 2024).

It has been stated that various measures should be taken to increase the prestige of the teaching profession in society, increase the value of the profession and improve the working conditions of teachers (Duru, 2022). The acceptance and increase in the prestige of the teaching profession in society is important in terms of the efficiency of the education system and the training of the qualified human resources needed by the society (Özen, 2017). Therefore, it is expected that the regulations made for the teaching profession will contribute to the professional development of teachers and the quality of education of the society (Demir et al., 2023).

It has been stated that various measures should be taken to increase the prestige of the teaching profession in society, increase the value of the profession and improve the working conditions of teachers (Şengül-Bircan, 2019). The acceptance and increase in the prestige of the teaching profession in society is important in terms of the efficiency of the education system and the training of the qualified human resources needed by the society (Kartal & Kıymaz, 2020). Therefore, it is expected that the regulations made for the teaching profession will contribute to the professional development of teachers and the quality of education of the society (Çermik et al., 2017).

It has been stated that various measures should be taken to increase the prestige of the teaching profession in society, increase the value of the profession and improve the working conditions of teachers (Yaraş & Turan, 2021). The acceptance and increase in the prestige of the teaching profession in society is important for the efficiency of the education system and the training of the qualified human resources needed by the society (Bolat & Baş, 2023).

Therefore, it is expected that the regulations made for the teaching profession will contribute to the professional development of teachers and the quality of education of the society (Aykol et al., 2021).

It has been stated that various measures should be taken to increase the prestige of the teaching profession in society, increase the value of the profession and improve the working conditions of teachers (Bektaş et al., 2019). The acceptance and increase in the prestige of the teaching profession in society is important for the efficiency of the education system and the training of the qualified human resources needed by the society. Therefore, regulations regarding the teaching profession are expected to contribute to the professional development of teachers and the quality of education in society (Erdem & Şimşek, 2013). Teaching, which requires patience and sacrifice, must be done willingly to achieve successful results. The social, cultural and economic status of teachers in society is an important indicator for understanding the general level of society. Teachers have always had an important and special position in society, and this has given them a different prestige than other professions. Protecting this prestige also places a great responsibility on teachers (Li et al., 2022; Toom et al., 2010).

The high status of teachers in society can increase their influence in society and have a more positive impact on students. Research shows that teachers' social, cultural and economic situations play an important role in determining social levels (Yuan, 2021). In particular, protecting the prestige of teachers in society can have positive effects on the level of education and general welfare of society (Dee & Henkin, 2002). The social status of teachers can also determine their influence in the field of education. For example, as teachers' prestige in society increases, their influence on students may also strengthen and the quality of education may increase (Liu & Wang, 2022). Therefore, raising teachers' social status may play an important role in improving general education standards and student achievement (Gong, 2024).

Teachers' social positions in society may also determine their influence on students. For example, when teachers' social status is high, students' motivation and learning capacity may be positively affected (Chang, 2003). This shows that teachers' prestige in society plays an important role in students' academic achievement and overall development (Schrijvers et al., 2016). As a result, teachers' social, cultural, and economic status in society is an important factor in determining their influence in the field of education. Teachers' being in a respected position may increase the general education level of society and positively affect students' achievement. Therefore, increasing the social status of teachers and preserving their dignity plays a critical role in the development of the education system and the success of students (Babić, 2023; Eiterebhe, 2023).

Violence can be considered as actions taken to violate a person's immunity and damage their dignity by making a harsh intervention. An act of violence can be defined as inflicting physical or psychological pain in an aggressive manner as a result of coercion. Violence is a phenomenon that can manifest itself in many different ways and we can frequently encounter it today, both individually and socially. It has different faces such as oppression, torture, intimidation, intimidation, killing, punishment and rebellion and is frequently encountered in daily life (Güleç et al., 2012).

Teachers being subjected to violence is a concerning issue that impacts not only the teachers themselves but also the overall school environment and student outcomes. Research has shown that violence against teachers is a complex phenomenon that requires a multifaceted approach to address effectively (Espelage et al., 2013). Psychologists have been highlighted as key figures in leading efforts to mitigate school violence, including violence directed towards teachers (Espelage et al., 2013). This underscores the importance of involving professionals with expertise in behavior, mental health, and conflict resolution in developing strategies to prevent and address violence in educational settings.

The role of administrators in shaping school climate and safety cannot be understated, as they play a crucial part in creating environments that either mitigate or exacerbate violence against teachers (McMahon et al., 2017). Collaborative efforts between teachers, administrators, and other stakeholders are essential in fostering a culture of respect and support within schools. By addressing systemic issues and providing adequate support to teachers, administrators can contribute to creating a positive and safe school climate that deters violence and promotes well-being. Understanding the factors contributing to student violence and its impact on teachers is essential in developing targeted strategies for prevention and response. By involving students in discussions about respectful behavior and conflict resolution, schools can promote a culture of non-violence and mutual respect among all members of the school community.

Studies investigating student violence against teachers in different cultural contexts, such as Slovakian secondary schools, provide valuable insights into the variations in prevalence and perceptions of such incidents (Džuka & Dalbert, 2007). Cultural factors, societal norms, and school dynamics all play a role in shaping attitudes towards violence and conflict resolution. Recognizing these differences is crucial in tailoring interventions that are culturally sensitive and effective in addressing the specific challenges faced by teachers in diverse settings. Teachers' perspectives on the reasons for teacher victimization offer valuable insights into the underlying factors contributing to violence against educators (Özdere, 2017). By understanding teachers' experiences and perceptions, policymakers and school leaders can develop strategies to address root causes and provide support to those at risk of victimization. Creating avenues for teachers to voice their concerns and actively participate in decision-making processes can contribute to a more inclusive and supportive school environment. Exposure of students to emotional and physical violence in the school environment underscores the need for comprehensive approaches to address various forms of violence that can impact students' we.

When we look at the studies that address violence against teachers in Turkey, we see that the types of violence against teachers are mostly focused on, the effects of violence on teachers are examined, the place of violence in education is generally mentioned or the value and respect of the teaching profession as an ancient profession is examined. However, the opinions of teachers are not given much space. This situation was seen as a deficiency by the researcher and it was decided to study it.

The general purpose of this research is to obtain the opinions of classroom teachers about the increasing violence against teachers. In line with this purpose, the following questions were sought:

1. What do you think about the increasing violence against teachers, especially in recent years? What kind of solutions do you think can be suggested in this regard?

2. How do news about violence against teachers affect your motivation towards your profession?

3. What do you think could be the reasons for the decrease in respect for the teaching profession and the increase in physical and psychological violence against teachers?

4. What are your thoughts on the adequacy and deterrence of the penalties for violence against teachers in the teaching profession law?

5. What do you think could be the negative consequences of increasing violence against teachers?

Method

Research Model

In this study, in which the views of classroom teachers on the increasing violence against teachers were tried to be determined, a case study was used as one of the qualitative research designs. Qualitative research involves qualitative data collection process through methods such as observation, interview and document analysis. These researches are studies aimed at revealing perceptions and events in a realistic and holistic manner in a natural environment (Yıldırım & Şimşek, 2016). In qualitative research, case studies focus on a phenomenon/case that is being experienced. Case study is a method that allows the researcher to examine a current and limited situation or multiple limited situations in a certain period of time in detail. This approach is carried out through information collection sources such as document analysis, observation and interviews (Creswell, 2016). In this study, violence against classroom teachers was examined as a case in point.

Study Group

In accordance with the purpose of this study, 27 classroom teachers participated in the research. The participants were determined according to the criterion sampling technique, one of the purposive sampling techniques. Purposive sampling is an unlikely, non-selective sampling approach. Purposive sampling allows in-depth research by selecting information-rich situations depending on the purpose of the study. It is preferred when it is desired to study one or more special cases that meet certain criteria or have certain characteristics (Büyüköztürk et al., 2022). The distribution of the teachers participating in the study according to these variables is presented in Table 1.

Table 1.

Demographic Distribution of the Study Group

Variables		*f*
Gender	Female	20
	Male	7
Age	22-31	22
	32-41	4
	42-51	1
Educational level	Bachelor's degree	20
	Master's degree	7
Years of experience	1-10	18
	11-20	8
	21-30	1
I was physically abused at school before.	Yes	1
	No	26
I have been subjected to psychological violence at school before.	Yes	10
	No	17

Table 1 shows that 7 male and 20 female teachers participated in the study. There were 22 teachers between the ages of 22-31, 2 teachers between the ages of 32-41, 4 teachers and 1 teacher between the ages of 42-51. When the educational status of the participant classroom teachers is examined, 20 classroom teachers with bachelor's degree and 7 classroom teachers with master's degree participated in the study. Considering the professional seniority of the classroom teachers, 18 teachers working between 1-10 years, 8 teachers working between 11-20 years and 1 teacher working between 21-30 years participated in the study. However, when the table is analysed, it is seen that 1 of the participant classroom teachers was subjected to physical violence and 10 classroom teachers were subjected to psychological violence.

Data Collection Tool

In order to collect research data, a structured interview form was developed in accordance with the opinions of field experts, and this form was used by sending Google Forms online to the participants in advance and then conducting interviews via zoom. The semi-structured interview form is a form containing flexible and open-ended questions, where there are no fixed questions and answers, where thoughts expressing a unique point of view are collected from each person interviewed (Merriam, 2013). The interview form consists of a total of 12 questions and three parts: the first part consists of 1 question, the second part consists of 6 questions and the third part consists of 5 questions. The first part consists of multiple-choice questions to confirm whether the participants volunteered to participate in the study, the second part consists of multiple-choice questions to determine the demographic characteristics of the teachers, and the third part consists of open-ended questions to determine the opinions of classroom teachers about the increasing violence against teachers. Open-ended questions were prepared by reviewing the literature on violence against teachers. The interview questions were related to violence against teachers and solution suggestions. The prepared interview form was sent to 24 classroom teachers working in different provinces of Turkey in the 2023-2024 academic year via Google Forms and teachers were asked to fill out the form. An attempt was made to provide data enrichment by interviewing teachers who filled out the Google form about their answers for 10-15 minutes at their convenience. Before the application, it was stated to the teachers that they should answer the questions sincerely.

Analysing the Data

Content analysis method was used to analyse the qualitative data obtained in the study. Content analysis involves qualitative data reduction and interpretation efforts and deals with voluminous qualitative material to determine basic consistencies and meanings (Patton, 2018). As a first step in this method, descriptions and coding are made on the subject. Then, similar data are grouped around certain concepts and themes and interpreted by organising them in a way that the reader can understand (Yıldırım & Şimşek, 2016). In the research, the opinions of the classroom teachers for each question are divided into codes and themes are formed from the codes. While performing these procedures, classroom teachers were given codes up to T1...T27. For content analysis in the research; firstly, codes were extracted from the teacher opinions collected with the data collection tool. Then, draft categories were determined and codes were organised accordingly. Finally, the categories were checked.

Reliability and Validity

In qualitative research, efforts should be made to conduct the research ethically by taking measures to increase validity and reliability from the first step of the research (Merriam, 2013). In this study, the concepts of credibility, transferability, consistency and confirmability were used instead of validity and reliability (Yıldırım & Şimşek, 2016). In order to achieve the credibility of the study, the semi-structured interview form was presented to the opinions of experts and arrangements were made in the interview form accordingly. In addition, teachers' opinions were included in the form of direct quotations and expressed with numerical data and tables. To ensure transferability, the characteristics of the participants participating in the research, the method of the research, the process of data collection and analysis were explained in detail and the findings were transparently described in detail. To ensure consistency in the research, similar processes were carried out with all participants in the interviews. In order to ensure coding consistency during data analysis in the study, the researchers coded separately without being aware of each other. The agreement between the two coders was calculated using Miles and Huberman's (1994) formula (Reliability=Agreement/(Agreement+Disagreement) x 100) and the agreement rate between the coders was calculated as .94. Reliability calculations above 70% are considered reliable for the research (Miles & Huberman, 1994). In order to ensure confirmability in the study, the interview forms were recorded electronically.

Ethical Permits of Research:

In this study, all the rules specified to be followed within the scope of "Higher Education Institutions Scientific Research and Publication Ethics Directive" were complied with. None of the actions specified under the heading "Actions Contrary to Scientific Research and Publication Ethics", which is the second part of the directive, have been taken.

Ethics Committee Permission Information:

Name of the committee that made the ethical evaluation = Kahramanmaraş Sütçü Imam University Social and Human Sciences Ethics Committee

Date of ethical review decision = 11.09.2024

Ethics assessment document issue number = E-72321963-050.04-344018

Findings

Under this heading, the opinions of classroom teachers about the increasing violence against teachers were analysed. The examination aims to find answers to the sub-problems of the research. The findings are presented in the form of stating the opinions of teachers regarding the sub-problems of the research under each question.

The answers given to the question "What do you think about the increasing violence against teachers, especially in recent years? What kind of solutions do you think there can be in this regard?" are given in Table 2.

Table 2.

Teachers' Thoughts on Increasing Violence against Teachers and Suggestions for Solutions

Theme	Categories	Codes	f
Violence and solution suggestions	Thoughts on violence	Discrediting the profession	12
		Disrespect for teaching	11
		Devaluation of the profession	9
		Lack of deterrent measures	6
		Superiority of parents and students	5
	Solution suggestions	Deterrent penalties	15
		Enhancing reputation	10
		Laws and regulations	7
		Security measures	6
		Restriction on parental permission	2

When Table 2 is analysed, classroom teachers stated that the teaching profession has been discredited (12), respect for the profession has decreased (11), the profession has been devalued (9), deterrent measures have not been taken (6) and parents and students have the upper hand (5) about the increase in violence against teachers. It is seen that classroom teachers listed the solution suggestions that can prevent violence against teachers as giving deterrent punishments against violence (15), increasing the reputation of teachers (10), enacting laws and regulations on violence (7), increasing security measures (6) and restricting the entry of parents to the school (2). The classroom teachers who participated in the research associated violence against teachers mostly with the discrediting of the teaching profession. In addition to this, it is seen that the classroom teachers participating in the research mostly suggested that deterrent penalties should be introduced against violence as a solution. Some of the answers given by the participant classroom teachers to the questions are given below.

T8: *The teaching profession needs to be restored to its former reputation. As these incidents are heard, more and more people do it because the necessary punishment is not applied. Sanctions should be applied.*

T16: *Increasing violence against teachers is a very worrying issue. It is extremely important to provide a safe educational environment and protect teachers. For this purpose, security measures should be increased in schools, a strong attitude towards violence should be displayed, deterrent penalties should be applied and teachers should be supported professionally-psychologically.*

The answers to the second question of the research, "How do the news about violence against teachers affect your motivation towards your profession?" are given in Table 3.

Table 3.

Motivations of Teachers towards Their Profession

Theme	Categories	Codes	*f*
Motivation	Occupation related	Negatively affect	14
		Reducing motivation towards the profession	8
		Dismissal from the profession	5
	Towards emotions	Fear	9
		Feeling sadness	7
		Reluctance	5
		Regret	2

When Table 3 is analysed, it is seen that classroom teachers stated that the news about violence against teachers negatively affected their motivation (14), decreased their motivation for the profession (8) and alienated them from the profession (5). Teachers stated that they felt fear (9), sadness (7), reluctance (2) and regret (2) with these news. It is seen that the participant classroom teachers' motivation is negatively affected by the news about violence against teachers and they feel fear the most. Some of the answers given by the participant classroom teachers to the questions are given below.

T6: *It affects negatively. It makes me very sad when my colleagues are subjected to the slightest oppression, not violence. Because I see that the respect for our profession, which is very valuable and a keystone for the welfare of the society, is lost.*

T27: *Honestly, seeing these news makes me both prolonged, disappointed and frightened. It really hurts us to see that teachers are being devalued more and more every day. Naturally, this situation negatively affects our motivation towards our profession and even pushes us away from doing the profession.*

The answers to the question "What do you think are the reasons for the decrease in respect for the teaching profession and the increase in physical and psychological violence against teachers?" are given in Table 4.

Table 4.

Opinions on the Reasons for the Decrease in Respect for Teachers and Increase in Violence

Theme	Categories	Codes	*f*
The reasons underlying the decrease in respect for teachers and the increase in violence	Personal rights and developments in the profession	Discredited	14
		Decisions taken independently of education	12
		Low salary	10
		Lack of deterrence of criminal sanctions	6
		Graduate teacher increase	5
		Paid teaching	3
	Parent and student originated	Prioritizing the wishes of parents and students	10
		Parents and students with anger problems	9
		Pampering of students	5
		Social media effects	2

When Table 4 is analysed, classroom teachers stated the reasons for the increase in violence against teachers as: discrediting the profession (14), decisions taken against the profession (12), low salary (10), lack of deterrent sanctions (6), increase in graduate teachers

(5) and paid teaching (3). Classroom teachers stated that incidents of violence were caused by parents and students; prioritising the wishes of parents and students (10), the presence of students and parents with anger problems (9), spoiling students from an early age (5), parents and students being influenced by social media (2). It is understood that the classroom teachers who participated in the research see the reasons for violence against teachers mostly as discrediting the teaching profession and prioritising the wishes of students and parents. Some of the answers given by the participant classroom teachers to the questions are given below.

T3: *I think it is caused by the education system that ignores teachers while saying that we should act according to the students.*

T16: *The decrease in respect for the teaching profession and the increase in violence can be caused by factors such as changes in social value judgements, problems in the education system and deficiencies in family-school cooperation.*

The answers given to the question "What are your opinions about the adequacy and deterrence of the penalties for violence against teachers in the teaching profession law?" are given in Table 5.

Table 5.

Opinions on the Sanctions for Violence in the Teaching Profession Law

Category	Codes	ƒ
Opinions on the Law on Teaching Profession	There should be more penalties	17
	Not a deterrent	14
	Not implemented	2
	No opinion	2
	Adequate level	1

When Table 5 is analysed, classroom teachers stated that there should be more penalties (17), sanctions are not deterrent (14), penalties are not applied (2), they have not examined the law (2), and they find the law sufficient (1) about the sanctions for violence against teachers in the teaching profession law. It is seen that the classroom teachers who participated in the research think that there should be more penalties in the teaching profession law about the sanctions for violence. Some of the answers given by the participant classroom teachers to the questions are given below.

T14: *I think it is not enough, the penalties need to be increased so that they realise that education should be the building block of society.*

T22: *There are valid penalties and deterrences in this law, but the fact that these news still occur has two consequences. Either these laws are inadequate or the public is unconscious about these laws. The penalties should be updated again and it should be reflected to the public that the state is behind the honourable teachers.*

The answers to the fifth question of the research, "What do you think the negative consequences of increasing violence against teachers might be?" are given in Table 6.

Table 6.

Negative Consequences of Increasing Violence

Theme	Categories	Codes	*f*
	Community oriented	Decline in quality in education	17
		Corruption	10
		Increase in violence	7
		Student disrespect	7
Negative		Reluctance to receive training	2
consequences	Occupation oriented	Decreased motivation	12
		Disengagement from the profession	7
		Teacher de-qualification	6
		Quitting the profession	3
		Not preferring teaching	3

When Table 6 is analysed, it is seen that for the society, the classroom teachers stated that the negative consequences of increasing violence against teaching are likely to be; decrease in the quality of education (17), degeneration of society (10), increase in violence in society (7), increase in disrespect towards teachers among students (7) and increase in reluctance to receive education (2). In terms of the classroom teaching profession, they stated that the decrease in teachers' motivation towards their profession (17), teachers' leaving the profession (4) and not preferring the teaching department in university preferences (4) are possible outcomes. It is understood that the classroom teachers who participated in the research see that the decrease in the quality of education and the decrease in motivation towards the profession are the main negative consequences of the increasing violence against teachers. Some of the answers given by the participant classroom teachers to the questions are given below.

T13: *First of all, the motivation of teachers, one of the main components of the education system, will decrease. This situation will enter into a vicious cycle of decreasing the quality of education and students not receiving a good enough education.*

T19: *It may be that the quality of teaching processes will decrease, teachers' professional motivation and professional efficiency will decrease.*

Discussion and Conclusion

The aim of this study is to investigate and describe the opinions of classroom teachers about the increasing violence against teachers. In this context, it was tried to determine whether the classroom teachers had been subjected to physical or psychological violence at school before, the causes of violence in schools and their opinions about what the solution suggestions could be. In this section, the findings obtained from teachers' opinions and the results obtained in other studies in the literature are discussed together.

According to the results obtained from the first question of the research, when the opinions of the teachers were examined, the majority of the teachers associated the discrediting of the teaching profession with the increase in violence against teachers. In addition, teachers stated that deterrent penalties should be introduced as a solution to increasing violence. It has been observed that the opinions of classroom teachers about the increasing violence against teachers and their solution suggestions overlap with the literature to a great extent. Some of the solutions suggested by Yener (2023) for violence against teachers are education and

awareness raising, communication and co-operation, and identification of risk factors. According to the results obtained from the second question of the research, when the opinions of the teachers are analysed, it is seen that the majority of the teachers are negatively affected by the news about violence against teachers, their motivation towards the profession decreases and they look to the future with fear. Yaman et al. (2010) concluded in their study that teachers experienced problems such as not wanting to go to school, low motivation, restlessness and depression and that this negative situation was reflected on the students as a result. According to the results obtained from the third question of the research, when the opinions of the teachers are analysed, it is seen that classroom teachers think that the reasons for the increasing violence against teachers are the decrease in the reputation and respect for the teaching profession and the prioritisation of the wishes of parents and students. The result obtained is similar to the literature. Aydın et al. (2018) conducted a study in which teachers evaluated the teaching profession and the social status of the profession was examined according to teachers' views, and it was concluded that the social status of the teaching profession has decreased and decreased in recent years. According to the results obtained from the fourth question of the research, when the teacher opinions are analysed, it is seen that classroom teachers do not find the sanctions for violence in the teaching profession law deterrent. In Akın and Çolak's (2024) study, although positive opinions were expressed about the career system introduced by the law, criticisms were also expressed that the regulations that would solve the chronic problems of teachers such as protecting teachers against violence and mobbing, offering additional opportunities to those working in disadvantaged regions and supporting the social status of the profession were missing. According to the results obtained from the fifth question of the research, when the opinions of the teachers are analysed, it is seen that classroom teachers are of the opinion that if violence against teachers increases, society will degenerate and violence incidents will increase even more. Taşar (2019) stated that it is important to establish and strengthen the communication network between students, family members and school staff in order to reduce violence in schools.

Based on the results obtained, it was concluded that classroom teachers were negatively affected by the news about violence against teachers, that the profession was discredited and that they were of the opinion that deterrent sanctions should be applied as a solution proposal in this regard, and that they thought that the discrediting of the profession and prioritising the wishes of parents and students were the causes of violent incidents. Classroom teachers do not find the sanctions for violence against teachers in the teaching profession law sufficient and think that society will degenerate if violence continues in this way. Teachers are essential contributors to education systems globally, influencing the future by imparting knowledge and nurturing young minds. To ensure teachers are respected, supported, and empowered, various strategies can be implemented. One crucial aspect is enhancing legal protection for teachers (Page, 2017). By securing their rights through legal means, practices such as unpaid teaching can be eliminated, ensuring fair compensation for their invaluable work. Additionally, providing teachers with necessary material and moral support is essential (Donnelly, 2004). Teachers' personal values significantly shape school ethos, underscoring the importance of respecting and aligning with teachers' beliefs to foster a positive school environment.

Furthermore, raising awareness and respect for teachers among parents and students is vital (Brown, 2008). Educating parents and students on valuing and respecting teachers can cultivate an appreciation for educators. Increasing security measures in schools is also crucial to safeguard teachers and establish a safe learning environment (Sixte et al., 2023). Prioritizing teacher safety and well-being demonstrates schools' commitment to protecting those dedicated to educating others.

Moreover, fostering collaboration among teachers and school leaders is key to creating a supportive educational environment (Steyn, 2014). Teacher collaboration enhances professional development and school performance. Encouraging inclusivity and tolerance within schools is paramount (Şahin-Fırat & Ergin-Özgen, 2024). By promoting values like equality, justice, and honesty, teachers can create a welcoming and respectful atmosphere for all. Addressing teacher retention issues is critical for maintaining a stable, high-performing academic environment (Sixte et al., 2023). Recognizing and rewarding teachers for their dedication significantly impacts their job satisfaction and commitment. Providing ongoing training and support, especially in areas like disaster management and multicultural education, further enhances teacher effectiveness (Abozeed et al., 2019; Anas et al., 2021).

Understanding and supporting teachers' emotional well-being is essential for their professional growth (Alves et al., 2018). Acknowledging the emotional challenges teachers face and providing resources to navigate these experiences contributes to their overall job satisfaction and performance. Recognizing teachers' mental health importance is crucial for a supportive school environment (Kouznetsov & Jelastopulu, 2022). By promoting mental health awareness and offering stress coping resources, schools prioritize educators' holistic well-being. In conclusion, a comprehensive approach addressing legal protection, respect, support, collaboration, inclusivity, and well-being can create an environment where teachers feel valued, empowered, and motivated to excel. Respecting and supporting teachers is not only a moral obligation but also a strategic investment in education and society's future.

Recommendations

Ensuring teachers' rights and improving their working conditions are crucial for a thriving education system. Here are some suggestions to support teachers:

Violence against teachers at school should have a legal sanction, such as resisting a doctor at a hospital or a police officer on duty.

The environment necessary for classroom teachers to be able to educate their students well pedagogically should be provided without the fear of violence.

Excessive coverage of violence news in the media should not be given too much space, as it reduces teachers' motivation for their profession.

The decrease in respect for the teaching profession also stems from the inadequate share of income distribution. For this reason, teachers' salary and personal rights should be improved.

There should be a separate penalty and a deterrent sanction for violence against teachers arising from their profession.

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Sınıf Öğretmenlerinin Öğretmenlere Yönelik Şiddet Hakkındaki Görüşlerinin İncelenmesi

Özet

Öğretmenler her zaman önemli bir rol oynamış ve toplumda özel bir yere sahip olmuştur. Öğretmenler bu kadar değerli olsalar da onlara yönelik şiddet kabul edilmemelidir. Ancak günümüzde bu durum öğretmenlerin ders verdiği okullara ve sınıflara bile ulaşabilmektedir. Bu çalışma, sınıf öğretmenlerinin öğretmenlere yönelik şiddetin artması konusunda görüşlerini almak amacıyla yapılmıştır. Araştırmada nitel araştırma tasarımlarından biri olan vaka çalışması tasarımı kullanılmıştır. Çalışmaya 27 sınıf öğretmeni katılmıştır. Araştırmanın örneklemi amaçlı örnekleme tekniğinden kriter örnekleme yöntemi ile belirlenmiştir. Veriler araştırmacılar tarafından uzman görüşlerine danışılarak hazırlanan yarı yapılandırılmış görüşme formu ile elde edilmiştir. Veri toplama işlemi sonunda elde edilen veriler içerik analizi tekniği ile analiz edilmiştir. Araştırma sonucunda öğretmenlere yönelik şiddet haberlerinden sınıf öğretmenlerinin olumsuz etkilendiği, mesleğin itibarsızlaştırıldığı ve bu konuya çözüm olarak caydırıcı yaptırımların uygulanması gerektiği ve şiddet olaylarının sebebinin mesleğin itibarsızlaştırılması olduğunu düşündükleri sonucuna varılmıştır. Elde edilen sonuçlara dayanarak öğretmenlerin haklarının yasal yollarla güvence altına alınması, öğretmenlere maddi ve manevi açıdan gerekli önemin gösterilmesi, okullarda güvenlik önlemlerinin artırılması ve veli toplantılarının randevu alınarak güvenli bir ortamda yapılması gibi öneriler ön plana çıkmaktadır.

Anahtar Kelimeler: Öğretmen, şiddet, eğitimde şiddet, öğretmen görüşleri.

Giriş

Eğitim alanında öğretmenin rolü sadece bilgi vermek değil, aynı zamanda bireylere belirli hedeflere yönelik beceri ve karakter aşılamaktır (Campbell, 2008). Öğretmenlik, evrensel ve yerel kültürel mirasın aktarılmasındaki önemli konumu ve bireylerin potansiyellerini tam olarak gerçekleştirmelerine yardımcı olma çabası nedeniyle diğerlerinden farklı bir meslek olarak kabul edilir (Goldie vd., 2002). Bu ayrım, öğretmenlerin toplumun eğitim ihtiyaçlarını etkin bir şekilde karşılamak için uzmanlık eğitimi ve pedagojik formasyona girme ihtiyacının altını çizmektedir (Campbell, 2008). Ayrıca öğretmenlik, mesleğin temel bileşenleri olan uzmanlık ve etik ilkelere bağlılık gerektiren bilimsel temeli ile karakterize edilir.

Öğretmenlik mesleğine yönelik tutumlar üzerine yapılan çalışmalarda kadın öğretmen adaylarının mesleki tutum puanlarının erkek öğretmen adaylarına göre daha yüksek olduğu belirtilmiş ve bu durum Türk toplumunda öğretmenlik algısı ile ilişkilendirilmiştir (Akın & Çolak, 2024). Öğretmenlik mesleğinin tercih edilmesinde içsel ve dışsal motivasyonların etkili olduğu ve öğretmenlik mesleğine yönelik motivasyonun incelenmesinin önemli olduğu düşünülmüştür. Öğretmenlik mesleğinin toplumdaki prestijini artırmak, mesleğin değerini artırmak ve öğretmenlerin çalışma koşullarını iyileştirmek için çeşitli önlemlerin alınması gerektiği belirtilmiştir (Polat & Özdemir, 2018). Öğretmenlik mesleğinin toplumda kabul görmesi ve prestijinin arttırılması, eğitim sisteminin etkinliği ve toplumun ihtiyaç duyduğu

nitelikli insan kaynağının yetiştirilmesi açısından önemlidir (Gülay-Ogelman vd., 2023). Bu nedenle öğretmenlik mesleği için yapılan düzenlemelerin öğretmenlerin mesleki gelişimlerine ve toplumun eğitim kalitesine katkı sağlaması beklenmektedir (Yılan & Yılan, 2024).

Türkiye'de öğretmenlere yönelik şiddete değinen çalışmalara bakıldığında, öğretmenlere yönelik şiddet türlerinin daha çok üzerinde durulduğu, şiddetin öğretmenler üzerindeki etkilerinin incelendiği, şiddetin eğitimdeki yerinden genel olarak bahsedildiği ya da öğretmenlik mesleğinin kadim bir meslek olarak değer ve saygısının çok önemli olduğu görülmektedir. Ancak öğretmenlerin görüşlerine fazla yer verilmemektedir. Bu durum araştırmacılar tarafından eksiklik olarak görülmüş ve üzerinde çalışılmasına karar verilmiştir.

Bu araştırmanın genel amacı, sınıf öğretmenlerinin öğretmenlere yönelik artan şiddete ilişkin görüşlerini elde etmektir. Bu amaç doğrultusunda sınıf öğretmenlerine aşağıdaki sorular sorularak görüşleri alınmıştır:

1. Özellikle son yıllarda öğretmenlere yönelik şiddetin artması hakkında ne düşünüyorsunuz? Sizce bu konuda ne tür çözümler önerilebilir?

2. Öğretmenlere yönelik şiddet haberleri mesleğinize yönelik motivasyonunuzu nasıl etkiler?

3. Öğretmenlik mesleğine saygının azalmasının, öğretmenlere yönelik fiziksel ve psikolojik şiddetin artmasının nedenleri sizce neler olabilir?

4. Öğretmenlik meslek hukukunda öğretmenlere yönelik şiddet cezalarının yeterliliği ve caydırıcılığı hakkındaki düşünceleriniz nelerdir?

5. Sizce öğretmenlere yönelik şiddetin artmasının olumsuz sonuçları neler olabilir?

Yöntem

Araştırma Modeli

Çalışmada nitel araştırma tasarımlarından biri olarak bir vaka çalışması kullanılmıştır. Nitel araştırma, gözlem, görüşme ve belge analizi gibi yöntemlerle nitel veri toplama sürecini içerir. Bu araştırmalar, doğal ortamda algı ve olayları gerçekçi ve bütüncül bir şekilde ortaya koymayı amaçlayan çalışmalardır (Yıldırım & Şimşek, 2016). Nitel araştırmalarda vaka çalışmaları, yaşanmakta olan bir olguya/vakaya odaklanmaktadır. Nitel araştırmada bir vaka çalışması, bir olgunun gerçek dünya bağlamında derinlemesine incelenmesini içeren bir sorgulama stratejisidir. Araştırmacılara, diğer araştırma yöntemleriyle o kadar belirgin veya erişilebilir olmayabilecek karmaşık ayrıntılar hakkında derinlemesine bir anlayış edinme fırsatı sağlar. Bu yaklaşım, belge analizi, gözlem ve mülakat gibi bilgi toplama kaynakları aracılığıyla yürütülmektedir (Creswell, 2016).

Çalışma Grubu

Çalışmaya 7 erkek ve 20 kadın olmak üzere toplam 27 sınıf öğretmeni katılmıştır. 22-31 yaşları arasında 22 öğretmen, 32-41 yaşları arasında 4 öğretmen ve 42-51 yaşları arasında 1 öğretmen vardır. Katılımcı sınıf öğretmenlerinin eğitim durumları incelendiğinde, çalışmaya lisans derecesine sahip 20 sınıf öğretmeni ve yüksek lisans derecesine sahip 7 sınıf öğretmeni katılmıştır. Çalışmaya sınıf öğretmenlerinin mesleki kıdemleri dikkate alınarak 1-10 yıl

arasında çalışan 18 öğretmen, 11-20 yıl arasında çalışan 8 öğretmen ve 21-30 yıl arasında çalışan 1 öğretmen katılmıştır. Katılımcılar, amaca yönelik örnekleme tekniklerinden biri olan kriter örnekleme tekniğine göre belirlenmiştir.

Veri Toplama Aracı

Araştırma verilerinin toplanabilmesi için saha uzmanlarının görüşleri doğrultusunda yapılandırılmış bir görüşme formu geliştirilmiş ve bu form Google Formlar aracılığıyla online olarak önceden katılımcılara gönderilerek sonra da zoom üzerinden görüşmeler yapılarak kullanılmıştır. Yarı yapılandırılmış görüşme formu, esnek ve açık uçlu sorular içeren, sabit soru ve cevapların bulunmadığı, görüşülen her kişiden kendine özgü bakış açısını ifade eden düşüncelerin toplandığı bir formdur (Merriam, 2013). Mülakat formu toplam 12 sorudan ve üç bölümden oluşmaktadır. Birinci bölüm 1 sorudan, ikinci bölüm 6 sorudan ve üçüncü bölüm 5 sorudan oluşmaktadır.

Verilerin Analizi

Çalışmada elde edilen nitel verilerin analizinde içerik analizi yöntemi kullanılmıştır. İçerik analizi, nitel veri azaltma ve yorumlama çabalarını içerir ve temel tutarlılıkları ve anlamları belirlemek için hacimli nitel materyallerle ilgilenir (Patton, 2018). Bu yöntemde ilk adım olarak konuyla ilgili açıklamalar ve kodlamalar yapılır. Daha sonra benzer veriler belirli kavram ve temalar etrafında gruplandırılarak okuyucunun anlayabileceği şekilde düzenlenerek yorumlanır (Yıldırım & Şimşek, 2016). Araştırmada sınıf öğretmenlerinin her soru için görüşleri kodlara ayrılmış ve kodlardan temalar oluşturulmuştur. Bu işlemler yapılırken sınıf öğretmenlerine Ö1, Ö2, Ö3, …Ö27 şeklinde kodlar verilmiştir. Araştırmada içerik analizi için; öncelikle veri toplama aracı ile toplanan öğretmen görüşlerinden kodlar çıkarılmıştır. Ardından taslak kategoriler belirlenmiş ve kodlar buna göre düzenlenmiştir.

Araştırmanın Etik İzinleri:

Bu çalışmada "Yükseköğretim Kurumları Bilimsel Araştırma ve Yayın Etiği Yönergesi" kapsamında uyulması gerektiği belirtilen tüm kurallara uyulmuştur. Yönergenin ikinci bölümü olan "Bilimsel Araştırma ve Yayın Etiğine Aykırı Eylemler" başlığı altında belirtilen eylemlerin hiçbiri gerçekleştirilmemiştir.

Etik Kurul İzin Bilgileri:

Etik değerlendirmeyi yapan kurulun adı = Kahramanmaraş Sütçü İmam Üniversitesi Sosyal ve Beşeri Bilimler Etik Kurulu

Etik Kurul Etik inceleme karar tarihi=11.09.2024

Etik değerlendirme belgesi konu numarası= E-72321963-050.04-344018

Bulgular

Öğretmenlere yönelik artan şiddet hakkında sınıf öğretmenlerinin görüşleri incelenmiştir. Yapılan inceleme, araştırmanın alt problemlerine cevap bulunmasını amaçlamaktadır. Bulgular her bir soru altında araştırmanın alt problemlerine yönelik olarak öğretmen görüşlerinin belirtilmesi biçiminde ortaya konulmuştur.

Araştırmanın birinci sorusuna yönelik katılımcılara sorulan "Özellikle son yıllarda öğretmenlere yönelik artan şiddet hakkında neler düşünüyorsunuz? Sizce bu konuda ne gibi çözüm önerileri olabilir?" sorusuna verilen yanıtlar Tablo 1'de yer almaktadır.

Tablo 1.

Öğretmenlerin Öğretmenlere Yönelik Artan Şiddet Düşünceleri ve Çözüm Önerileri

Tema	Kategoriler	Kodlar	*f*
Şiddet ve çözüm önerileri	Şiddete yönelik düşünceler	Mesleğin itibarsızlaşması	12
		Öğretmenliğe saygısızlık	11
		Mesleğinin değersizleşmesi	9
		Caydırıcı önlemin olmaması	6
		Veli ve öğrencilerin üstünlüğü	5
	Çözüm önerileri	Caydırıcı cezalar	15
		İtibarın arttırılması	10
		Yasa ve kanunlar	7
		Güvenlik tedbirleri	6
		Veli izinlerine kısıtlama	2

Tablo 1 incelendiğinde sınıf öğretmenleri öğretmenlere yönelik şiddetin artması hakkında öğretmenlik mesleğinin itibarsızlaştığını (12) ve mesleğe karşı saygının azaldığını (11) ifade etmişlerdir. Sınıf öğretmenlerinin öğretmene yönelik şiddete engel olabilecek çözüm önerilerini; şiddete karşı caydırıcı cezalar verme (15) ve öğretmenlerin itibarlarının arttırılması (10) olarak sıraladıkları görülmektedir. Araştırmaya katılan sınıf öğretmenleri öğretmenlere yönelik şiddeti en çok öğretmenlik mesleğinin itibarsızlaşması ile ilişkilendirmişlerdir. Bunula birlikte araştırmaya katılan sınıf öğretmenlerinin çözüm olarak en çok şiddete karşı caydırıcı cezalar getirilmesi gerektiğini sundukları görülmektedir.

Ö16: *Öğretmenlere yönelik artan şiddet oldukça endişe verici bir konudur. Güvenli bir eğitim ortamının sağlanması ve öğretmenlerin korunması son derece önemlidir. Bunun için okullarda güvenlik önlemleri artırılmalı, şiddete karşı güçlü tutum sergilenmeli, caydırıcı cezalar uygulanmalı ve öğretmenler mesleki-psikolojik açıdan desteklenmelidir.*

Araştırmanın ikinci sorusuna yönelik katılımcılara sorulan "Öğretmenlere yönelik şiddet haberleri mesleğinize yönelik motivasyonunuzu nasıl etkiliyor?" sorusuna verilen yanıtlar Tablo2'de yer almaktadır.

Tablo 2.

Öğretmenlerin Mesleğe Yönelik Motivasyonları

Tema	Kategoriler	Kodlar	*f*
Motivasyon	Mesleğe yönelik	Olumsuz etkilemek	14
		Mesleğe yönelik motivasyonu düşürmek	8
		Meslekten soğutmak	5
	Duygulara yönelik	Korku	9
		Üzüntü duymak	7
		İsteksizlik	5
		Pişmanlık	2

Tablo 2 incelendiğinde sınıf öğretmenleri öğretmenlere yönelik şiddet haberlerinin motivasyonlarını mesleki anlamda; olumsuz etkilediğini (14) ve mesleğe yönelik motivasyonlarını düşürdüğünü (8) ifade etmişlerdir. Öğretmenler bu haberler ile korkuya kapıldıklarını (9) ve üzüntü duyduklarını (7) ifade etmişlerdir. Araştırmaya katılan sınıf öğretmenlerinin öğretmenlere yönelik şiddet haberleri ile motivasyonlarının olumsuz etkilendiği ve bu konuda en çok korkuya kapıldıkları görülmektedir.

Ö27: *Açıkçası bu haberleri görmek beni hem üzüyor hem hayal kırıklığına uğratıyor hem de korkutuyor. Her geçen gün öğretmenlerin daha da değersizleştiğini görmek bizi gerçekten yaralıyor. Haliyle bu durum mesleğimize yönelik motivasyonumuzu olumsuz yönde etkiliyor ve hatta mesleği yapmaktan da itiyor.*

Araştırmanın üçüncü sorusuna yönelik katılımcılara sorulan "Öğretmenlik mesleğine saygının azalmasının, öğretmenlere yönelik fiziksel ve psikolojik şiddetin artmasının nedenleri sizce neler olabilir?" sorusuna verilen yanıtlar Tablo 3'te yer almaktadır.

Tablo 3.

Öğretmenlere Yönelik Saygının Azalması ve Şiddetin Artmasının Nedenleri Hakkındaki Görüşler

Tema	Kategoriler	Kodlar	*f*
Öğretmenlere saygının azalması ve şiddetin artmasının altında yatan nedenler	Özlük hakkı ve meslekteki gelişmelerden kaynaklı	İtibarsızlaştırılmak	14
		Alınan kararlar	12
		Maaş azlığı	10
		Cezai yaptırımın caydırıcı bulunmaması	6
		Mezun öğretmen artışı	5
		Ücretli öğretmenlik	3
	Veli ve öğrenci kaynaklı	Veli ve öğrencilerin isteklerinin öncelenmesi	10
		Öfke problemli veli ve öğrenciler	9
		Öğrencilerin şımartılması	5
		Sosyal medya etkileri	2

Tablo 3 incelendiğinde sınıf öğretmenleri öğretmenlere yönelik şiddetin artma nedenlerini; mesleğin itibarsızlaştırılması (14) ve mesleğe yönelik alınan kararlar (12) olarak ifade etmişlerdir. Sınıf öğretmenleri şiddet olaylarını veli ve öğrenciden kaynaklı olarak ise: veli ve öğrencilerin isteklerinin öncelenmesi (10) ve öfke problemli öğrenci ve velilerin varlığı (9) olarak ifade etmişlerdir. Araştırmaya katılan sınıf öğretmenlerinin öğretmenlere yönelik şiddetin nedenini en çok öğretmenlik mesleğinin itibarsızlaştırılması ve öğrenci ve veli isteklerinin öncelenmesi olarak gördükleri anlaşılmaktadır.

Ö16: *Öğretmenlik mesleğine duyulan saygının azalması ve şiddetin artması, toplumsal değer yargılarındaki değişimler, eğitim sistemindeki sorunlar ve aile-okul iş birliğindeki eksiklikler gibi etkenlerden kaynaklanabilir.*

Araştırmanın dördüncü sorusuna yönelik katılımcılara sorulan "Öğretmenlik meslek kanununda bulunan öğretmenlere yönelik şiddete getirilen cezaların yeterliliği ve caydırıcılığı hakkındaki düşünceleriniz neler?" sorusuna verilen yanıtlar Tablo4'te yer almaktadır.

Tablo 4.

Öğretmenlik Meslek Kanunu'nda Bulunan Şiddete Yönelik Yaptırımlar Hakkındaki Görüşler

Kategori	Kodlar	*f*
Öğretmenlik Meslek Kanunu hakkında görüşler	Daha fazla ceza olmalı	17
	Caydırıcı değil	14
	Uygulanmıyor	2
	Fikrim yok	2
	Yeterli düzeyde	1

Tablo 4 incelendiğinde sınıf öğretmenleri öğretmenlik meslek kanununda bulunan öğretmene yönelik şiddet için yaptırımlar hakkında; daha fazla ceza olması gerektiğini (17) ve yaptırımların caydırıcı olmadığını (14) ifade etmişlerdir. Araştırmaya katılan sınıf

öğretmenlerinin öğretmenlik meslek kanununda şiddete yönelik yaptırımlar hakkında en çok daha fazla ceza olması gerektiğini düşündükleri görülmektedir.

Ö22: *Bu kanunda geçerli cezalar ve caydarıcılıklar mevcuttur ancak bu haberler hala ortaya çıkıyor olması iki sonuç doğurmaktadır. Ya bu kanunlar yetersizdir ya da halk bu kanunlar hakkında bilinçsizdir. Cezalar tekrardan güncellenerek devletin şerefli öğretmenlerinin arkasında olduğu halka yansıtılmalıdır.*

Araştırmanın beşinci sorusuna yönelik katılımcılara sorulan "Öğretmenlere yönelik artan şiddetin doğuracağı olumsuz sonuçlar sizce neler olabilir?" sorusuna verilen yanıtlar Tablo 5'te yer almaktadır.

Tablo 5.

Artan Şiddetin Doğuracağı Olumsuz Sonuçlar

Tema	Kategoriler	Kodlar	ƒ
	Topluma yönelik	Eğitimde kalite düşüşü	17
		Yozlaşma	10
		Şiddet artışı	7
		Öğrenci saygısızlıkları	7
Olumsuz sonuçlar		Eğitim almada isteksizlik	2
	Mesleğe yönelik	Motivasyonun azalması	12
		Meslekten uzaklaşma	7
		Öğretmenin niteliksizleşmesi	6
		Mesleği bırakma	3
		Öğretmenliğin tercih edilmemesi	3

Tablo 5 incelendiğinde sınıf öğretmenleri öğretmenlik yönelik artan şiddetin doğuracağı olumsuz sonuçlar için topluma yönelik olarak; eğitim kalitesinin düşmesinin (17) ve toplumun yozlaşmasının (10) olduğunu ifade etmişlerdir. Sınıf öğretmenliği mesleği açısından ise; öğretmenlerin mesleklerine yönelik motivasyonlarının azalmasının (12) ve öğretmenlerin mesleği bırakmasının (7) olduğunu ifade etmişlerdir. Araştırmaya katılan sınıf öğretmenlerinin eğitim kalitesinin düşmesinin ve mesleğe karşı motivasyonun azalmasının öğretmenlere yönelik artan şiddetin doğuracağı olumsuz sonuçların başında oluğunu gördükleri anlaşılmaktadır.

Ö13: *Öncelikle eğitim sisteminin temel bileşenlerinden biri olan öğretmenlerin motivasyonları düşecektir. Bu durum eğitim kalitesinin düşmesi, öğrencilerin yeterince iyi eğitim alamaması gibi birbirine bağlı oldukça kötü bir kısır döngüye girecektir.*

Tartışma ve Sonuç

Araştırmanın ilk sorusundan elde edilen sonuçlara göre öğretmenlerin görüşleri incelendiğinde öğretmenlerin büyük çoğunluğu öğretmenlik mesleğinin itibarsızlaştırılmasını öğretmenlere yönelik şiddetin artmasıyla ilişkilendirmiştir. Yener'in (2023) öğretmenlere yönelik şiddete yönelik önerdiği çözümlerden bazıları eğitim ve bilinçlendirme, iletişim ve iş birliği ve risk faktörlerinin belirlenmesidir. Araştırmanın ikinci sorusundan elde edilen sonuçlara göre öğretmenlerin görüşleri analiz edildiğinde öğretmenlerin çoğunluğunun öğretmenlere yönelik şiddet haberlerinden olumsuz etkilendiği, mesleğe yönelik motivasyonlarının azaldığı ve geleceğe korkuyla baktıkları görülmektedir. Yaman vd. (2010) yaptıkları çalışmada öğretmenlerin okula gitmek istememe, motivasyonlarının düşük olması, huzursuzluk ve depresyon gibi sorunlar yaşadıkları ve bunun sonucunda bu olumsuz durumun

öğrencilere yansıdığı sonucuna varmışlardır. Araştırmanın üçüncü sorusundan elde edilen sonuçlara göre öğretmenlerin görüşleri analiz edildiğinde sınıf öğretmenlerinin öğretmenlere yönelik şiddetin artmasının nedenlerinin öğretmenlik mesleğine olan itibar ve saygının azalması olduğunu düşündükleri görülmektedir. Elde edilen sonuç literatürde Aydın vd.nin (2018) öğretmenlerin öğretmenlik mesleğini değerlendirdiği ve mesleğin sosyal statüsünün öğretmenlerin görüşlerine göre incelendiği çalışmasındaki öğretmenlik mesleğinin sosyal statüsünün son yıllarda azaldığı bulgusu ile örtüşmektedir. Araştırmanın dördüncü sorusundan elde edilen sonuçlara göre öğretmen görüşleri incelendiğinde sınıf öğretmenlerinin öğretmenlik mesleği hukukunda şiddete yönelik yaptırımları caydırıcı bulmadıkları görülmektedir. Akın ve Çolak'ın (2024) çalışmasında, yasanın getirdiği kariyer sistemi hakkında olumlu görüşler dile getirilmesine rağmen, fırsatlar sunulması ve öğretmenlerin kronik sorunlarını çözecek düzenlemelerin, öğretmenlerin şiddete ve mobbinge karşı korunmasının ve mesleğin sosyal statüsünün eksik olduğu üzerinde durulmuştur. Araştırmanın beşinci sorusundan elde edilen sonuçlara göre öğretmenlerin görüşleri incelendiğinde sınıf öğretmenlerinin öğretmenlere yönelik şiddet artarsa toplumun yozlaşacağı ve şiddet olaylarının daha da artacağı görüşünde oldukları görülmektedir. Taşar (2019), okullardaki şiddeti azaltmak için öğrenciler, aile üyeleri ve okul personeli arasındaki iletişim ağının kurulmasının ve güçlendirilmesinin önemli olduğunu belirtmiştir.

Öneriler

Yapılan çalışma doğrultusunda faydalı olabileceği düşünülen bazı öneriler şu şekildedir:

Okulda öğretmenlere yönelik şiddetin hastanede doktora ya da görev başında polise mukavemetin ağır cezası olması gibi kanuni bir yaptırımının olması gerekmektedir.

Öğretmenlik mesleğine duyulan saygının azalması gelir dağılımından yeterince pay alınamamasından da kaynaklanmaktadır. Bu nedenle öğretmenlerin maaş ve özlük haklarının iyileştirilmesi gerekmektedir.

Öğretmenlere mesleğinden kaynaklı yönelen şiddete ilişkin ayrı bir ceza ve caydırıcı bir yaptırım gücünün olması gerekmektedir.

Exploring Cultural Heritage through Virtual Museums: Social Studies Teacher Candidates' Views and Experiences with Virtual Museums

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Abstract

As the role of museums in preserving cultural heritage and passing it on to future generations becomes increasingly significant, virtual museums in a digitalized world have introduced a new dimension to the discovery and learning process of this heritage. This study aims to examine the views and experiences of social studies teacher candidates regarding virtual museums. The study was designed using a qualitative research method with a phenomenological approach. The study group consisted of 45 teacher candidates. A virtual museum interview form was used as the data collection tool. The data were collected in a digital environment through the completion of virtual museum interview forms. Content analysis was utilized for data analysis. The virtual museum visits of teacher candidates were analyzed under themes such as archaeology museums, history and ethnography museums, science and technology museums, and nature and environment museums, with prominent sites like Göbeklitepe and the Museum of Anatolian Civilizations coming to the forefront. Teacher candidates positively assessed the use of virtual museums in social studies lessons for reasons such as supporting permanent learning by concretizing the teaching-learning process and making lessons more enjoyable. They designed various learning materials and activities using virtual museums, increased their cultural awareness, and contributed to their educational practices. As a result of the study, it was suggested to strengthen schools' technical infrastructure, enrich virtual museum content, encourage teacher candidates to use virtual museums as teaching materials, and integrate virtual and physical museum visits to enhance the educational impact of virtual museums.

Keywords: Cultural heritage, museum, virtual museum, social studies education, teacher candidate.

Introduction

In contemporary societies, museums, which serve as important cultural centers, help individuals understand their own culture and other cultures by exhibiting objects from humanity's past. They enable people to recognize similarities and differences, approach different cultures with tolerance, and develop empathy, imagination, and creativity (Köksal-Akyol & Akyol, 2014). The International Council of Museums [ICOM] defines museums as "non-profit, sustainable institutions at the service of society that provide individuals the opportunity to understand their environment, promote knowledge acquisition by combining entertainment with research, and aim for sustainability" (ICOM, 2007). Museums play a crucial role in helping students understand artifacts from past periods, appreciate their own culture, and approach other cultures with tolerance. Furthermore, through the artifacts displayed in museums, they contribute to the development of students' abilities to interpret the past, engage in critical thinking, and foster empathy (Kısa & Gazel, 2016).

As the role of museums in preserving cultural heritage and passing it on to future generations becomes increasingly significant, virtual museums in a digitized world have introduced a new dimension to the process of discovering and learning about this heritage. Virtual museums, which have gained prominence in recent years with the growing presence of digital technology in our lives, are a global form of museums that allow students to explore and engage in the learning process from anywhere with an internet connection (McKenzie, 1997; cited in Çelik & Ütkür-Güllühan, 2022). Virtual museums can be defined as interactive websites that utilize computer and internet technologies to provide visitors with access to

digitized copies (in visual, audio, or video formats) of artworks, historical artifacts, and documents, as well as information about these items, over the internet (Turan, 2015). With the advancement of modern technology, virtual museums now exist not only as websites but also as applications (Kılıç et al., 2023). In this context, virtual museums play a crucial role in preserving cultural heritage and passing it on to future generations. With the development of digital technologies, virtual museums can reach wider audiences and offer individuals new experiences in the learning process. These digital platforms, with their global accessibility, provide constant access to cultural and historical information, thereby enhancing intercultural understanding and tolerance while contributing to the development of individuals' cultural awareness. In this way, virtual museums serve the preservation and sustainability of cultural heritage in line with the demands of the modern age.

Virtual museums, leveraging the opportunities offered by modern technology, go beyond traditional museum experiences, redefining access to information and the sharing of cultural heritage. Bowen (2000) emphasizes the importance of virtual visitors being able to access information about distant museums, noting that in the past, visitors were required to physically visit museums to obtain information. However, thanks to the internet, it is now possible to access museums from homes, workplaces, schools, or libraries. Serin (2020) states that virtual reality allows individuals to experience being in places that seem impossible to visit, offering them authentic experiences. Through the technology employed in virtual museums, people can remotely access the collections of museums in different cities or even countries at any time of the day. This access provides direct and reliable sources of information. Virtual museums enable visitors to reach any museum they desire without time constraints. Furthermore, virtual museums are not only safe and cost-effective but also offer richer content options compared to the limited presentation capabilities of traditional museums (Kılıç et al., 2023). Çolak (2006) states that virtual museums are valuable tools that can be used in distance education, provide reliable information, allow simultaneous access to multiple users, enable individuals without physical access to reach national and international museums, and contribute to cultural development. Tsichritzis and Gibbs (1991) highlight that real museums face disadvantages in displaying artifacts, such as size limitations, incomplete collections, adverse environmental conditions, and difficulties in visitor accessibility. In this context, virtual museums, which are independent of time and space, offer an alternative solution to these challenges.

The role of technology in education is becoming increasingly vital with innovative methods that expand students' access to and opportunities for learning. The use of technology in education should not be perceived as an additional burden but rather as an element that enriches the educational experience (Karataş et al., 2015). The impact of technology in education not only facilitates students' access to information but also makes learning processes more interactive and efficient. In this context, virtual museum tours emerge as an example of the opportunities technology offers in education and contribute significantly to students' learning processes. Virtual museum tours allow students to virtually visit places they cannot physically access, transform abstract information into concrete experiences (Karataş et al., 2015), provide access to information and experiences they could not otherwise obtain, and enable them to learn in an engaging way. The enjoyable learning environment created by these

tours facilitates learning (Kayabaşı, 2005; Saraç & Özarslan, 2017; Shim et al., 2003). Virtual museums offer students richer learning experiences both cognitively and affectively (Aktaş et al., 2021) while also providing an online learning environment that develops digital literacy skills and enables historical research (Okolo et al., 2011). According to Ata (2010), virtual museum applications can enhance the quality of classroom instruction and enable students to make significant educational progress. Daniela (2020), Fokides and Sfakianou (2017), and Kampouropoulou et al. (2013), highlight that when virtual museums are used in school environments, they increase students' participation in effective learning experiences, positively influence their behavior through functions such as entertainment and communication, and make significant contributions to their cultural knowledge. Moreover, virtual tours provide valuable opportunities for schools to organize trips for students who face social and economic constraints. Çelik and Ütkür-Güllühan (2022) and Tuncel and Dolanbay (2021) emphasize in their studies that the lack of museums and cultural sites in the areas where students live, combined with parents' economic and safety concerns, underscores the importance of virtual museums and tours in ensuring equality of opportunity in education. Based on the findings of related studies, virtual museum tours play a critical role in enriching students' cultural, historical, and social knowledge and ensuring equal educational opportunities.

There is a strong connection between virtual museum applications and social studies courses. By emphasizing virtual museum applications, it has become possible for students to explore museum collections in social studies education without the constraints of time and space (Turan, 2015). Virtual museums, supported by technological tools, allow students to learn social studies topics more meaningfully. Furthermore, virtual museums, which support active learning methods, enable students to achieve deeper cognitive and affective learning (Aktaş et al., 2021). The use of virtual museums in social studies education makes significant contributions to the development of students' thinking skills. It provides an effective out-of-school learning environment for enhancing skills such as understanding time and chronology, spatial perception, and digital literacy. Virtual museums also offer extensive applications within the learning areas of the social studies curriculum, such as "Culture and Heritage," "People, Places, and Environments," and "Science, Technology, and Society" (İlhan et al., 2021). In this context, teaching activities supported by virtual museum tours in social studies classes are considered highly beneficial. They not only enhance the quality of museum experiences but also add new dimensions to real museum visits (Çolak, 2006; Yıldırım & Tahiroğlu, 2012).

Today, technologies such as virtual reality, holograms, and three-dimensional imaging, along with the recent pandemic period, have made virtual museums competitive with traditional museums. These developments have increased the significance of virtual museums in education and led to their inclusion in curricula. However, despite being integrated into curricula, the pedagogical foundations of virtual museums are still in their early stages. Consequently, teachers lack sufficient knowledge about how to effectively incorporate these museums into education and classroom activities across different subjects. This situation highlights the need for open-access training programs for teachers on the effective use of virtual museums in education, activities that directly link virtual museum use to the content and outcomes of curricula, stronger school-museum collaboration, and further reinforcement

of the educational objectives of museums (Kılıç et al., 2023). Studies by Aktaş et al. (2021) and Sungur and Bülbül (2019) have also identified that teachers and teacher candidates lack adequate knowledge and ideas about the use of virtual museums and related activities.

In this context, the necessity and importance of pre-service teachers receiving training on virtual museums and effectively utilizing them have become evident. To ensure the effective use of virtual museums in learning environments, it is crucial to consider the experiences of teacher who candidates will be the practitioners. Utkugün (2022) and İlhan et al. (2021) examined the experiences of social studies teacher candidates regarding virtual museum tours based on their views on the advantages, disadvantages, usage challenges, and effective application of virtual museums. In this study, teacher candidates evaluated virtual museums as a resource that can be used in social studies classes and designed in-class activities related to the virtual museums they visited. The candidates transformed the knowledge and experiences they gained from virtual museums into activities aligned with the learning outcomes of the course, thereby creating original materials for integrating virtual museums into the teaching process. In this context, the study aims to explore the views and experiences of social studies teacher candidates regarding virtual museums. To achieve this general objective, the following research questions are addressed:

1. Which virtual museums have social studies teacher candidates visited?

2. What are the views and evaluations of social studies teacher candidates regarding the virtual museums they visited?

3. What are the views of social studies teacher candidates on the usability of virtual museums in social studies courses?

4. What activities have social studies teacher candidates designed using the virtual museums they visited?

5. What are the views of social studies teacher candidates on the virtual museum tour activity?

Method

Research Design

This study, aiming to determine the views and experiences of social studies teacher candidates regarding virtual museums, was designed using a qualitative research method. Yıldırım and Şimşek (2018), define qualitative research as studies in which perceptions and events are examined realistically and holistically in their natural settings. The study was conducted using phenomenological design, one of the qualitative research approaches. Phenomenological research design seeks to reveal individuals' experiences, perceptions, and the meanings they attribute to a specific phenomenon or situation (Yıldırım & Şimşek, 2018). Since this study aims to deeply analyze virtual museum tours based on the views and experiences of teacher candidates, the phenomenological design was chosen.

Study Group

The study group consisted of 45 teacher candidates (30 females and 15 males) enrolled in the Social Studies Education Department at Afyon Kocatepe University Faculty of Education during the 2023-2024 academic year. The study group was selected using criterion sampling, one of the purposive sampling methods. According to Maxwell (2018), purposive sampling is employed to select groups and participants that can best address the research questions. In criterion sampling, the criteria can either be determined by the researchers or derived from a pre-established list of criteria (Yıldırım & Şimşek, 2018). In this study, the criterion used for selecting the teacher candidates was being a fourth-year student in the Social Studies Education Program. The rationale for choosing fourth-year students was their advanced knowledge in the field and their pedagogical readiness, equipping them with the depth of understanding and experience needed to respond comprehensively to the research questions. In the presentation of findings, direct quotations from teacher candidates were coded as TCA1, TCA2…TCA45 instead of using their real names.

Data Collection Tool

The data collection tool used in this study was a virtual museum interview form consisting of open-ended questions. Using written documents as a data collection tool aims to obtain detailed evidence about the meanings participants attribute to various concepts or situations (Bogdan & Biklen, 2007). An interview form was chosen as the data collection tool to allow teacher candidates to express themselves more comfortably and share their thoughts about their virtual museum tour experiences in detail. During the preparation phase of the virtual museum interview form, the open-ended questions were presented to an expert in the field of social studies education for evaluation in terms of scope and clarity. Based on the feedback received from the expert, the questions in the interview form were revised concerning their content, number, and phrasing, and the final version of the form was created. The virtual museum interview form includes questions designed to reveal teacher candidates' positive and negative evaluations of the virtual museums they visited, their views on the usability of virtual museums in social studies lessons, and the activities they designed for social studies classes using the virtual museums they explored.

Data Collection and Analysis

The data collection process began after obtaining ethical approval from the Scientific Research and Publication Ethics Committee of Afyon Kocatepe University (Ethics Committee Decision: dated 20.12.2023 and numbered 2023/357). For the data collection process, teacher candidates were asked to visit three virtual museums of their choice during the midterm break of the 2023-2024 academic year, between January 29, 2024, and February 26, 2024, and to write detailed reflections on their experiences of these virtual museum tours. The confidentiality of the data collected from the teacher candidates was ensured, and it was stated in the interview form that the data would not be used for purposes other than scientific research. The research data were collected digitally through the teacher candidates' written completion of the virtual museum interview forms.

In qualitative research, the detailed reporting of data and the thorough explanation of how the researcher arrived at the conclusions are among the key criteria for validity (Creswell, 2013; Glesne, 2016). In this study, the method section provides a detailed explanation of the research design, study group, data collection tool, data collection process, and analysis process. The data were analyzed using content analysis. According to Yıldırım and Şimşek (2018), the purpose of content analysis is to identify concepts and relationships that help interpret and explain the collected data. The commonalities among the codes derived from the data were identified and classified, and sub-themes were created for each research question. Additionally, the data analysis process was reviewed by an expert in the field, and the codes produced by the researchers and the expert were compared and evaluated. The agreement percentage was calculated using the formula [Agreement/(Agreement+Disagreement) × 100] and found to be 93%. According to Miles and Huberman (1994), a reliability percentage above 70% indicates that the study can be considered reliable. Sections causing disagreement, such as the definition of some codes and their categorization into themes, were re-evaluated to reach a consensus. To ensure the confirmability of the study, the researchers periodically revisited the raw data to verify the accuracy of the codes. The data were presented in tables according to the sub-themes and codes, and the findings were supported and interpreted with direct quotations.

Ethical Permits of Research:

In this study, all the rules specified to be followed within the scope of "Higher Education Institutions Scientific Research and Publication Ethics Directive" were complied with. None of the actions specified under the heading "Actions Contrary to Scientific Research and Publication Ethics", which is the second part of the directive, have been taken.

Ethics Committee Permission Information:

Name of the committee that made the ethical evaluation = Afyon Kocatepe University Scientific Research and Publication Ethics Committee

Date of ethical review decision= 20.12.2023

Ethics assessment document issue number= 2023/357

Findings

The views and experiences of social studies teacher candidates regarding virtual museums were analyzed under the following themes: the virtual museums they visited, their opinions on virtual museums, their views on the usability of virtual museums in social studies lessons, the activities they designed using the virtual museums they visited, and their evaluations of the virtual museum tour activity. Table 1 presents the virtual museums visited by the teacher candidates.

Table 1.

Virtual Museums Visited by Teacher Candidates

Sub-themes	Codes	ƒ
Archaeological museums and heritage sites	Göbeklitepe Archaeological Site	12
	Anatolian Civilizations Museum	10
	Adana Archaeological Museum	6
	Istanbul Archaeological Museums	5
	Çatalhöyük Archaeological Site	4
	Gaziantep Archaeological Museum	3
	Ihlara Valley Archaeological Site	3
	Ephesus Archaeological Site	3
	Hierapolis (Pamukkale) Archaeological Site	3
	Gaziantep Zeugma Mosaic Museum	2
	Şanlıurfa Karahantepe Archaeological Site	1
	Hatay Archaeological Museum	1
	Boğazköy Hattusa Archaeological Site	1
	Nemrut Archaeological Site	1
History and ethnography museums	Ankara Ethnography Museum	14
	Ankara Republic Museum	8
	Museum of Turkish and Islamic Arts	7
	İzmir Atatürk Museum	6
	Ankara Independence War Museum	6
	Gallipoli 1915 Red Crescent Hospital Exhibition Area	5
	Ankara University Toy Museum	3
	Ankara Police Museum	3
	Çanakkale Epic Promotion Cente	2
	Antalya Museum	2
	Topkapı Palace	2
	Istanbul Airport Museum	2
	Ankara Hacı Bayram Veli Museum	2
	Presidency National Struggle Exhibition	1
	Çanakkale Kilitbahir Castle Museum	1
	Bursa City Museum	1
	Bayburt Kenan Yavuz Ethnography Museum	1
	Samsun Gazi Museum	1
	Şanlıurfa Museum	1
Science and technology museums	Turkish Islamic Science and Technology History Museum	6
	Konya Science Center:	1
Nature and environment museums	Nevşehir Göreme Open-Air Museum	3
	MTA General Directorate Martyr Cuma Dağ Natural History Museum	1

As seen in Table 1, the virtual museums visited by the teacher candidates were analyzed under the sub-themes of archaeological museums and heritage sites, history and ethnography museums, science and technology museums, and nature and environment museums. An examination of the virtual museums visited by the teacher candidates reveals that they chose museums in different regions of Türkiye, representing diverse themes, based on their interests and personal curiosities. In this context, it can also be stated that the virtual museums visited by the teacher candidates align with the content of the Social Studies Curriculum, making them relevant resources for educational activities.

The teacher candidates visited the following virtual archaeological museums and heritage sites: Göbeklitepe Archaeological Site, Anatolian Civilizations Museum, Adana Archaeological Museum, Istanbul Archaeological Museums, Çatalhöyük Archaeological Site, Gaziantep Archaeological Museum, Ihlara Valley Archaeological Site, Ephesus Archaeological

Site, Hierapolis (Pamukkale) Archaeological Site, Gaziantep Zeugma Mosaic Museum, Şanlıurfa Karahantepe Archaeological Site, Hatay Archaeological Museum, Boğazköy Hattusa Archaeological Site, and Nemrut Archaeological Site.

The teacher candidates visited the following virtual history and ethnography museums: Ankara Ethnography Museum, Ankara Republic Museum, Museum of Turkish and Islamic Arts, Izmir Atatürk Museum, Ankara Independence War Museum, Gallipoli 1915 Red Crescent Hospital Exhibition Area, Ankara University Toy Museum, Ankara Police Museum, Gallipoli Campaign Promotion Center, Antalya Museum, Topkapı Palace, Istanbul Airport Museum, Ankara Hacı Bayram Veli Museum, Presidency National Struggle Exhibition, Çanakkale Kilitbahir Castle Museum, Bursa City Museum, Bayburt Kenan Yavuz Ethnography Museum, Samsun Gazi Museum, and Şanlıurfa Museum.

The teacher candidates visited the Turkish Islamic Science and Technology History Museum and the Konya Science Center as virtual science and technology museums, and the Nevşehir Göreme Open-Air Museum and the MTA General Directorate Martyr Cuma Dağ Natural History Museum as virtual nature and environment museums. Table 2 presents the views of teacher candidates regarding virtual museums.

Table 2.

Views of Teacher Candidates Regarding Virtual Museums

Sub-themes	Codes	f
Virtual tour experience	Being interesting/appealing	42
	Evoking curiosity/excitement	23
	Being visually rich/educational	30
	Giving the feeling of a real museum visit	18
	The use of technology for educational purposes	16
	Being advantageous in terms of time	15
	The desire to visit the virtual museum in person as well	15
	Lack of prior knowledge about virtual museums	12
	Being more enjoyable	12
	Curiosity about the virtual tour of the visited museum/historical site	11
	Being able to tour distant museums through virtual tours	9
	Being financially advantageous	7
Ease of use	The ease of navigating through the virtual tour	21
	The presence of informative texts for the sections	11
	Audio/video support in the virtual tour	5
	The availability of guides for the virtual tour	4
Technological challenges and shortcomings	The decrease in image quality when zooming in	22
	The inability to clearly read text when zooming in	14
	Difficulty in passing from one section to another	12
	Insufficient navigation within the museum	11
	Limited written information in the museum	11
	Lack of audio narration/music in the virtual tour.	9
	Few three-dimensional/moving models in the museum	4
	Internet connection issues during the virtual tour	3
	Freezing/lagging during the virtual tour	3
	The museum's lighting system being visually straining	1

As seen in Table 2, the teacher candidates' views on virtual museums were analyzed under the sub-themes of virtual tour experience, ease of use, and technological challenges and shortcomings.

Teacher candidates who explained their views on virtual museums through the virtual tour experience expressed their opinions as follows: being interesting/appealing, evoking curiosity/excitement, being visually rich/educational, providing the feeling of a real museum visit, the use of technology for educational purposes, being advantageous in terms of time, the desire to visit the virtual museum in person as well, lack of prior knowledge about virtual museums, being more enjoyable, curiosity about the virtual tour of the museum/historical site, the ease of navigating through the virtual tour and being financially advantageous.

TC2F explained her virtual tour experience through the Denizli Hierapolis Archaeological Site as follows: *"I wanted to revisit Hierapolis, which reflects the history of my city and which I had already visited in person, through the virtual museum to clarify the details I remembered and to see it from a different perspective. Visiting Hierapolis in person is very enjoyable, but when I recall searching for water in the heat, getting tired from walking, and being scorched by the sun, I realized that the virtual museum is much easier and more effortless both financially and emotionally. Of course, visiting in person has a unique charm. I found it very useful for exploring and seeing places that are far away and difficult to reach. Being able to visit the places I've seen with just two clicks was quite delightful… This must be what it means to use technology in a beneficial and successful way."*

TC5F described the virtual museum experience through the Çanakkale 1915 Red Crescent Hospital Exhibition Area as follows: *"…Inside this museum, there are various points of interest starting from the machine gun trench protecting the hospital from enemy aircraft, including the tea house, operating room, storage, registration and first aid tents, and the shaded area where our fallen soldiers were kept. What impacted me the most about this hospital was, as soon as I entered, the sound effects of people crying out in agony during the war, gunfire, bomb explosions, and even the mooing of cows, which deeply moved me. For a moment, I felt as though I was living in that era; I was covered in goosebumps and became very emotional. Later, when I entered the hospital, I saw scenes of injured people, those praying, those reciting prayers, people sitting and lying down, doctors attending to patients, and fallen soldiers with their bodies covered. It deeply affected me, and my eyes filled with tears. After visiting this museum, I understood even more clearly that we can never repay the sacrifices made by our soldiers and people, who gave their lives, blood, and everything for this homeland. It is definitely one of the places that must be visited to instill a sense of national consciousness. Thanks to this activity, I had the opportunity to visit it online again and relive the emotions I experienced there…"*

TC12F shared her experience during the virtual tour of the Ankara Independence War Museum as follows: *"…While exploring the virtual museum, I realized that pausing the tour to do some research is much easier compared to a physical museum visit. For instance, I researched how and under what conditions the items in the General Assembly Hall were gathered, and I learned that they serve as a vivid example of the spirit of that time: 'There is scarcity, but it does not pose an obstacle."* TC28F described her virtual tour experience of the Bayburt Kenan Yavuz Ethnography Museum as follows: *"First of all, I want to say that the location of the museum is very beautiful. The open space looks very refreshing. The exterior of the museum is also quite aesthetically pleasing. They visually exhibited water mills, which*

are almost non-existent now but were widely used in the past. When we entered the exhibition hall, we encountered items from those times, such as bowls, scissors, and sewing machines. There are also vintage cameras and cassettes, which are currently very popular among young people. Old records, telephones, clocks, and coins used during that time were displayed very clearly. This clarity is very impressive for a virtual tour. One of the things that caught my attention was the traditional Turkish floor dining table, an essential element of Turkish culture. There are many tools and equipment used for agriculture. Seeing these items made me think about how challenging the tasks of that time must have been. I greatly admired the interior and exterior design of the hall prepared to display these items. It gave me a strong sense of the past. For example, a village house was recreated. The items inside created a very authentic environment. It was very impressive that they considered every detail, from the cradle to dried vegetables. Of course, the Turkish flag had a prominent place in the exhibit. When I visited the Dede Korkut and Turkish Identity Library, which consists of works that form the foundation of Turkish-Islamic identity, I felt a warm and sincere atmosphere. I think students who love reading books would feel very connected to this place. The prayer area in the museum was also very well-designed, meticulous, and inviting. I came across a section called Loru Han. It reminded me of the tribal houses we see in TV series, but it was definitely more spacious and peaceful. The carvings on the doors and the flowers planted around the area made the atmosphere even more beautiful. I also visited an area called the observation terrace, which looked very refreshing. According to the information I read, various celebrations and weddings were held here. Thanks to this museum, I gained an understanding of how and where a family lived in the past. Every part of the museum felt very warm and welcoming. It is definitely a museum I want to visit in person. If it looks this beautiful virtually, I can only imagine how amazing it must be in reality…"

Teacher candidates who explained their views on virtual museums in terms of ease of use expressed their opinions as follows: the ability to conduct the virtual tour easily, the presence of informative texts for the sections, the availability of audio/video support during the virtual tour, and the inclusion of guides for the virtual tour.

TC13F described the ease of use of the Göbeklitepe Archaeological Site virtual tour as follows: *"…At the entrance of the museum, I first encountered the exhibition area. Having an informative section about Göbeklitepe and its history here was a great idea for gaining knowledge before visiting the archaeological site. In terms of technology, it was possible to see various tools in this area. The video option was particularly nice, as watching the video before the tour provided a brief overview and context for the visit. The opportunity to examine the structures one by one at the site was very well thought out. Clicking on the circular areas at each structure gave the feeling of walking among those monoliths. In this sense, I was very impressed and liked it a lot. While exploring the structures, I had the chance to closely examine the motifs and figures on all the stones…"*

TC22M described the virtual tour of Topkapı Palace as follows: *"…The image quality, usability of the interface, and the speed of operations within the site were quite good. The wide-ranging view provided was particularly intriguing. I didn't encounter any issues during the tour…"* TC26F emphasized the importance of the informative texts in the Ankara

Independence War Virtual Museum as follows: *"…The sections with informational content were specifically added and were clearly readable. In this respect, I was genuinely satisfied with the virtual tour and felt like I was actually visiting the museum…"*

Teacher candidates who explained their views on virtual museums in terms of technological challenges and shortcomings expressed their opinions as follows: the decrease in image quality and lack of clarity in text when zooming in, difficulties in passing from one section to another, insufficient navigation within the museum, limited written informational content, absence of audio narration or music in the virtual tour, the small number of three-dimensional or interactive models, internet connection issues during the virtual tour, freezing or lagging during the tour, and visually straining lighting systems in the museum. Some students shared their experiences regarding the difficulties they encountered during virtual museum tours as follows:

TC30F (Anatolian Civilizations Museum): *"The virtual museum was quite good, but it could be improved. For example, if you could touch the historical artifacts and receive brief audio information about them, it would be more efficient…"*

TC31M (Göbeklitepe Archaeological Site): *"In evaluating the virtual museum section for Göbeklitepe, the work done is impressive. Efforts were made to include almost every detail. However, the descriptions next to the artifacts serve as guides for me when visiting a museum. In this virtual museum, more than half of the descriptions were unreadable, and when I zoomed in, the image lost its clarity…"*

TC35F (Independence War Museum, First Turkish Grand National Assembly): *"I explored the Independence War Museum, also known as the First Grand National Assembly of Turkey [GNAT], on sanalmuze.gov.tr, but I didn't find the experience sufficient. When I researched through other sources, I gained more information about the First Assembly. First of all, the image quality wasn't very good, and I couldn't get information about the things I was curious about by zooming in. While other sources contained many pictures of paintings, I noticed that the site didn't include much about the paintings inside the museum. I also think the lack of an audio feature was a significant drawback. If there had been an audio feature, the artifacts in the museum could have been introduced audibly…"*

TC39F: *"…Since the Nevşehir Göreme Museum is an open-air museum, I had a bit more difficulty exploring it. Because it's virtual, I often got confused and wandered around the same spot, but even this detail amused me…"*

TC43F: *"…The experience feels realistic, like you're actually there, with a camera-like perspective. However, I had a hard time moving forward, turning left, right, or back, and it made me feel a bit overwhelmed. While technology provides us with a great opportunity, if even I had trouble navigating, I think middle school-level students might struggle a bit more when exploring a virtual museum…"*

Table 3 presents the teacher candidates' views on the usability of virtual museums in social studies lessons.

Table 3.

Views of Teacher Candidates on the Usability of Virtual Museums in Social Studies Lessons

Sub-themes	Codes	*f*
The learning-teaching process	Being used as an instructional material	40
	Facilitating permanent learning	25
	Making the topics taught in the lesson more concrete	23
	Attracting students' attention	13
	Making the lesson enjoyable	3
Acquisition of general knowledge and value	Introducing culture to students	20
	Instilling the value of patriotism in students	19
	Fostering a love for Atatürk in students	4
	Encouraging students to appreciate history	4
	Promoting the value of cooperation among students	1
Awareness and skill development	Enhancing students' sense of chronology	3
	Improving students' creative thinking skills	4
	Developing students' awareness of recycling	1
	Instilling a sense of cooperation in students	1
	Encouraging students to develop a habit and appreciation for visiting museums	1

As seen in Table 3, the teacher candidates' views on the usability of virtual museums in social studies lessons were analyzed under the sub-themes of teaching-learning process, general culture and value acquisition, and awareness and skill development.

Teacher candidates who explained their views on the usability of virtual museums in social studies lessons through the teaching and learning process expressed their opinions as follows: being used as teaching materials, facilitating permanent learning, making the topics taught in the lesson more concrete, attracting students' attention, and making the lesson more enjoyable. Some of the teacher candidates' views on this topic are as follows:

TC2F: *"...The ancient city of Hierapolis, which also bears traces of the Byzantine period, will positively influence students' perspectives on history by allowing them to see historical traces, structures, and living spaces. Additionally, since they learn by experiencing and exploring, their retention of information will also increase..."*

TC4F: *"...After covering a topic in class, a virtual museum tour can help make the information more permanent. I believe visual memory is very important for students..."*

TC19F: *"The Ankara Ethnography Museum I visited allowed me to gain knowledge about the social and cultural lifestyles during the Ottoman and Republic periods. The museum features items such as hand looms and their techniques, clothing styles, woven carpets, miniatures, ornaments, weapons, and various objects brought from mosques and lodges from the Ottoman and Republic periods. After touring the museum, I realized that, as a teacher candidate, I could use virtual museums as teaching materials in the future to make information more effective and long-lasting when conveying knowledge to my students about the social, cultural, and ethnographic structure of the Ottoman and Republic periods. For instance, I could connect the learning outcome in the 7th grade Culture and Heritage unit, 'SB.7.2.5. Gives examples of the Ottoman understanding of culture, art, and aesthetics,' with the artifacts in the Ankara Ethnography Museum to teach the lesson. This is because textbooks are often insufficient in terms of providing information. By integrating the*

museum into the classroom through technology instead of teaching within four walls, I could make the lesson more engaging and memorable."

TC43F: *"In the Antalya Museum, there were tools and items from ancient times, statues from the Byzantine period, burial mounds (kurgans), jewelry, and many other things. While exploring, I noticed that everything was entirely related to social studies, and seeing the actual tools and items I had studied in class helped me visualize them much better. For example, when teaching about the cutting tools from ancient times, if I were to just say 'cutting tools made of stone' and move on, the students might not understand it as well. If I showed this lesson on the smartboard after covering it in class, I could achieve more lasting learning..."*

Teacher candidates who explained their views on the usability of virtual museums in social studies lessons through general culture and value acquisition expressed their opinions as follows: virtual museums introduce culture to students, instill the value of patriotism, foster a love for Atatürk, make history more appealing, and promote the value of cooperation among students. Some teacher candidates' views on this subject are as follows:

TC5F (Çanakkale 1915 Red Crescent Hospital Exhibition Area): *"It can be shown as an example for middle school students to instill important values such as national independence, sovereignty, and love for the homeland and nation..."*

TC11F: *"From the perspective of the social studies course, visiting the Çanakkale Campaign Promotion Center will allow children to closely see how our homeland could not be divided in the past and how our glorious army achieved remarkable successes. It will also help them understand that it was not easy for Türkiye to reach where it is today..."*

TC19F: *"As a teacher candidate, in the future, I would like to teach my students about wars, love for the homeland, and its defense by using the example of the Çanakkale War, which was one of the most difficult and unjust wars of the Ottoman period. By making them feel the love and defense of their homeland, I can help them better understand these concepts. However, since I will not be able to take my students to Çanakkale due to conditions and limitations, I can use the Çanakkale Campaign Promotion Center Museum, which I visited virtually, as a teaching material in class. By visualizing the content, I can make the lesson more efficient. Additionally, I can relate it to the learning objective (SB.6.1.2. Analyzes the place and role of social, cultural, and historical ties in the formation of social unity) and teach my lesson within this context."*

Teacher candidates who explained their views on the usability of virtual museums in social studies lessons through awareness and skill development expressed their opinions as follows: virtual museums enhance students' sense of chronology, improve their creative thinking skills, instill awareness of recycling and cooperation, and foster a habit and love of visiting museums. Some teacher candidates' views on this subject are as follows:

TC2F: *"...By virtually visiting the Ankara University Toy Museum, students' imagination can be developed. Their creativity can be enhanced, making them more productive. Through the toy museum, students can also be introduced to the concept of recycling. They can learn about the history of toys and gain knowledge about traditional*

toys. Toys could be collected and donated to institutions like care homes or orphanages, fostering a sense of charity and kindness."

TC20F: *"...In my opinion, all kinds of museums should be visited because I believe they will develop students' critical and creative thinking skills. Additionally, I think museum visits will raise students' awareness about history..."*

Table 4 presents the activities designed by teacher candidates using the virtual museums they visited.

Table 4.

Activities Designed by Teacher Candidates Using the Virtual Museums They Visited

Sub-themes	Codes	*f*
Learning materials and techniques	Educational game	17
	Worksheet	17
	Question-and-answer activity	11
	Organizing a museum visit	6
	Brainstorming	4
	Puzzle	2
	Station technique	2
	Archaeological excavation activity	1
Visual arts and design activities	Drama	16
	Creating replicas of artifacts seen in the museum	13
	Creating a tour board	8
	Drawing pictures of the places and works seen	6
	Preparing a museum brochure/poster/flyer	4
	Preparing an exhibition	3
Creative writing and thinking activities	Evaluations of the museum after the virtual tour	37
	Writing stories/tales with historical empathy	4

As seen in Table 4, the activities designed by teacher candidates using the virtual museums they visited were analyzed under the sub-themes of learning materials and techniques, visual arts and design activities, and creative writing and thinking activities.

Teacher candidates who designed learning materials and applied learning techniques using the virtual museums they visited developed activities such as educational games, worksheets, question-and-answer sessions, organizing museum tours, brainstorming, puzzles, the station technique, and archaeological excavation activities. Some examples of activities designed by teacher candidates are as follows:

TC1M: *"I would explore the Konya Science Center through a virtual tour. Using the station technique, I would create four stations in the form of poetry, painting, slogans, and song lyrics. I would ask the students to collaborate and contribute to each station based on what they remembered from the museum. The resulting work would be displayed on a bulletin board in the school hallway."*

TC8F: *"I would prepare a spinning wheel. On the upper sections of the wheel, I would write questions about the virtual museum we visited. I would select a student from the class list to spin the wheel and answer the question. If the student answered correctly, they would choose a classmate and ask them a question about the museum. If the student didn't know the answer, they would have to answer one of the penalty questions located on the lower section of the wheel. At the end of the lesson, I would reward the student with the most correct answers with a prize."*

TC33M: *"First, I would guide students on a virtual tour of the Adana Archaeological Museum using a smartboard. Then, I would provide them with information about the museum. To make the learning more permanent, I would prepare cards related to the museum at the teacher's desk, writing distinctive features of the museum on these cards. I would ask the students to identify these distinctive points. The group that finds the points earns points. Later, I would have the students in each group prepare five questions about the museum and ask them to the opposing group."*

TC38M: *"Before the museum visit, the teacher introduces the museum with a brief presentation. Then, students begin exploring the Ankara Ethnography Virtual Museum using the provided website link. As they tour the museum exhibits, students analyze each exhibit and collect information about it on Traveler's Route activity worksheets. The worksheets include questions and answers about the exhibit, information boxes for completing answers, explanation sections, and relevant images."*

Teacher candidates who designed visual arts and design activities using the virtual museums they visited developed activities such as drama, creating replicas of artifacts seen in the museum, making a trip board, drawing pictures of the places and artifacts viewed, and designing museum brochures, posters, or flyers. Some examples of activities designed by teacher candidates are as follows:

TC6F: *"Students are taken on a virtual tour of the Istanbul Museum of the History of Islamic Science and Technology. They are shown and told about scientists and the technological discoveries they made. Then, students are asked to imagine themselves as scientists and come up with their own invention, creating a model of it. The models created by the students are then exhibited in the school."*

TC8F: *"After virtually touring the Ankara Ethnography Museum in class, I would ask students to bring items from home similar to the artifacts they saw in the museum. They would also share stories and information about these items that they learned from their elders. In class, we would relate the items brought in with the virtual museum visit and compare the items to those used in modern times. Just like during Local Goods Week, I would organize an exhibition of traditional clothing and old items."*

TC13F: *"The events seen during the virtual tour of the Çanakkale 1915 Red Crescent Hospital Exhibition Area can be dramatized by the students. Through the emotions and thoughts experienced during the virtual tour and drama process, children would develop empathy and gain a better understanding of what happened. Additionally, students could be tasked with designing a model of the Çanakkale monument using recycled materials."*

TC36F: *"After taking students on a detailed virtual tour of the Göbeklitepe Archaeological Site, I would divide them into groups and have them work on creating museum brochures. Students would observe the artifacts in the museum and study them in detail to gain in-depth knowledge. Then, I would provide groups with poster boards and crayons, asking them to create and illustrate brochures about the museum. Alternatively, I would have the students create posters in groups about the museum. These brochures and posters would then be displayed in a 'Tour and Observation' corner within the school."*

Teacher candidates who designed creative writing and thinking activities using the virtual museums they visited developed activities such as writing evaluations of the museum after the virtual tour and creating stories or fairy tales with historical empathy. Some examples of activities designed by teacher candidates are as follows:

TC1M: *"In the social studies class, I would organize a virtual tour of the Martyr Cuma Dağ Natural History Museum. After the tour, I would have the students sit in a circle and conduct a brainstorming session, ensuring that every student has a chance to speak."*

TC4F: *"Before the virtual museum tour, I would provide students with information, and after the tour, I would ask each student to write about what they saw, what they remembered, and their thoughts about the museum. Then, I would have them ask and answer questions with each other."*

TC11F: *"After visiting the Çanakkale Campaign Promotion Center, I would ask students to research their favorite hero story from the museum and present it to their classmates. Listening to and understanding these hero stories one by one will leave an impact on them and help them better appreciate the value of this homeland."*

TC36F: *"After taking students on a detailed tour of the museum, I would ask them to write stories as if they were imaginary heroes living during that period, focusing on the objects displayed in the museum, historical documents, and the doctors, nurses, wounded soldiers, animals, and babies depicted there. I would encourage them to include the location, time, and starting point of the event, highlighting the challenges faced and the victories achieved, to enhance the significance of the museum visit. Alternatively, I would assign roles to each student in the class to reenact the scenes represented by the models in the museum. Using various sound effects and equipment, we would recreate the events of the war to promote impactful learning."*

Table 5 presents the teacher candidates' views on the virtual museum tour activity.

Table 5.

Opinions of Teacher Candidated on the Virtual Museum Tours Activity

Sub-themes	Codes	*f*
Learning and academic development	Providing permanent learning instead of memorized knowledge	7
	Examining the Social Studies Curriculum to match museums and outcomes	7
	Revising educational sciences contentto prepare activities	6
	Overlapping virtual museum tours with the Social Studies Teaching Program course content	5
	Contributing to KPSS	2
	Being an activity that improves writing skills	2
Personal and professional development	Being an activity that is done effortlessly/pleasurably	33
	Contributing to the teaching life	16
	Difficulty in preparing the activity	2
	Difficulty in matching the learning outcome and museum	2
	Developing the imagination	1
Acquisition of cultural and historical knowledge	Being culturally educational	23
	Creating a desire to visit museums	21
	Understanding the importance of museum visits	10
	Discovering new museums with virtual tours	8
	Increasing awareness of cultural heritage	3

As seen in Table 5, the teacher candidates' views on the virtual museum tour activity were analyzed under the sub-themes of learning and academic development, personal and professional development, and acquisition of cultural and historical knowledge.

Teacher candidates who explained the virtual museum tour activity in terms of learning and academic development expressed their opinions as follows: it facilitates permanent learning instead of rote memorization, involves reviewing the Social Studies Curriculum to match museums with learning outcomes, requires revisiting educational sciences knowledge for activity preparation, aligns with the course content of the Social Studies Teaching Program, contributes to KPSS exam preparation, and is an activity that enhances writing skills. TC1M stated that he/she refreshed his knowledge as follows: *"Although I had previously reviewed the learning outcomes of the Social Studies Curriculum, I revisited them in detail to align them with virtual museums. Preparing activities using virtual museums allowed me to revisit my educational sciences knowledge. I believe that this virtual museum tour activity will make significant contributions to the lessons I will conduct with my students in the future. At the same time, I think reviewing the curriculum and learning outcomes will be beneficial for the KPSS exam."* TC3F connected the virtual museum tours to the courses in the Social Studies Teaching Program and shared *his/her* thoughts as: *"I found that museums are highly aligned with the courses we take at the faculty. While exploring virtual museums, I was reminded of the courses we studied in our program. Designing activities made me recall our educational sciences courses. This made the virtual museum tours even more enjoyable. In other words, virtual museum tours reinforced some of the theoretical knowledge we learned in certain courses, and now I have become a teacher candidate with a growing desire to visit museums in person."* TC4F expressed that she achieved permanent learning during the activity, stating as follows: *"If I compare this activity with classical exams or tests, I would likely have resorted to rote memorization for the exam. Since the information wouldn't have been permanent, I would either have passed the course without learning much or failed it. This activity was very instructive for me. During the activity, I realized that I learned better and that the knowledge I gained was more permanent."* TC15F stated that *"It was a very enjoyable and instructive activity. I had a long time to complete the activity, and I took my time, doing it slowly because it was enjoyable and thoughtful. While completing the activity, I constantly reflected on my profession and how the activity contributed to me and my career. In fact, on the day I completed the activity, I told a friend about it and shared what I felt while working on it. I think it was a very different, informative, and educational activity for us. While doing it, I felt more developed because I examined the learning outcomes of the Social Studies Curriculum one by one. I thought about how I could teach these outcomes effectively to my students in the future and, most importantly, how to make my teaching permanent. I reviewed social studies textbooks to generate ideas while preparing the activity. I didn't think this activity was assigned as just homework to keep us busy, nor did I feel bored or question its usefulness. It was not the type of activity where I asked myself, 'Why am I doing this? What use will it have for me?' Instead, it was a truly engaging and purposeful experience."*

Teacher candidates who explained the virtual museum tour activity in terms of personal and professional development expressed their opinions as follows: it was an activity that could be completed without difficulty and with enjoyment, contributed significantly to their teaching

careers, involved challenges in matching learning outcomes with museums during activity preparation, and fostered imagination. TC2F described their thoughts on the activity process as follows: *"This activity was one where I never thought, 'Ugh, how am I going to do this?' Instead, I enjoyed it and wrote down what came to mind with enthusiasm."* TC8F evaluated the virtual museum tour activity, stating: *"The virtual museum tour activity was something that could improve us. Through this activity, I better understood the importance of museums for lessons and how they could be used as teaching materials. I examined the topics, learning outcomes, and fields in the textbooks. I questioned how students could better understand the topic through the use of virtual museums in lessons. As a social studies teacher candidate, I designed an activity for students for the first time. I believe activities like this will better prepare us for teaching."* TC13F explained the process for determining the content of the activity as follows: *"I think this activity was very beneficial professionally. I am a 32-year-old preschool teacher and also studying in the social studies teaching program. I felt ashamed of myself for not knowing about virtual museum applications, but learning has no age limit. Before deciding on the virtual museums I would tour for the activity, I visited many museums, and my 5-year-old son accompanied me while I explored them. Since he loves the Rafadan Tayfa Göbeklitepe movie, we chose Göbeklitepe together. The movie also gave me ideas for designing the activity. In short, I had a lot of fun and learned a lot while completing this activity."* TC18F mentioned that she learned a lot and enjoyed the virtual museum tour activity but also experienced challenges, stating: *"I learned so much and enjoyed this activity a lot. However, I struggled a lot in the activity preparation phase. I envisioned virtual museums as being distant from the school and classroom environment, which made it difficult to plan the activity."*

Teacher candidates who explained the virtual museum tour activity in terms of cultural and historical knowledge acquisition expressed their opinions as follows: the activity was culturally instructive, fostered a desire to visit museums, helped understand the importance of museum visits, enabled the discovery of new museums through virtual tours, and increased sensitivity to cultural heritage. TC5F evaluated the cultural benefits of the virtual museum tour activity, stating: *"The virtual museum tour activity was very beneficial for me. Exploring the museums I selected based on my interests was a very useful experience. In the future, I may be able to visit these museums in person, but exploring them online made me feel like I had already visited them. On the same day, I had the chance to access multiple museums with ease. This will also allow me to convey our historical and cultural heritage to my students in a well-equipped manner in the future. I think museums and historical artifacts are not given enough importance in our country. If we, as future teachers, become aware and culturally sensitive, we can instill this feeling in our students as well."* TC11F reflected on the cultural benefits of virtual museum tours, saying: *"Since we don't always have the time or opportunity to visit every museum, even touring museums virtually allows us to view our culture from a broader perspective."* TC12F compared physical and virtual museums, expressing the impact of virtual museum tours as follows: *"In general, I love visiting museums in the cities I travel to. Those historical places and objects feel enchanting to me. When I close my eyes, it's as if I could travel back to the time when those objects were part of a living world. A teacher of mine once said in high school, 'Go to a place like (Afyonkarahisar) Imaret Mosque, touch it, close*

your eyes, and you're in the 15th century.' It stayed with me, and I still do it. Virtual tours didn't fully give me that feeling because I couldn't touch the objects, but they increased my readiness, excitement, and desire to see them. This way, I virtually crossed distances I wouldn't currently be able to travel. Moreover, when I visit these museums in person in the future, the experiences and knowledge I gained through virtual museum tours will guide me and make my visit even more enjoyable." TC20F explained how the virtual museum activity fostered an interest in visiting museums: *"I wasn't very interested in or curious about museums before. However, the virtual museums I explored were so impressive that I noted down some of them and decided to visit them in person. Thanks to this activity, I also became curious about the museums in the city I live in and visited them immediately. I believe this activity added a lot to my perspective."*

Discussion and Conclusion

In this study, which aimed to determine the views and experiences of social studies teacher candidates regarding virtual museums, the perspectives of the teacher candidates in the study group were evaluated in terms of the virtual museums they visited, their opinions about virtual museums, their views on the usability of virtual museums in social studies lessons, the activities they designed using the virtual museums they visited, and their opinions on the virtual museum tour activity. The virtual museums visited by the teacher candidates were analyzed under various themes, including archaeology museums and archaeological sites, history and ethnography museums, science and technology museums, and nature and environment museums. Among the virtual museums visited by the teacher candidates, prominent cultural and historical sites such as Göbeklitepe Archaeological Site, Anatolian Civilizations Museum, Ankara Ethnography Museum, Ankara Republic Museum, Museum of Turkish and Islamic Arts, and the Turkish Islamic Science and Technology History Museum were highlighted. This reflects the teacher candidates' interest in history, culture, and science, as well as their curiosity to explore Türkiye's rich heritage. Additionally, the alignment of the virtual museums visited by the teacher candidates with the Social Studies Curriculum demonstrates that such activities can serve as effective tools in education and contribute to the curriculum. İlhan et al. (2021) emphasized the importance of considering the role of teachers in the integration of virtual museums into education. They suggested that social studies teacher candidates should receive training on virtual museums or be made aware of their potential during their undergraduate studies.

The teacher candidates' views on virtual museums were analyzed under the themes of virtual tour experience, ease of use, and technological challenges and shortcomings. In the context of the virtual tour experience, teacher candidates stated that virtual museum tours were engaging, educational, and advantageous in terms of time but did not fully replace the experience of a physical museum visit. Regarding technological challenges and shortcomings, issues such as decreasing image quality, insufficient navigation, and internet connectivity problems were highlighted. As a result, it was found that while teacher candidates viewed virtual museum tours as beneficial for education, they emphasized the need to address certain technical difficulties and shortcomings. In a study by İralı (2019), it was noted that virtual museums could be used for purposes such as entertainment, interaction, and information

acquisition. Similarly, Ulusoy (2010) found that virtual museums were perceived as both educational and entertaining. İlhan and Dolmaz (2022) identified in their research that while virtual museums offer significant advantages as educational tools, they also present certain disadvantages. Teacher candidates emphasized the advantages of virtual museum tours, describing the experience as creative, advantageous, inspiring, pleasant, comfortable, motivating, unique, practical, efficient, engaging, impressive, enjoyable, educational, and beneficial. However, they also highlighted technical disadvantages, such as the inability to examine artifacts in detail, difficulties in use, limited zoom-in and zoom-out adjustments, lack of panoramic views, absence of guides, and visual quality issues (İlhan & Dolmaz, 2022). Kaya and Okumuş (2018) and Sürme and Atılgan (2020) noted that during virtual museum visits, visitors prioritized ease of use, accessibility to all galleries, and the readability of signs. Similarly, Çınar et al. (2021) found that virtual museums do not provide the realistic experience offered by physical museums. Çınar et al. (2021) found that although students appreciated virtual museum tours, they preferred physical museum visits due to the opportunity to experience the museum atmosphere in person, see the artifacts directly, and touch them. While virtual museums offer many advantages, their inability to allow tactile interaction with objects or provide the experience of walking through corridors makes them fall short of delivering an authentic museum experience, which constitutes the most prominent criticism (Barlas-Bozkuş, 2014). Kaya and Okumuş (2018) emphasized the need for music and video support, improved visual quality, and detailed background information for visuals to create a more effective virtual museum experience. Similarly, Çıldır and Karadeniz (2014) suggested that the educational departments of museums could increase the educational use of virtual museums by preparing and offering schools educational packages based on their collections. These packages could include games, puzzles, videos, and animations accessible through virtual museums.

The teacher candidates' views on the usability of virtual museums in social studies lessons were examined in the dimensions of teaching-learning process, general culture and value acquisition, and awareness and skill development. It was concluded that virtual museums support permanent learning by concretizing lessons, increase student interest, make lessons more enjoyable, and are effective as teaching materials. Additionally, virtual museums were found to instill national consciousness, cultural awareness, and a love for Atatürk, enhance students' understanding of time and chronology, improve their creative thinking skills, and foster a habit and appreciation for visiting museums. In a study conducted by Çalışkan et al. (2016) with social studies teacher candidates, it was stated that virtual museums support permanent learning in social studies lessons, provide an active and enjoyable learning environment, and offer advantages such as concretization, fostering a love for history, and promoting empathy. Similarly, Peker (2020) found that social studies teacher candidates strongly believed that the use of virtual museums in the educational process would create lasting and positive effects on students. Koca and Daşdemir (2018) highlighted the positive impact of virtual museum tours on students' academic achievement, while Meirkhanovna et al. (2022) and Sevi and Er-Türküresin (2023) emphasized the role of virtual museums in fostering sensitivity to cultural heritage, patriotism, scientific thinking, aesthetics, and other important values in students. Çınar et al. (2021) noted that virtual museums enrich the

teaching and learning process, making lessons more enjoyable. Turgut (2015) and Gılıç (2020) found that virtual museum tours contribute to the learning process, offer an enjoyable experience, and add dynamism to lessons. Durmuş (2012) reported that students enjoyed virtual museum tours and expressed a desire for such activities to be incorporated into other lessons as well. Ustaoğlu (2012) stated that traditional teaching methods did not evoke curiosity in students, whereas virtual museum applications increased curiosity, which in turn boosted engagement and success in lessons.

The activities designed by teacher candidates using the virtual museums they visited were categorized into learning materials and techniques, visual arts and design activities, and creative writing and thinking activities. Teacher candidates developed various learning materials such as educational games, worksheets, question-and-answer activities, and archaeological excavation activities. In the scope of visual arts and design activities, they created drama performances, replicas of artifacts seen in museums, drawings, and museum brochures. Additionally, in the domain of creative writing and thinking, they designed activities such as evaluations after virtual museum visits, historical empathy-based storytelling, and brainstorming sessions. Öner-Armağan et al. (2023) found in their research that while teacher candidates initially emphasized their technological proficiency and subject knowledge during virtual museum use, they later recognized the importance of pedagogical knowledge and demonstrated an ability to integrate content with pedagogy effectively after the application. Barab et al. (2005) and Iqbala et al. (2010) stated that virtual applications provide students with a sense of being in a different environment, thereby enhancing their imagination and problem-solving skills. They also noted that such applications offer highly interactive learning experiences and create suitable environments for constructing knowledge, brainstorming, and synthesizing information using diverse resources. In this context, virtual environments are seen to support both students' and teacher candidates' cognitive and pedagogical development, making the educational process more dynamic and interactive. According to Öztürk-Kömleksiz and Gökmenoğlu (2020), a child who encounters warnings from museum staff or teachers, such as "Be quiet!" or "Don't touch anything!" may find it difficult to benefit fully from a museum visit or enjoy the experience. However, the use of virtual museums in the teaching and learning process can provide children with a freer and more active learning experience, free from such restrictions, making activities designed through virtual museums more appealing and effective.

The teacher candidates' views on the virtual museum tour activity were evaluated within the framework of learning and academic development, personal and professional development, and cultural and historical knowledge acquisition. Regarding the preparation process, it was noted that the activity was carried out with ease and enjoyment, involved reviewing the Social Studies Curriculum to match museums with learning outcomes, and required revisiting educational sciences knowledge during activity preparation. However, some challenges were encountered in aligning learning outcomes with museums and during the activity design process. In terms of cultural benefits, it was stated that virtual museum tours were culturally instructive, inspired a desire to visit museums, helped better understand the importance of museums, facilitated the discovery of new museums, and enhanced sensitivity to cultural heritage. In terms of contributions to education and teaching careers, it

was emphasized that this activity had positive effects on teaching careers, supported permanent learning, aligned with the course content of the Social Studies Teaching Program, contributed to KPSS preparation, enhanced writing skills, and enriched imagination. Shehade and Stylianou-Lambert (2020) noted that high visual quality and realistic designs capture visitors' attention, increase interaction with collections and accessibility, and encourage visitors to spend more time in virtual museums. The teacher candidates who formed the study group belong to Generation Z. Generation Z refers to individuals born from the early 21st century onwards. This generation has grown up immersed in technology from infancy and understands and uses technological devices, which permeate all aspects of daily life, more effectively than previous generations. The interest of Generation Z individuals in technology is undeniable. Therefore, modern educational practices tend to capture the attention of Generation Z more effectively (Adıgüzel et al., 2014).

Recommendations

Based on the research findings, the following recommendations can be made:

To address the technological challenges encountered during virtual museum tours, the technical infrastructure of virtual museums can be enhanced, image quality improved, and navigation made more user-friendly.

To make virtual museums more effective in education, their content can be enriched. Features such as audio narration, 3D models, and interactive artifacts can be added to capture students' interest.

Teacher candidates can be encouraged to use virtual museums as teaching materials. They can be guided on planning virtual museum tours, aligning learning outcomes with museums, and designing activities.

Combining virtual museum tours with physical museum visits can provide students with a broader learning experience. Virtual museums can be used as a preparatory step for physical visits, allowing students to gain prior knowledge about the museum and enhancing the educational impact of museum trips.

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BIOGRAPHICAL NOTES

Contribution Rate of Researchers

Author 1: 50%

Author 2: 50%

Conflict Statement

There is no conflict of interest in the research.

Sanal Müzelerle Kültürel Mirası Keşfetmek: Sosyal Bilgiler Öğretmen Adaylarının Sanal Müzelere Yönelik Görüş ve Deneyimleri

Özet

Kültürel mirasın korunması ve gelecek nesillere aktarılmasında müzelerin rolü her geçen gün daha da önem kazanırken dijitalleşen dünyada sanal müzeler, bu mirası keşfetme ve öğrenme sürecine yeni bir boyut kazandırmıştır. Bu araştırmanın amacı sosyal bilgiler öğretmen adaylarının sanal müzelere yönelik görüş ve deneyimlerinin incelenmesidir. Araştırma nitel araştırma yönteminde, fenomenoloji deseninde tasarlanmıştır. Araştırmanın çalışma grubu 45 öğretmen adayından oluşmaktadır. Araştırmada veri toplama aracı olarak sanal müze görüş formu kullanılmıştır. Araştırma verileri dijital ortamda sanal müze görüş formlarının doldurulması suretiyle toplanmıştır. Verilerin analizinde içerik analizinden yararlanılmıştır. Veriler, alt temalar ve kodlar doğrultusunda tablolar halinde sunulmuş, doğrudan alıntılarla desteklenerek yorumlanmıştır. Öğretmen adaylarının sanal müze ziyaretleri; arkeoloji müzeleri, tarih ve etnografya müzeleri, bilim ve teknoloji müzeleri ile doğa ve çevre müzeleri temaları altında incelenmiş ve Göbeklitepe, Anadolu Medeniyetleri Müzesi gibi önemli mekânların ön plana çıktığı görülmüştür. Öğretmen adayları, öğrenme-öğretme sürecini somutlaştırarak kalıcı öğrenmeyi desteklemesi ve dersleri daha eğlenceli hale getirmesi gibi sebeplerle sanal müzelerin sosyal bilgiler derslerinde kullanılmasını olumlu değerlendirmişlerdir. Öğretmen adayları, sanal müzeleri kullanarak çeşitli öğrenme materyalleri ve etkinlikler tasarlamış, bu süreçte kültürel farkındalıklarını artırmış ve eğitim-öğretim hayatına katkılar sağlamışlardır. Araştırma sonucunda; sanal müzelerin eğitici etkisini artırmak için okulların teknik alt yapısının güçlendirilmesi, sanal müze içeriklerinin zenginleştirilmesi, öğretmen adaylarının sanal müzeleri ders materyali olarak kullanmaya teşvik edilmesi ile sanal ve fiziksel müze gezilerinin birleştirilmesi önerilmiştir.

Anahtar Kelimeler: Kültürel miras, müze, sanal müze, sosyal bilgiler eğitimi, öğretmen adayı.

Giriş

Kültürel mirasın korunması ve gelecek nesillere aktarılmasında müzelerin rolü her geçen gün daha da önem kazanırken dijitalleşen dünyada sanal müzeler, bu mirası keşfetme ve öğrenme sürecine yeni bir boyut kazandırmıştır. Son yıllarda dijital teknolojinin hayatımızda daha fazla yer almasıyla gündeme gelen sanal müze kavramı, öğrencilerin internet bağlantısı olan her yerden erişim sağlayarak gezinti yapabildiği ve kendilerini öğrenme sürecinin bir parçası olarak buldukları, küresel bir özellik taşıyan müze türü olarak karşımıza çıkmaktadır (McKenzie, 1997; akt. Çelik & Ütkür-Güllühan, 2022). Sanal müzeler, "bilgisayar ve internet teknolojilerinden faydalanarak sanat eserleri, tarihî eserler ve belgelerin dijitalleştirilmiş kopyalarını (görsel, ses, video formatlarında) ve bu eserlere ait bilgileri internet üzerinden ziyaretçilerin erişimine sunan etkileşimli web siteleri" olarak tanımlanabilir (Turan, 2015).

Sanal müzeler, modern teknolojinin sunduğu olanaklar sayesinde, geleneksel müze deneyimlerinin ötesine geçerek bilgiye erişimi ve kültürel mirasın paylaşımını yeniden tanımlamaktadır. Bowen (2000), sanal ziyaretçilerin uzaktaki bir müze hakkında bilgi edinmesinin önemine dikkat çekerek geçmişte ziyaretçilerin bilgi sağlayıcıları olan müzeleri

fiziksel olarak ziyaret etmek zorunda olduklarını ancak internet sayesinde artık ev, iş yeri, okul veya kütüphanelerden müzelere ulaşmanın daha mümkün hale geldiğini belirtmektedir. Serin (2020) ise, sanal gerçekliğin bireylere imkânsız görünen yerlerde bulunma fırsatı vererek gerçek yaşam deneyimleri yaşamalarını sağladığını ifade etmektedir. Sanal müzelerde kullanılan teknoloji sayesinde, insanlar farklı şehirlerde veya hatta farklı ülkelerdeki müzelerin koleksiyonlarına uzaktan, günün her saatinde erişebilirler ve bu erişim birinci elden doğru ve güvenilir bilgi kaynaklarını içerir. Sanal müzeler, ziyaretçilerin zaman sınırlaması olmadan istedikleri müzeye ulaşmalarına imkân tanımaktadır. Ayrıca, sanal müzeler hem güvenli hem de ekonomik olmalarının yanı sıra, geleneksel müzelerin sınırlı sunum imkanlarına kıyasla daha zengin sunum seçenekleri sunmaktadırlar (Kılıç vd., 2023).

Teknolojinin eğitimdeki rolü, öğrencilere erişim ve öğrenme olanaklarını genişleten yenilikçi yöntemlerle giderek daha hayati bir hale gelmektedir. Teknolojinin eğitimde kullanımı ekstra bir yük olarak algılanmamalı, aksine eğitimi zenginleştirici bir unsur olarak değerlendirilmelidir (Karataş vd., 2015). Sanal müze uygulamalarıyla sosyal bilgiler dersi arasında güçlü bir ilişki olduğu söylenebilir. Sanal müze gezileri, öğrencilerin fiziksel olarak gidemeyecekleri yerleri sanal olarak ziyaret etmelerine, soyut bilgileri somut hale getirmelerine (Karataş vd., 2015), erişemedikleri bilgi ve deneyimlere ulaşmalarına ve eğlenerek öğrenmelerine imkân tanımakta ve gezilerin oluşturduğu eğlenceli öğrenme ortamı öğrenmeyi kolaylaştırmaktadır (Kayabaşı, 2005; Saraç & Özarslan, 2017; Shim vd., 2003). Sanal müzeler, öğrencilere hem bilişsel hem de duyuşsal anlamda daha zengin öğrenme deneyimleri sunarken (Aktaş vd., 2021), aynı zamanda dijital okuryazarlık becerilerini geliştirme ve tarihî araştırma yapmalarını sağlayan çevrimiçi bir öğrenme ortamı oluşturma fırsatı da tanımaktadır (Okolo vd., 2011). Daniela (2020), Fokides ve Sfakianou (2017), ve Kampouropoulou vd.ne (2013) göre sanal müzeler, okul ortamlarında kullanıldığında öğrencilerin etkili öğrenme deneyimlerine katılımını artırmakta, eğlence ve iletişim gibi işlevlerle davranışlarını olumlu yönde düzenlemekte ve kültürel bilgi birikimlerine önemli katkılarda bulunmaktadır. Ayrıca sanal geziler, sosyal ve ekonomik koşulları elverişli olmayan öğrenciler için okulların gezi düzenleyebilmesi adına değerli fırsatlar sunmaktadır. Çelik ve Ütkür-Güllühan (2022) ile Tuncel ve Dolanbay (2021), çalışmalarında, öğrencilerin yaşadıkları bölgelerde müze ve gezilecek yerlerin eksik olmasının, velilerin ekonomik ve güvenlik kaygılarıyla birleştiğinde, sanal müzeler ve sanal gezilerin eğitimde fırsat eşitliği sağlama açısından ne kadar önemli hale geldiğini vurgulamaktadır. İlgili araştırma sonuçlarından hareketle, sanal müze gezileri öğrencilerin kültürel, tarihî ve sosyal bilgilerini zenginleştirmek ve eğitimde eşit fırsatlara sahip olmalarını sağlamak için kritik bir öneme sahiptir.

Günümüzde sanal gerçeklik, hologram ve üç boyutlu görüntü gibi teknolojiler ile yakın tarihte yaşanan pandemi süreci, sanal müzeleri, klasik müzelerle rekabet edebilir hale getirmiştir. Bu gelişmeler, sanal müzelerin eğitimdeki önemini artırmış ve sanal müzeler öğretim programlarına dahil edilmiştir. Sanal müzeler, öğretim programlarına eklenmiş olmasına rağmen, pedagojik temelleri henüz yeni geliştiği için, öğretmenler bu müzelerin eğitimde ve farklı derslerde sınıf içi etkinliklere nasıl entegre edileceği konusunda yeterli bilgiye sahip değillerdir. Bu durum, sanal müzelerin eğitimde etkin kullanımına yönelik öğretmenlere sunulacak açık erişimli eğitimlere, sanal müze kullanımını doğrudan öğretim programlarındaki içerik ve kazanımlarla ilişkilendiren etkinliklere, daha güçlü bir okul-müze

iş birliğine ve müzelerin eğitsel amaçlarının daha da güçlendirilmesine ihtiyaç duyulduğunu göstermektedir (Kılıç vd., 2023). Aktaş vd. (2021) ile Sungur ve Bülbül (2019) araştırmalarında, öğretmenler ve öğretmen adaylarının sanal müze kullanımı ve bu konudaki etkinlikler hakkında yeterli bilgi ve fikir sahibi olmadıklarını tespit etmişlerdir. Bu doğrultuda, hizmet öncesi eğitim kapsamında öğretmen adaylarının sanal müze eğitimi almalarının ve bu müzeleri etkin bir şekilde kullanabilmelerinin gerekliliği ve önemi ortaya çıkmaktadır. Sanal müzelerin öğrenme ortamlarında etkin bir şekilde kullanılabilmesi için, uygulayıcı olacak öğretmen adaylarının deneyimlerinin dikkate alınması önemlidir. Utkugün (2022) ve İlhan vd.nin (2021) araştırmalarında sosyal bilgiler öğretmen adaylarının sanal müze gezilerine yönelik deneyimlerini sanal müzelerin avantaj, dezavantaj, kullanım zorlukları ve etkili kullanımına yönelik görüşler temelinde incelemişlerdir. Bu araştırmada ise öğretmen adayları, sanal müzeleri sosyal bilgiler dersinde kullanabilecekleri bir materyal olarak değerlendirmiş, gezdikleri sanal müzelerle ilgili ders içi etkinlikler tasarlamışlardır. Öğretmen adayları, sanal müzelerde edindikleri bilgi ve deneyimleri, dersin kazanımlarına uygun etkinliklere dönüştürmüş, böylece sanal müzelerin öğretim sürecinde nasıl entegre edilebileceğine yönelik özgün materyaller oluşturmuşlardır. Bu bağlamda araştırmada sosyal bilgiler öğretmen adaylarının sanal müzelere yönelik görüş ve deneyimlerinin incelenmesi amaçlanmıştır. Bu genel amaç doğrultusunda aşağıdaki sorulara cevap aranmıştır:

Bu genel amaç doğrultusunda aşağıdaki sorulara cevap aranmıştır:

1. Sosyal bilgiler öğretmen adaylarının gezdikleri sanal müzeler hangileridir?

2. Sosyal bilgiler öğretmen adaylarının gezdikleri sanal müzelere yönelik görüş ve değerlendirmeleri nelerdir?

3. Sosyal bilgiler öğretmen adaylarının sanal müzelerin sosyal bilgiler derslerinde kullanılabilirliğine yönelik görüşleri nelerdir?

4. Sosyal bilgiler öğretmen adaylarının gezdikleri sanal müzeleri kullanarak tasarladıkları etkinlikler nelerdir?

5. Sosyal bilgiler öğretmen adaylarının sanal müze gezileri etkinliğine ilişkin görüşleri nelerdir?

Yöntem

Araştırma, nitel araştırma yaklaşımlarından biri olan fenomenoloji deseni kullanılarak gerçekleştirilmiştir. Fenomenolojik araştırma deseni, bireylerin belirli bir olay ya da durumla ilgili yaşadıkları deneyimler, algılar ve bu olguya atfettikleri anlamları ortaya çıkarmayı hedefler (Yıldırım & Şimşek, 2018). Bu araştırmada, öğretmen adaylarının görüş ve deneyimlerine dayanarak sanal müze gezilerinin derinlemesine incelenmesi amaçlandığı için fenomenoloji deseni tercih edilmiştir. Araştırmanın çalışma grubu, 2023-2024 eğitim öğretim yılında Afyon Kocatepe Üniversitesi Eğitim Fakültesi Sosyal Bilgiler Eğitimi Ana Bilim Dalı'nda öğrenim görmekte olan 30 kadın, 15 erkek olmak üzere toplam 45 öğretmen adayından oluşmaktadır. Çalışma grubunun seçiminde, amaçlı örnekleme yöntemlerinden biri olan ölçüt örnekleme tercih edilmiştir. Çalışma grubunu oluşturan öğretmen adaylarının seçilmesinde kullanılan ölçüt, Sosyal Bilgiler Eğitimi Programı'nda 4. sınıf öğrencisi olmaktır.

Bulguların sunumunda yer verilen doğrudan alıntılarda, öğretmen adaylarının isimleri yerine ÖA1, ÖA2...ÖA45 şeklinde kodlar kullanılmıştır.

Araştırmada veri toplama aracı olarak sanal müze görüş formu kullanılmıştır. Yazılı belgelerin veri toplama aracı olarak kullanılması, katılımcıların çeşitli kavramlar veya durumlara verdikleri anlamlara dair ayrıntılı kanıtlar elde etmeyi amaçlamaktadır (Bogdan & Biklen, 2007). Sanal müze görüş formunun hazırlık aşamasında öncelikle araştırmanın amacı doğrultusunda literatür taraması yapılmış, açık uçlu sorular hazırlanmıştır. Hazırlanan sorular kapsam ve anlaşılabilirlik bakımından değerlendirilmek üzere uzman görüşüne sunulmuştur. Alan uzmanından gelen dönütler doğrultusunda sorular, sayı ve ifade ediliş biçimi açısından yeniden düzenlenerek görüş formuna son şekli verilmiştir. Sanal müze görüş formunda, öğretmen adaylarının gezdikleri sanal müzeler hakkında olumlu ve olumsuz değerlendirmeleri, sanal müzelerin sosyal bilgiler derslerinde kullanılabilirliğine yönelik görüşleri ve gezdikleri sanal müzeleri kullanarak sosyal bilgiler dersi için tasarladıkları etkinlikleri ortaya çıkartmaya yönelik sorular yer almıştır.

Veri toplama süreci Afyon Kocatepe Üniversitesi Bilimsel Araştırma ve Yayın Etiği Kurulu'ndan (Etik Kurul Kararı: 20.12.2023 tarih ve 2023/357 karar sayılı) etik izin alınarak başlamıştır. Araştırmanın veri toplama süreci için öğretmen adaylarından, 2023-2024 eğitim öğretim dönemi ara tatilinde, 29.01.2024-26.02.2024 tarihleri arasında kendi seçimleri doğrultusunda 3 adet sanal müze gezisi yapmaları ve sanal müze gezilerine ilişkin görüşlerini detaylı olarak yazmaları istenmiştir. Öğretmen adaylarından toplanacak verilerin gizlilik ilkesinin çiğnenmeyeceği, verilerin bilimsel araştırma dışında kullanılmayacağı görüş formunda belirtilmiştir. Araştırma verileri, öğretmen adaylarının sanal müze görüş formlarını dijital ortamda yazılı olarak doldurmaları sonucunda toplanmıştır.

Araştırma verilerinin analizinde içerik analizinden yararlanılmıştır. Yıldırım ve Şimşek'e (2018) göre, içerik analizinin amacı, elde edilen verileri anlamlandıracak ve açıklamayı kolaylaştıracak kavramlar ve ilişkiler ortaya çıkarmaktır. Elde edilen verilerden hareketle oluşturulan kodların ortak yönleri belirlenerek sınıflandırılmış ve her bir araştırma problemine yönelik alt temalar oluşturulmuştur. Ayrıca veri analiz süreci uzman görüşüne sunulmuş ve araştırmacılar ile alan uzmanının kodlamaları karşılaştırılarak değerlendirilmiştir. Uyuşum yüzdesi ([Görüş birliği/(Görüş birliği+Görüş ayrılığı) x 100] formülüyle %93 olarak hesaplanmıştır. Miles ve Huberman'a (1994) göre, güvenirlik hesaplarının %70'in üzerinde olması, araştırmanın güvenilir kabul edilebileceğini göstermektedir. Araştırmacılar ve alan uzmanı arasında görüş ayrılığı bulunan kısımlar yeniden değerlendirilerek görüş birliği sağlanmıştır. Araştırmacılar, araştırmanın teyit edilebilirliğini sağlamak amacıyla zaman zaman ham verilere geri dönerek kodların doğruluğunu test etmiştir. Veriler, alt temalar ve kodlar doğrultusunda tablolar halinde sunulmuş, doğrudan alıntılarla desteklenerek yorumlanmıştır.

Araştırmanın Etik İzinleri:

Bu çalışmada "Yükseköğretim Kurumları Bilimsel Araştırma ve Yayın Etiği Yönergesi" kapsamında uyulması gerektiği belirtilen tüm kurallara uyulmuştur. Yönergenin ikinci bölümü olan "Bilimsel Araştırma ve Yayın Etiğine Aykırı Eylemler" başlığı altında belirtilen eylemlerin hiçbiri gerçekleştirilmemiştir.

Etik Kurul İzin Bilgileri:

Etik değerlendirmeyi yapan kurulun adı = Afyon Kocatepe Üniversitesi Bilimsel Araştırma ve Yayın Etiği Kurulu

Etik Kurul Etik inceleme karar tarihi= 20.12.2023

Etik değerlendirme belgesi konu numarası= 2023/357

Bulgular

Sosyal bilgiler öğretmen adaylarının sanal müzelere yönelik görüş ve deneyimleri; öğretmen adaylarının gezdikleri sanal müzeler, sanal müzelere yönelik görüşleri, sanal müzelerin sosyal bilgiler derslerinde kullanılabilirliğine yönelik görüşleri, gezdikleri sanal müzeleri kullanarak tasarladıkları etkinlikler ve sanal müze gezileri etkinliğine ilişkin görüşleri temaları altında analiz edilmiştir.

Öğretmen adaylarının gezdiği sanal müzeler; arkeoloji müzeleri ve örenyerleri, tarih ve etnografya müzeleri, bilim ve teknoloji müzeleri ile doğa ve çevre müzeleri alt temaları üzerinden analiz edilmiştir. Öğretmen adaylarının gezdikleri sanal müzeler incelendiğinde, ilgi alanları ve kişisel merakları doğrultusunda Türkiye'nin farklı bölgelerinde, farklı temalarda müzeleri ziyaret ettikleri görülmektedir. Yine bu bağlamda öğretmen adaylarının gezmiş oldukları sanal müzelerin Sosyal Bilgiler Dersi Öğretim Programı içeriğiyle de uyumlu olduğu ifade edilebilir. Öğretmen adayları arkeoloji müzeleri ve örenyerleri olarak Göbeklitepe Örenyeri, Anadolu Medeniyetleri Müzesi, Adana Arkeoloji Müzesi, İstanbul Arkeoloji Müzesi, Çatalhöyük Örenyeri, Gaziantep Arkeoloji Müzesi, Ihlara Vadisi Örenyeri, Efes Örenyeri, Hierapolis (Pamukkale) Arkeoloji Örenyeri, Gaziantep Zeugma Mozaik Müzesi, Şanlıurfa Karahantepe Örenyeri, Hatay Arkeoloji Müzesi, Boğazköy Hattuşa Örenyeri ve Nemrut Örenyeri sanal müzelerini; tarih ve etnografya müzeleri olarak Ankara Etnografya Müzesi, Ankara Cumhuriyet Müzesi, Türk ve İslam Eserleri Müzesi, İzmir Atatürk Müzesi, Ankara Kurtuluş Savaşı Müzesi, Çanakkale 1915 Hilal-i Ahmer Hastanesi Canlandırma Alanı, Ankara Üniversitesi Oyuncak Müzesi, Ankara Polis Müzesi, Çanakkale Destanı Tanıtım Merkezi, Antalya Müzesi, Topkapı Sarayı, İstanbul Havalimanı Müzesi, Ankara Hacı Bayram Veli Müzesi, Cumhurbaşkanlığı Milli Mücadele Sergisi, Çanakkale Kilitbahir Kale Müzesi, Bursa Kent Müzesi, Bayburt Kenan Yavuz Etnografya Müzesi, Samsun Gazi Müzesi ve Şanlıurfa sanal müzelerini; bilim ve teknoloji müzeleri olarak Türk İslam Bilim ve Teknoloji Tarihi Müzesi ve Konya Bilim Merkezi sanal müzelerini; doğa ve çevre müzeleri olarak ise Nevşehir Göreme Açıkhava Müzesi ve MTA Genel Müdürlüğü Şehit Cuma Dağ Tabiat Tarihi Müzesi sanal müzelerini gezmişlerdir.

Öğretmen adaylarının sanal müzelere yönelik görüşleri; sanal gezi deneyimi, kullanım kolaylığı ve teknolojik zorluklar ve eksiklikler alt temaları üzerinden analiz edilmiştir. Sanal

müzelere yönelik görüşlerini sanal gezi deneyimi üzerinden açıklayan öğretmen adayları; sanal müze gezisinin ilgi çekici/güzel olması, sanal müze gezisinin merak/heyecan uyandırması, sanal müzenin görsel açıdan zengin/öğretici olması, sanal müze gezisinin gerçek müze gezisi hissi vermesi, teknolojinin eğitim amaçlı kullanılması, sanal müze gezisinin zaman açısından avantajlı olması, sanal müzenin canlı olarak da gezilmesi isteği, öncesinde sanal müzeler hakkında bilgi sahibi olunmaması, sanal olmayan müze/tarihi alan gezisinin daha güzel olması, müzenin/tarihi alanının sanal gezisinin merak edilmesi, yaşanılan bölgeye uzak müzelerin sanal tur ile gezilebilmesi ve sanal müze gezisinin maddi açıdan avantajlı olması olarak; kullanım kolaylığı üzerinden açıklayan öğretmen adayları; sanal turun kolay bir şekilde yapılabilmesi, bölümlere ait bilgilendirici yazıların olması, sanal turda ses/video desteğinin olması ve sanal gezi için yönlendiricilerin olması olarak; teknolojik zorluklar ve eksiklikler üzerinden açıklayan öğretmen adayları; yakınlaştırma yapılınca görüntü kalitesinin düşmesi ve yazıların net okunmaması, bir bölümden diğer bölüme geçerken zorluk yaşanması, müze içinde yönlendirmelerin yetersiz olması, müzedeki yazılı bilgilendirmelerin az olması, sanal turda sesli anlatım/müzik olmaması, üç boyutlu/hareketli maketlerin sayıca az olması, sanal gezi sırasında internet bağlantısı kaynaklı sorunlar yaşanması, sanal gezi sırasında takılma/donma yaşanması ve müzenin ışıklandırma sisteminin göz yorucu olması olarak ifade etmişlerdir.

Öğretmen adaylarının sanal müzelerin sosyal bilgiler derslerinde kullanılabilirliğine yönelik görüşleri; öğrenme-öğretme süreci, genel kültür ve değer kazanımı ile bilinç ve beceri kazanımı alt temaları üzerinden analiz edilmiştir. Sanal müzelerin sosyal bilgiler derslerinde kullanılabilirliğine yönelik görüşlerini öğrenme ve öğretme süreci üzerinden açıklayan öğretmen adayları sanal müzelerin öğretim materyali olarak kullanılması, kalıcı öğrenmeyi sağlaması, derste anlatılan konuları somutlaştırması, öğrencilerin ilgisini çekmesi ve dersi eğlenceli hale getirmesi olarak; milli ve kültürel değerler üzerinden açıklayan öğretmen adayları öğrencilere kültürü tanıtması, millî bilinç ve Atatürk sevgisi kazandırması ile tarihi sevdirmesi olarak; bilinç ve beceri kazanımı üzerinden açıklayan öğretmen adayları öğrencilerin zaman ve kronolojiyi algılama becerilerini arttırması, yaratıcı düşünme becerilerini arttırması, hayal gücünü zenginleştirmesi, geri dönüşüm ve yardımlaşma bilinci kazandırması ile müze gezme alışkanlığı ve sevgisi kazandırması olarak ifade etmişlerdir.

Öğretmen adaylarının gezdikleri sanal müzeleri kullanarak tasarladıkları etkinlikler; öğrenme materyalleri ve teknikleri, görsel sanatlar ve tasarım etkinlikleri ile yaratıcı yazma ve düşünme etkinlikleri alt temaları üzerinden analiz edilmiştir. Gezdikleri sanal müzeleri kullanarak öğrenme materyalleri ve etkinlikleri tasarlayan öğretmen adayları; eğitsel oyun tasarlama, çalışma yaprağı, soru-cevap, sanal turu yapılan müzeye gezi etkinliği düzenleme, bulmaca, istasyon tekniği ve arkeolojik kazı etkinliği; görsel sanatlar ve tasarım etkinlikleri tasarlayan öğretmen adayları drama, müzede görülen eser örneklerinin yapılması, gezi panosu oluşturma, görülen mekân ve eserlere yönelik resim çizme etkinliği, müze broşürü/afiş/poster hazırlama etkinliği; yaratıcı yazma ve düşünme etkinlikleri tasarlayan öğretmen adayları; sanal gezi sonrasında müzeye yönelik değerlendirmeleri, tarihsel empatiyle hikâye/masal yazımı ve beyin fırtınası etkinliği oluşturmuşlardır.

Öğretmen adaylarının sanal müze gezileri etkinliğine yönelik görüşleri; öğrenme ve akademik gelişim, kişisel ve mesleki gelişim ile kültür ve tarihi bilgi kazanımı alt temaları üzerinden analiz edilmiştir. Sanal müze gezileri etkinliğine yönelik görüşlerini hazırlık süreci üzerinden açıklayan öğretmen adayları zorlanmadan/keyifle yapılan bir etkinlik olması, müze ve kazanım eşleştirmek için Sosyal Bilgiler Dersi Öğretim Programı'nın incelenmesi, etkinlik hazırlamak için eğitim bilimleri bilgilerinin tekrar edilmesi, etkinlik hazırlama aşamasında zorluk yaşanması ve kazanım-müze eşleştirmesinde zorluk yaşanması olarak; kültürel fayda üzerinden açıklayan öğretmen adayları; kültürel açıdan öğretici olması, müze gezme isteği oluşturması, müze gezilerinin öneminin anlaşılması, sanal gezilerle yeni müzeler keşfedilmesi ve kültürel mirasa duyarlılığı arttırması olarak; eğitim öğretim hayatına katkıları üzerinden açıklayan öğretmen adayları; etkinliğin öğretmenlik hayatı için katkılarının olması, ezber bilgi yerine kalıcı öğrenme sağlaması, sanal müze gezileri ile Sosyal Bilgiler Öğretmenliği Programı ders içeriklerinin örtüşmesi, Kamu Personel Seçme Sınavı [KPSS] için katkılarının olması, yazma becerisini geliştiren bir etkinlik olması ve hayal gücünü geliştirmesi olarak ifade etmişlerdir.

Tartışma ve Sonuç

Sosyal bilgiler öğretmen adaylarının sanal müzelere yönelik görüş ve deneyimlerinin belirlenmesini amaçlayan bu araştırmada çalışma grubunu oluşturan öğretmen adaylarının bakış açısından; gezdikleri sanal müzeler, sanal müzelere yönelik görüşleri, sanal müzelerin sosyal bilgiler derslerinde kullanılabilirliğine yönelik görüşleri, gezdikleri sanal müzeleri kullanarak tasarladıkları etkinlikler ve sanal müze gezisi etkinliğine ilişkin görüşleri değerlendirilmiştir.

Öğretmen adaylarının gezdikleri sanal müzeler; arkeoloji müzeleri ve örenyerleri, tarih ve etnografya müzeleri, bilim ve teknoloji müzeleri ile doğa ve çevre müzeleri gibi farklı temalar altında incelenmiştir. Öğretmen adaylarının ziyaret ettikleri sanal müzeler arasında, Göbeklitepe Örenyeri, Anadolu Medeniyetleri Müzesi, Ankara Etnografya Müzesi, Ankara Cumhuriyet Müzesi, Türk ve İslam Eserleri Müzesi ve Türk İslam Bilim ve Teknoloji Tarihi Müzesi gibi önemli kültürel ve tarihî mekânların öne çıktığı tespit edilmiştir. Bu durum, öğretmen adaylarının tarih, kültür ve bilim alanlarına olan ilgilerinin yanı sıra Türkiye'nin zengin mirasını keşfetmeye yönelik meraklarını da yansıtmaktadır. Ayrıca öğretmen adaylarının gezdikleri sanal müzelerin, Sosyal Bilgiler Dersi Öğretim Programı ile uyumlu olması, bu tür etkinliklerin eğitimde etkili bir araç olarak kullanılabileceğini ve ders programına katkı sağlayabileceğini ortaya koymaktadır.

Öğretmen adaylarının sanal müzelere yönelik görüşleri; sanal gezi deneyimi, kullanım kolaylığı ve teknolojik zorluklar ile eksiklikler başlıkları altında incelenmiştir. Sanal gezi deneyimi bağlamında, öğretmen adayları sanal müze gezisinin ilgi çekici, öğretici ve zaman açısından avantajlı olduğunu, ancak gerçek bir müze gezisinin yerini tam olarak tutmadığını belirtmişlerdir. Teknolojik zorluklar ve eksiklikler açısından ise, görüntü kalitesinin düşmesi, yönlendirmelerin yetersizliği ve internet bağlantısı sorunları gibi çeşitli sıkıntılar dile getirilmiştir. Sonuç olarak, öğretmen adaylarının sanal müze gezilerinin eğitim açısından faydalı olduğu, ancak bazı teknik zorluklar ve eksikliklerin giderilmesi gerektiği görüşünde olduğu tespit edilmiştir. İralı (2019) araştırmasında, sanal müzelerin eğlence, etkileşim ve bilgi

edinme amaçları için kullanılabileceğini belirtirken Ulusoy (2010) sanal müzelerin hem eğitici hem de eğlenceli bulunduğunu tespit etmiştir. İlhan ve Dolmaz (2022) araştırmalarında, sanal müzelerin eğitim aracı olarak önemli avantajlar sunduğu kadar bazı dezavantajları da barındırdığını tespit etmiştir. Öğretmen adaylarının sanal müze gezilerini yaratıcı, avantajlı, ilham verici, hoş, konforlu, motive edici, farklı, pratik, verimli, dikkat çekici, etkileyici, eğlenceli, eğitici ve faydalı bir deneyim olarak değerlendirerek avantajlarını vurguladıkları; eserin detaylı incelenememesi, kullanım zorluğu, kısıtlı yakınlık-uzaklık ayarı, panoramik görüntü eksikliği, rehber bulunmaması ve görsel kalite sorunları gibi değerlendirmelerle teknik dezavantajlarına değindiklerini belirtmişlerdir (İlhan & Dolmaz, 2022). Kaya ve Okumuş (2018) ile Sürme ve Atılgan (2020), sanal müze ziyaretlerinde ziyaretçilerin kullanım kolaylığı, tüm galerilere erişim imkânı ve tabelaların okunabilirliğini ön planda tuttuğunu belirtmiştir. Sanal müzelerin fiziki müzelerin sunduğu gerçekçi deneyimi sağlamadığı Çınar vd.nin (2021) araştırmasında da yer almaktadır. Çınar vd. (2021) öğrencilerin sanal müze gezilerini beğenmelerine rağmen, müze atmosferini canlı olarak yaşama, eserleri doğrudan görme ve dokunma gibi nedenlerle fiziksel müze gezilerini tercih ettiklerini tespit etmişlerdir. Sanal müzeler, birçok avantaj sunmasına rağmen, objelere dokunamama ve koridorlarda dolaşamama gibi sınırlamaları nedeniyle gerçek müze deneyimini yetersiz kılmakta, bu durum da en belirgin eleştirileri oluşturmaktadır (Barlas-Bozkuş, 2014).

Öğretmen adaylarının sanal müzelerin sosyal bilgiler derslerinde kullanılabilirliğine yönelik görüşleri, öğrenme-öğretme süreci, millî ve kültürel değerler ile bilinç ve beceri kazanımı boyutlarında incelenmiştir. Sanal müzelerin, dersleri somutlaştırarak kalıcı öğrenmeyi desteklediği, öğrenci ilgisini artırarak dersi daha eğlenceli hale getirdiği ve öğretim materyali olarak etkili olduğu sonucuna ulaşılmıştır. Ayrıca, sanal müzelerin millî bilinç, kültürel farkındalık ve Atatürk sevgisi kazandırdığı, öğrencilerin zaman ve kronoloji algısını geliştirip, yaratıcı düşünme becerilerini artırdığı, müze gezme alışkanlığı ve sevgisi kazandırdığı belirlenmiştir. Çalışkan vd. (2016) tarafından sosyal bilgiler öğretmen adaylarıyla yapılan bir araştırmada, öğretmen adayları sanal müzelerin sosyal bilgiler derslerinde kalıcı öğrenmeyi desteklediğini, aktif ve eğlenceli bir öğrenme ortamı sunduğunu, somutlaştırma, tarih sevgisi ve empati gibi avantajlar sağladığını belirtmişlerdir. Peker (2020) tarafından yapılan araştırmada, sosyal bilgiler öğretmen adaylarının sanal müze kullanımının eğitim sürecinde ve öğrenciler üzerinde kalıcı ve olumlu etkiler yaratacağına dair güçlü bir inanca sahip oldukları belirlenmiştir. Koca ve Daşdemir (2018) sanal müze gezilerinin öğrencilerin akademik başarısı üzerinde olumlu etkisi olduğunu, Meirkhanovna vd. (2022) ile Sevi ve Er-Türküresin (2023) sanal müzelerin öğrencilerde kültürel mirasa duyarlılık, vatanseverlik, bilimsellik, estetik ve diğer önemli değerlerin kazandırılmasına olumlu katkı sağladığını, Çınar vd. (2021) öğrenme öğretme sürecini zenginleştirerek dersleri eğlenceli hale getirdiğini, Turgut (2015) ve Gılıç (2020), sanal müze gezilerinin öğrencilerin öğrenme sürecine katkıda bulunduğunu, eğlenceli bir deneyim sunduğunu ve derse hareket kattığını, Durmuş (2012), sanal müze gezilerinin öğrenciler tarafından beğenildiğini ve bu tür etkinliklerin diğer derslerde de uygulanmasını istediklerini, Ustaoğlu (2012), geleneksel yöntemle ders gören öğrencilerde merak duygusu oluşmazken, sanal müze uygulamaları ile merak duygusunun arttığını ve bu durumun derse ilgiyi ve başarıyı yükselttiğini ifade etmişlerdir.

Öğretmen adaylarının gezdikleri sanal müzeleri kullanarak tasarladıkları etkinlikler, öğrenme materyalleri ve etkinlikleri, görsel sanatlar ve tasarım etkinlikleri ve yaratıcı yazma ve düşünme etkinlikleri olarak sınıflandırılmıştır. Öğretmen adayları, eğitsel oyunlar, çalışma yaprakları, soru-cevap etkinlikleri ve arkeolojik kazı gibi çeşitli öğrenme materyalleri tasarlamışlardır. Görsel sanatlar ve tasarım etkinlikleri kapsamında ise drama, müzede görülen eserlerin replikalarını yapma, resim çizme ve müze broşürü hazırlama gibi etkinlikler geliştirilmiştir. Ayrıca, yaratıcı yazma ve düşünme alanında, sanal müze ziyaretlerinden sonra değerlendirmeler, tarihsel empatiyle hikâye yazımı ve beyin fırtınası etkinlikleri tasarlanmıştır. Öner-Armağan vd. (2023) araştırmalarında; öğretmen adaylarının sanal müze kullanımlarında başlangıçta teknolojik yeterlilikleri ve alan bilgilerinin öne çıktığı, uygulama sonrasında ise pedagojik bilginin de önemini kavradıkları ve bilgiyi içerikle birleştirebildikleri sonucuna ulaşmışlardır. Barab vd. (2005) ve Iqbala vd. (2010), sanal uygulamalarla öğrencilere farklı bir ortamda bulunma hissi verildiğini, böylece hayal güçleri ve problem çözme yeteneklerinin geliştirildiğini, yüksek düzeyde etkileşimle öğrenme deneyimleri sunulduğunu ve bilginin yapılandırılması, beyin fırtınası gibi farklı kaynaklardan yararlanarak bilginin sentezlenmesi için uygun ortamlar sağlandığını belirtmişlerdir. Bu bağlamda sanal ortamların hem öğrenci hem de öğretmen adaylarının bilişsel ve pedagojik gelişimlerini destekleyerek, eğitim sürecini daha dinamik ve etkileşimli hale getirdiği görülmektedir.

Öğretmen adaylarının sanal müze gezileri etkinliğine yönelik görüşleri, hazırlık süreci, kültürel fayda ve eğitim-öğretim hayatına katkılar çerçevesinde değerlendirilmiştir. Hazırlık sürecine ilişkin olarak, etkinliğin zorlanmadan ve keyifle yapıldığı, Sosyal Bilgiler Dersi Öğretim Programı'nın incelenerek müze ve kazanımların eşleştirildiği, etkinlik hazırlığı sırasında eğitim bilimleri bilgilerinin yeniden gözden geçirildiği, ancak kazanım-müze eşleştirmesinde ve etkinlik hazırlama aşamasında bazı zorluklar yaşandığı belirtilmiştir. Kültürel fayda açısından ise, sanal müze gezilerinin kültürel açıdan öğretici olduğu, müze gezme isteği uyandırdığı, müzelerin önemini daha iyi kavrattığı, yeni müzelerin keşfedilmesine olanak sağladığı ve kültürel mirasa duyarlılığı artırdığı ifade edilmiştir. Eğitim-öğretim hayatına katkılar bağlamında ise, bu etkinliğin öğretmenlik kariyerine olumlu etkiler sağladığı, kalıcı öğrenmeyi desteklediği, Sosyal Bilgiler Öğretmenliği Programı ders içerikleriyle uyumlu olduğu, KPSS hazırlığına katkıda bulunduğu, yazma becerilerini geliştirdiği ve hayal gücünü zenginleştirdiği vurgulanmıştır.

Öneriler

Sanal müze gezileri sırasında yaşanan teknolojik zorlukların önüne geçmek üzere; sanal müzelerin teknik alt yapısı güçlendirilebilir, görüntü kalitesi arttırılabilir ve yönlendirmeler daha kullanıcı dostu hale getirilebilir.

Sanal müzelerin eğitimde daha etkili kullanılabilmesi için içerikleri zenginleştirilebilir. Sesli anlatım, üç boyutlu modeller ve interaktif eserler eklenerek öğrencilerin ilgisi çekilebilir.

Öğretmen adayları sanal müzeleri ders materyali olarak kullanmaları için teşvik edilebilir. Öğretmen adaylarına sanal müze gezilerinin planlanması, kazanımlar ve müzelerin eşleştirilmesi ve etkinlik tasarlama konularında rehberlik yapılabilir.

Sanal müzeler ile fiziksel müze gezileri birleştirilerek öğrencilere daha geniş bir öğrenme deneyimi sunulabilir. Müze gezilerinin eğitici etkisini arttırmak üzere sanal müzeler, fiziksel gezilerin ön hazırlığı olarak kullanılabilir ve öğrencilerin müzeye dair ön bilgi edinmeleri sağlanabilir.

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Analysing the Tasks in Middle School Mathematics Textbooks According to the Levels of Cognitive Demand

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Abstract

This study aims to investigate and categorize the tasks in middle school mathematics textbooks based on their cognitive demand levels. The goal is to examine how these tasks align with educational objectives aimed at fostering students' critical thinking and problem-solving abilities. This research employed the document analysis method. This study evaluated the mathematical tasks in 5th to 8th grade textbooks used in schools in Türkiye, using Smith and Stein's (1998) framework for classifying mathematical tasks. The data were examined using the content analysis method. The results indicated that most tasks in these textbooks were concentrated at the levels of procedures without connections and procedures with connections. Additionally, the proportion of tasks requiring higher-order cognitive skills, specifically, doing mathematics tasks, was relatively low. Based on these findings, future textbook revisions should integrate more high cognitive demand tasks to both strengthen students' procedural skills and foster complex problem-solving and critical thinking abilities.

Keywords: Cognitive demand, mathematical task, textbook, middle school mathematics, activity.

Introduction

Despite various criticisms (Radford, 2008), the constructivist approach, gained influence in mathematics education since the mid-1980s, fundamentally emphasizes student-centeredness and active student participation in the learning process. In this approach, students are expected to restructure new knowledge by building on their existing knowledge, essentially constructing new information on the foundation of what they already know (Toluk-Uçar, 2020; Van de Walle et al., 2023). Boston et al. (2017), argued that the key element in achieving the goals of the constructivist approach and supporting students' meaningful understanding of mathematics is the incorporation of activities that promote problem-solving and logical reasoning in the teaching process. Activities can be defined as processes that encourage active student participation or they can be defined as individual or series of tasks selected by the teacher but voluntarily performed by the student (Dede et al., 2020). Similarly, Mathematics activities shape students' learning and experiences in mathematics classes (Johnson et al., 2017). Well-organized and effectively implemented mathematical activities allow students to reflect on their knowledge, skills, and understanding within the classroom (Smith & Stein, 2011). Kilpatrick et al. (2001), state that clear and motivating mathematical activities are one of the three conditions necessary for students to demonstrate their logical reasoning abilities (the other two are having sufficient knowledge and being familiar with the content). When examining the term "activity" within the mathematics education literature, it appears in various forms.

Although some do not fully capture the intended meaning, the terms "exercise", "task", and "activity" are often used interchangeably to refer to activities. The typical characteristics of exercises are as follows: teachers are highly active and they want to control process, teachers directs the students with minimal student participation, the content and goals of the lesson are clearly known in advance, they were proceed in a written format, the focus is on procedural skills rather than conceptual learning, and the aim is to reinforce learned or memorized content through repetition (Cichy et al., 2020; Foster, 2018; Watson & Mason, 2006). Tasks,

on the other hand, have different characteristics. They involve low teacher control, but students are guided under teacher supervision, and neither the teacher nor the student is central. Active participation is not mandatory, and tasks can be presented in any format. They focus on both procedural and conceptual knowledge, involving repetition of learned content through social processes such as peer support and collaborative learning. Although the topics and goals are clear, they are not explicitly stated. (Chapman, 2013; Foster, 2013). Lastly, activities are characterized by student control with the teacher acting as a guide, where the student is central, and active participation is required. The goals and content to be learned are not explicitly given at the beginning, and activities are presented in a physical format. They prioritize building procedural skills on conceptual learning and involve constructing new topics based on previous learning. Additionally, they encourage exploration (Antonijević, 2016; Ponte et al., 2014).

Considering the use and function of these three terms as a whole, activities can be defined as learning engagements that allow students to focus on specific mathematical ideas under particular pedagogical approaches and mathematical procedure. In this context, the fundamental basis of the term "task" can be said to be the provision of opportunities and conditions that help develop students' mathematical thinking, reasoning, modelling, and understanding skills in mathematical learning environments and teaching processes (Seah & Horne, 2021; Stein et al., 1996; Wess et al., 2021). Activities can be quite broad in scope; they may include; outdoor learning activities, projects or games and also questions from textbooks and worked-out examples, all of which fall within the concept of an activity.

Given the significant role of textbooks in shaping classroom activities, it is crucial to examine the cognitive demand levels of the tasks they contain to better understand how they align with educational objectives. This study aims to analyse the tasks in middle school mathematics textbooks and classify them according to their cognitive demand levels. By doing so, it seeks to provide insights into the nature of tasks presented in textbooks and their alignment with the educational goals of fostering critical thinking and problem-solving skills among students. The findings from this study will contribute to understanding the extent to which textbooks support or hinder the development of these essential skills in mathematics education.

Background and Related Context

Classifying tasks according to their cognitive levels or the cognitive demands expected from students is one of the useful methods to ensure that instructional materials target different levels of thinking, from basic recall to higher-order problem-solving, helping educators design more effective learning experiences. The classification of academic tasks according to their levels of cognitive demand, as the cognitive processes required for a student to complete a given task, was introduced by Doyle (1980, 1983). In his studies, Doyle (1983) categorized academic tasks into four groups based on their cognitive demand levels. These are: "memory tasks, procedural or routine tasks, comprehension or understanding tasks, and opinion tasks" (pp. 7-8).

The most typical feature of memory tasks is that students recognize or reuse previously seen or learned information in similar, identical situations. Memorizing the multiplication table is a good example of memory tasks. Procedural or routine tasks aim to have students

reach a result by using a specific or predictable formula. Solving addition or subtraction problems using a learned algorithm can be examples of such tasks (Dorner & Ableitinger, 2022). Comprehension or understanding tasks, on the other hand, require students to follow a three-step process. First, students need to recognize the reorganized forms of previously learned information. Then, they must apply the appropriate procedure from various options in a new situation. Finally, they are expected to make inferences for their possible future learning. Solving a routine real-life problem using several different strategies can be an example of these types of tasks (Plath & Leiss, 2018). In the final stage, opinion tasks require students to make choices among possible options with logical and sufficient justifications. A task that involves evaluating and selecting among various types of individual retirement plans based on variables such as monthly fees, duration, and repayment options can be presented as an example for opinion tasks (Leiss et al., 2019).

Figure 1.

Characteristics of Mathematical Instructional Tasks

Low Cognitive Demand	Memorization	— Involves reproducing previously learned facts, rules, formulas or definitions or committing these to memory. — Cannot be solved using procedures because a procedure does not exist or because the time frame in which the task is being completed is too short to use a procedure. — Is not ambiguous. Such tasks involve the exact reproduction of previously seen material, and what is to be reproduced is clearly and directly stated. — Has no connection to the concepts or meaning that underlie the facts, rules, formulas, or definitions being learned.
	Procedures *without* Connections	— Is algorithmic. The use of a procedure either is specifically called for or is evident from prior instruction and/or experience. — Requires limited cognitive demand for successful completion. Little ambiguity exists about what needs to be done and how to do it. — Is not connected to the concepts or meaning that underlie the procedure being used. — Is focused on producing correct answers. — Requires no explanation or explanations focus solely on describing the procedure that was used.
High Cognitive Demand	Procedures *with* connections	— Focuses students' attention on the use of procedures for the purpose of developing deeper understanding of mathematical concepts and ideas. — Suggests explicit and/or implicit pathways to follow that involve the use of broad general procedures that have close connections to underlying conceptual ideas as opposed to narrow algorithms. — Can usually be represented in multiple ways, including the use of manipulative materials, diagrams, and symbols. Making connections among the representations helps students develop meaning. — Requires some degree of cognitive effort. Although general procedures may be followed, they cannot be followed mindlessly. Students are engaged in conceptual ideas that underlie the procedure and develop understanding.
	"Doing" Mathematics	— Requires complex, non-algorithmic thinking. — Requires students to explore and understand the nature of mathematical concepts, processes, or relationships. — Demands students do some type of self-monitoring or self-regulation of their own cognitive processes. — Requires students to access relevant knowledge and experiences and make appropriate uses of them in working through the task. — Requires students to analyse task constraints that may limit possible solution strategies or solutions. — Requires considerable cognitive effort and may cause some level of anxiety for the students as they are working through the problem.

Similarly, mathematical tasks range along a continuum from routine exercises to complex and challenging problems. Based on Doyle's (1988) work, Stein and her colleagues conducted a series of studies to classify the types of mathematical tasks and the levels of

thinking required to solve them (Stein et al., 1996; Stein & Smith, 1998). Smith and Stein (1998) categorized mathematical tasks into two levels: lower-level and higher-level. The lower-level tasks were divided into memorization and procedures without connections, while the higher-level tasks were divided into procedures with connections and doing mathematics.

Figure 1 presents the characteristic features of each type of tasks based on their cognitive demand levels in detail (Smith & Stein, 1998). According to the classification presented in this figure, tasks that force students to engage in active inquiry and investigation, or that require building the processes and methods used to reach a result on a particular concept or idea, are considered tasks with high cognitive demands. On the other hand, tasks that encourage students to repeatedly use formulas, solutions, and algorithms without understanding the reasons behind them, or that require the use of memorized information or previously tried situations, are seen as tasks with low cognitive demands (National Council of Teachers of Mathematics [NCTM], 2014). The features specified in this classification can serve as a rubric for deciding whether to use pre-constructed or readily available tasks in the mathematics teaching process. They can also guide the development of original activities for teaching mathematics (Smith & Stein, 1998). Besides these functions, the different cognitive demand levels of tasks can be used to assess students' learning and mathematical understanding by examining their ability to complete these tasks (Van de Walle et al., 2023).

In their literature review on mathematics tasks, NCTM (2014) identified three main findings. The first is that not all tasks provide students with the same opportunities for thinking and learning. In other words, not every task used in the classroom has the expected impact on students. The second finding is that students' mathematics learning is maximized when tasks consistently promote higher-order thinking and logical reasoning, whereas it remains minimal when tasks consist of procedural repetitions. The third finding is that the most challenging type of tasks to implement in the classroom are those that require high cognitive demands, which are essential for achieving the highest levels of mathematics learning. Consequently, tasks in the mathematics teaching process are often transformed into types that require lower cognitive demand. One of the fundamental challenges in mathematics education is the inability to replace routine exercises, which can be solved by repeatedly applying a specific method and focusing solely on procedural skills, with tasks that emphasize conceptual learning. These routine exercises often fail to prioritize the development of deeper understanding in students (Lithner, 2017). In parallel with these findings, two main factors contribute to the reduction of cognitive expectations in tasks: students may request that teachers lower the difficulty level of tasks to achieve solutions through more straightforward, understandable steps, or when teachers notice that students are struggling with the tasks, they may take on some of the steps themselves by telling or showing students what to do (Kilpatrick et al., 2001).

The challenges in transitioning to higher-order cognitive tasks are also reflected in more recent studies. In the study conducted by Lee (2022), the cognitive demand levels and question types of tasks in 5th and 6th grade mathematics textbooks were analysed. The results showed that the proportion of tasks requiring mathematical reasoning was the highest, while the proportion of problem-solving tasks was the lowest. It was also found that the proportion of high-level tasks was quite low, and tasks requiring students to engage in deep cognitive

processes were insufficiently provided. Additionally, the analysis of the sub-questions of high-level tasks revealed that reasoning questions had the highest proportion. The study suggests that to develop students' mathematical thinking skills, a broader range of tasks requiring deep cognitive complexity should be implemented. Moreover, it emphasizes the importance of maintaining the cognitive level when creating sub-questions for high-level mathematical tasks.

Additionally, the study conducted by Ni et al. (2018), found that mathematical tasks involving high cognitive demand, multiple representations, and multiple solution methods enhanced students' abilities to solve complex problems. However, it was determined that these types of tasks did not have a direct impact on cognitive learning outcomes such as computation, routine and complex problem solving. Conversely, high cognitive demand for mathematical tasks positively influenced students' interest in mathematics, their classroom engagement, and dynamic views on learning mathematics. The study highlighted that the cognitive demand levels of mathematical tasks play a significant role in students' cognitive and affective learning outcomes, and that effectively implementing these tasks in the classroom encouraged students to form positive relationships with mathematics. When examining the literature from Turkish context on mathematics education, several studies have categorized the tasks or activities included in textbooks and curricula according to their cognitive demand levels. In their analysis of the algebra learning domain in the middle school mathematics curriculum, Ubuz et al. (2010) found that activities at the 6th, 7th, and 8th grade-levels included all types except for memorization, with approximately 60% of the activities requiring high cognitive demand across all three grade levels.

In a study focusing on textbooks, Ubuz and Sarpkaya (2014) discovered that the tasks in the algebra sub-learning domain of 6th grade textbooks were generally of the "procedures with connections" type. However, when examining the tasks used by mathematics teachers in the classroom, they found that most were of the "procedures without connections" type. Similarly, Engin and Sezer (2016) revealed that most tasks in the 7th grade mathematics curriculum and textbooks were at the level of "procedures with connections." Another study by Reçber and Sezer (2018) found that the proportion of tasks requiring high cognitive demand in the 8th grade textbooks was lower than expected in the middle school mathematics curriculum, with this discrepancy reaching up to 35% in some sub-learning domains.

Bozkurt and Yılmaz (2020) noted that the distribution of tasks in the 8th grade mathematics textbooks was almost equal between low and high cognitive demand levels. However, they found that these tasks were concentrated in the "procedures with connections" and "procedures without connections" categories. They also observed significant differences in cognitive demand levels between the two textbooks they examined. A more recent study conducted by Polat and Dede (2023) revealed that the tasks in the algebra learning domain of the analysed mathematics textbooks were generally of low cognitive demand. This indicates that the tasks do not require students to engage in high-level cognitive thinking and problem-solving skills when performing mathematical tasks.

When these previous studies are considered as a whole, it can be concluded that the tasks in the middle school mathematics curriculum are sufficient to provide students with a mathematical perspective and can promote logical reasoning and complex problem-solving

skills. On the other hand, it appears that the tasks in textbooks do not meet the expected levels of the curriculum and that there are differences between textbooks. In terms of classroom practices and the activities used, it is observed that tasks requiring low cognitive demand are predominantly preferred. Consequently, classroom implementations do not reflect the expectation of utilizing high cognitive demand tasks in the curriculum

Mathematics teaching processes heavily rely on textbooks as the primary resource for both teachers and students. Consequently, many of the tasks that teachers assign to students during mathematics lessons are derived from the tasks included in the textbooks. Despite various efforts to incorporate tasks that promote higher-order thinking and conceptual understanding, challenges persist in replacing routine exercises with more cognitively demanding tasks. Previous studies have highlighted that not all tasks or activities offer the same opportunities for student learning and thinking. While tasks that encourage higher-order thinking and logical reasoning are essential for maximizing students' mathematical understanding, such tasks are often underrepresented in classroom practices. Instead, there is a tendency to favour tasks requiring lower cognitive demand due to various constraints and challenges faced by teachers.

Method

Research Design and Source of Data

The aim of this study is to analyse and classify the tasks in middle school mathematics textbooks according to their cognitive demand levels. The design of the study is document analysis which examines written or printed materials to provide detailed information on the subject being studied (Bowen, 2009). In 2021, when the data for this study were collected, three 5th grade textbooks, three 6th grade textbooks, two 7th grade textbooks, and three 8th grade textbooks from different publishers were available in the Education Information Network [EBA] of the Ministry of National Education [MoNE]. However, the content, analysed in this study, includes tasks in the 5th grade (Cırıtcı et al., 2019), 6th grade (Çağlayan et al., 2019), 7th grade (Keskin-Oğan and Öztürk, 2019) and 8th grade (Böge and Akıllı, 2019) mathematics textbooks published by the MoNE. The study encompasses all tasks that students are assumed to solve during lessons, such as exercise questions, problems, solved examples, activities, and games. However, unit evaluation questions, which are typically assigned as homework, were excluded from the study. Therefore, a total of 1,802 tasks were analysed, including 372 tasks from the 5th grade textbooks, 519 tasks from the 6th grade textbooks, 477 tasks from the 7th grade textbooks, and 434 tasks from the 8th grade textbooks.

Data Analysis and Process

In this study, the mathematical tasks in the 5th, 6th, 7th, and 8th grade textbooks were evaluated based on the framework for classifying mathematical tasks, as explained in Figure 1, developed by Smith and Stein (1998). The data were examined using the content analysis method, as one of the techniques employed to identify concepts and relationships and derive conclusions from qualitative data (Mayring, 2015). The findings of the study are reported based on the tasks related to class level and learning domains. This involves determining the cognitive demand levels associated with each task. In the classification by Smith and Stein

(1998), each level is coded as follows: a) Memorization (Low Cognitive Demand-1 [LCD1]), b) procedures without connections (Low Cognitive Demand-2 [LCD2]), c) Procedures with connections (High Cognitive Demand-1 [HCD1]), and d) Doing mathematics (High Cognitive Demand-2 [HCD2]).

Each task was coded by both of researchers with specific codes whose examples are provided below. When researchers encountered disagreements in coding any task, they discussed their perspectives and decided on the most appropriate code through deliberation. To enhance the reliability of the data, 20 tasks, including those with disagreements, were reviewed by an expert familiar with the classification used in the study. The researchers then engaged in discussions with the expert about the coding decisions. After these discussions agreement-correlation coefficients was found as 92% between researchers, and 86% among researchers and expert (Miles & Huberman, 1994). In the following subsections, an overview of the tasks was briefly discussed, with specific task examples provided under the corresponding subheadings below.

Example Task for Memorization (LCD1)

Students are expected to recognize and repeat previously encountered and acquired information. In this algebraic task (Cırıtcı et al., 2019), students are asked to recall the definition: "Given that a, b, and n are natural numbers, in the expression $an=b$, a is called the base, and n, which indicates how many times a is multiplied, is called the exponent or power (Figure 2)." Students must then identify the base and exponent in given exponential numbers. This task does not involve relating the learned or repeated definitions, formulas, rules, or facts to their underlying meanings.

Figure 2.

Example Task for Memorization

Identify only the bases and exponents of the given exponential numbers.

a) 8^3 b) 3^{10} c) 20^{10} d) 1999^{2000}

Example Task for Procedures without Connections (LCD2)

In this algebraic task (Böge and Akıllı, 2019) students are expected to apply standardized and predictable formulas or algorithms to reach the solution (Figure 3). Specifically, they are required to find the solution of the equation and verify its accuracy. Solving the equation necessitates the use of algorithmic procedures. Students can solve previous experiences, explanations, and the sequence of tasks. However, there is no connection to the underlying concepts in this task. While explanations are provided during the solution process, these explanations pertain solely to the use of procedures.

Figure 3.

Example Task for Procedures without Connections

Solve the given equations and verify the accuracy of your solutions.

        a) 2a+5=13   b) 3k-2=+7   c) 2m-3=19

d) $\frac{1}{2}y - 6 = 4$ e) 2t+8=14   f) 11=4x+3   g) 3a+8=32

Example Task for Procedures with connections (HCD1)

In this task (Böge and Akıllı, 2019) students are expected to draw conclusions about knowledge or methods, apply learned methods to new situations, choose appropriate methods for solving new problems, and transform or explain knowledge or methods (Figure 4). This algebraic task involves using a balance model to represent equations, establishing a connection between the model and mathematical concepts. Through this task, students perceive that the underlying concept of the balance model is the principle of equality.

Figure 4.

Example Task for Procedures with Connections

Marbles on the Scale
➢ Let's place 6 marbles on the left pan of the scale and 10 marbles on the right pan.
❖ To balance the scale, let's add an object to the left pan. How can you write the algebraic expression for the balanced position of the scale, considering the object you placed as the unknown? Explain

Example Task for Doing Mathematics (HCD2)

In this task (Çağlayan et al., 2019) students are expected to independently identify a situation that is not explicitly stated in the task (Figure 5). Specifically, they are asked to create a pattern of shapes based on a numerical pattern, requiring them to engage in modelling. By following the steps provided in the task, students establish a relationship within the numerical pattern, derive a general rule, and explain their findings, and then effectively proving their conclusions. This task necessitates high level of cognitive demand as it requires students to make connections, generalize their findings, abstract, symbolize, and ultimately prove their results.

Figure 5.

Example Task for Doing Mathematics

Based on the pattern: 1x4, 2x4, 3x4, ….

a)   Find the values of the first 4 steps.
b)   Find the value of the 80th step and explain how you arrived at your answer.
c)   Create a shape pattern that corresponds to the given number pattern

Ethical Permits of Research:

In this study, all the rules specified to be followed within the scope of "Higher Education Institutions Scientific Research and Publication Ethics Directive" were complied with. None of the actions specified under the heading "Actions Contrary to Scientific Research and Publication Ethics", which is the second part of the directive, have been taken.

Ethics Committee Permission Information:

Ethics committee approval was not necessary for this research, as it does not involve human or animal subjects, and the data sources are publicly accessible textbooks. The journal's writing guidelines, publication principles, research and publication ethics rules, and journal ethics regulations were adhered to in this article. Any responsibility for potential violations related to the article lies with the author.

Findings

According to the findings of the study, examples of mathematical tasks found in the textbooks correspond to each level of the mathematical task classification proposed by Smith and Stein (1998). The details of these mathematical tasks and their distributions by grade level were presented in the following section. Additionally, their distributions according to learning areas were also discussed.

Findings for 5th Grade Textbook

The findings from the analysis of the 5th grade mathematics textbook tasks reveal a distribution across different cognitive demand levels, categorized into Low Cognitive Demand [LCD] and High Cognitive Demand [HCD] (see Table 1).

Table 1.

Statistics for Cognitive Demand Levels of Tasks in 5th Grade Textbook

Learning area	Low cognitive demand				High cognitive demand				Total	%
	LCD1	%	LCD2	%	HCD1	%	HCD2	%		
Numbers and operations	19	9.69	84	42.86	68	34.69	25	12.76	196	52.69
Algebra	-		-		-		-		-	
Geometry and measurement	42	26.25	56	35.00	51	31.88	11	6.88	160	43.01
Data analysis	3	18.75	6	37.50	6	37.50	1	6.25	16	4.30
Probability	-		-		-		-		-	
Total	64	17.20	146	39.25	125	33.60	37	9.95	372	100

Within the Numbers and Operations learning area, the majority of tasks fall under the LCD2 category (42.86%), with a significant portion also classified as HCD1 (34.69%). In the geometry and measurement area, tasks are predominantly in the LCD2 (35.00%) and HCD1 (31.88%) categories. For data analysis, tasks are evenly distributed between LCD2 (37.50%) and HCD1 (37.50%). Overall, across all learning areas, 56.45% of the tasks are classified as low cognitive demand (LCD1 and LCD2), while 43.55% are high cognitive demand (HCD1 and HCD2). This indicates that while there is a greater prevalence of lower cognitive demand tasks, a substantial proportion of tasks also require higher cognitive engagement.

Findings for 6th Grade Textbook

The analysis of cognitive demand levels in the 6th grade mathematics textbook (see Table 2) reveals that a significant portion of tasks falls under low cognitive demand categories (LCD1 and LCD2), accounting for 28.90% and 19.46% of the tasks, respectively. In the numbers and operations learning area, tasks are almost equally distributed between LCD1 (33.46%) and HCD1 (33.46%), with a notable presence of LCD2 (20.46%) and HCD2 (12.64%). In the Algebra learning area, the majority of tasks are categorized as LCD1 (62.07%), followed by HCD1 (20.69%), LCD2 (13.79%), and HCD2 (3.45%). Geometry and measurement tasks show a more balanced distribution with 17.32% in LCD1, 18.99% in LCD2, 34.64% in HCD1, and 29.05% in HCD2. For data analysis, tasks are distributed with 26.19% in LCD1, 19.05% in LCD2, 35.71% in HCD1, and 19.05% in HCD2. There are no tasks recorded under Probability. Overall, 33.33% of the tasks are classified as HCD1, indicating a substantial effort to incorporate high cognitive demand tasks, while 18.30% are categorized as HCD2.

Table 2.

Statistics for Cognitive Demand Levels of Tasks in 6th Grade Textbook

Learning area	Low cognitive demand				High cognitive demand				Total	%
	LCD1	%	LCD2	%	HCD1	%	HCD2	%		
Numbers and operations	90	33.46	55	20.46	90	33.46	34	12.64	269	51.83
Algebra	18	62.07	4	13.79	6	20.69	1	3.45	29	5.59
Geometry and measurement	31	17.32	34	18.99	62	34.64	52	29.05	179	34.49
Data analysis	11	26.19	8	19.05	15	35.71	8	19.05	42	8.09
Probability	-		-		-		-		-	
Total	150	28.90	101	19.46	173	33.33	95	18.30	519	100

Findings for 7th Grade Textbook

The analysis of cognitive demand levels in the 7th grade mathematics textbook (see Table 3) reveals that a significant portion of tasks fall under low cognitive demand categories, with LCD1 comprising 9.22% and LCD2 comprising 50.31% of the tasks. In the numbers and operations learning area, the majority of tasks are classified as LCD2 (55.53%), followed by HCD1 (26.13%), LCD1 (9.55%), and HCD2 (8.79%), making up 83.44% of the total tasks in this category.

For algebra, tasks are distributed among LCD1 (11.90%), LCD2 (21.43%), HCD1 (28.57%), and HCD2 (38.10%), constituting 8.81% of the total tasks. Geometry and measurement tasks show a varied distribution with no tasks in LCD1, but 25.81% in LCD2, 58.06% in HCD1, and 16.13% in HCD2, representing 6.50% of the total tasks. Data Analysis tasks are limited, with 16.67% in LCD1, 33.33% in LCD2, and 50% in HCD1, making up 1.26% of the total tasks. Overall, 59.53% of the tasks are classified as low cognitive demand and 40.47% as high cognitive demand.

Table 3.

Statistics for Cognitive Demand Levels of Tasks in 7th Grade Textbook

Learning area	Low cognitive demand				High cognitive demand				Total	%
	LCD1	%	LCD2	%	HCD1	%	HCD2	%		
Numbers and operations	38	9.55	221	55.53	104	26.13	35	8.79	398	83.44
Algebra	5	11.90	9	21.43	12	28.57	16	38.10	42	8.81
Geometry and measurement	0	0.00	8	25.81	18	58.06	5	16.13	31	6.50
Data analysis	1	16.67	2	33.33	3	50	0	0.00	6	1.26
Probability	-		-		-		-		-	
Total	44	9.22	240	50.31	137	28.72	56	11.74	477	100

Findings for 8th Grade Textbook

The distribution of cognitive demand levels within the tasks in the 8th mathematics textbook demonstrates a varied spread across different categories (see table 4).

Table 4.

Statistics for Cognitive Demand Levels of Tasks in 8th Grade Textbook

Learning area	Low Cognitive Demand				High Cognitive Demand				Total	%
	LCD1	%	LCD2	%	HCD1	%	HCD2	%		
Numbers and operations	3	5.08	28	47.46	8	13.56	20	33.90	59	13.59
Algebra	16	8.47	86	45.50	63	33.33	24	12.70	189	43.55
Geometry and measurement	0	0.00	71	50.71	49	35.00	20	14.29	140	32.26
Data analysis	3	15.79	3	15.79	4	21.05	9	47.37	19	4.38
Probability	5	18.53	6	22.22	9	33.33	7	25.93	27	6.22
Total	27	6.22	194	44.70	133	30.65	80	18.43	434	100

In the numbers and operations section, tasks primarily fall into the LCD2 category, making up 47.46% of the tasks, followed by HCD2 at 33.90%. For Algebra, the majority of tasks are categorized as LCD2 (45.50%), with a substantial proportion also classified as HCD1 (33.33%). In geometry and measurement, the highest percentage of tasks is in the LCD2 category (50.71%), while HCD1 and HCD2 tasks account for 35.00% and 14.29%, respectively. Data Analysis tasks are evenly distributed between LCD1, LCD2, HCD1, and but not HCD2, each representing 15.79%, 15.79%, 21.05%, and 47.37% respectively. In the Probability section, tasks are not predominantly low cognitive demand, with LCD1 and LCD2 constituting 18.53% and 22.22% of the tasks, while HCD1 and HCD2 make up 33.33% and 25.93%. In general, the total distribution reveals that 44.70% of tasks are classified under LCD2, 30.65% under HCD1, 18.43% under HCD2, and %6.22 under LCD1.

Overall Findings by Grade Level

The distribution of cognitive demand levels across different grade levels (see Table 5) reveals distinct patterns. In the 5th grade, tasks are predominantly classified under LCD2 (39.25%), followed by HCD1 (33.60%), indicating a balanced mix of low and high cognitive demand tasks. The 6th grade shows a significant portion of tasks in the LCD1 category (28.90%), with HCD1 (33.33%) and HCD2 (18.30%) also well represented, suggesting a shift towards higher cognitive demands. For the 7th grade, the majority of tasks fall under LCD2 (50.31%), highlighting a strong focus on procedural tasks without connections, with notable proportions in HCD1 (28.72%) and HCD2 (11.74%). In the 8th grade, tasks are similarly

distributed with a large percentage in LCD2 (44.70%) and significant representation in HCD1 (30.65%) and HCD2 (18.43%), reflecting a continued emphasis on higher cognitive demand tasks. Overall, the total distribution indicates that 37.79% of tasks are classified under LCD2, 31.52% under HCD1, and 14.87% under HCD2.

Table 5.

Statistics for Overall Cognitive Demand Levels by Grade Level

Grade level	Low cognitive demand				High cognitive demand				Total	%
	LCD1	%	LCD2	%	HCD1	%	HCD2	%		
5th grade	64	17.20	146	39.25	125	33.60	37	9.95	372	20.64
6th grade	150	28.90	101	19.46	173	33.33	95	18.30	519	28.80
7th grade	44	9.22	240	50.31	137	28.72	56	11.74	477	26.47
8th grade	27	6.22	194	44.70	133	30.65	80	18.43	434	24.08
Total	285	15.82	681	37.79	568	31.52	268	14.87	1802	100

Overall Findings by Learning Area

The analysis of cognitive demand levels across different learning areas (see Table 6) reveals notable variations. In the numbers and operations category, a significant portion of tasks fall under LCD2 (42.08%), followed by HCD1 (29.28%) and LCD1 (16.27%), with HCD2 tasks constituting 12.36% of the total. This area comprises 51.17% of all tasks. In the Algebra category, LCD2 tasks dominate with 38.08%, while HCD1 and HCD2 tasks account for 31.15% and 15.77% respectively, and LCD1 tasks make up 15.00%. Algebra tasks represent 14.43% of the total tasks analysed.

Table 6.

Statistics for Overall Cognitive Demand Levels by Learning Area

Learning area	Low cognitive demand				High cognitive demand				Total	%
	LCD1	%	LCD2	%	HCD1	%	HCD2	%		
Numbers and operations	150	16.27	388	42.08	270	29.28	114	12.36	922	51.17
Algebra	39	15.00	99	38.08	81	31.15	41	15.77	260	14.43
Geometry and measurement	73	14.31	169	33.14	180	35.29	88	17.25	510	28.30
Data analysis	18	21.69	19	22.89	28	33.73	18	21.69	83	4.61
Probability	5	18.53	6	22.22	9	33.33	7	25.93	27	1.50
Total	285	15.82	681	37.79	568	31.52	268	14.87	1802	100

For geometry and measurement, the distribution shows a higher percentage of HCD1 tasks (35.29%), followed by LCD2 (33.14%), HCD2 (17.25%), and LCD1 (14.31%) (Table 6). This category makes up 28.30% of the total tasks. In the Data Analysis category, the majority of tasks are in the HCD1 (33.73%) and HCD2 (21.69%) categories, with LCD1 and LCD2 each representing 21.69% and 22.89% respectively. Data Analysis tasks account for 4.61% of the total. In the Probability category, tasks are evenly distributed among LCD1 (18.53%), LCD2 (22.22%), HCD1 (33.33%), and HCD2 (25.93%), although this area constitutes only 1.50% of the total tasks (Table 6). Overall, the total distribution indicates that 37.79% of tasks are categorized under LCD2, 31.52% under HCD1, and 14.87% under HCD2.

As a summary, the current study found that mathematical tasks in textbooks correspond to the classification levels proposed by Smith and Stein (1998). For the 5th grade, tasks are primarily of LCD, though a significant portion requires HCD. The 6th grade textbook shows a notable presence of high cognitive demand tasks, particularly in the Algebra learning

area. In the 7th grade, there is a strong focus on procedural tasks with lower cognitive demands, yet a considerable number of tasks also necessitate higher cognitive skills. The 8th grade textbook maintains a balanced distribution of tasks across different cognitive demand levels. Overall, the findings indicate a mix of low and high cognitive demand tasks across all grades, with variations depending on the learning area, such as Numbers and Operations or Geometry and Measurement.

Discussion and Conclusion

To briefly summarize the findings of the study, the tasks with the highest proportions are as follows: procedures without connections tasks (LCD2) – 681 tasks (37.79%), followed by Procedures with Connections tasks (HCD1) – 568 tasks (31.52%). The task with the lowest proportion is doing mathematics tasks (HCD2) – 268 tasks (14.87%). High cognitive demand tasks are the most frequently observed in the 6th grade textbook, with Procedures with Connections (HCD1) accounting for 173 tasks (33.33%) and doing mathematics (HCD2) for 95 tasks (18.30%), making a total of 268 tasks (51.63%). However, the 6th grade textbook also has the highest proportion of memorization tasks (LCD1), 150 tasks (28.90%). The grade level with the lowest cognitive demand tasks is the 7th grade textbook, containing 44 memorization tasks (LCD1) (9.22%) and 240 procedures without connections tasks (LCD2) (50.31%), making a total of 284 tasks (59.53%). The proportion of tasks with high cognitive demand is highest in the probability learning area; however, due to the very low number of objectives and tasks, this might lead to incorrect interpretations (16 tasks, 59.26%). High cognitive demand tasks are notably present in the data analysis and geometry and measurement learning areas (46 tasks, 55.42% and 268 tasks, 52.54%, respectively). Conversely, the learning area with the highest proportion of low cognitive demand tasks is numbers and operations (538 tasks, 58.35%). Another interesting point is that, in the 7th and 8th grade textbooks, none of the tasks related to geometry and scale were found to be at the memorization level. This may be due to the focus on procedures and relationships at these grade levels. Additionally, information that requires direct memorization, such as the number of sides, vertices, or the sum of interior angles in geometric shapes, is typically covered in earlier grades, even at the primary level. Similarly, the distribution of tasks in the 7th grade textbook on data analysis might have been difficult to adjust due to the presence of only one learning outcome.

These findings underscore the need for a balanced approach in the design of mathematics textbooks. While procedural fluency is important, the integration of tasks that promote higher-order thinking and problem-solving skills is essential for comprehensive mathematical education. This balance can better prepare students for real-world applications of mathematics and foster a deeper understanding of the subject (Stein & Smith, 1998). Moreover, the findings of this study provide significant insights into the cognitive demand levels of tasks in mathematics textbooks. The overemphasis on procedural tasks, both with and without connections, suggests a missed opportunity to engage students in more complex and meaningful mathematical thinking (Bozkurt & Yılmaz, 2020). The alignment with Bozkurt and Yılmaz's (2020) results state that the tasks in these textbooks are largely concentrated at the levels of procedures without connections (LCD2) and Procedures with Connections (HCD1). This indicates a predominance of tasks that focus on procedural skills, both with and without

conceptual connections. This trend highlights an ongoing challenge in mathematics education: the need to ensure that students are not only proficient in basic procedures but also capable of engaging in complex problem-solving and critical thinking (Henningsen & Stein, 1997).

The findings of present study are consistent with those of Ubuz and Sarpkaya (2014) as well as Engin and Sezer (2016), both of which highlighted that the proportion of doing mathematics tasks (HCD2) in textbooks is relatively low. This underrepresentation of high-level cognitive demand tasks suggests a potential area for improvement in textbook content to better support the development of students' higher-order thinking skills. Incorporating more tasks that require students to make connections and engage with mathematical concepts deeply can enhance their understanding and retention of the material (Kilpatrick et al., 2001).

Furthermore, the findings of present study align with those of Reçber and Sezer (2018), who found that the proportion of high cognitive demand tasks in 8th grade mathematics textbooks was lower than expected in the middle school mathematics curriculum. Similarly, the results of the current study indicate a limited presence of tasks that require higher-order thinking skills, further emphasizing the need for greater inclusion of cognitively demanding tasks in mathematics education (Stein & Smith, 1998). Additionally, the findings of Polat and Dede (2023) revealed that the tasks in the algebra learning domain of the analysed mathematics textbooks from the 2000s to today were generally of low cognitive demand. This indicates that these tasks do not require students to engage in high-level cognitive thinking and problem-solving skills. These results align with the findings of the current study, suggesting that both in the past and present, the cognitive demand levels of the tasks remain low.

The expectation for the use of high cognitive demand tasks in the middle school mathematics curriculum is not reflected in the content of the textbooks. Despite the curriculum emphasizing the importance of engaging students with tasks that require higher-order thinking and deep understanding, the actual materials provided in the textbooks tend to focus more on lower cognitive demand tasks. This discrepancy indicates a gap between the educational goals set by the curriculum and the resources available to teachers and students. This gap between curricular goals and textbook content suggests that educators may need to supplement textbooks with additional resources and tasks that promote higher cognitive engagement (Schmidt et al., 2002). Research has shown that tasks with high cognitive demand are essential for developing students' mathematical reasoning, problem-solving, and critical thinking skills. These skills are crucial for success in advanced mathematics and Science, Technology, Engineering and Math [STEM]-related fields, as well as for everyday problem-solving and decision-making (NRC, 2012). However, the lack of such tasks in the textbooks suggests that students may not be adequately challenged to reach their full potential in mathematics. Ensuring that textbooks include a greater proportion of high cognitive demand tasks can help bridge this gap and provide students with a more well-rounded mathematics education. According to a study by Ni et al. (2018), the frequency of mathematical tasks involving high cognitive demand did not predict cognitive learning outcomes but positively influenced students' interest in learning mathematics and classroom participation, highlighting the need for such tasks in educational materials.

In conclusion, the study highlights the need for a more strategic approach in the design and selection of tasks in mathematics textbooks. By increasing the proportion of high cognitive demand tasks, textbooks might better support the development of students' higher-order thinking skills and prepare them for future academic and professional challenges. This shift is critical for aligning educational resources with curricular goals and enhancing the overall quality of mathematics education.

Recommendations

The findings and discussions of this study emphasize the need for a more balanced inclusion of tasks that promote deep cognitive engagement and conceptual understanding. Future textbook revisions should consider increasing the proportion of high cognitive demand tasks to foster a more comprehensive mathematical education that not only builds procedural proficiency but also enhances students' ability to engage in complex problem-solving and critical thinking.

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BIOGRAPHICAL NOTES

Contribution Rate of Researchers

Author 1: 50%

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Conflict Statement

The authors declare that there is no conflict of interest in the research.

Ortaokul Matematik Ders Kitaplarındaki Görevlerin Bilişsel İstem Düzeylerine Göre Analizi

Özet

Bu çalışma, ortaokul matematik ders kitaplarındaki matematiksel görevleri, bilişsel istem düzeylerine göre ayrıntılı bir biçimde incelemeyi ve sınıflandırmayı amaçlamaktadır. Bu görevlerin, öğrencilerin eleştirel düşünme, problem çözme ve matematiksel akıl yürütme becerilerini geliştirmeye yönelik olarak tasarlanan eğitim hedefleriyle nasıl bir uyum gösterdiğini ortaya çıkarmayı hedeflemektedir. Çalışmanın deseni doküman analizidir ve ders kitaplarında yer alan matematiksel görevlerin niteliğini derinlemesine incelemektedir. Bu çalışma kapsamında, 5., 6., 7. ve 8. sınıf ders kitaplarında yer alan matematiksel görevler, Stein ve Smith (1998) tarafından geliştirilen matematiksel görev sınıflandırma çerçevesi esas alınarak değerlendirilmiştir. Veriler, içerik analizi yöntemiyle incelenmiş ve görevlerin bilişsel düzeylerine göre dağılımları değerlendirilmiştir. Sonuçlar, ders kitaplarında yer alan matematiksel görevlerin çoğunlukla bağlantısız yöntemler ve bağlantılı yöntemler düzeylerinde yoğunlaştığını göstermiştir. Buna karşın, özellikle üst bilişsel beceriler gerektiren matematik yapma görevlerinin oranının düşük olduğu belirlenmiştir. Bu nedenle, gelecekteki ders kitabı revizyonlarının, öğrencilerin sadece işlemsel becerilerini değil, aynı zamanda karmaşık problem çözme ve eleştirel düşünme yeteneklerini de geliştirecek daha fazla bilişsel istem gerektiren görevleri içerecek şekilde düzenlenebilir.

Anahtar Kelimeler: Bilişsel istem, matematiksel görev, ders kitabı, ortaokul matematiği, etkinlik.

Giriş

1980'lerin ortalarından itibaren matematik eğitiminde etkisini artıran yapılandırmacı yaklaşım, temel olarak öğrenci merkezliliği ve öğrencinin aktif katılımını vurgulamaktadır. Bu yaklaşıma göre, öğrencilerin, mevcut bilgileri üzerine yeni bilgileri inşa ederek öğrenmelerini kendilerinin yapılandırmaları beklenir (Toluk-Uçar, 2020; Van de Walle vd., 2023). Boston vd. (2017), yapılandırmacı yaklaşımın hedeflerine ulaşmada ve öğrencilerin anlamlı matematik öğrenmelerini desteklemede, problem çözme ve mantıksal akıl yürütmeyi teşvik eden etkinliklerin öğretim sürecine dahil edilmesinin kilit unsur olduğunu savunmaktadır. Etkinlikler, öğrencilerin aktif katılımını teşvik eden süreçler olarak tanımlanabileceği gibi, öğretmen tarafından seçilen ve öğrenci tarafından gönüllü olarak gerçekleştirilen bireysel veya bir dizi görev olarak da tanımlanabilir (Dede vd., 2020). Matematik etkinlikleri, öğrencilerin matematik derslerindeki öğrenme ve deneyimlerini şekillendirir (Johnson vd., 2017). İyi organize edilmiş ve etkili bir şekilde uygulanan etkinlikler, öğrencilerin sınıf içinde bilgi, beceri ve anlayışlarını yansıtmalarına olanak tanır (Smith & Stein, 2011). Kilpatrick vd. (2001), net ve motive edici etkinliklerin, öğrencilerin mantıksal akıl yürütme becerilerini gösterebilmeleri için gerekli üç koşuldan biri olduğunu belirtmektedir (diğer ikisi yeterli bilgiye sahip olmak ve içeriğe aşina olmaktır). Matematik eğitimi literatüründe "etkinlik" terimi farklı biçimlerde karşımıza çıkmaktadır.

"Alıştırma", "Görev" ve "Etkinlik" terimleri genellikle birbirinin yerine kullanılsa da tam anlamıyla aynı şeyi ifade etmemektedir. Alıştırmalar, öğrencilere genellikle yazılı halde

sunulur ve öğretmen kontrolü çok yüksektir. Ayrıca, işlemsel becerilere odaklanır ve tekrara dayalı öğrenmeyi destekler. (Cichy vd., 2020; Foster, 2018; Watson & Mason, 2006). Görevler ise düşük öğretmen kontrolü olması hem işlemsel hem kavramsal bilgiye odaklanma ve sosyal süreçlerle öğrenmenin tekrarı gibi özelliklerle tanımlanır (Chapman, 2013; Foster, 2013). Etkinlikler, öğrencinin kontrolünde olup öğretmenin rehber rolünde olduğu, aktif katılım gerektiren, keşfetmeyi teşvik eden ve önceki öğrenmeler üzerine yeni konular inşa etmeye odaklanan süreçlerdir (Antonijević, 2016; Ponte vd., 2014). Bu üç terimin kullanımı ve işlevi göz önünde bulundurulduğunda, etkinlikler, öğrencilerin belirli pedagojik yaklaşımlar ve matematiksel görevler eşliğinde belirli matematiksel fikirlere odaklanmalarını sağlayan öğrenme etkinlikleri olarak tanımlanabilir. Bu bağlamda, "etkinlik" teriminin temel dayanağı, matematiksel öğrenme ortamlarında ve öğretim süreçlerinde, öğrencilerin matematiksel düşünme, akıl yürütme, modelleme ve anlama becerilerini geliştirmeye yardımcı olacak fırsatların ve koşulların sağlanmasıdır (Seah & Horne, 2021; Stein vd., 1996; Wess vd., 2021).

Bilişsel düzeylerine veya öğrencilerden beklenen bilişsel istemlerine göre görevleri tanımlamak ve sınıflandırmak, etkinliklerin oluşturulması ve değerlendirilmesi sürecinde faydalı yöntemlerden biridir. Burada bahsedilen bilişsel düzey, bir öğrencinin belirli bir etkinliği tamamlaması için gereken bilişsel süreçlere atıfta bulunmaktadır. Matematiksel görevler, rutin alıştırmalardan, karmaşık ve zorlu problemlere kadar bir süreklilik göstermektedir. Doyle'un (1988) çalışmasına dayanarak, Stein ve meslektaşları, matematiksel görev türlerini ve bu görevleri çözmek için gereken düşünme düzeylerini sınıflandırmak amacıyla bir dizi çalışma yapmıştır (Stein vd., 1996; Stein & Smith, 1998). Smith ve Stein (1998), matematiksel görevleri iki düzeyde sınıflandırmıştır: düşük düzey ve yüksek düzey. Düşük düzey görevler, ezberleme ve bağlantısız yöntemler olarak ayrılmışken, yüksek düzey görevler, bağlantılı yöntemler ve matematik yapma olarak ayrılmıştır.

Bu çalışma, ortaokul matematik ders kitaplarındaki görevleri analiz etmeyi ve bilişsel istem düzeylerine göre sınıflandırmayı amaçlamaktadır. Bu yolla, ders kitaplarında sunulan görevlerin niteliği ve bu görevlerin eleştirel düşünme ve problem çözme becerilerini geliştirmeye yönelik eğitim hedefleriyle uyumu hakkında bilgi sunmak amaçlanmaktadır. Bu çalışmanın bulguları, ders kitaplarının bu temel becerilerin gelişimini ne ölçüde desteklediğini veya engellediğini anlamaya katkı sağlayacaktır.

Yöntem

Bu çalışmanın amacı, ortaokul matematik ders kitaplarındaki görevleri bilişsel istem düzeylerine göre analiz etmek ve sınıflandırmaktır. Çalışmanın deseni, incelenen konu hakkında detaylı bilgi sağlamak için yazılı veya basılı materyallerin incelenmesini içeren bir veri toplama süreci olan (Bowen, 2009) doküman analizidir. Bu çalışmada, 5., 6., 7. ve 8. sınıf matematik ders kitaplarındaki matematiksel görevler, Smith ve Stein (1998) tarafından geliştirilen sınıflandırma çerçevesine dayanarak değerlendirilmiştir. Veriler, nitel verilerden sonuç çıkarma tekniklerinden biri olan içerik analizi yöntemi kullanılarak incelenmiştir.

Smith ve Stein (1998) tarafından yapılan sınıflandırmada her seviye şu şekilde kodlanmıştır: a) Ezberleme (LCD1), b) Bağlantısız yöntemler (LCD2), c) Bağlantılı yöntemler (HCD1) ve d) Matematik yapma (HCD2). Ezberleme, bilgilerin basitçe hatırlanmasıdır.

Bağlantısız yöntemler, algoritmaların uygulanmasını gerektirir ama kavramsal bir anlayışa dayanmaz. Bağlantılı yöntemler, yapılan işlemleri kavramsal bir anlayışla ilişkilendirir. Matematik yapma, derinlemesine düşünme ve problem çözme yetenekleri gerektirir. Düzeyler ilerledikçe, daha fazla zihinsel çaba ve kavramsal anlayış devreye girer.

Her görev, iki araştırmacı tarafından belirli bir kodla kodlanmıştır. Kodlamada anlaşmazlık yaşandığında, araştırmacılar görüşlerini tartışarak en uygun koda karar vermişlerdir. Verilerin güvenilirliğini artırmak için, anlaşmazlık içerenler de dahil olmak üzere 20 görev, çalışmada kullanılan sınıflandırmaya aşina olan bir uzman tarafından gözden geçirilmiştir. İlgili uzman ve araştırmacılar daha sonra kodlama kararlarını tartışmışlardır. Araştırmacılar arasındaki uyum-korelasyon katsayısı %92, araştırmacılar ve uzman arasındaki ise %86'dır (Miles & Huberman, 1994).

Araştırmanın Etik İzinleri:

Bu çalışmada "Yükseköğretim Kurumları Bilimsel Araştırma ve Yayın Etiği Yönergesi" kapsamında uyulması gerektiği belirtilen tüm kurallara uyulmuştur. Yönergenin ikinci bölümü olan "Bilimsel Araştırma ve Yayın Etiğine Aykırı Eylemler" başlığı altında belirtilen eylemlerin hiçbiri gerçekleştirilmemiştir.

Etik Kurul İzin Bilgileri:

Bu araştırma, insan veya hayvan denekler içermediği ve veri kaynakları kamuya açık ders kitapları olduğu için etik kurul onayı gerektirmemektedir. Bu makalede, dergi yazım kuralları, yayın ilkeleri, araştırma ve yayın etiği kuralları ve dergi etik kuralları titizlikle takip edilmiştir. Makale ile ilgili olarak ortaya çıkabilecek herhangi bir ihlalin sorumluluğu yazarlara aittir.

Bulgular

5. sınıf matematik ders kitabındaki görevlerin analizi, Düşük Bilişsel İstem [LCD] ve Yüksek Bilişsel İstem [HCD] düzeylerinde dağılım göstermektedir. Sayılar ve İşlemler öğrenme alanında görevlerin çoğunluğu LCD2 (%42,86) düzeyinde yer alırken, önemli bir kısmı da HCD1 (%34,69) olarak sınıflandırılmıştır. Geometri ve ölçme alanında görevler ağırlıklı olarak LCD2 (%35.00) ve HCD1 (%31,88) düzeyindedir. Veri analizi alanında görevler LCD2 (%37,50) ve HCD1 (%37,50) düzeyinde eşit dağılım göstermektedir. Genel olarak, tüm öğrenme alanlarında görevlerin %56,45'i düşük bilişsel istem, %43,55'i ise yüksek bilişsel istem düzeyindedir. Bu durum, daha düşük bilişsel istemli görevlerin yaygın olmasına rağmen, önemli bir oranda yüksek bilişsel katılım gerektiren görevlerin de bulunduğunu göstermektedir.

6. sınıf matematik ders kitabındaki bilişsel istem düzeylerinin analizi, görevlerin önemli bir kısmının düşük bilişsel istem düzeyinde (LCD1 %28,90 ve LCD2 %19,46) yer aldığını göstermektedir. Sayılar ve işlemler alanında, görevler LCD1 (%33,46) ve HCD1 (%33,46) arasında eşit olarak dağılmıştır. Cebir alanında görevlerin çoğunluğu LCD1 (%62,07) olarak sınıflandırılmıştır. Geometri ve ölçme ile veri analizi alanlarında görevler daha dengeli bir dağılım göstermektedir. Genel olarak, görevlerin %33,33'ü HCD1, %18,30'u ise HCD2 olarak sınıflandırılmıştır.

7. sınıf matematik ders kitabındaki bilişsel istem düzeylerinin analizi, görevlerin önemli bir kısmının düşük bilişsel istem düzeylerinde olduğunu göstermektedir; LCD1 %9,22 ve LCD2 %50,31. Sayılar ve işlemler alanında görevlerin çoğunluğu LCD2 (%55,53), ardından HCD1 (%26,13) olarak sınıflandırılmıştır. Cebir alanında görevler LCD1 (%11,90), LCD2 (%21.43), HCD1 (%28,57) ve HCD2 (%38,10) olarak dağılmıştır. Geometri ve ölçme alanında görevler LCD1 içermemekle birlikte, LCD2 (%25,81), HCD1 (%58,06) ve HCD2 (%16,13) olarak dağılım göstermektedir. Veri analizi alanında görevler sınırlıdır; LCD1 (%16,67), LCD2 (%33,33) ve HCD1 (%50). Genel olarak, görevlerin %59,53'ü düşük bilişsel istem, %40,47'si yüksek bilişsel istem düzeyindedir.

8. sınıf matematik ders kitabındaki görevlerin bilişsel istem düzeylerinin dağılımı, farklı düzeyler arasında çeşitlilik göstermektedir. Sayılar ve işlemler bölümünde görevlerin çoğunluğu LCD2 düzeyinde (%47,46) yer alırken, bunu HCD2 düzeyindeki görevler (%33,90) izlemektedir. Cebir bölümünde görevlerin çoğu LCD2 (%45,50) ve HCD1 (%33,33) olarak sınıflandırılmıştır. Geometri ve Ölçme bölümünde görevlerin en yüksek yüzdesi LCD2 düzeyinde (%50,71), HCD1 ve HCD2 görevleri ise sırasıyla %35.00 ve %14,29'dur. Veri analizi görevleri düşük düzey beklentilerde LCD1 (%15,79) ve LCD2 (%15,79) olacak şekilde eşit dağıtılmıştır, yüksek düzey beklentiler içeren görevlerden HCD1 (%21,05) düşük düzey beklentiler içeren görevlere yakındır fakat matematik yapma düzeyindeki HCD2 (%47,37) diğerlerinden daha fazladır. Olasılık bölümünde görevler, genellikle düşük bilişsel istem düzeylerinde değildir; LCD1 %18,53 ve LCD2 %22.22, HCD1 %33,33 ve HCD2 %25,93 oranındadır. Genel olarak, görevlerin %44,70'i LCD2, %30,65'i HCD1 ve %18,43'ü HCD2 olarak sınıflandırılmıştır.

Farklı sınıf seviyelerindeki bilişsel istem düzeylerinin dağılımı belirgin bir örüntü göstermemektedir. 5. sınıfta görevler ağırlıklı olarak LCD2 (%39,25) ve HCD1 (%33,60) olarak sınıflandırılmıştır. 6. sınıfta, görevlerin büyük bir kısmı HCD1 (%33,33) düzeyinde olup, diğer görevlerin oranları ise sırasıyla LCD1 (%28,90), LCD2 (%19,46) ve HCD2(%18,30) şeklindedir. 7. sınıfta görevlerin çoğu LCD2 (%50,31) olup, HCD1 (%28,72) ve HCD2 (%11,74) oranları dikkat çekmektedir. 8. sınıfta, görevler benzer şekilde LCD2 (%44,70), HCD1 (%30,65) ve HCD2 (%18,43) olarak dağılım göstermektedir. Genel olarak, görevlerin %37,79'u LCD2, %31,52'si HCD1 ve %14,87'si HCD2 olarak sınıflandırılmıştır,

Farklı öğrenme alanlarındaki bilişsel istem düzeylerinin analizi önemli farklılıklar göstermektedir. Sayılar ve işlemler alt öğrenme alanında, görevlerin büyük bir kısmı LCD2 (%42.08), ardından HCD1 (%29,28) ve LCD1 (%16,27) olarak dağılım göstermektedir, HCD2 görevleri toplamın %12,36'sını oluşturmaktadır. Bu alan, tüm görevlerin %51,17'sini kapsamaktadır. Cebir alt öğrenme alanında, LCD2 görevleri %38,08 ile baskın olup, HCD1 ve HCD2 görevleri sırasıyla %31,15 ve %15,77, LCD1 görevleri ise %15,00'dir. Cebir görevleri toplam görevlerin %14,43'ünü temsil etmektedir. Geometri ve ölçme alt öğrenme alanında, HCD1 düzeyindeki görevler (%35,29) daha yüksek bir yüzde gösterirken, LCD2 (%33,14), HCD2 (%17,25) ve LCD1 (%14,31) düzeyindeki görevler sırasıyla yer almaktadır. Bu alt öğrenme alanı toplam görevlerin %28,30'unu içermektedir. Veri analizi alt öğrenme alanında, görevlerin çoğunluğu HCD1 (%33,73) ve HCD2 (%21,69) düzeylerinde olup, LCD1 ve LCD2 görevleri sırasıyla %21,69 ve %22,89'dur. Veri analizi görevleri toplamın %4,61'ini

kapsamaktadır. Olasılık alt öğrenme alanında, görevler LCD1 (%18,53), LCD2 (%22,22), HCD1 (%33,33) ve HCD2 (%25,93) yüzde olarak çok farklı dağılmış gibi görünse de bu alan toplam görevlerin yalnızca %1.50'sini oluşturmaktadır her bir düzey için ders kitaplarındaki görev sayıları birbirine yakındır. Genel olarak, görevlerin %37,79'u LCD2, %31,52'si HCD1 ve %14,87'si HCD2 olarak sınıflandırılmıştır.

Tartışma ve Sonuç

Bu çalışmanın bulguları, 5., 6., 7. ve 8. sınıf matematik ders kitaplarındaki görevlerin bilişsel istem düzeylerine dair önemli tespitler sunmaktadır. Bozkurt ve Yılmaz (2020) ile uyumlu olarak, bu kitaplarda görevlerin büyük ölçüde bağlantısız yöntemler (LCD2) – 681 görev (37.79%) ve bağlantılı yöntemler (HCD1) – 568 görev (31.52%) seviyelerinde yoğunlaştığını göstermektedir. Bu durum hem kavramsal bağlantılarla hem de bağlantısız işlemsel becerilere odaklanan görevlerin baskın olduğunu göstermektedir. Matematiksel görevlerin büyük bir çoğunluğunun, işlemsel becerilere dayalı görevlerden oluştuğu ve üst bilişsel düzeydeki görevlerin nispeten yetersiz kaldığı görülmektedir. Bu bulgular, matematik ders kitaplarının tasarımında dengeli bir yaklaşımın gerekliliğini vurgulamaktadır. İşlemsel akıcılık önemli olsa da üst düzey düşünme ve problem çözme becerilerini teşvik eden görevlerin entegrasyonu, kapsamlı bir matematik eğitimi için esastır. Bu denge, öğrencileri matematiğin gerçek dünya uygulamalarına daha iyi hazırlayabilir ve konuya daha derin bir anlayış kazandırabilir (Stein & Smith, 1998).

Ubuz ve Sarpkaya (2014) ile Engin ve Sezer (2016) çalışmalarında, ders kitaplarında üst düzey bilişsel becerileri gerektiren matematik yapma (HCD2) görevlerinin yeterli oranda yer almadığı tespit edilmiştir. Bu çalışmanın bulguları da benzer şekilde, ders kitaplarındaki matematik yapma görevlerinin oranının nispeten düşük olduğunu ortaya koymakta ve bu durumun öğrencilerin matematiksel düşünme becerilerini geliştirme açısından önemli bir eksiklik yarattığını vurgulamaktadır. Bu yüksek düzey bilişsel istem gerektiren görevlerin yeterince temsil edilmemesi, ders kitabı içeriğinde öğrencilerin üst düzey düşünme becerilerini geliştirmeye yönelik potansiyel bir iyileştirme alanı olarak görülebilir.

Ayrıca, bu çalışmanın bulguları, Reçber ve Sezer (2018) tarafından yapılan çalışmanın bulgularıyla da örtüşmektedir; yazarla çalışmalarında, 8. sınıf matematik ders kitaplarında yüksek bilişsel istem gerektiren görevlerin, ortaokul matematik müfredatındaki beklentilerin altında bir oranda bulunduğunu ortaya koymuştur. Benzer şekilde, bu çalışmanın sonuçları da üst düzey düşünme becerileri gerektiren görevlerin sınırlı bir şekilde yer aldığını göstererek, matematik eğitiminde bilişsel olarak zorlayıcı görevlerin daha fazla dahil edilmesi gerekliliğini vurgulamaktadır (Stein & Smith, 1998). Ek olarak, Polat ve Dede (2023) tarafından yapılan çalışmanın bulguları, 2000'li yıllardan bugüne kadar analiz edilen matematik ders kitaplarındaki cebir öğrenme alanında yer alan görevlerin genellikle düşük bilişsel istem düzeyinde olduğunu ortaya koymuştur. Bu durum, bu görevlerin öğrencilerin yüksek düzeyde bilişsel düşünme ve problem çözme becerilerini kullanmalarını gerektirmediğini göstermektedir. Bu sonuçlar, mevcut çalışmanın bulgularıyla örtüşmekte olup geçmişte ve günümüzde görevlerin bilişsel istem düzeylerinin düşük kaldığını işaret etmektedir.

Diğer taraftan, ortaokul matematik müfredatında yüksek bilişsel talep gerektiren görevlerin kullanımına yönelik beklenti, ders kitaplarının içeriğinde tam olarak karşılanmamaktadır. Müfredat, öğrencilerin üst düzey düşünme ve derin kavrayış gerektiren görevlerle meşgul olmalarının önemini vurgulasa da ders kitaplarında sunulan materyaller çoğunlukla düşük bilişsel talep gerektiren görevlere odaklanmaktadır. Bu tutarsızlık, müfredat tarafından belirlenen eğitim hedefleri ile öğretmenler ve öğrenciler için sunulan kaynaklar arasında bir boşluğun olduğunu göstermektedir. Ders kitaplarında bu tür görevlerin eksikliği, öğrencilerin matematikte tam potansiyellerine ulaşmak için yeterince zorlanmadıklarını göstermektedir. Ders kitaplarında yüksek bilişsel talep gerektiren görevlerin oranını artırmak, bu boşluğu kapatmaya yardımcı olabilir ve öğrencilere daha dengeli bir matematik eğitimi sunabilir.

Sonuç olarak, bu çalışma, matematik ders kitaplarında görevlerin tasarımında ve seçiminde daha stratejik bir yaklaşımın gerekliliğini vurgulamaktadır. Yüksek bilişsel talep gerektiren görevlerin oranını artırarak, ders kitapları öğrencilerin üst düzey düşünme becerilerini geliştirmelerine ve gelecekteki akademik ve mesleki zorluklara daha iyi hazırlanmalarına destek olabilir. Bu değişim, eğitim kaynaklarını müfredat hedefleriyle uyumlu hale getirmek ve matematik eğitiminin genel kalitesini artırmak için kritik bir öneme sahiptir.

Öneriler

Bu çalışmanın bulguları ve tartışmaları, derin bilişsel katılımı ve kavramsal anlayışı teşvik eden görevlerin daha dengeli bir şekilde dahil edilmesi gerektiğini vurgulamaktadır. Gelecekteki ders kitabı revizyonlarında, sadece işlem yapabilme yeterliliğini geliştirmekle kalmayıp, aynı zamanda öğrencilerin karmaşık problem çözme ve eleştirel düşünme becerilerini de artıran yüksek bilişsel istem gerektiren görevlerin oranının artırılması önerilmektedir.

Social Studies Teachers' Opinions on the Abolished Teacher's Guidebooks

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Abstract

The education system should be updated in accordance with the needs and should be open to innovations. Teaching methods and materials should also adapt to these changes. The abolition of teacher's guidebooks as of the 2018-2019 academic year has had significant effects on the education system. The purpose of this study is to examine the views of social studies teachers on the abolition of teacher's guidebooks. The participants of the study, which was conducted with qualitative research method, were 15 social studies teachers, 4 females and 11 males, who started working in Erzincan before 2018. Data were collected with an 8-item semi-structured interview form in the autumn semester of the 2023-2024 academic year and evaluated by content analysis method. The results show that teachers' guidebooks are used at least at one stage of the course, and this has both positive and negative effects on professional development, time management, freedom and creativity. In addition, it was found that teachers needed guidebooks more in the first years of the profession and did not use daily plans. In this context, the question of whether guidebooks should be redistributed has led to the conclusions that they should be redistributed, should not be redistributed, and should be revised and then redistributed.

Keywords: Social studies, teacher's guidebooks, textbook, teacher opinions.

Introduction

Science and technology are developing rapidly at our age. The education system has also been affected by these developments. In the context of meeting the needs of the age, traditional educational approaches are incomplete. Constructivist approach, multiple intelligence theory and student-centered education approaches are more effective than traditional education approaches in meeting the needs of the age (Bircan & Gökbulut, 2014). In addition, changes have been made in the education system from time to time in order to raise qualified individuals. After the declaration of the republic in Türkiye, 6 different radical changes were made in the education system (Akyüz, 2012). These changes took place in 1926, 1936, 1948, 1968, 1997 and 2004. Although advances in science and technology positively affect educational technology, books still maintain their place among teaching materials. Textbooks, workbooks, resource books and electronic books can be given as examples. Books enable teachers to work more systematically in the teaching process (Genç et al., 2014).

In 2003-2004, textbooks were distributed free of charge to primary and secondary school students for the first time with the decision of Ministry of National Education [MoNE] (Şahin, 2010). Then, pilot applications were made for the constructivist approach in the 2004-2005 academic year and the curriculum was rearranged according to the constructivist approach. As of the 2005-2006 academic year, the new program was prepared and started to be used according to the constructivist approach (Güneş, 2009). In 2005-2006, textbooks, student workbooks and teacher's guidebooks prepared in accordance with the constructivist system were distributed in sets of 3. With the introduction of the new curriculum in education, in-service training was given to teachers to introduce these programs. CDs introducing the constructivist approach and teacher guidebooks were distributed (Ayvacı & Er-Nas, 2009). Teacher's guidebooks for an academic year include an introductory scheme, project assignments, performance tasks, evaluation studies, and alternative assessment tools. In addition to these, it also includes drawing attention, motivation, target gains, time, methods

and techniques to be used and resources that can be used. In short, it helps the teacher in education (Ceyhan & Yiğit, 2004).

Article 10 of the "Preparation of the Teacher's Guidebook" title in the Regulation on Textbooks and Educational Tools of the MoNE published on 12 September 2012 provides detailed information about the teacher's guidebook:

Article 10- (1) The qualifications and preparation procedures of the textbook are taken into consideration in the teacher's guidebook. In the teacher's guidebook:

a) The achievements / objectives to be achieved in the processing of the subjects are specified.

b) Information, examples and practices that will help the teacher in helping students acquire knowledge, skills, attitudes and behaviors in line with the objectives and explanations in the education and training program and that will facilitate teaching are included.

c) Teaching methods and techniques together with the tools and materials that can be used to help students acquire knowledge, skills, attitudes, behaviors and values, as well as

1) Time analysis related to the subject and the processing plan of the subject,

2) Preliminary preparations to be made by the teacher about the subject,

3) Reminders, questions and similar elements that will provide the relationship with the subjects previously covered and attract the students' attention,

4) Figures, diagrams, charts and similar auxiliary elements in the textbook that require explanation are included.

d) Homework, projects and similar sample studies that will encourage students to research and produce solutions to various problems encountered in daily life are included.

e) At the end of the topics, if necessary, there is a glossary of the concepts given.

In addition to the fact that teacher's guidebooks contain activities that can be used in lesson teaching, suggestions on how much the lesson time should be, lesson plans, methods, techniques and resources to be used in lesson teaching (Karakuş, 2010), there is also student-centered planning and teaching of lessons outside of traditional educational habits among the purposes of use. Because constructivist approach is student-centered. The use of teacher's guidebooks is important in terms of guiding new practices and implementing student-centered education (Uluçınar-Sağır, 2017). "Although students play an active role in the constructivist approach, teachers also have important roles in this process" (Vernette & Foote, 2001; cited in Yurtbakan & Cerrah-Özsevgeç, 2019, p. 129). Teachers are guides in organizing learning environments and accessing information. Teachers' opinions are important in any change to be made in education and training. Because teachers are at the forefront as practitioners. No matter how qualified the renewed program is prepared, the quality and attitude of the implementer is very important. Teachers have important roles in the implementation of the program and guidebooks. As a practitioner, the teacher can easily reveal the deficiencies. While there are positive opinions about teacher's guidebooks, there are also opinions that argue that teacher's guidebooks are disadvantageous. For example, in recent years, there has been a

tendency in the education system towards alternative approaches that are flexible and that focus on teachers' creativity rather than traditional resources. Teacher's guidebooks are resources that have a certain standard and are prepared according to the curriculum. Therefore, flexibility in the teaching process and teachers' creativity may be limited (Darling-Hammond, 2006). In addition, teacher's guidebooks convey one-sided information. However, this contradicts with the constructivist approach that encourages active participation of students (Bonwell & Eison, 1991). In addition to this, the development of technology and the increase in alternative sources have enabled both teachers and students to access information quickly. Therefore, teachers can develop their own practices rather than depending on a source book (Schwartz & Bransford, 1998). In addition, Pinnell and Fountas (2017) argue that teachers can develop their own teaching approaches and be more innovative if there are no teacher's guidebooks. Krasnoff (2016) argues in his study that the abolition of teacher's guidebooks supports the professional development of teachers and improves the quality of education. On the contrary, if teachers depend only on the guidebook, it may negatively affect their professional development and teaching practices (Day & Sachs, 2004). While discussions about the advantageous and disadvantageous situations arising from the use of guidebooks continue, MoNE abolished guidebooks in the 2018-2019 academic year (Erden & Dilekçi, 2022). In this context, taking the opinions of social studies teachers about the abolition of guidebooks constitutes the subject of this study. Therefore, the problem of the research was determined as "What are the opinions of social studies teachers about the teacher's guidebooks that have been retired?". The sub-problems of the research are as follows:

1. What role do teacher's guidebooks play in the preparation, teaching and evaluation of lessons?

2. Do teacher's guidebooks affect teachers' originality, creativity and professional development?

3. Should teacher's guidebooks be redistributed?

Method

Research Model

This research, which was conducted to reveal the opinions of social studies teachers about the removed teacher's guidebooks, is a qualitative study. Qualitative studies examine the quality of relationships, activities, situations or materials (Fraenkel and Wallen, 2006) in order to explore the reasons behind why participants of a given research do what they do (Given, 2015). In addition, a phenomenological design was used in the study. The phenomenological design is a qualitative approach that examines in detail the phenomena that we encounter in our daily lives but do not have detailed information (Creswell, 2009). The reason for choosing the phenomenological design in the study is the effects of the abolition of teacher guidebooks on professional knowledge, skills and attitudes. These effects are changes directly belonging to the individual. Therefore, this design was deemed appropriate to examine teachers' views on the abolished teacher's guidebooks in depth. In addition, the phenomenological design provides the opportunity to explore the background of the participants' thoughts in order to

understand the teachers' views on the abolition of the guidebooks, to reveal their educational approaches and to consider their practices in the classroom.

Study Group

The study group of the research conducted in the academic year 2023-2024 autumn semester consisted of 15 social studies teachers, 4 females and 11 males, who started to work in Erzincan city centre before 2018. Criterion sampling, one of the purposeful sampling methods, was used to determine the study group. Criterion sampling method is the study of all situations that meet predetermined criteria (Yıldırım & Şimşek, 2011). Since the aim of the study is to reveal the opinions about the teacher's guidebooks, the teachers who will form the study group should have used the guidebooks before. In this context, the criterion of the research is that the teachers started their profession before 2018, that is, before the teacher's guidebooks were abolished.

Table 1.

Characteristics of the Working Group

Code	Gender	Field	Graduation year	Seniority	Classes	Class size
T1	Male	Social studies	2007	16-20	5, 6, 7. class	21-30
T2	Female	Social studies	2006	11-15	6, 7. class	21-30
T3	Male	Social studies	2007	11-15	6, 7. class	21-30
T4	Male	Social studies	2006	16-20	5, 6, 7. class	10-20
T5	Male	Social studies	2002	21+	5, 6, 7. class	21-30
T6	Female	Social Studies	2014	6-10	5, 6, 7. class	21-30
T7	Male	Social studies	2008	11-15	6. class	21-30
T8	Female	Social studies	2004	16-20	6, 7. class	21-30
T9	Male	History	2001	21+	5, 6, 7. class	21-30
T10	Male	History	2009	6-10	5, 6, 7. class	21-30
T11	Male	Social studies	2008	16-20	5, 6, 7. class	21-30
T12	Male	Class	2001	21+	5, 6, 7. class	21-30
T13	Male	Social studies	2002	21+	4, 5, 6, 7. class	21-30
T14	Male	Social studies	2007	16-20	4, 5, 6, 7. class	21-30
T15	Female	Class	2001	21+	5, 6, 7. class	21-30

In table 1, the characteristics of the study group. In the study conducted with a total of 15 participants (4 females and 11 males), 11 of the teachers graduated from the field of social studies, 2 from the field of history and the other two from the field of classroom teaching. The graduation years of the participants were between 2001 and 2014. The seniority of the participants is between 6-10 years and 21 years and above. In addition, all of the teachers teach 6th grade, 14 teachers teach 7th grade, 11 teachers teach 5th grade and 2 teachers teach 4th grade. The class size of one participant was between 10-20 students, while the class size of the other 14 participants was between 21-30 students.

Data Collection Tool and Data Collection

A semi-structured interview form consisting of 8 items was applied to 15 social studies teachers in the study group. The semi- structured interview method is an advantageous method because it gives the opportunity to ask in-depth questions and complete the answers if the answers are incomplete or unclear in research on any specified subject (Çepni, 2009). The semi-structured interview form was first prepared by the researchers and then expert opinion was consulted to ensure content validity. The interview questions prepared were revised by taking expert opinions into consideration. Thus, the interview questions were made ready for

application. In addition, follow-up questions were prepared for each question to be used during the interview. In addition to these, in-depth questions were asked to the participant when necessary to obtain more detailed data during the interview. The answers given by the teachers were recorded with a voice recorder. The use of a voice recorder is important in terms of recording the data completely. In order to ensure validity and reliability in the research, firstly, the purpose and sub-problems of the research were presented in a clear and understandable way. Then, the sources to be analyzed within the scope of the research and the study group were presented in detail. In order to ensure validity and reliability during the literature review, domestic and foreign sources were scanned in detail and tables were prepared for the data obtained within the examined sources. While preparing the tables, codes, categories and themes were created. In order to increase validity and reliability, expert opinion was consulted while preparing the semi-structured interview form and after the tables were created. In order to ensure consistency, the tables were checked again by the researchers on the basis of codes, categories and themes. The data related to the research were collected through one-to-one interviews in May-June 2023 at the time and place deemed appropriate by the participants. During the interviews, care was taken to ensure that the teachers were not influenced by the researcher while answering the questions. The interviews lasted an average of 30 minutes.

Data Analysis

The data obtained by using a semi-structured interview form with social studies teachers who voluntarily participated in the study were analyzed by content analysis method. "The basic process in content analysis is to bring together similar data within the framework of certain concepts and themes and to interpret them by organizing them in a way that the reader can understand" (Yıldırım & Şimşek, 2011, p. 227). In the first stage of data analysis, the audio recordings were transcribed systematically in order not to disrupt the integrity of the data obtained and the teachers were given codes as T1, T2, …, T15 according to the order of the interview. The data obtained with the coding of the participants was analyzed systematically. Themes were determined by considering the interview questions and codes were created for the answers given by the participants related to each theme. The opinions expressed by the participants were associated and brought together. Thus, codes were grouped around certain themes. For example, after the theme related to the frequency and stages of use of teacher's guidebooks was formed, codes related to all the data obtained on the subject were formed. In line with these themes, the associated codes were brought together to form categories. For example, codes such as 'using the teacher's guidebooks while "writing the acquisitions in the notebook" and "using the teacher's guidebooks while preparing the annual plan" were grouped under the same category since they were done at the preparation stage of the lesson. Then, frequency values reflecting the frequency of the categories and codes were written against them. According to the results of the study, codes, categories and frequencies were presented in tables. In order to ensure the reliability of the research, direct quotations from the interview records were included in the findings section.

Ethical Permits of Research:

In this study, all the rules specified to be followed within the scope of "Higher Education Institutions Scientific Research and Publication Ethics Directive" were complied with. None of

the actions specified under the heading "Actions Contrary to Scientific Research and Publication Ethics", which is the second part of the directive, have been taken.

Ethics Committee Permission Information:

Name of the committee that made the ethical evaluation =Erzincan Binali Yıldırım University Educational Sciences Ethics Board Commission

Date of ethical review decision=01.02.2023

Ethics assessment document issue number= E-88012460-050.01.04-237786

Findings

In the study, the findings related to the semi-structured questions asked to social studies teachers about the abolition of teacher's guidebooks are presented separately. The findings obtained are presented on tables.

Table 2.

Frequency and Stages of Use of Teacher's Guidebooks

Theme	Category	Code	*f*
Frequency and stages of use of teacher's guidebooks	Preparation for the lesson	It is used when writing the gains in the notebook Used when preparing the annual plan Used for preliminary preparation Used for lesson planning	15
	Lesson teaching	Utilising the included daily plan Effective in time management Provides guidance and ideas Provides convenience to the teacher	10
	Assessment and evaluation	Activities at the end of the unit are useful There are assessments appropriate to the gains Provides convenience to the teacher	4

In Table 2, it is analyzed how often, and at which stage the teacher's guidebooks were used the most. The examination was carried out under three headings: lesson preparation, lesson teaching, measurement and evaluation. In the lesson preparation stage, it was stated that they were used for writing the learning outcomes in the notebook, preparing the annual plan, making preparations before the lesson and lesson planning. It was concluded that all of the participants benefited from the teacher's guidebooks at the lesson preparation stage. Some of the opinions of social studies teachers about the frequency and stages of using teacher's guidebooks in the preparation phase of the lesson are presented below.

T1- *I used to use it at the preparation and processing stage, but I don't think it is suitable for assessment and evaluation. There should not be a single method and there should be alternatives in lesson plans.*

T5- *The guidebook was always at hand. I was using it at every stage, but I can say that I used it mostly at the preparation stage.*

T14- *I was using it only at the preparation stage to write the acquisitions in the notebook.*

It was stated that daily plans were used, time management was utilized, the teacher's guidebook provided guidance and ideas and provided convenience to the teacher. It was

concluded that 10 participants benefited from teacher's guidebooks during the lesson teaching phase. Some of the opinions of social studies teachers about the frequency and stages of using teacher's guidebooks during the lesson are presented below.

T4- *I only used them when I was teaching the lesson. I was teaching my lesson in line with the daily plans.*

T6- *I was making use of the guidebooks during the lesson teaching and preparation phase. It provided me convenience and if there was anything that I could not think of at that moment, I could touch upon the subject thanks to the book.*

In the measurement and evaluation phase, it was stated that the activities at the end of the unit were utilized, there were assessments appropriate to the outcomes and it was easy for the teacher in measurement and evaluation. It was concluded that 4 participants benefited from the teacher's guidebooks during the teaching phase of the lesson. Some of the opinions of social studies teachers about the frequency and stages of using teacher's guidebooks in the measurement and evaluation phase are presented below.

T10- *Although I used it mostly at the preparation stage, I also used it at the lesson teaching and measurement and evaluation stages... In the teacher's guidebooks, there were evaluation questions appropriate to the learning outcomes covered in the textbooks. I would definitely use these questions for assessment and evaluation.*

T12- *I was using the teacher's guidebooks at all stages... At the measurement and evaluation stage, the questions at the end of the unit provided me with convenience.*

Table 3.
Advantageous Aspects of Teacher's Guidebooks

Theme	Category	Code
Advantageous aspects of teacher's guidebooks	Planning	Benefiting the teacher in preparing for the lesson
	Guidance	Guiding the teacher in preparing for the lesson
	Creating an alternative	Having an alternative for things that the teacher does not remember
	Gaining experience	Creating experience for newly appointed teachers
	Unity in teaching	Covering the same subjects in the same periods in schools
	Resource unity	Conducting courses with a single source across the country
	Class notebook	Filling the class notebook by using the guide
	Dominance	Supporting the teacher in terms of subject mastery
	Convenience	Providing convenience in processing and measurement and evaluation
	Reliability	Reliability of questions in measurement and evaluation

In Table 3, the positive aspects of teacher's guidebooks were analyzed. The positive aspects of teacher's guidebooks are as follows: They are useful in preparation for the lesson, they are guiding, they provide an alternative for things that are not remembered, they provide experience for newly appointed teachers, they provide unity in teaching and resources, they are used when filling in the class notebook, they support the teacher in terms of providing mastery of the subjects, they provide convenience, and the questions are reliable in

measurement and evaluation. Some of the opinions of social studies teachers about the advantageous aspects of teacher's guidebooks are presented below.

T6- *It was very useful for newly appointed teachers. It eliminated the difference in experience.*

T9- *It was very advantageous because it was a guide. We could see anything we could not think of in the guidebook and use it.*

T13- *It was advantageous in terms of teaching the same courses in the same periods in every school in our country and providing unity in teaching and resources.*

T15- *I don't think that all teachers enter the lesson by preparing for the lesson. For this reason, I think it is advantageous for the teacher to have at least one resource at hand.*

Table 4.

Disadvantages of teacher's Guidebooks

Theme	Category	Code
Disadvantages of teacher's guidebooks	Monotonous	Monotonisation of teacher's guidebooks
	Limitation	Restricting the teacher's creativity and freedom
	Preparedness	Encouraging the teacher to readiness
	Teacher-centred	Students remain passive during the lesson
	Inconsistency	Incompatibility of content and implementation
	Time	Too many learning outcomes and too few lesson hours
	Scope invalidity	Failure to respond to the needs of each student
	Inadequate measurement	Low number and variety of activities
	Transport difficulties	The guide is thick and heavy and difficult to carry
	Lack of digital	Being in book form and not digital

In Table 4, the negative aspects of teacher's guidebooks were analyzed. The negative aspects of the teacher's guidebooks are as follows: the lessons become monotonous when the teacher's guidebook is used, it restricts the teacher's creativity and freedom, it encourages the teacher to be prepared, it makes the students passive during the lesson, it cannot meet the needs of every student, the number and variety of activities are low, the guidebook is thick and heavy, it is in book form and it is not digital. Some of the opinions of social studies teachers about the disadvantages of teacher's guidebooks are presented below.

T3- *It is not suitable for every school because it is prepared by a single hand. There should be alternatives.*

T4- *It is disadvantageous because it puts the teacher into a mould.*

T5- *The content and application phase were not consistent; it was uniform, and the measurement tools were the same in every subject.*

T7- It prevented creativity when it was adhered to directly.

T10- *There was no activity to make students active. Being teacher-centered was a negative aspect.*

T12- *The number of activities was low. There should have been various activities under each daily plan. In this way, permanent learning could have been provided.*

Table 5.
The Effect of Teacher's Guidebooks on Teacher's Freedom and Creativity

Theme	Category	Code
The effect of the teacher's guidebook on freedom and creativity	Positive effect	Does not restrict as there is no obligation to adhere
		Creates an alternative, not a restriction
		Guidance does not affect freedom and creativity
		The conscious teacher does not encourage preparation but gives ideas
	Negative effect	Promotes readiness
		Hinders freedom and creativity
		It puts the teacher in a mould

In Table 5, the effect of teacher's guidebooks on teachers' freedom and creativity is analyzed. The analysis was conducted in two categories: positive and negative effects. The positive effect of the teacher's guidebooks on teachers' freedom and creativity was found to be that they do not restrict freedom and creativity since teachers do not have to adhere to the guidebook, that they create alternatives rather than restrictions, that they are guiding, and that they do not lead a conscious teacher to preparedness. Some of the opinions of social studies teachers about the positive effect of teacher's guidebooks on freedom and creativity are presented below.

T1- *If the teacher had to stick to the book one hundred per cent, yes, he/she would restrict it. But since he did not have such an obligation, he did not restrict it.*

T10- *It did not restrict creativity and freedom. She was showing the way. Sometimes I could not look at the learning outcome and decide what kind of a path I should follow. For this reason, I do not think that it led me to readiness.*

T11- *It did not restrict freedom and creativity, and it did not lead to preparation. The absence of a guidebook does not mean that teachers are currently doing research. The book at least sets a standard.*

T13- *It does not restrict creativity and freedom. It did not encourage preparation. Currently, teachers download directly from the internet. But when there was a guidebook, there was a healthier system through MoNE.*

The negative effects of the teacher's guidebooks on teachers' freedom and creativity were determined as: encouraging readiness, preventing freedom and creativity, and moulding teachers into a mould. Some of the opinions of social studies teachers about the negative effects of teacher's guidebooks on freedom and creativity are presented below.

T4- *It encouraged readiness. It also restricted creativity and freedom.*

T6- *It did not affect freedom and creativity, but it encouraged readiness.*

T12- *It can restrict creativity and freedom. It actually depends on the teacher. It could lead some teachers to prepare, but conscious teachers can support them with other studies.*

T14- *Some teachers could enter the lesson without any preparation because they trusted the existence of the guidebook. At this point, I think that guidebooks encourage teachers to be prepared.*

Table 6.

The effect of Teacher's Guidebooks on Teacher's Professional Development

Theme	Category	Code
The effect of teacher's guidebook on professional development	Positive effect	Fills the teacher's deficiencies
		Eliminates the experience gap
		Useful, although not a leading role in professional development
	Negative effect	Does not support professional development
		No positive effect as it is a standard format

Table 6 analyses the effect of the use of teachers' guidebooks on teachers' professional development. The examination was carried out in 2 categories as positive and negative effects. The positive effects of the teacher's guidebooks on professional development were stated as; eliminating teacher deficiencies, eliminating the difference in experience and being useful even though they are not the main role in professional development. Some of the opinions of social studies teachers about the positive effects of teacher's guidebooks on professional development are presented below.

T1- *It contributes to professional development. Especially for teachers who are new to the profession and teachers who are about to retire. For teachers who have deficiencies, the guidebook is a saviour. Because it offers at least one option.*

T2- *It was guiding us in constructivist education. For this reason, I think guidebooks are useful for professional development.*

T4- *It was not the main role in professional development, but it had positive effects.*

The negative effects of the guidebooks on professional development were not supporting professional development and not having a positive effect due to being a standard format.

T8- *I cannot say that it supports professional development too much.*

T13- *Teacher's guidebooks are prepared in a certain format. Therefore, I don't think it has any benefit for professional development.*

Table 7.

The Effect of Teacher's Guidebooks on Time Management

Theme	Category	Code
The effect of teacher's guidebooks on time management	Positive effect	Useful for planning before the lesson
		Saves time as there is a sample lesson plan
		Useful for limiting the topic
		40+ 40 lesson plans are effective
		It is a reliable source
	Negative effect	Guidance in preparation is teacher-centred
		Does not correspond to reality due to inconsistencies
		Achievements cannot be achieved with the hours in the guide
		Students' readiness is ignored
		It is incomplete
		Monotonous
		Does not match the content

In Table 7, the effect of teacher's guidebooks on time management was analyzed. The analysis was carried out in 2 categories as positive and negative effects. The positive effects of the teacher's guidebooks on time management were as follows: it is useful in terms of planning when browsing before the lesson, it saves time because it contains sample lesson plans, it is useful in terms of limiting the subject, 40+ 40 lesson plans are effective, and it is a reliable source. In addition, the majority of the teachers stated that it was useful at every stage for newly appointed teachers. Some of the positive opinions of social studies teachers about time management of teacher's guidebooks are presented below.

T5- *It had a positive effect on time management. After all, there was a sample lesson plan in the teacher's guidebook.*

T7- *It affects time management positively. The teacher's guide limited the lecture depending on the breadth of the subject.*

T12- *I think 40+ 40 lesson planning was very useful in terms of time management.*

The negative effects of the guidebooks on time management; it was stated that the directions made in the preparation were teacher-centered, they did not match the reality due to inconsistencies, the achievements could not be achieved with the time in the guidebook, the readiness of the students was ignored, they were incomplete, they were monotonous and did not match the content. Some of the negative opinions of social studies teachers about the time management of teacher's guidebooks are presented below.

T6- *I do not think it is advantageous in terms of time management because the readiness of the class is very important at this point. The teacher should be able to evaluate and use it according to the classes he/she enters.*

T10- *It was not very useful in terms of time. It was impossible to catch the subject in the time specified in the guide. But it was useful in giving ideas.*

T14- *The guidebook was not useful in terms of time management because the learning outcomes and class hours were incompatible.*

Table 8.

Use of Daily Plan with Teacher's Guide Book

Theme	Category	Code
Using a daily plan with the teacher's guidebook	I was using	-
	I wasn't using	No other plan was needed as it was in the manual

In Table 9, it was analyzed whether there was a need for a daily plan while using the teacher's guidebook. The examination was carried out under 2 headings as "I was using" and "I was not using". In the data obtained, all participants answered that they were not using it. Some of the opinions of social studies teachers about the use of daily plans with teacher's guidebooks are presented below.

T1- *I didn't need it because it was already in the teacher's guidebook.*

T15- *No, I didn't need it because we had an example at hand thanks to the teacher's guidebook.*

Table 9.

Teacher's Guidebook and the First Years of the Profession

Theme	Category	Code
Teacher's guidebook and the first years of the profession	Experience	It overcomes the lack of experience in the newly appointed teacher
	Guide	It serves as a guide in the hands of the newly appointed teacher
	Need	Much needed in the first 5 years of teaching
	Digitalisation	It is important, but a digital resource would be more useful

Table 10 analyses the years in which teachers' guidebooks are needed more and the importance of teachers' guidebooks for newly appointed teachers. The analysis revealed that teachers' guidebooks overcome the lack of experience in newly appointed teachers, serve as guides in the hands of newly appointed teachers, are needed more in the first 5 years of teaching, and although they are important, it would be more useful if they were a digital resource. Some of the opinions of social studies teachers about teacher's guidebooks and the first years of the profession are presented below.

T2- *I think more is needed in the first five years. Teaching is not learnt at a desk anyway. It needs to be put into practice in the classroom environment. The guidebook was very helpful for questions such as how to introduce the lesson, where to talk about which subject, how to establish the connection.*

T6- *It is needed more in the first years. It is very important for newly appointed teachers. But it should be taken into consideration when the teacher is appointed. A newly appointed teacher may not need much because he/she can easily access products and options in the digital environment. But it was not like that 10 years ago.*

T15- *It is very necessary in the first years. But it may also be needed in the following years.*

Table 10.

Redistribution Status of Teacher's Guide Books

Theme	Category	Code	*f*
Redistribution of the teacher's guide book	Must be distributed	It should be distributed as it is a basic road map	2
		It should be distributed because it is the teacher's hand and foot	
	Should be revised and distributed	Digitised and distributed	11
		Guidelines should be prepared by experienced teachers, not university lecturers	
		It should be in a way to respond to the needs of the changing society	
		Different guidebooks should be prepared according to the conditions of each region	
		Course hours and learning outcomes should be organised equally	
	Must not be distributed	It should not be distributed in the information age	2
		It was a burden for the teacher to carry to the classroom	
		Cost of paper	
		There must be an alternative in digital	

In Table 10, it is analyzed whether the teacher's guidebooks should be redistributed or not. The examination consists of 3 categories: should be distributed, should be revised and distributed and should not be distributed. The teachers who stated that the teacher's guidebook should be distributed stated that it is a basic road map and that it is the teacher's hand and foot. Some of the opinions of social studies teachers about the redistribution of teacher's guidebooks are presented below.

T2- *It should be distributed. We prepare daily plans. This is difficult and tedious and I don't think that everyone prepares a daily plan regularly. They go to class without a plan. Teacher's guidebooks are easy to use and easy to access. You can open it and have a look and see which subjects you need to talk about as a whole.*

T11- *They should be distributed. We need a common resource. A basic road map. We definitely have deficiencies. The guidebook was very useful for us to complete them.*

The teachers who said that the teacher's guidebooks should be revised and distributed answered that they should be digitized and distributed, the guidebooks should be prepared not by university professors but by experienced professors who have worked in MoNE for a long time, they should respond to the needs of the changing society, different guidebooks should be prepared in accordance with the conditions of each region, course hours and achievements should be arranged in an equivalent way. Some of the opinions of social studies teachers about the redistribution of revised teacher's guidebooks are presented below.

T3- *If they are to be distributed as before, they should not be distributed again. They can be revised and distributed to each region separately.*

T4- *They should be revised and distributed. For example, there can be digital guidebooks.*

T8- *They should be revised and distributed. Outcomes and lesson hours should be organized equally. The learning outcomes are intensive, but the course hours are insufficient.'*

T10- *It should be distributed. But it should be revised. I think it should be prepared not by university teachers but by experienced teachers.*

The teachers who said that teacher's guidebooks should not be distributed stated that there is no need for a book in the information age, that it is a burden on the teacher to carry it to the classroom, that it causes paper costs and that there should be an alternative in digital format. Some of the opinions of social studies teachers about not distributing teacher's guidebooks are presented below.

T7- *They should not be distributed. We are in the information age. The teacher can access it digitally. I don't think there is a need for something that will be an extra expense, something that will even burden the teacher on the way to the classroom.'*

T14- *It should not be distributed. Teachers can complete their deficiencies through digital ways.*

Discussion and Conclusion

Regarding the abolition of teacher's guidebooks, which were prepared to support teachers in planning, preparing and conducting lessons, after the 2018-2019 academic year, firstly, it was revealed whether social studies teachers used the guidebooks, and if so, how often and at which stage they used them the most. According to the data obtained, all teachers stated that they benefited from the guidebook in at least one of the stages of lesson preparation, lesson teaching and assessment and evaluation. In the study conducted by Varol (2017) on the use of teacher's guidebooks in science courses, 57.3% of the participants stated that they always used the guidebook, 30.5% stated that they sometimes used it, and 11.9% stated that they never used it. When we examine the positive aspects of teacher's guidebooks, we see that they guide and benefit the teacher, create alternatives, add experience, provide unity in teaching and resources, support the teacher in terms of subject mastery in the lesson, provide convenience and are a reliable tool in measurement and evaluation. When we look at the negative aspects of teacher's guidebooks; monotonizing the lesson, restricting the teacher's freedom and creativity while encouraging him/her to readiness, not complying with the constructivist approach because it is teacher-centered, inconsistent achievements and course hours, not meeting the needs of each student, the number and variety of activities are low, the guidebook is heavy and difficult to carry, and the guidebook is still distributed as a book in the digitalized period. According to the data obtained, the participants mentioned both positive and negative issues related to the guidebook. When we look at the data counted as negative, it is seen that there are issues such as deficiencies, inconsistencies and inadequate response to the needs of the teachers rather than opposing the existence of a guidebook. In this context, it is thought that teachers' guidebooks can be revised according to today's conditions by taking into account the deficiencies and inconsistencies mentioned. The data collected are in parallel with the metaphor study prepared by Göçer and Aktürk (2015) on primary and secondary school teachers' perceptions of teacher's guidebooks. For example, while the guidebook's being a guide and a helper to the teacher was counted among the positive features, its restricting creativity and confining it to a narrow framework and its difficulties in the implementation phase were counted among the negative features.

When the effect of guidebooks on teachers' freedom and creativity was analyzed, both positive and negative data were found. The positive results obtained in the research are that they do not restrict the teacher since there is no obligation to adhere to the guidebook, on the contrary, they create an alternative rather than a restriction, they are guiding, they do not encourage a conscious teacher to be ready, they only give ideas, and they are useful for newly appointed teachers. Among the negative results are that it puts the teacher into a mould, prevents freedom and creativity and encourages readiness. In this context, many probes were asked and most of the teachers stated that the features listed as negative were teacher-induced and that it was up to the teacher to eliminate them. Teachers should not be completely dependent on the guidebooks. On the contrary, they should conduct research by taking into account the class level, students' readiness and the region where the school is located. Content, in-class and extracurricular activities should be adapted in a unique way in line with these factors.

When the effect of the guidebooks on teachers' professional development was analyzed, the teachers who thought that the guidebooks supported professional development stated that they eliminated their deficiencies, eliminated the difference in experience and were useful although they did not play a leading role in professional development. Some teachers, on the other hand, stated that guidebooks do not support professional development because they have a standard format. It is similar to the study prepared by Acele and Ateş (2021) titled "Evaluation of the abolition of teacher's guidebooks according to the opinions of Turkish teachers". Approximately 70% of the teachers stated that the teacher's guidebooks did not contribute to teachers' professional skills and creativity, while 30% of the teachers stated that the teacher's guidebooks had a positive effect on the professional skills of newly appointed teachers.

The effect of teacher's guidebooks in terms of time management was analyzed in terms of lesson preparation, lesson teaching and assessment and evaluation stages. In general, the teacher's guidebooks were found to be useful in the preparation phase, but most of the teachers found them useless in the lesson teaching phase due to incompatibilities such as learning outcomes and lesson hours. In addition, although it is seen as a reliable source in measurement and evaluation, it is characterized as incomplete and monotonous. On this issue, which was analyzed in depth with probing questions, teachers stated that students had difficulty in learning the objectives that they encountered for the first time and were abstract, and that it was impossible to finish these subjects in the time periods in the guidebooks. As a suggestion, they stated that either the number of acquisitions should be reduced, or the duration of the lesson should be extended. The data obtained are similar to the studies conducted by Erdoğan (2007) and Kamber (2007). In both of these studies, it was concluded that there was a shortage of time for in-class and extracurricular activities.

Another result obtained in the study is that all teachers in the study group did not need an additional daily plan before the guidebook was removed. Teachers stated that the daily plan in the guidebook was sufficient. After the guidebooks were removed, they stated that they downloaded daily plans from the internet. In addition, it was concluded that none of the teachers prepared the daily plan on their own, but they provided it only because the administration asked them to do so. In this regard, the validity and reliability of daily plans downloaded randomly from the internet are open to discussion. It is similar to the master's thesis prepared by Hamlı (2022) titled "The evaluation of the abolition of teacher's guidebooks in primary schools according to teachers". All 16 teachers who taught 1., 2., 3. and 4. grades stated that they did not need a daily plan when the teacher's guidebook was distributed.

Almost all of the data obtained about the importance of the teacher's guidebook for the newly appointed teacher is that teachers need it more, especially in the first 5 years of the profession. Especially guiding and guiding the teacher is among the results. In addition, some teachers suggested digital books. Similar results were found in the study conducted by Oliva and Gordon (2018). They stated that teachers may need more detailed plans, especially in the first years of the profession.

Teachers were asked whether the guidebook should be redistributed and as a result, 2 teachers stated that it should be redistributed, 11 teachers stated that it should be revised and

not distributed, and 2 other teachers stated that a digital book should be created with alternatives. In the light of the data obtained, there is a need for a manual. In this context, the data obtained in the Q method study prepared by Çakmak et al. (2022) titled "The opinions of social studies teachers about the 7th grade social studies teacher's guidebook and the abolition of the books" are in the same direction. Teachers stated that the teacher's guidebook had positive aspects, and that the abolition of the teacher's guidebooks had negative consequences. They also agreed that the teachers' guidebooks should be developed and redistributed. Since all these results obtained in the study were limited to social studies teachers in Erzincan province centre, they may not reflect the views of all social studies teachers in Türkiye. In this direction, more extensive studies can increase the generalizability of the results obtained. In addition, the data in the study were obtained only through a semi-structured interview form. Therefore, studies using different data collection methods will increase the diversity of the results.

Recommendations

For each outcome, a guidebook containing alternative lesson plans using different methods and techniques can be prepared.

Comprehensive and up-to-date digital resources can be prepared for the subjects needed. Supporting the use of materials in education with technology integration will contribute to the enrichment of the content.

Needs related to educational policies can be determined and teachers' opinions can be taken into consideration in this regard.

Policies that support teachers' innovative approach to teaching methods, techniques and materials appropriate to the curriculum can be developed.

Platforms that can be used interactively among teachers can be designed to overcome the deficiencies felt about the guidebooks.

A system where practitioners' feedback about teaching practices can be received can be developed.

Scientific research can be conducted on the abolition of teachers' guidebooks.

Alternative teaching techniques and materials suitable for the needs of teachers can be focused on.

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Author 1: 50%

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Sosyal Bilgiler Öğretmenlerinin Kullanımdan Kaldırılan Öğretmen Kılavuz Kitapları ile İlgili Görüşleri

Özet

Eğitim sistemi, ihtiyaçlara uygun bir şekilde güncellenmeli ve yeniliklere açık olmalıdır. Öğretim yöntemleri ve materyalleri de bu değişimlere uyum sağlamalıdır. 2018-2019 eğitim-öğretim yılından itibaren öğretmen kılavuz kitaplarının kaldırılması, eğitim sistemi üzerinde önemli etkiler yaratmıştır. Bu araştırmanın amacı, sosyal bilgiler öğretmenlerinin kılavuz kitaplarının kaldırılmasına ilişkin görüşlerini incelemektir. Nitel araştırma yöntemi ile gerçekleştirilen çalışmanın katılımcıları, 2018 yılından önce Erzincan'da göreve başlayan 4 kadın ve 11 erkek olmak üzere toplam 15 sosyal bilgiler öğretmenidir. 2023-2024 akademik yılı güz döneminde 8 maddeli yarı yapılandırılmış bir görüşme formu ile veriler toplanmış ve içerik analizi yöntemiyle değerlendirilmiştir. Sonuçlar, öğretmenlerin kılavuz kitaplarının dersin en az bir aşamasında kullanıldığını ve bunun mesleki gelişim, zaman yönetimi, özgürlük ve yaratıcılık üzerinde hem olumlu hem de olumsuz etkileri olduğunu göstermektedir. Ayrıca, öğretmenlerin mesleğin ilk yıllarında kılavuz kitaplara daha fazla ihtiyaç duyduğu ve günlük plan kullanmadıkları tespit edilmiştir. Bu bağlamda kılavuz kitaplar tekrar dağıtılmalı mı sorusuna dağıtılmalı, dağıtılmamalı ve revize edilip dağıtılmalı sonucu ortaya çıkmıştır.

Anahtar Kelimeler: Sosyal bilgiler, öğretmen kılavuz kitapları, ders kitabı, öğretmen görüşü.

Giriş

Çağımızda bilim ve teknoloji hızla gelişmektedir. Bu gelişmelerden eğitim sistemi de oldukça fazla etkilenmiştir. Çağın gereksinimlerini karşılama bağlamında geleneksel eğitim yaklaşımları eksik kalmaktadır. Yapılandırmacı yaklaşım, çoklu zekâ kuramı ve öğrenci merkezli eğitim anlayışları çağın gereksinimlerini karşılama konusunda geleneksel eğitim anlayışlarından daha etkilidir (Bircan & Gökbulut, 2014). Ayrıca nitelikli birer birey yetiştirmek için eğitim sisteminde zaman zaman değişiklikler yapılmıştır. Türkiye'de cumhuriyetin ilanından sonra eğitim sisteminde 6 farklı köklü değişim yapılmıştır (Akyüz, 2012). Bu değişiklikler 1926, 1936, 1948, 1968, 1997 ve 2004 yıllarında yaşanmıştır. Bilim ve teknolojideki ilerlemeler eğitim teknolojisini de olumlu etkilese de öğretim materyalleri içinde kitaplar hâlâ yerini korumaktadır. Ders kitapları, çalışma kitapları, kaynak kitaplar ve elektronik kitaplar buna örnek olarak verilebilir. Kitaplar öğretim sürecinde öğretmenlerin daha sistematik çalışmalarına olanak sağlamaktadır (Genç vd., 2014).

2003-2004 yılında ders kitapları Millî Eğitim Bakanlığı'nın [MEB] kararıyla ilk kez ilkokul ve ortaokul öğrencilerine ücretsiz olarak dağıtılmıştır (Şahin, 2010). Daha sonra 2004-2005 eğitim öğretim yılında yapılandırmacı yaklaşım için pilot uygulamalar yapılmış ve program yapılandırmacı yaklaşıma göre tekrardan düzenlenmiştir. 2005-2006 eğitim öğretim yılından itibaren ise yapılandırmacı yaklaşıma göre yeni program hazırlanıp kullanılmaya başlanmıştır (Güneş, 2009). 2005-2006 yılında ise yapılandırmacı sisteme uygun olarak hazırlanan ders kitapları, öğrenci çalışma kitapları ve öğretmen kılavuz kitapları üçlü set halinde dağıtılmıştır. Eğitim öğretimde yeni programın kullanılmaya başlanmasıyla

öğretmenlere bu programları tanıtmak için hizmet içi eğitimler verilmiştir. Yapılandırmacı yaklaşımın tanıtıldığı CD'ler ve öğretmen kılavuz kitapları dağıtılmıştır (Ayvacı & Er-Nas, 2009). Öğretmen kılavuz kitapları bir eğitim öğretim yılı için; tanıtım şeması, proje ödevleri, performans görevleri, değerlendirme çalışmaları, alternatif değerlendirme araçlarını içermektedir. Bunlara ek olarak dikkat çekme, güdüleme, hedef kazanımlar, zaman, kullanılacak yöntem teknikler ve yararlanılabilecek kaynakları da içinde barındırmaktadır. Kısaca eğitim öğretimde öğretmene yardımcıdır (Ceyhan & Yiğit, 2004).

12 Eylûl 2012 tarihinde yayımlanan Millî Eğitim Bakanlığı Ders Kitapları ve Eğitim Araçları Yönetmeliği'nde yer alan "Öğretmen Kılavuz Kitabının Hazırlanması" başlığının 10. maddesinde öğretmen kılavuz kitabına dair detaylı bir şekilde bilgi verilmiştir 10. madde şu şekildedir;

Madde 10- (1) Öğretmen kılavuz kitabında ders kitabının nitelikleri ve hazırlanma usulleri göz önünde bulundurulur. Öğretmen kılavuz kitabında;

a) Konuların işlenişinde ulaşılmak istenen kazanımlar/hedefler belirtilir.

b) Eğitim ve öğretim programlarında yer alan kazanım/amaç ve açıklamalar doğrultusunda öğrencilere bilgi, beceri, tutum ve davranışların kazandırılmasında öğretmene yardımcı olacak ve öğretmeyi kolaylaştıracak bilgi, örnek ve uygulamalara yer verilir.

c) Bilgi, beceri, tutum ve davranışlar ile değerlerin öğrencilere kazandırılmasında kullanılabilecek araç-gereçle birlikte öğretim yöntem ve teknikleri ile ayrıca;

1) Konu ile ilgili zaman analizine ve konunun işleniş planına,

2) Öğretmenin konu ile ilgili yapacağı ön hazırlıklara,

3) Konuya girerken daha önce işlenen konularla ilişkisini sağlayacak ve öğrencinin ilgisini çekecek hatırlatmalara, sorulara ve benzeri unsurlara,

4) Ders kitabında yer alan ve açıklama gerektiren şekil, şema, çizelge ve benzeri yardımcı unsurlara yer verilir.

d) Öğrencileri araştırmaya, günlük yaşamda karşılaşılan çeşitli sorunlara çözüm üretmeye yöneltecek ödev, proje ve benzeri örnek çalışmalara yer verilir.

e) Konuların sonunda, gerekli görülmesi halinde verilen kavramlarla ilgili sözlük bulunur.

Öğretmen kılavuz kitapları ders işlenişinde kullanılabilecek etkinlikler, ders süresinin ne kadar olması gerektiğine dair öneriler, ders planları, ders işlenişinde yararlanılacak yöntem teknikler ve kaynakları barındırmasına (Karakuş, 2010) ek olarak kullanım amaçları arasında geleneksel eğitim alışkanlıklarının dışında öğrenci merkezli olarak derslerin planlanması ve işlenmesi de vardır. Çünkü yapılandırmacı yaklaşım öğrenci merkezlidir. Öğretmen kılavuz kitaplarının kullanılması yeni uygulamalarda yol gösterici olması ve öğrenci merkezli eğitim öğretimin uygulanması açısından önemlidir (Uluçınar-Sağır, 2017). "Her ne kadar öğrenciler yapılandırmacı yaklaşımda aktif rol oynasa da öğretmenlerin de bu süreçte önemli görevleri vardır" (Vernette & Foote, 2001; akt. Yurtbakan & Cerrah-Özsevgeç, 2019, s. 129). Öğretmenler

öğrenme ortamlarını düzenleyip bilgiye ulaşmada bir yol göstericidir. Eğitim öğretimde yapılacak herhangi bir değişiklikte öğretmenlerin görüşleri önemlidir. Çünkü öğretmen uygulayıcı olarak ön plandadır. Yenilenen program ne kadar nitelikli hazırlanırsa hazırlansın uygulayıcının niteliği ve tutumu çok önemlidir. Programın ve ek olarak kılavuz kitapların uygulanmasında öğretmene önemli roller düşer. Bir uygulayıcı olarak öğretmen, eksiklikleri kolayca ortaya koyabilir. Kılavuz kitap kullanımının ortaya çıkardığı avantajlı ve dezavantajlı durumlar ile ilgili tartışmalar sürerken MEB 2018-2019 eğitim öğretim yılında kılavuz kitaplarını kaldırmıştır (Erden & Dilekçi, 2022). Bu bağlamda sosyal bilgiler öğretmenlerinin, kılavuz kitapların kaldırılmasına ilişkin görüşlerinin alınması araştırmanın konusunu oluşturmaktadır. Dolayısıyla araştırmanın problemi "Sosyal bilgiler öğretmenlerinin kullanımdan kaldırılan öğretmen kılavuz kitaplarına ilişkin görüşleri nelerdir?" şeklinde belirlenmiştir. Araştırmanın alt problemleri ise şu şekildedir:

1. Öğretmen kılavuz kitapları; derslerin hazırlanması, işlenmesi ve değerlendirilmesi süreçlerinde nasıl bir rol oynamaktadır?

2. Öğretmen kılavuz kitapları; öğretmenlerin özgünlüğü, yaratıcılığı ve mesleki gelişimini etkilemekte midir?

3. Öğretmen kılavuz kitapları tekrar dağıtılmalı mıdır?

Yöntem

Sosyal bilgiler öğretmenlerinin kaldırılan öğretmen kılavuz kitapları ile ilgili görüşlerini ortaya koymak için yapılan bu araştırma nitel bir çalışmadır. Nitel araştırmalar, ilişkilerin, etkinliklerin, durumların ya da materyallerin niteliğinin incelendiği çalışmalardır (Fraenkel ve Wallen, 2006) ve bu çalışmalarda katılımcıların neyi niçin yaptıkları anlaşılmaya çalışılır (Given, 2015). Ayrıca araştırmada olgubilim deseni kullanılmıştır. Olgubilim deseni; günlük yaşantımızda karşılaştığımız fakat detaylı bilgi sahibi olmadığımız olguları detaylı inceleyen nitel bir yaklaşım türüdür (Creswell, 2009). Araştırmada olgubilim deseninin seçilme nedeni ise, öğretmen kılavuz kitaplarının kaldırılmasının mesleki bilgi, beceri ve tutumlar üzerinde yaratacağı etkilerdir. Bu etkiler ise doğrudan kişiye ait değişimlerdir. Araştırmanın çalışma grubunu; 2018 yılından önce, Erzincan il merkezinde göreve başlamış olan 4 kadın ve 11 erkek olmak üzere toplam 15 sosyal bilgiler öğretmeni oluşturmaktadır. Çalışma grubu belirlenirken amaçlı örneklem yöntemlerinden biri olan ölçüt örnekleme kullanılmıştır. Araştırmanın amacı öğretmen kılavuz kitaplar ile ilgili görüşlerin ortaya konulması olduğu için çalışma grubunu oluşturacak öğretmenlerin daha önce kılavuz kitabı kullanmış olması gerekmektedir. Bu bağlamda araştırmanın ölçütü öğretmenlerin 2018 yılından önce yani öğretmen kılavuz kitapları kaldırılmadan mesleğe başlamış olmalarıdır. Çalışma grubunda yer alan 15 sosyal bilgiler öğretmenine 8 maddeden oluşan yarı yapılandırılmış görüşme formu uygulanmıştır. Görüşme yöntemi; belirlenmiş herhangi bir konuda yapılan araştırmalarda cevaplar eksik veya açık değilse, derinlemesine soru sorma ve cevapları tamamlama fırsatı vermesinden dolayı avantajlı bir yöntemdir (Çepni, 2009). Yarı yapılandırılmış görüşme formu hazırlanırken kapsam geçerliliğini sağlamak amacıyla uzman görüşü alınmış, görüşme formunda yer alan sorular bu görüşlere göre düzenlenmiş ve uygulamaya hazır duruma getirilmiştir. Görüşme formunda yer alan sorulara öğretmenlerin verdikleri cevaplar ses kayıt cihazı ile kaydedilmiştir. Ses kayıt cihazının kullanılması verilerin eksiksiz bir şekilde kaydedilmesi

açısından önemlidir. Araştırmaya ilişkin veriler Mayıs-Haziran 2023 tarihlerinde katılımcıların uygun gördüğü zamanda ve mekânda bire bir görüşmeler yoluyla toplanmıştır. Görüşme sırasında öğretmenlerin soruları cevaplarken araştırmacıdan etkilenmemesine dikkat edilmiştir. Görüşmeler ise ortalama 30 dakika civarında sürmüştür. Elde edilen veriler içerik analizi yöntemiyle analiz edilmiştir. "İçerik analizinde temelde yapılan işlem, birbirine benzeyen verileri belirli kavramlar ve temalar çerçevesinde bir araya getirmek ve bunları okuyucunun anlayabileceği bir biçimde düzenleyerek yorumlamaktır" (Yıldırım & Şimşek, 2011, s. 227). Verilerin analizinin ilk aşamasında, elde edilen verilerin bütünlüğünü bozmamak amacıyla ses kayıtları sistematik bir şekilde transkript edilmiştir ve kodlar oluşturulmuştur. Öğretmenlere görüşme sıralarına göre T1, T2, …, T15 şeklinde kodlar verilmiştir. Kodlar arası ilişkiler belirlendikten sonra kategoriler ve temalar oluşturulmuştur. Araştırmanın sonuçlarına göre kodlar, kategoriler ve frekanslar tablolar halinde sunulmuştur. Araştırmanın güvenirliğini sağlamak amacıyla bulgular bölümünde görüşme kayıtlarından doğrudan alıntılara yer verilmiştir.

Araştırmanın Etik İzinleri:

Bu çalışmada "Yükseköğretim Kurumları Bilimsel Araştırma ve Yayın Etiği Yönergesi" kapsamında uyulması gerektiği belirtilen tüm kurallara uyulmuştur. Yönergenin ikinci bölümü olan "Bilimsel Araştırma ve Yayın Etiğine Aykırı Eylemler" başlığı altında belirtilen eylemlerin hiçbiri gerçekleştirilmemiştir.

Etik Kurul İzin Bilgileri:

Etik değerlendirmeyi yapan kurulun adı =Erzincan Binali Yıldırım Üniversitesi Eğitim Bilimleri Etik Kurulu

Etik Kurul Etik inceleme karar tarihi= 01.02.2023

Etik değerlendirme belgesi konu numarası=E-88012460-050.01.04-237786

Bulgular

Elde edilen bulgulara göre öğretmenlerin kılavuz kitapları derse hazırlık, dersin işlenişi, ölçme ve değerlendirme aşamalarından en az birinde kullandıkları görülmüştür. Ayrıca öğretmenlerin mesleklerinin ilk yıllarında kılavuz kitaplara daha fazla ihtiyaç duydukları belirlenmiştir. Sosyal bilgiler öğretmenleri kılavuz kitapların hem olumlu hem de olumsuz yönleri olduğunu belirtmişlerdir. Olumsuz olarak sayılan verilere baktığımızda kılavuz kitabın varlığına karşı çıkmaktan ziyade eksiklikler, tutarsızlıklar ve öğretmenlerin ihtiyaçlarına yeterince cevap verememesi gibi hususların olduğu görülmektedir. Ayrıca öğretmenlerin mesleki gelişimleri, zaman yönetimi, özgürlük ve yaratıcılıkları üzerinde hem olumlu hem de olumsuz etkileri olduğu sonucuna varılmıştır. Bu bağlamda birçok sonda soru sorulmuş ve öğretmenlerin çoğu olumsuz olarak sıralanan özelliklerin öğretmen kaynaklı olduğunu ve giderilmesinin öğretmene bağlı olduğunu belirtmiştir. Araştırmadan elde edilen bir diğer sonuç ise çalışma grubundaki tüm öğretmenlerin kılavuz kitap kaldırılmadan önce ek bir günlük plana ihtiyaç duymadıklarıdır. Bu noktada öğretmenlere "Kılavuz kitaplar tekrar dağıtılmalı mı?" sorusu yöneltilmiştir. Yanıtlar, dağıtılmalı, dağıtılmamalı ve revize edilerek yeniden dağıtılmalı şeklinde olmuştur.

Tartışma ve Sonuç

Araştırmadan elde edilen sonuçlara göre tüm öğretmenler derse hazırlık, ders işlenişi ve ölçme değerlendirme aşamalarının en az birinde kılavuz kaynaktan yararlandıklarını ifade etmişlerdir. Öğretmen kılavuz kitaplarının fen bilimleri dersinde kullanılması ile ilgili Varol (2017) tarafından yapılan çalışmada ise katılımcıların %57.3'lük kısmı kılavuz kitabı sürekli kullandığını, %30.5'lik kısmı bazen kullandığını %11.9'luk kısmı ise hiç kullanmadığını ifade etmiştir. Katılımcılar öğretmen kılavuz kitapları ile ilgili hem olumlu hem de olumsuz birçok konudan bahsetmişlerdir. Olumsuz olarak sayılan verilere bakıldığında öğretmenlerin bir kılavuzun varlığına karşı çıkmasından ziyade kılavuzdaki eksiklikler, tutarsızlıklar ve ihtiyaçlara yeterli cevabı verememesi gibi konuların olduğu görülmektedir. Bu bağlamda öğretmen kılavuz kitaplarının, bahsedilen eksiklik ve tutarsızlıklar dikkate alınarak günümüz şartlarına göre revize edilebileceği düşünülmektedir. Toplanan veriler Göçer ve Aktürk (2015) tarafından hazırlanan "İlk ve ortaokul öğretmenlerinin öğretmen kılavuz kitabına yönelik algıları" adlı metafor çalışmasında öğretmenlerin yaptığı benzetmeler ile paralellik göstermektedir.

Kılavuz kitapların öğretmenlerin özgürlüğü ve yaratıcılığı üzerindeki etkisine bakıldığında hem olumlu hem de olumsuz verilere ulaşılmıştır. Bu bağlamda birçok sonda soru sorulmuş ve öğretmenlerin birçoğu olumsuz olarak sıralanan özelliklerin öğretmen kaynaklı olduğunu ve ortadan kaldırılmasının da yine öğretmene bağlı olduğunu ifade etmişlerdir. Kılavuz kitaplarının öğretmenlerin mesleki gelişimi üzerindeki etkisine bakıldığında hem mesleki gelişimi desteklediğini hem de mesleki gelişimi desteklemediğini savunan öğretmenler olmuştur. Ayrıca mesleki gelişimde bir başrol olmasa da faydalı olduğunu ifade eden katılımcıların olduğu tespit edilmiştir. Acele ve Ateş (2021) tarafından hazırlanan "Öğretmen kılavuz kitaplarının kaldırılmasının Türkçe öğretmenlerinin görüşlerine göre değerlendirilmesi" adlı çalışma ile benzerlik göstermektedir. Öğretmenlerin yaklaşık olarak %70'i kılavuz kitapların öğretmene mesleki beceri ve yaratıcılık konusunda bir katkısının olmadığını ifade ederken öğretmenlerin %30'luk kısmı ise kılavuz kitapların özellikle yeni atanan öğretmenlerin mesleki becerilerine olumlu etkisi olduğunu ifade etmişlerdir.

Öğretmen kılavuz kitapları derse hazırlık aşamasında faydalı bulunurken ders işlenişinde öğretmenlerin çoğu tarafından kazanım ve ders saati gibi uyuşmazlıklardan dolayı kullanışsız bulunmaktadır. Ayrıca ölçme ve değerlendirmede de güvenilir bir kaynak olarak görülse de eksik ve tekdüze olarak nitelendirilmektedir. Elde edilen veriler Erdoğan (2007) ve Kamber (2007) tarafından yapılan çalışmalarla benzerlik göstermektedir. Bu iki çalışmada da ders içi ve ders dışı yapılabilecek etkinliklerde zaman sıkıntısı yaşandığı sonucuna ulaşılmıştır. Araştırmada elde edilen bir diğer sonuç ise kılavuz kitap kaldırılmadan önce çalışma grubunu oluşturan tüm öğretmenlerin ek bir günlük plana ihtiyaç duymamasıdır. Bu bağlamda araştırma sonuçlarının Hamlı'nın (2022) "İlkokullarda öğretmen kılavuz kitaplarının kaldırılmasının öğretmenlere göre değerlendirilmesi" başlıklı yüksek lisans tezindeki 1., 2., 3. ve 4. sınıfları okutan 16 öğretmenin tamamının kılavuz kitaplar dağıtıldığında günlük plana ihtiyaç duymadıklarını belirttikleri ifadeleriyle benzerlik gösterdiği tespit edilmiştir.

Öğretmen kılavuz kitabının yeni atanan öğretmen açısından önemi ile ilgili elde edilen verilerin tamamına yakını öğretmenlerin özellikle mesleğin ilk 5 yılında daha çok ihtiyaç

duyduğu yönündedir. Benzer sonuçlara Oliva ve Gordon (2018) tarafından yapılan çalışmada da rastlanmıştır. Özellikle mesleğin ilk yıllarında öğretmenlerin daha ayrıntılı planlara ihtiyaç duyabileceklerini dile getirmişlerdir. Son olarak öğretmenlere kılavuz kitap tekrar dağıtılmalı mı sorusu yöneltilmiştir. Bu bağlamda Çakmak vd. (2022) tarafından hazırlanan "7. Sınıf sosyal bilgiler öğretmen kılavuz kitabına ve kitapların kaldırılmasına yönelik sosyal bilgiler öğretmenlerinin görüşleri" adlı Q metot çalışmasında elde edilen veriler de aynı doğrultudadır. Bu çalışmada elde edilen tüm sonuçlar Erzincan il merkezi sosyal bilgiler öğretmenleri ile sınırlı olduğundan, Türkiye'deki tüm sosyal bilgiler öğretmenlerinin görüşlerini yansıtmayabilir. Bu doğrultuda, daha kapsamlı çalışmalar elde edilen sonuçların genellenebilirliğini artırabilir. Ayrıca, çalışmadaki veriler yalnızca yarı yapılandırılmış bir görüşme formu aracılığıyla toplanmıştır. Bu nedenle farklı veri toplama yöntemleri kullanan çalışmalar sonuçların çeşitliliğini artıracaktır.

Öneriler

Her bir kazanım için farklı yöntem ve tekniklerin kullanıldığı, alternatif ders planları içeren kılavuz kitap hazırlanabilir.

İhtiyaç duyulan konulara yönelik kapsamlı ve güncel dijital kaynaklar hazırlanabilir. Eğitimde materyal kullanımının teknoloji entegrasyonuyla desteklenmesi, içeriğin zenginleşmesine katkı sağlayacaktır.

Eğitim politikaları ile ilgili ihtiyaçlar belirlenebilir ve bu hususta öğretmenlerin görüşleri de dikkate alınabilir.

Müfredata uygun öğretim yöntem, teknik ve materyaller konusunda öğretmenlerin yenilikçi yaklaşımını destekleyen politikalar geliştirilebilir.

Kılavuz kitaplar ile ilgili hissedilen eksiklikleri gidermek için öğretmenler arasında etkileşimli olarak kullanılabilen platformlar tasarlanabilir.

Öğretim uygulamaları ile ilgili uygulamacıların geri bildirimlerinin alınabildiği bir sistem geliştirilebilir.

Öğretmen kılavuz kitaplarının kaldırılmasına yönelik bilimsel araştırmalar yapılabilir.

Öğretmenlerin ihtiyaçlarına uygun alternatif öğretim teknik ve materyalleri üzerine odaklanılabilir.

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Examining Classroom Management Anxiety Levels of Classroom Teachers and Their Attitudes Towards Refugee Pupils

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Abstract

In this study, the classroom management concerns and attitudes towards refugee students of 328 classroom teachers in the Midyat district of Mardin province were examined according to various variables. Descriptive scanning from quantitative designs was used. Data were collected using the "Classroom Management Anxiety Scale" and the "Refugee Student Attitude Scale". In the study, it was observed that teachers' classroom management anxieties were high, while their attitudes towards refugee students were positive. The teachers' classroom management anxieties did not vary according to the variables of professional seniority, the grade they taught, class size, the number of refugee students, and their ability to communicate with refugee students and their parents. However, it has been observed that as teachers' seniority increases, their concerns about classroom management decrease; those teaching intermediate grades are more anxious than those teaching first grade. On the other hand, teachers' positive attitudes towards refugee students did not vary according to their professional seniority, the grade they taught, class size, and the number of refugee students. However, as teachers' seniority increased and class sizes decreased, their positive attitudes towards refugees also increased. Additionally, teachers' positive attitudes towards refugee students have varied in favor of those who can communicate with refugee students and their parents. Based on these findings, it has been recommended that teachers be provided with inclusive and multicultural education, effective classroom management, and communication skills in differentiated environments, that Turkish be taught to refugees, and that they be evenly distributed among branches after language training.

Keywords: Refugee student, classroom management, anxiety, attitude.

Introduction

When continuous migration movements throughout human history (Goularas and Sunata, 2015) are not controlled, they weaken the host country's security resilience and disrupt internal stability (Berti, 2015). However, refugees may face discrimination (Ulukan, 2013) and experience integration issues with the host country's society (Aksoy, 2012; Kartal & Başçı, 2014). On the other hand, the fact that refugees encounter a foreign language and complex culture and have to overcome negative attitudes makes their situation even more difficult (Fisher et al., 2000; Ogbu, 1982; Olsen, 2000). Indeed, after the internal turmoil that emerged in Syria in 2011, Syrian refugees, including children who were traumatized due to losing family members (Boyden et al., 2002), sought refuge in Türkiye, which has a strategic location facilitating sea and land transportation (Ünal, 2014) and implements an Open Door Policy (Ihlamur-Öner, 2014).

Türkiye, because of this migration movement, has granted refugees the right to benefit from shelter, health, and education services (Güler, 2021). However, due to economic difficulties, some refugee children, forced to work for low wages, have remained outside the education system (Harunoğulları, 2016; Tollefson, 1989). This situation has necessitated the implementation of policy measures in the field of refugee education, which plays a crucial role in the integration of refugees (Sekin & Çakir, 2021). In addition to providing basic needs such as nutrition, shelter, and security to refugees, educational opportunities have also been emphasized (Aydın et al., 2019). However, it has been emphasized that it is important to provide education for school-age refugees in terms of their social integration. (The UN Refugee Agency [UNHCR], 2000).

Problems Encountered in Refugee Education

With the admission of school-age refugees to Turkish state schools, it was initially observed that they experienced language and communication problems (Başar et al., 2018; Delen & Ercoşkun, 2019; Kardeş and Akman, 2018; Kiremit et al., 2018; Şahin and Sümer, 2018; Tösten et al., 2017) and faced difficulties in adaptation (Delen and Ercoşkun, 2019; Toker-Gokçe and Acar, 2018; Uzun and Bütün, 2016). On the other hand, it has been determined that teachers have a positive attitude toward refugees, but they do not see themselves as sufficient in terms of providing inclusive education for these students (Kardeş & Akman, 2018; Kiremit et al., 2018; Sağlam & İlksen-Kanbur, 2017; Şahin & Sümer, 2018). However, it has been found that with the admission of refugees to schools, there were disruptions in educational activities (Kiremit et al., 2018), excessively crowded classrooms were formed (Tösten et al., 2017), and there were deficiencies in infrastructure and equipment in schools (Şahin & Sümer, 2018). Additionally, it has been determined that teachers complain about the indifference of refugee students' parents and the negative impact on the school and classroom climate (Arabacı et al., 2014; Şeker & Aslan, 2015).

When the conducted studies are generally examined, it can be suggested that the underlying issues are actually rooted in language and communication problems. It is believed that teachers' difficulties in communicating with students and parents during the educational process may also cause other problems. When examining the measures taken by the Ministry of National Education [MoNE] regarding the teaching of Turkish, it can be said that the target audience mainly consists of school-age refugees. It has been determined that children tend to learn the language of their host country more quickly than their parents. (Zhou, 2001).

The Education Process in Inclusive and Multicultural Environments

In 2016, MoNE initiated the "Support for the Integration of Refugee Children into the Turkish Education System Project [PIKTES]" with the aim of removing barriers to social integration for refugees, ensuring their right to education, improving language and communication skills, strengthening school infrastructures, and providing equipment support. (MoNE, 2024). The PIKTES project budget was fully covered by the European Union [EU] through direct grants under the "Financial Assistance Program for Refugees in Turkey [FRIT]" agreement. This project has been carried out in 26 provinces, including Mardin, where refugees predominantly reside. (MoNE, 2023). Within the scope of the project, educational materials, stationery, and cleaning supplies have been provided to schools where integration classes have been held. Additionally, independent integration classes have been opened at the 3rd grade level in primary schools, and class teachers and guidance counselors have been assigned to provide primarily Turkish language education and support the social integration of refugee students in these classes. Additionally, the MoNE has organized in-service training seminars for all teachers on the topic of "Education of Refugees in the Context of Inclusive Education". Thus, developing the skills of classroom teachers to effectively conduct educational processes in inclusive and multicultural educational environments. It can be said that teachers play a key role in the social and cultural integration of refugees with other students during the educational process (Hones & Cha, 1999; Trueba et al., 1990). Therefore, it is believed that in addition to teachers' professional competencies toward refugees, their attitudes, concerns, and emotional

perspectives toward these students are also important (Hones, 2002; Lee, 2002; Semerci & Semerci, 2004; Trueba et al., 1990).

Attitude is a type of emotional behavior that affects an individual's emotions, thoughts, and behaviors (Myers, 2010; Recepoğlu, 2013). Therefore, it can be stated that teachers' attitudes affect classroom climate, students' learning processes, social adjustment, and character development (Uluğ et al., 2011). Another emotional behavior tendency is anxiety. Excessively high or low anxiety levels can negatively impact academic success, self-confidence, motivation, and interpersonal relationships. (Layard, 2008). Similarly, Mishra and Yadav (2013) stated that anxiety should be at a normal level because being too high or too low can negatively affect performance. From this perspective, teachers' emotional behaviors during the teaching process and school and classroom communication and interaction can affect students' academic success (Şimşek, 2010).

On the other hand, it has been observed that teachers who are likened to conductors within the classroom (Başar, 2005) have their concerns primarily regarding classroom management (Evertson & Weinstein, 2006; Ingersoll & Smith, 2003; Jones & Jones, 2007; Lampadan, 2014; Vaezi & Fallah, 2011; Wagner, 2009). Teachers' concerns regarding classroom management stem from a lack of subject knowledge, insufficient practical experience, and weak subject matter expertise (Oral, 2012). Therefore, educating refugees, which teachers face as a different and new situation, may affect their levels of classroom management anxiety.

Importance and Original Value of the Study

When examining the literature, studies have shown that the problems faced by educators as a result of admitting refugees to schools (Arslan and Ergül, 2021; Kardeş and Akman, 2018; Sarıer, 2020;) primarily include language and communication problems (Başar et al., 2018; Cin, 2018; Delen and Ercoşkun, 2019; Kardeş and Akman, 2018; Levent and Çayak, 2017), and that such a situation brings about social integration and other issues (Akalın, 2016; Memduhoğlu & Kultas, 2022). However, it has been stated that the inability of refugee student parents to speak Turkish negatively affects their children's education (Gözübüyük-Tamer, 2017; Sarıtaş et al., 2016), teachers face difficulties in educating refugees (Aykırı, 2017; Er and Bayındır, 2015), overcrowded classrooms occur (Emin, 2016), and the schools' infrastructure is inadequate (Gencer, 2017; Sakız, 2016).

Based on the conducted studies, it is believed that examining the classroom management concerns and attitudes toward refugees of teachers with refugee students, according to variables such as their professional seniority, the class they teach, class size, the number of refugee students in the class, and their ability to communicate with refugee students and their parents, will add a different dimension and depth to the literature. Additionally, this study is important in determining how the communication factor, which is generally seen as a significant issue in the literature on the education of refugees, affects teachers' classroom management concerns and their positive attitudes toward refugees. However, the study is different from other studies in that it was conducted with a sample of primary school teachers who only had refugee students. On the other hand, the recommendations presented based on the study results will benefit educators in the education of refugees.

In this study, which aims to examine the attitudes of classroom teachers toward refugee students and their levels of classroom management anxiety in Turkish state primary schools in terms of various variables (professional seniority, the grade level they teach, class size, the number of refugee students in the class, and the ability to communicate with refugee students and their parents), the following questions are addressed.

1. What are the levels of concern among classroom teachers regarding classroom management?

2. What are the levels of classroom teachers' attitudes toward refugees?

3. Do the levels of classroom management anxiety of primary school teachers toward refugee students vary according to various variables (professional seniority, the grade level they teach, class size, the number of refugee students in the class, and their ability to communicate with refugee students and their parents)?

4. Do classroom teachers' attitudes toward refugee students vary according to various factors (professional seniority, the grade level they teach, class size, the number of refugee students in the class, their ability to communicate with refugee students and their parents)?

Method

Research Design

In this study, the level of teachers' attitudes toward refugee students and their concerns about classroom management were determined, and whether these two dependent variables differed according to teachers' professional seniority, the grade level they taught, class sizes, the number of refugee students in the class, and their ability to communicate with refugee students and their parents was examined using the descriptive survey model, a quantitative research type. In the survey model, the primary aim is to test hypotheses and determine the views, thoughts, attitudes, and habits of participants on a particular subject. (Christensen et al., 2014; Creswell, 2012; Fraenkel et al., 2012; Gay et al., 2012; McMillan & Schumacher, 2010). Therefore, the descriptive survey model was used in this study to find answers to the problem statements and to determine the attitudes and anxieties of classroom teachers.

Population and Sample

In the 2022-2023 academic year, a sample was formed from 328 classroom teachers determined by criterion sampling, a purposive sampling method, within the universe of classroom teachers working in primary schools in Türkiye, specifically in the Midyat district of Mardin province. In purposive sampling, groups are formed by the researcher from individuals who possess experience and knowledge to answer the research questions (Bernard, 2002). In purposive sampling, the criterion can be any situation related to the subject of the research, but (Grix, 2010) stated that the sample should be rich in terms of providing information (Marshall, 1996). The reason for selecting the district of Midyat in Mardin province as the sample is the high concentration of refugee students in this settlement. Additionally, the sample was limited to primary schools and consisted of teachers who were willing to participate in the study and had refugee students in their classrooms. Demographic information about the participants is presented in Table 1.

Table 1.

Demographic Information About the Participants

Demographic characteristics	Subcriteria	*f*	%
Gender	Woman	133	40.5
	Man	195	59.5
Professional seniority	1-4 years	54	16.5
	5-9 years	82	25.0
	10-14 years	73	22.3
	15-19 years	66	20.1
	20+ years	53	16.2
Graduation	Bachelor's	272	82.9
	Postgraduate	56	17.1
The grade level at which they teach	1st grade	80	24.4
	2nd grade	80	24.4
	3rd grade	88	26.8
	4th grade	80	24.4
Class size	20-24 students	83	25.3
	25-29 students	93	28.4
	30-34 students	101	30.8
	35+ students	51	15.5
Number of refugee students in the class	1-2 students	100	30.5
	3-4 students	93	28.3
	5-6 students	77	23.5
	7+ students	58	17.7
Ability to communicate with refugee students	Yes	184	56.1
	Partially	131	39.9
	No	13	4.0
Ability to communicate with refugee student parents	Yes	132	40.2
	Partially	146	44.5
	No	50	15.2

According to Table 1, when examining the demographic information of the classroom teachers who participated in the study, the number of males (n=195, 59.5%) was higher than the number of females (n=133, 40.5%). It can be said that most classroom teachers have 5-9 years (n=82, 25.0%) and that teachers with 20 years or more of professional seniority are fewer than those with other years (n=53, 16.2%). Additionally, it can be stated that the number of classroom teachers is equal to or very close to each other according to the grade levels they teach. When evaluating class sizes, it can be observed that the number of classes with 35 or more students (n=51, 15.5%) was low, and generally, class sizes ranged between 25 and 35. It is observed that the number of refugee students in the class is mostly between 1 and 4 students (n=193, 58.8%), while a small portion has 7 or more (n=58, 17.7%). The majority of classroom teachers were able to communicate with refugee students, with responses being mostly yes (n=184, 56.1%) and Partially (n=131, 39.9%), while a small number (n=13, 4.0%) answered no regarding their ability to communicate. However, the situation of classroom teachers being able to communicate with the parents of refugee students is mostly Partially (n=146, 44.5%) and yes (n=132, 40.2%), while a small portion responded with no (n=50, 15.2%).

Data Collection Tools

In selecting data collection tools to be used in the study, factors such as currency, citation status, suitability for the study's purpose, and the results of validity and reliability analyses were taken into consideration. Therefore, to determine the classroom management anxieties of classroom teachers, the "Classroom Management Anxiety Scale" was used, and to

determine their attitudes toward refugee students, the "Refugee Student Attitude Scale" was used. The scales are detailed below.

The Classroom Management Anxiety Scale (CMAS)

Developed by Özkul and Dönmez (2019), the scale comprises three dimensions (time management anxiety, motivation anxiety, and communication anxiety) and 23 items. The scale consists of 4 items in the time management anxiety dimension, 8 items in the motivation anxiety dimension, and 11 items in the communication anxiety dimension. The scale is a 5-point Likert type (1=strongly disagree...5=strongly agree). As the scores obtained from the scale increased, teachers' levels of anxiety regarding classroom management also increased. The reliability values for the three subdimensions of the scale; time management anxiety .79, motivation anxiety .92 and communication anxiety—were calculated as .95. The Cronbach's alpha coefficient of the items in the scale was found to be .96. The total item correlation coefficients in all dimensions of the scale range between .42 and .80. Based on these data, it can be concluded that the correlation between the scale items was at a good level (Özkul & Dönmez, 2019). In this study, the reliability values of the scale were calculated as .98 overall; in the subdimensions, time management anxiety as .92, motivation anxiety as .96 and communication anxiety as .97.

Refugee Student Attitude Scale (RSAS)

Developed by Sağlam and İlksen-Kanbur (2017), this scale consists of 3 sub-dimensions (communication, adaptation, competence) and 24 items. The load values of the scale are between .45 and .75 for the first, .40 and .79 for the second, and .60 and .is between .60 and .83. The scale is a 4-point Likert-type scale (1=strongly disagree...4=strongly agree). The score obtained from this scale, which does not contain any reverse items, ranges from a minimum of 24 to a maximum of .96. As the scale score increases, the attitude toward refugee students also improves positively. The Cronbach's alpha reliability coefficient of the scale has been calculated as .91. This value indicates that the items in the scale are consistent with each other (Sağlam & İlksen-Kanbur, 2017). In this study, the reliability coefficients obtained were recalculated, and the overall scale was found to be .92; in the sub-dimensions, communication was .92, adaptation was .87 and competence .80 were calculated. Scales with a reliability coefficient between .60 and .80 are considered quite reliable, whereas scales with a coefficient of .80 and above are accepted as highly reliable scales (Özdamar, 2002). Therefore, these scales were used in the research.

Data Analysis

The researchers actively participated in the collection, analysis, and interpretation of data to ensure the reliability of the study. The researchers determined the teachers' levels of classroom management anxiety and attitudes toward refugees based on the score ranges obtained from the scales. Accordingly, the 23-item 5-point Likert-type classroom management anxiety scale was divided into 3 categories (23-53=Low; 54-84=Medium; 85-115=High) with a minimum score of 23 and a maximum score of 115. Similarly, the 24-item 4-point Likert-type scale for attitudes toward refugee students was divided into 3 categories (24-47=Negative; 48-72=Moderate; 73-96=Positive), with a minimum score of 24 and a maximum score of 96.

Teachers' levels of classroom management anxiety and their attitudes toward refugee students were evaluated according to the determined score ranges. Additionally, the normality and homogeneity assumptions of the data obtained in this study were analyzed using the SPSS software package. Skewness and kurtosis values are expected to be between -1 and +1, but coefficients between -2 and +2 are also acceptable for meeting the normality assumption (George & Mallery, 2010; Karaatlı, 2006). It was concluded that the distributions of the variables were normal and that the variances were homogeneous (p>.05). The normality results of the data are shown in Table 2, and the results of the Levene test conducted to test the homogeneity of variances are shown in Table 3.

Table 2.

Normality Test Results of the Data Obtained from the Application

	Skewness	Kurtosis
Classroom management anxiety level normality coefficient	-.45	-.71
Refugee student attitude level normality coefficient	-.13	-.12

Table 3.

Results of the Levene Test on Classroom Teachers' Attitudes toward Refugee Students and Their Classroom Management Anxiety Levels

Variables under examination	Levene's statistic	df1	df2	p
Classroom management concerns according to professional grade level	3.91	4	323	.00*
Attitudes toward refugee students according to professional level	.41	4	323	.80
Classroom management concerns according to grade level	1.09	3	324	.36
Attitudes toward refugees according to grade level	.97	3	324	.40
Classroom management concerns according to class size	1.30	4	323	.27
Attitudes toward refugees according to class size	1.92	4	323	.11
Classroom management concerns according to the number of refugee students in the class	.29	3	324	.83
Attitudes toward refugee students according to the number of refugee students in the class	2.30	3	324	.08
The classroom management concern levels of classroom teachers according to their ability to communicate with refugee students in the class	.82	2	325	.44
Attitude levels of classroom teachers toward refugee students according to their ability to communicate with refugee students	.10	2	325	.90
The teachers' level of classroom management concern according to their ability to communicate with the parents of refugee students	1.20	2	325	.30
Attitude levels of teachers toward refugee students according to their ability to communicate with parents of refugee students.	.88	2	325	.42

When Table 2 is examined, it is observed that the skewness and kurtosis coefficients of the class management anxiety levels and attitudes toward refugee students of the classroom teachers from whom data were collected in the study are between +1 and 1. On the other hand, when Table 3 is examined, it is determined that the Levene's test statistics for the variables studied in the research are not significant, and the variances are equal (p > .05). The Levene statistic for the anxiety levels of classroom teachers according to their professional seniority was significant (p<.05), indicating that the equality of variances was not met. However, when examining the skewness (-.45) and kurtosis (-.71) values, it was observed that the values were between +1 and 1, indicating that the data were normally distributed.

To determine classroom teachers' levels of classroom management anxiety and their attitudes toward refugee students, descriptive statistical analysis was conducted. Then, to

determine whether classroom teachers' levels of classroom management anxiety and their attitudes toward refugee students differed according to various variables, one-way ANOVA analyses were conducted. In cases in which a significant difference was detected according to the ANOVA test, the LSD test, a type of post-hoc test, was conducted to determine which groups differed. In the selection of the post hoc test, since the sample size and number of groups should be taken into account (Sincich, 2003), the LSD test (Miller, 1969), which does not require equal sample sizes in the groups, was used instead of the Tukey test (Tukey, 1949), which requires equal sample sizes in the groups, and effect size values were provided. Additionally, due to the equal variances being met (p>.05), the differing sample sizes in the groups, and the number of groups not exceeding 3 (Efe et al., 2000), the LSD test was preferred among the multiple comparison tests. The eta squared effect size is interpreted as .01 small, .06 medium, and .14 large effect. (Ellis, 2010). For all analyses, the level of statistical significance was set to.05.

Validity and Reliability

The roles of the researchers were specified to strengthen internal validity. The explanation of the data collection and analysis process (McMillan and Schumacher, 2010), the selection process of the study sample, the explanation of its characteristics, and the justification of the study method (Merriam, 1998) supported the validity of the research. The reliability of the study was ensured by obtaining expert opinions at every stage of the research (Best and Khan, 2003) and by meticulously checking the data by the researchers (Bogdan & Biklen, 2007). Additionally, detailed information was provided to strengthen the external validity of the research, ensuring that it could be more clearly understood by readers.

Ethical Permits of Research:

In this study, all the rules specified to be followed within the scope of "Higher Education Institutions Scientific Research and Publication Ethics Directive" were complied with. None of the actions specified under the heading "Actions Contrary to Scientific Research and Publication Ethics", which is the second part of the directive, have been taken.

Ethics Committee Permission Information:

Name of the committee that made the ethical evaluation= Atatürk University Rectorate-Social and Human Sciences Ethics Committee Presidency

Date of ethical review decision= 06.12.2022

Ethics assessment document issue number= E-56785782-050.02.04-2200404813

Findings

The first subproblem of the research is the question, "What is the level of anxiety of classroom teachers regarding classroom management?" The anxiety levels of classroom teachers in relation to classroom management were evaluated according to the score ranges determined by the researchers. Considering the scale scores, the researchers determined the levels of classroom management anxiety of classroom teachers as low (23-53), medium (54-84), and high (85-115). The levels of classroom management anxiety among the teachers are shown in Graph 1.

Graph 1.

Classroom Management Anxiety Levels of Classroom Teachers
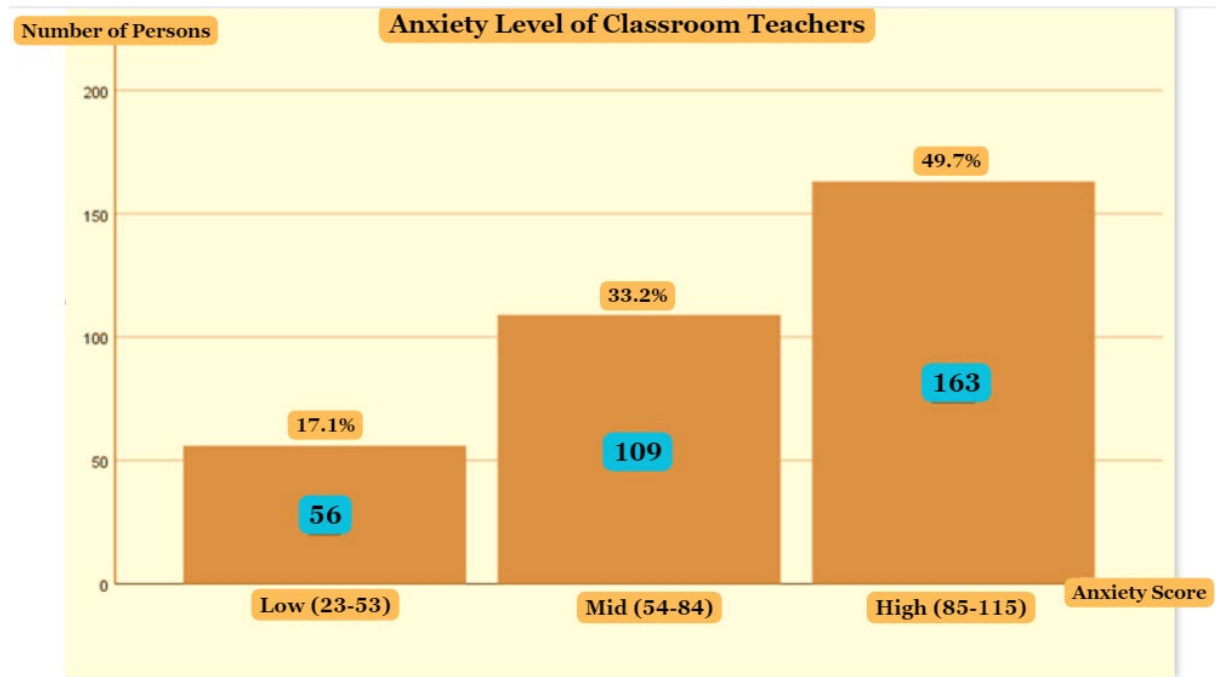
According to Graph 1, the average scores of classroom teachers' classroom management anxiety levels were mostly in the range of 85-115. It was determined that approximately half of the classroom teachers (49.7%, n=163) have a high level of classroom management anxiety. However, it can be said that those with medium level classroom management anxiety (33.2%, n=109) are more than those with low level (17.1%, n=56). The average scores of the subdimensions of classroom teachers' classroom management anxiety levels are presented in Table 4.

Table 4.

Classroom Management Anxiety Levels of Primary School Teachers According to Sub-Dimensions

Subdimensions of classroom management anxiety	n	M	df	Skewness	Kurtosis
1st subdimension: communication	328	3.39	1.26	-.39	-1.01
2nd subdimension: motivation	328	3.58	1.12	-.54	-.56
3rd subdimension: time	328	3.44	1.16	-.35	-.81
Scale total	328	3.46	1.11	-.45	-.71

When Table 4 is examined, it is observed that the primary school teachers' levels of anxiety regarding classroom management are 3.39 in the communication dimension; 3.58 in the motivation dimension; 3.44 in the time dimension, and 3.46 in the overall scale. Therefore, it can be said that the classroom teachers' anxiety levels regarding classroom management are at a medium level in the communication dimension and at a high level in the motivation and time dimensions as well as in the overall scale (1.00-1.80=Very low, 1.81-2.60=Low, 2.61-3.40=Medium, 3.41-4.20=High, 4.21-5.00=Very high).

The second subproblem of the research is the question, "What is the level of classroom teachers' attitudes toward refugee students?" The attitudes of classroom teachers toward refugees were evaluated according to the score ranges determined by the researchers. Considering the scale scoring, the researchers determined the attitudes of classroom teachers

toward refugee students as negative (24-47), medium (48-72), and positive (73-96) levels. The attitudes of the classroom teachers toward the refugees are shown in Graph 2.

Graph 2.

Class Teachers' Attitudes toward Refugee Students
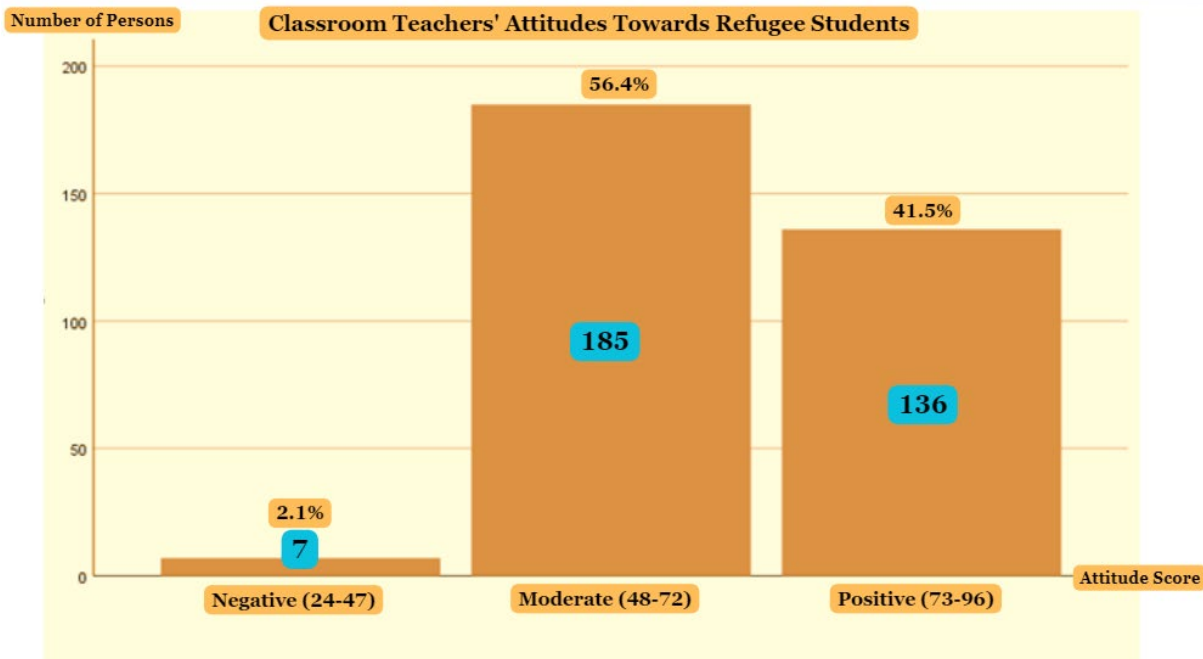
When examining Graph 2, it is observed that more than half of the classroom teachers (56.4%, n=185) have an average level of attitudes toward refugees. However, the number of teachers with a positive attitude toward refugee students (41.5%, n=136) was greater than the number of teachers with a negative attitude (2.1%, n=7). Data on the subdimensions of classroom teachers' attitudes toward refugees are presented in Table 5.

Table 5.

Classroom Teachers' Attitudes toward Refugee Students According to Sub-Dimensions

Subdimensions of Attitudes toward Refugee Students	n	M	df	Skewness	Kurtosis
1st subdimension: communication	328	3.20	.59	-.45	-.28
2nd subdimension: adaptation	328	2.69	.59	.20	-.32
3rd subdimension: competence	328	2.76	.71	.10	-.72
Scale total	328	2.93	.53	-.13	-.12

When Table 5 is examined, it is seen that the attitude levels of classroom teachers toward refugees are 3.20 in the communication dimension; 2.69 in the adaptation dimension; 2.76 in the competence dimension, and 2.93 in the overall scale. Therefore, it can be said that the attitudes of classroom teachers toward refugee students are at a positive level in the sub-dimensions of communication adaptation, and competence as well as in the overall scale (1.00-1.74= Negative, 1.75-2.49= Moderate; 2.50-3.24= Positive; 3.25-4.00= Very Positive).

The third subproblem of the research is formed by the question: "Do the anxiety levels of classroom teachers toward refugee students differ according to various variables (professional seniority, the grade level they teach, class size, the number of refugee students in the class, the level of communication with refugee students, and the level of communication

with refugee students' parents)?" The anxiety levels of teachers in relation to classroom management according to professional seniority are presented in Table 6.

Table 6.

The Levels of Classroom Management Anxiety among Primary School Teachers According to Their Professional Seniority

	Sum of squares	df	Mean square	F	p
Between groups	5.288	4	1.322	1.078	.367
Within groups	396.246	323	1.227		
Total	401.535	327			

When Table 6 is examined, it is observed that the anxiety levels of teachers with 1-4 years of seniority are 3.64, those with 5-9 years are 3.56, and those with 10-14 years are 3.43. Additionally, the anxiety levels of teachers with 15-19 years and 20 years and above were 3.42 and 3.24, respectively. According to the results of the ANOVA, no statistically significant difference was found between the groups ($F_{(4-323)}$=1.078; p>.05). The levels of classroom management anxiety of the teachers according to the grade level they taught are presented in Table 7.

Table 7.

The Levels of Classroom Management Anxiety of Classroom Teachers According to Grade Level

	Sum of squares	df	Mean square	F	p
Between groups	3.968	3	1.323	1.078	.359
Within groups	397.566	324	1.227		
Total	401.535	327			

When Table 7 is examined, it is observed that the classroom management anxiety levels of first-grade teachers were 3.31, second-grade teachers were 3.53, third-grade teachers were 3.59, and fourth-grade teachers were 3.42. According to the results of the ANOVA, no significant difference was observed between the groups ($F_{(3-324)}$=1.078; p>.05). It can be said that the highest average anxiety level belongs to third grade teachers, while the lowest average anxiety level belongs to first grade teachers. The anxiety levels of the teachers in relation to classroom management according to class size are presented in Table 8.

Table 8.

Class Teachers' Levels of Classroom Management Anxiety According to Class Sizes

	Sum of squares	df	Mean square	F	p
Between groups	3.561	3	1.187	.966	.409
Within groups	397.974	324	1.228		
Total	401.535	327			

When Table 8 is examined, it is observed that the anxiety levels of teachers with class sizes of 20-24 students are 3.59, those with 25-29 students are 3.52, and those with 30-34 students are 3.40. Additionally, the anxiety levels of teachers with class sizes of 35 and above were determined to be 3.29. According to the results of the ANOVA, no significant difference was observed between the groups ($F_{(3-324)}$=.966; p>.05). The levels of classroom management anxiety of the teachers according to the number of refugee students in the class are presented in Table 9.

Table 9.

Levels of Classroom Management Anxiety among Class Teachers According to the Number of Refugee Students in the Class

	Sum of squares	df	Mean square	F	p
Between groups	5.685	3	1.895	1.551	.201
Within groups	395.850	324	1.222		
Total	401.535	327			

When Table 9 is examined, it is observed that the class management anxiety levels of teachers with 1-2 refugee students in the class are 3.45, those with 3-4 students are 3.31, those with 5-6 students are 3.60, and those with 7 or more students are 3.57. According to the results of the ANOVA, no significant difference was observed between the groups ($F_{(3-324)}$=1.551; p>.05). The levels of classroom management anxiety of teachers according to their ability to communicate with refugee students in the classroom are presented in Table 10.

Table 10.

Levels of Classroom Management Anxiety among Class Teachers According to Their Ability to Communicate with Refugee Students in the Classroom

	Sum of squares	df	Mean square	F	p
Between groups	2.424	2	1.212	.987	.374
Within groups	399.111	325	1.228		
Total	401.535	327			

When Table 10 is examined, it is observed that the classroom management anxiety of teachers who can communicate with refugee students is at a level of 3.54, those who can partially communicate is at 3.36, and those who cannot communicate is at 3.49. According to the results of the ANOVA, no significant difference was observed between the groups ($F_{(2-325)}$=.987; p>.05). The levels of classroom management anxiety among the teachers according to their ability to communicate with the parents of the refugee students are presented in Table 11.

Table 11.

Teachers' Levels of Classroom Management Anxiety according to Students' Ability to Communicate with Parents of Refugee Students

	Sum of squares	df	Mean square	F	p
Between groups	2.789	2	1.395	1.137	.322
Within groups	398.746	325	1.227		
Total	401.535	327			

When Table 11 is examined, it is observed that the classroom management anxiety of teachers who can communicate with the parents of refugee students is at a level of 3.54, those who can partially communicate is at 3.36, and those who cannot communicate is at 3.57. According to the results of the ANOVA, no significant difference was observed between the groups ($F_{(2-325)}$=1.137; p>.05).

The fourth subproblem of the research is formed by the question, "Do the anxiety levels of classroom teachers toward refugee students differ according to various variables (professional seniority, the grade level they teach, class size, the number of refugee students in the class, the level of communication with refugee students, and the level of communication with refugee students' parents)?" The teachers' attitudes toward refugee students according to professional seniority are presented in Table 12.

Table 12.

Attitudes toward Refugee Students According to Professional Seniority

	Sum of squares	df	Mean square	F	p.
Between groups	.794	4	.199	.702	.591
Within groups	91.387	323	.283		
Total	92.181	327			

When Table 12 is examined, it is seen that the attitude levels of teachers with 1-4 years of seniority are 2.86, those with 5-9 years are 2.91, and those with 10-14 years are 2.92. Additionally, the attitude levels of teachers with 15-19 years and 20+ years of experience are 2.98 and 2.93, respectively. According to the results of the ANOVA, no significant difference was observed between the groups ($F_{(4-323)}$=.702; p>.05). The attitude levels of classroom teachers toward refugees, according to the grade level they teach, are presented in Table 13.

Table 13.

Attitude Levels of Classroom Teachers' Approaches to Refugee Students According to Grade Levels They Teach

	Sum of squares	df	Mean square	F	p
Between groups	1.270	3	.423	1.509	.212
Within groups	90.911	324	.281		
Total	92.181	327			

When Table 13 is examined, it is seen that the attitudes of first-grade teachers toward refugees are 2.88, second-grade teachers 2.89, third-grade teachers 3.04, and fourth-grade teachers 2.92. According to the results of the ANOVA, no significant difference was observed between the groups ($F_{(3-324)}$=1.51; p>.05). It can be said that the highest average attitude level belongs to third-grade teachers, while the lowest average belongs to first-grade teachers. The levels of teachers' attitudes toward refugee students according to class size are presented in Table 14.

Table 14.

Attitudes of Classroom Teachers toward Refugee Students According to Class Size

	Sum of squares	df	Mean square	F	p
Between groups	1.304	3	.435	1.549	.202
Within groups	90.877	324	.280		
Total	92.181	327			

When Table 14 is examined, it is observed that the attitude levels of teachers with class sizes of 20-24 students are 2.99, those with 25-29 students are 2.99, and those with 30-34 students are 2.90. Additionally, the attitude levels of teachers with class sizes of 35 or more were determined to be 2.82. According to the results of the ANOVA, no significant difference was observed between the groups $F_{(3-324)}$=1.55; p>.05). The levels of teachers' attitudes toward refugee students according to the number of refugee students in the class are presented in Table 15.

Table 15.

Attitude Levels of Classroom Teachers toward Refugee Students According to Class Number of Refugee Students

	Sum of squares	df	Mean square	F	p
Between groups	.048	3	.016	.056	.982
Within groups	92.133	324	.284		
Total	92.181	327			

When Table 15 is examined, it is observed that the attitude levels of teachers toward refugees are 2.99 for those with 1-2 refugee students in the class, 2.88 for those with 3-4 refugee students, 2.93 for those with 5-6 refugee students, and 2.93 for those with 7 or more refugee students. According to the results of the ANOVA, no significant difference was observed between the groups ($F_{(3-324)}$=.056; p>.05). The levels of teachers' attitudes toward refugee students in the classroom, based on their ability to communicate with them, are presented in Table 16.

Table 16.

Attitude Levels of Classroom Teachers' Approaches to Refugee Students Based on Their Ability to Communicate with Refugee Students in the Classroom

	Sum of squares	df	Mean square	F	p	Significant difference
Between groups	19.721	2	9.860	44.226	.000	Yes> Partially
Within groups	72.460	325	.223			Yes>No
Total	92.181	327				Partially >No

When Table 16 is examined, it is observed that the positive attitudes of teachers who can communicate with refugee students in the classroom are at a level of 3.15, those who can partially communicate are at 2.69, and those who cannot communicate are at 2.40. According to the results of the ANOVA, a significant difference was observed between the groups ($F_{(2-325)}$= 44.23; p<.05). To determine which groups differ from each other, the LSD test from the post hoc multiple comparison tests was conducted. According to this test, the positive attitudes of teachers who can communicate with refugee students in the classroom (3.15±.48) were found to be different and higher than the positive attitudes of teachers who can partially communicate (2.69±.45) and those who cannot communicate (2.40±.55). Additionally, the positive attitudes of those who could partially communicate with refugee students (2.69±.45) were different from and higher than those who could not communicate (2.40±.55). The eta squared effect size. It was found to be 214 and showed that teachers' ability to communicate with refugee students has a large impact on their positive attitudes toward these students.

The levels of teachers' attitudes toward refugee students, based on their ability to communicate with the parents of the refugees, are presented in Table 17.

Table 17.

Attitude Levels of Teachers Toward Refugee Students Based on Their Ability to Communicate with Parents of Refugee Students

	Sum of Squares	df	Mean Square	F	p	Significant difference
Between groups	14.348	2	7.174	29.955	.000	Yes> Partially
Within groups	77.833	325	.239			Yes>No
Total	92.181	327				

When Table 17 is examined, it is observed that the attitude levels of teachers who can communicate with the parents of refugee students are 3.19, those who can partially communicate are 2.76, and those who cannot communicate are 2.78. According to the results of the ANOVA, a significant difference was observed between the groups ($F_{(2-325)}$=29.96; p<.05). To determine which groups differ from each other, the LSD test from the Post hoc tests was used. It was observed that the positive attitudes of teachers who could communicate with refugee student parents (3.19±.46) were different and higher than those who could partially

communicate (2.76±.50) and those who could not communicate (2.78±.55). (Tablo 19). The eta squared effect size of. Having a value of 156 indicating that teachers' ability to communicate with refugee student parents has a large impact on their attitudes toward refugee students.

Discussion and Conclusion

The study concluded that primary school teachers' classroom management anxieties were at a high level. This result supports studies that identified teachers' anxiety regarding classroom management (Cook, 2001; Çınar & Tutkun, 2022; Gezen, 2021; Heflin & Bullock, 1999; Özkul, 2021; Sağır & Kökocak, 2023). Teachers' classroom management anxieties are particularly influenced by time and communication skills (Cüceloğlu, 2009; Taşğın, 2006). On the other hand, studies have also found that low levels of teachers' classroom management anxiety (Önder & Önder-Öz, 2018; Sadık & Nasırcı, 2019). It is believed that the differences in the results of studies conducted on teachers' classroom management anxiety levels in this way are related to factors such as the sample on which the study was conducted, the educational level, and the qualifications of the teachers.

It was concluded that there is no difference in the classroom management anxiety levels of classroom teachers based on their professional seniority, the grade level they teach, class sizes, the number of refugee students in the class, and their ability to communicate with refugee students and their parents. Additionally, this study determined that as teachers' professional seniority increases, their levels of classroom management anxiety decrease. According to this result, experienced teachers have lower levels of classroom management anxiety. (Lampadan, 2014; Oral, 2012). Additionally, Çar (2021) stated that there is no significant difference between teachers' professional seniority and their levels of classroom management anxiety; whereas Sağır and Kökocak (2023) identified a significant and inverse relationship between these two variables. The study concluded that the classroom management anxieties of classroom teachers did not vary according to class size, whereas Çınar and Tutkun (2022) determined that there was a significant difference between these two variables. Additionally, another study found that as class size decreased, teachers' levels of classroom management anxiety also decreased (Yalçınkaya & Tonbul, 2002).

In the study, although teachers' classroom management anxieties did not differ based on their ability to communicate with refugee students and their parents, it was noted that teachers' ability to communicate with students and parents had an impact on their classroom management anxieties (Cüceloğlu, 2009). On the other hand, it was determined that teachers who teach intermediate grades have higher classroom management anxieties than those who teach first grade. It is believed that this is related to the fact that the reading and writing levels of the students in the first-grade teachers' classes were similar. In intermediate grades, equivalency procedures or students transferring from other schools with different academic levels can lead to unforeseen problems in classroom management and cause teachers to be concerned (Önder & Önder-Öz, 2018).

Although no significant difference is observed between the number of refugee students in the class and the teachers' concerns about classroom management, it can be said that the group of teachers with the highest anxiety level consists of those who have 5-6 refugee students

in their class. Considering that adaptation classes consist of at least 10 students, classes with several refugees are considered adaptation classes. It is believed that teachers' concerns about classroom management decrease due to factors such as the students in the adaptation classes consisting only of refugees showing similarities academically and socially, and the teachers assigned to these classes under the project being experienced in educating refugees.

The attitudes of classroom teachers toward refugee students are at a positive level. This result is consistent with the findings of other studies in the literature (Akman, 2020; Çiftçi et al., 2019; Göçer et al., 2020; Gülüm & Akçalı, 2017; Kazu & Deniz, 2019; Keskin & Okçu, 2021; Köse et al., 2019; Vangölü, 2022). Additionally, it has been concluded that teachers' attitudes toward refugee students do not vary according to the variables of professional seniority, the grade level they teach, class sizes, and the number of refugee students in the class. This situation parallels the findings of studies that have indicated that teachers' attitudes toward refugee students do not vary according to professional seniority (Çiftçi et al., 2019; Vangölü, 2022) or the presence of refugee students in the classroom (Vangölü, 2022).

On the other hand, the study found that as teachers' professional seniority increased, their positive attitudes toward refugee students also increased. Therefore, experienced teachers exhibit a more positive attitude toward refugee students. Additionally, as class sizes increased, teachers' positive attitudes toward refugee students decreased. This situation can be explained by the fact that teachers' attitudes toward refugees are negatively affected because they need to spend more time with students in crowded classrooms.

When the teachers' positive attitudes toward refugee students were examined according to the grade level they taught, it was determined that the positive attitudes were highest in the third grade and lowest in the first grade. The high attitudes of third-grade teachers can be explained by the presence of adaptation classes. Independent adaptation classes are held at the third grade level in primary schools, and refugee students in third grade with weak reading and writing skills are placed in these classes. Therefore, it is believed that as a result of these refugee students with weak language skills being placed in independent adaptation classes, teachers who teach third-grade classes exhibit a positive attitude toward refugee students. The low level of positive attitudes exhibited by first-grade teachers can be explained by the fact that refugee students lead to overcrowded class sizes and the likelihood of having many indifferent refugee parents with poor communication skills.

However, it has been determined that teachers' positive attitudes toward refugee students vary depending on their ability to communicate with both the refugee students and their parents. It has been observed that this difference is in favor of teachers who can communicate with refugee students and their parents. Therefore, it is believed that language and communication can be effective in developing a positive attitude toward refugees.

Recommendations

In general, it is believed that having a positive school and classroom climate, as well as favorable teacher attitudes and organizing joint social activities with refugees, can make the adaptation process easier and faster for refugee students who struggle due to communication and cultural differences. Therefore, important steps can be taken, such as developing the

empathetic skills of teachers and students, organizing joint activities with refugees, conducting parent visits, and reinforcing feelings of cooperation and solidarity. Therefore, the coordinated work of classroom teachers, school administrators, and guidance services can yield more effective results. On the other hand, face-to-face or online training can reduce teachers' classroom management concerns. Additionally, the program content can be updated to provide effective classroom management skills and experience in inclusive and multicultural educational environments during undergraduate education. However, to reduce teachers' concerns about classroom management and to foster a positive attitude toward refugees, it is recommended that strong teacher-student-parent relationships be maintained and communication channels kept open. In this context, schools and public education centers can provide Turkish courses to parents of refugees. For education administrators, when placing refugee students who have transferred through equivalency or other means into classes, it is important to consider both the overall class size and the number of refugee students in the branches. Refugee students with low academic achievement and weak communication skills should be educated in adaptation classes until they reach a certain level, after which they can be placed in regular classes. Ensuring that class sizes do not become overcrowded and evenly distributing refugee students across classes can positively reflect teachers' attitudes toward refugees and their classroom management concerns.

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Contribution Rate of Researchers

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Author 2: 50%

Conflict Statement

There is no conflict of interest that the authors will declare in the research.

Sınıf Öğretmenlerinin Sınıf Yönetimi Kaygı Düzeyleri ve Mülteci Öğrencilere Yönelik Tutumlarının İncelenmesi

Özet

Bu çalışmada, Mardin ili Midyat ilçesindeki 328 sınıf öğretmeninin sınıf yönetimi kaygıları ve mülteci öğrencilere ilişkin tutumları çeşitli değişkenlere göre incelenmiştir. Nicel desenlerden betimsel tarama kullanılmıştır. Veriler, "Sınıf Yönetimi Kaygısı Ölçeği" ve "Mülteci Öğrenci Tutum Ölçeği" ile toplanmıştır. Çalışmada, öğretmenlerin sınıf yönetimi kaygılarının yüksek; mülteci öğrencilere yönelik tutumlarının olumlu olduğu görülmüştür. Öğretmenlerin sınıf yönetimi kaygılarının; mesleki kıdem, okuttukları sınıf, sınıf mevcudu, mülteci öğrenci sayısı, mülteci öğrenciler ve velileri ile iletişim kurabilme değişkenlerine göre farklılaşmamıştır. Ancak, öğretmenlerin kıdemi arttıkça sınıf yönetimi kaygılarının azaldığı; ara sınıf okutanların birinci sınıf okutanlardan daha çok kaygılı olduğu görülmüştür. Öte yandan öğretmenlerin mülteci öğrencilere yönelik olumlu tutumlarının; mesleki kıdem, okuttukları sınıf, sınıf mevcudu ve mülteci öğrenci sayısına göre farklılaşmamıştır. Ancak, öğretmenlerin kıdemi arttıkça ve sınıf mevcutları azaldıkça mültecilere yönelik olumlu tutumları artmıştır. Ayrıca, öğretmenlerin mülteci öğrencilere yönelik olumlu tutumlarının mülteci öğrenciler ve velileriyle iletişim kurabilenlerin lehine farklılaşmıştır. Bu bulgulara dayalı olarak öğretmenlere farklılaştırılmış ortamlarda kapsayıcı ve çokkültürlü eğitim ile etkili sınıf yönetimi ve iletişim becerilerinin kazandırılması, mültecilere Türkçe öğretilmesi, dil eğitiminden sonra şubelere eşit dağıtılması önerilmiştir.

Anahtar Kelimeler: Mülteci öğrenci, sınıf yönetimi, kaygı, tutum.

Giriş

İnsanlık tarihi boyunca sürekli yaşanan göç hareketleri (Goularas ve Sunata, 2015) kontrol edilemediğinde, ev sahibi ülkenin güvenlik direncini zayıflatıp iç istikrarının bozulmasına (Berti, 2015) ve karmaşık bir kültürle karşılaşan mültecilerin ayrıca olumsuz tutumları aşmak zorunda kalmalarına neden olmuştur (Olsen, 2000). Nitekim 2011 yılında Suriye'de ortaya çıkan iç karışıklık sonucunda aralarında travma yaşayan çocukların da bulunduğu (Boyden vd., 2002) Suriyeli mülteciler, stratejik konum olarak ulaşımı kolay olan (Ünal, 2014) ve Açık Kapı Politikası izleyen Türkiye'ye (Ihlamur-Öner, 2014) sığınmışlardır. Türkiye, yaşanan bu göç hareketi sonucunda mültecilere barınma, sağlık ve eğitim hizmetlerinden yararlanma hakkı sunmuştur (Güler, 2021).

Mültecilerin Eğitiminde Karşılaşılan Sorunlar

Eğitim çağındaki mültecilerin Türk devlet okullarına alınması ile birlikte; dil ve iletişim sorunları (Delen ve Ercoşkun, 2019) ve uyum sıkıntıları çektikleri (Uzun ve Bütün, 2016) görülmüştür. Öte yandan öğretmenlerin mülteci öğrencilere yönelik tutumlarının olumlu olduğu fakat mültecilerin eğitimi konusunda kendilerini yeterli görmedikleri belirlenmiştir (Kardeş & Akman, 2018). Bununla birlikte eğitim faaliyetlerinde aksamalar yaşandığı (Kiremit vd., 2018), kalabalık sınıfların oluştuğu (Tösten vd., 2017) ve altyapı yetersizliklerinin meydana geldiği (Şahin ve Sümer, 2018) görülmüştür. Ayrıca öğretmenlerin, mülteci velilerinin ilgisizliğinden, okul ve sınıf ikliminin olumsuz etkilenmesinden şikâyetçi oldukları

belirlenmiştir (Şeker & Aslan, 2015). Sonuç olarak ortaya çıkan sorunların temelinde dil ve iletişim problemlerinin yer aldığı ileri sürülebilir.

Çokkültürlü Ortamlarda Eğitim Süreci

Mültecilerin sosyal uyumlarının desteklenmesi, dil ve iletişim becerilerinin geliştirilmesi amacıyla 2016 yılında Avrupa Birliği [AB] ile Millî Eğitim Bakanlığı [MEB] tarafından "Mülteci Çocukların Türk Eğitim Sistemine Entegrasyonunun Desteklenmesi Projesi [PIKTES]" başlatılmıştır (MEB, 2024). Bu proje, aralarında Mardin ilinin de olduğu ve mültecilerin yoğun olarak yaşadığı 26 ilde sürdürülmüştür. Proje kapsamında ilkokulların 3. sınıf düzeyinde müstakil uyum sınıfları açılmış ve öğretmenler görevlendirilmiştir. Ayrıca MEB, tüm öğretmenlere yönelik Kapsayıcı eğitim bağlamında mültecilerin eğitimi konulu hizmet içi eğitim seminerleri düzenlemiştir. Çünkü eğitim sürecinde mültecilerin sosyal ve kültürel anlamda diğer öğrencilerle kaynaşmalarında öğretmenlerin kilit bir role sahip olan öğretmenlerin (Hones ve Cha, 1999), mesleki yeterliklerinin yanı sıra bu öğrencilere karşı tutumları, kaygıları ve tüm duygusal bakış açılarının da önemli olduğu düşünülmektedir (Lee, 2002).

Öte yandan sınıf içerisinde bir orkestra şefine benzetilen öğretmenlerin (Başar, 2005) kaygılarının en çok sınıf yönetimi açısından olduğu görülmüştür (Lampadan, 2014). Öğretmenlerin, sınıf yönetimi açısından kaygılanmaları, bu konudaki bilgi eksikliği, uygulamadaki deneyim yetersizliği ve alan bilgilerinin zayıf olmasından kaynaklandığı söylenebilir (Oral, 2012). Dolayısıyla öğretmenlerin farklı ve yeni bir durum olarak karşı karşıya kaldıkları mültecilerin eğitimi konusu onların sınıf yönetimi kaygı düzeylerini etkileyebilir.

Çalışmanın Önemi ve Özgün Değeri

Alan yazında öğretmenlerin mültecilerin eğitiminde karşılaştıkları sorunların incelendiği (Sarıer, 2020), bu sorunların başında dil ve iletişim problemlerinin geldiği (Cin, 2018) ve böyle bir durumun sosyal uyum ve diğer sorunları beraberinde getirdiği (Memduhoğlu ve Kultas, 2022) yapılan çalışmalardan anlaşılmıştır. Bunula birlikte mülteci öğrenci velilerinin Türkçe bilmemesi çocuklarının eğitimine olumsuz etki ettiği (Gözübüyük-Tamer, 2017), mültecilerin eğitimi konusunda öğretmenlerin zorlandığı (Aykırı, 2017), kalabalık sınıfların meydana geldiği (Emin, 2016) ve okulların altyapılarının yetersiz kaldığı (Sakız, 2016) belirtilmiştir. Dolayısıyla çalışmanın alan yazında mültecilerle ilgili yapılan çalışmalarda önemli bir sorun olarak görülen iletişim faktörünün, öğretmenlerin sınıf yönetimi kaygılarını ve mültecilere yönelik olumlu tutumlarını nasıl etkileyeceğinin belirlenmesi açısından önemli olduğu ve farklı bir boyut kazandıracağı düşünülmektedir. Ayrıca çalışma sonuçlarına yönelik sunulan önerilerin eğitimcilere, mültecilerin eğitimi konusunda fayda sağlayacağı düşünülmektedir.

Bu çalışmada aşağıdaki sorulara yanıt aranmıştır. Sınıf öğretmenlerinin;

1. Sınıf yönetimi açısından kaygıları ne düzeydedir?

2. Mülteci öğrencilere yönelik tutumları ne düzeydedir?

3. Mülteci öğrencilere yönelik sınıf yönetimi kaygı düzeyleri çeşitli değişkenlere göre farklılık göstermekte midir?

4. Mülteci öğrencilere yönelik tutumları çeşitli değişkenlere farklılık göstermekte midir?

Yöntem

Araştırma Deseni

Çalışmada nicel araştırma türlerinden biri olan betimsel tarama (survey) modeli kullanılmıştır. Tarama modelinde daha çok hipotezlerin test edilmesi ve katılımcıların bir konudaki görüş, düşünce, tutum ve alışkanlıklarının belirlenmesi amaçlanmaktadır (Christensen vd., 2014). Dolayısıyla bu çalışmanın problem cümlelerine cevap bulmak, sınıf öğretmenlerinin tutum ve kaygılarını belirlemek amacıyla betimsel tarama modeli kullanılmıştır.

Evren ve Örneklem

Örneklem, 2022-2023 eğitim-öğretim yılında mültecilerin yoğun olduğu Mardin ili Midyat ilçesinde amaçlı örnekleme yöntemlerinden ölçüt örnekleme ile belirlenen 328 sınıf öğretmeninden oluşturulmuştur.

Veri Toplama Araçları

Çalışmada sınıf öğretmenlerinin sınıf yönetimi kaygılarını belirleyebilmek için "Sınıf Yönetimi Kaygısı Ölçeği", mülteci öğrencilere yönelik tutumlarını belirleyebilmek için ise "Mülteci Öğrenci Tutum Ölçeği" kullanılmıştır. Ölçeklerle ilgili detaylı bilgiler aşağıda gösterilmiştir.

Sınıf Yönetimi Kaygısı Ölçeği (SYKÖ)

Özkul ve Dönmez (2019) tarafından geliştirilen ölçek, üç boyuttan (zaman yönetimi kaygısı, motivasyon kaygısı ve iletişim kaygısı) ve 23 maddeden oluşmaktadır. Ölçek, 5'li likert tipi bir ölçektir. Ölçekten alınan puanlar arttıkça öğretmenlerin sınıf yönetimi kaygı düzeyleri artmaktadır. Bu çalışmada ölçeğin güvenirlik değerleri, ölçek genelinde .98; alt boyutlarda ise zaman yönetimi kaygısı .92, motivasyon kaygısı .96 ve iletişim kaygısı .97 olarak hesaplanmıştır.

Mülteci Öğrenci Tutum Ölçeği (MÖTÖ)

Sağlam ve İlksen-Kanbur (2017) tarafından geliştirilen bu ölçek, 3 alt boyut (iletişim, uyum, yeterlik) ve 24 maddeden oluşmaktadır. Ölçek, 4'lü likert tipi bir ölçektir. Ters maddenin bulunmadığı bu ölçekten alınabilecek puan minimum 24, maksimum 96 puandır. Ölçek puanı arttıkça mülteci öğrencilere yönelik tutum da olumlu yönde artmaktadır. Bu çalışmadaki güvenirlik katsayıları ölçek genelinde .92; alt boyutlarda ise iletişim .92, uyum .87 ve yeterlik .80 olarak hesaplanmıştır.

Verilerin Analizi

Araştırmacılar tarafından sınıf yönetimi kaygısı ölçeği; en düşük 23, en yüksek 115 puan olmak üzere 3 kategoriye (23-53=Düşük; 54-84=Orta; 85-115=Yüksek) ayrılmıştır. Benzer şekilde mülteci öğrencilere yönelik tutum ölçeği; en düşük 24, en yüksek 96 puan olmak üzere

3 kategoriye (24-47=Olumsuz; 48-72=Orta; 73-96=Olumlu) ayrılmıştır ve belirlenen puan aralıklarına göre değerlendirilmiştir. Ayrıca araştırmada elde edilen veriler SPSS paket programı ile analiz edilmiştir. Değişkenlerin dağılımlarının normal ve varyansların homojen olduğu (p>.05) sonucuna ulaşılmıştır.

Tablo 1.

Verilerin Normallik Testi Sonuçları

	Çarpıklık	*Basıklık*
Sınıf yönetimi kaygı düzeyi normallik katsayısı	-.45	-.71
Mülteci öğrenci tutum düzeyi normallik katsayısı	-.13	-.12

Sınıf öğretmenlerinin sınıf yönetimi kaygı düzeylerini ve mülteci öğrencilere yönelik tutumlarını belirlemede betimleyici istatistik analizi, bunların çeşitli değişkenlere göre durumu tek yönlü ANOVA ile analiz edilmiş ve anlamlı farklılığın çıktığı durumlarda Post-hoc türlerinden LSD testi kullanılmıştır. Ayrıca etki büyüklüğü değerlerine yer verilmiştir. Eta kare etki büyüklüğü; .01 küçük, .06 orta ve .14 büyük etki (Ellis, 2010) kriterine göre yorumlanmıştır. Bütün analizler için istatistiksel anlamlılık düzeyi ise .05 olarak alınmıştır.

Geçerlik ve Güvenirlik

Çalışmada araştırmacıların rollerinin belirtilmesi, veri toplama ve analizi sürecinin açıklanması (McMillan ve Schumaher, 2010), örnekleminin seçim süreci ve özelliklerinin belirtilmesi, çalışma yönteminin gerekçelendirilmesi (Merriam, 1998) ile araştırmanın geçerliği desteklenmiştir. Çalışmanın her aşamasında uzman görüşlerinin alınması (Best ve Khan, 2003), verilerin araştırmacılar tarafından titizlikle kontrol edilmesi (Bogdan ve Biklen, 2007) ile çalışmanın güvenirliğine katkı sağlanmıştır.

Araştırmanın Etik İzinleri:

Bu çalışmada "Yükseköğretim Kurumları Bilimsel Araştırma ve Yayın Etiği Yönergesi" kapsamında uyulması gerektiği belirtilen tüm kurallara uyulmuştur. Yönergenin ikinci bölümü olan "Bilimsel Araştırma ve Yayın Etiğine Aykırı Eylemler" başlığı altında belirtilen eylemlerin hiçbiri gerçekleştirilmemiştir.

Etik Kurul İzin Bilgileri:

Etik değerlendirmeyi yapan kurulun adı= Atatürk Üniversitesi Rektörlüğü-Sosyal ve Beşeri Bilimler Etik Kurul Başkanlığı

Etik Kurul Etik inceleme karar tarihi=06.12.2022

Etik değerlendirme belgesi konu numarası= E-56785782-050.02.04-2200404813

Bulgular

Sınıf öğretmenlerinin sınıf yönetimi kaygı düzeyleri, araştırmacılar tarafından belirlenen puan aralıklarına göre düşük (23-53), orta (54-84) ve yüksek (85-115) olarak belirlenmiştir.

Grafik 1.
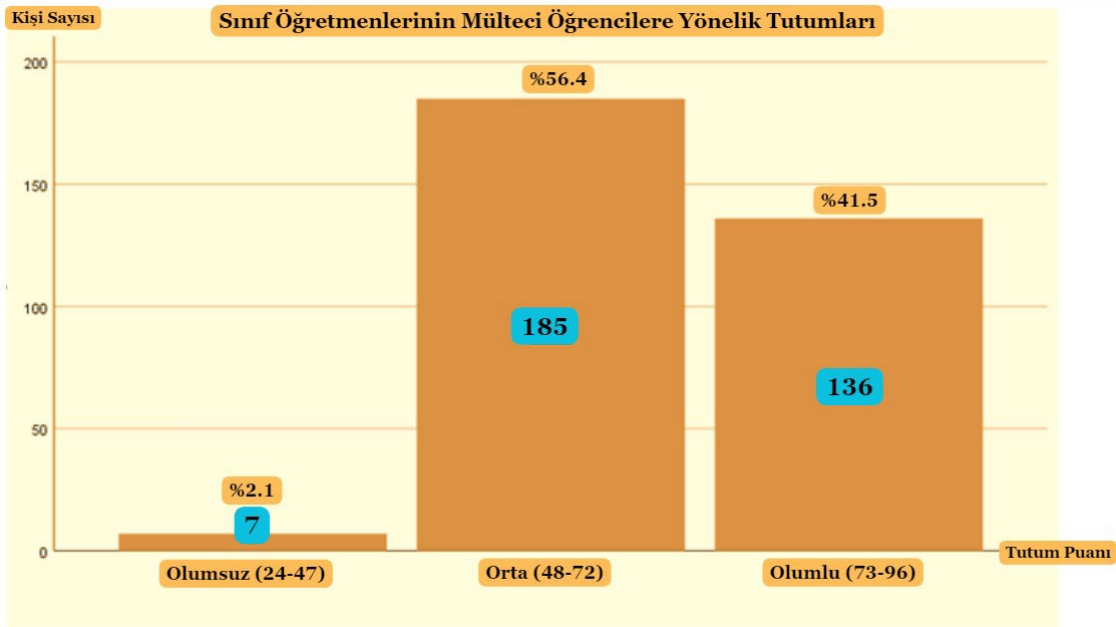*Sınıf Öğretmenlerinin Sınıf Yönetimi Kaygı Düzeyleri*
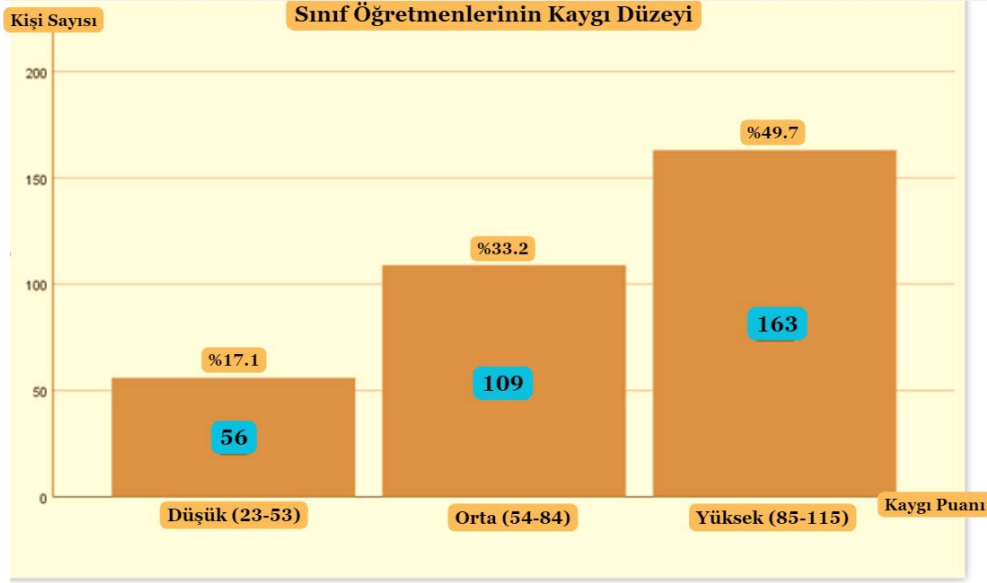
Grafik 1'e göre sınıf öğretmenlerinin sınıf yönetimi kaygı düzeyi ortalamalarının Yüksek ve çoğunlukla 85-115 aralığında olduğu (%49.7, n=163) söylenebilir.

Sınıf öğretmenlerinin mülteci öğrencilere yönelik tutumları ise, araştırmacılar tarafından belirlenen puan aralıklarına göre olumsuz (24-47), orta (48-72) ve olumlu (73-96) olarak belirlenmiştir.

Grafik 2.
Sınıf Öğretmenlerinin Mülteci Öğrencilere Yönelik Tutumları

Grafik 2 incelendiğinde sınıf öğretmenlerinin mülteci öğrencilere yönelik tutumlarının orta düzeyde (%56.4, n=185) olduğu görülmektedir.

Sınıf öğretmenlerinin sınıf yönetimi kaygı düzeylerinin çeşitli değişkenlere göre farklılaşma durumunu incelemek için yapılan tek yönlü varyans analizleri [ANOVA]

sonucunda öğretmenlerin mesleki kıdemlerine göre farklılaşma olmadığı [$F_{(323)}$=1.078; p>.05] görülmüştür. Benzer şekilde öğretmenlerin okuttukları sınıf düzeyine göre sınıf yönetimi kaygılarının farklılık göstermediği [$F_{(324)}$=1.078; p>.05] belirlenmiştir. Öte yandan sınıf öğretmenlerinin sınıf mevcutlarına göre sınıf yönetimi kaygı düzeylerinin de farklılık göstermediği [$F_{(324)}$=.966; p>.05]; benzer şekilde sınıftaki mülteci öğrenci sayısına göre sınıf yönetimi kaygılarının farklılaşmadığı [$F_{(324)}$=1.551; p>.05] görülmüştür. Bununla birlikte sınıf öğretmenlerinin sınıf yönetimi kaygılarının gerek mülteci öğrencilerle iletişim kurabilme durumları [$F_{(325)}$=.987; p>.05], gerek bu öğrencilerin velileri ile iletişim kurabilme durumlarına göre [$F_{(325)}$=1.137; p>.05] farklılık göstermediği sonucuna ulaşılmıştır.

Diğer taraftan sınıf öğretmenlerinin mülteci öğrencilere yönelik tutumlarının çeşitli değişkenlere farklılaşma durumunu incelemek için yapılan ANOVA sonucunda öğretmenlerin mesleki kıdemlerine göre farklılaşma olmadığı [$F_{(323)}$=.702; p>.05] belirlenmiştir. Benzer şekilde öğretmenlerin okuttukları sınıf düzeyine göre mülteci öğrencilere yönelik tutumlarının farklılık göstermediği [$F_{(324)}$=1.509; p>.05] tespit edilmiştir. Öte yandan sınıf öğretmenlerinin sınıf mevcutlarına göre mülteci öğrencilere yönelik tutumlarında farklılaşma olmadığı [$F_{(324)}$=1.549; p>.05]; sınıftaki mülteci öğrenci sayısına göre de herhangi bir farklılık görülmediği [$F_{(324)}$=.056; p>.05] sonucuna ulaşılmıştır.

Bununla birlikte sınıf öğretmenlerinin mülteci öğrencilere yönelik tutumlarının mülteci öğrencilerle iletişim kurabilme durumlarına göre farklılaştığı görülmüştür [$F_{(325)}$=44.226; p<.05]. Hangi gruplar arasında farklılığın olduğunu tespit etmek için yapılan LSD çoklu karşılaştırma testinde, sınıftaki mülteci öğrencilerle iletişim kurabilen öğretmenlerin (3.15±.48) olumlu tutumlarının; hem kısmen iletişim kurabilen (2.69±.45) hem de iletişim kuramayan öğretmenlerin (2.40±.55) olumlu tutumlarından farklılaştığı ve daha yüksek olduğu görülmüştür. Ayrıca mülteci öğrencilerle kısmen iletişim kurabilenlerin olumlu tutumlarının (2.69±.45) iletişim kuramayanlardan (2.40±.55) farklılaştığı ve daha yüksek olduğu görülmüştür. Eta kare etki büyüklüğü .214 olması, öğretmenlerin mülteci öğrencilerle iletişim kurabilme durumlarının bu öğrencilere yönelik olumlu tutumları üzerinde büyük bir etkiye sahip olduğunu göstermiştir.

Ayrıca sınıf öğretmenlerinin mülteci öğrencilere yönelik tutumlarının mülteci öğrencilerin velileri ile iletişim kurabilme durumlarına göre farklılaştığı belirlenmiştir [$F_{(325)}$=29.955; p<.05]. Hangi gruplar arasında farklılığın olduğunu tespit etmek için yapılan LSD çoklu karşılaştırma testinde, mülteci öğrenci velileri ile iletişim kurabilen öğretmenlerin olumlu tutumlarının (3.19±.46), hem kısmen iletişim kurabilen (2.76±.50) hem de iletişim kuramayanlardan (2.78±.55) farklılaştığı ve daha yüksek olduğu görülmüştür. Eta kare etki büyüklüğünün .156 olması öğretmenlerin mülteci öğrenci velileri ile iletişim kurabilme durumlarının mülteci öğrencilere yönelik tutumları üzerinde büyük bir etkiye sahip olduğunu göstermiştir.

Tartışma ve Sonuç

Çalışmada, sınıf öğretmenlerinin sınıf yönetimi kaygılarının yüksek düzeyde olduğu ve bu sonucun başka çalışma sonuçlarını (Cook, 2001; Özkul, 2021) desteklediği görülmüştür. Özellikle öğretmenlerin sınıf yönetimi kaygılarının zaman ve iletişim boyutlarından etkilendiği

söylenebilir (Cüceloğlu, 2009). Diğer taraftan öğretmenlerin sınıf yönetimi kaygılarının düşük düzeyde olduğunu belirleyen çalışmalara da rastlanmıştır (Önder & Önder-Öz, 2018; Sadık & Nasırcı, 2019). Çalışma sonuçlarının bu şekilde farklılık göstermesinin, çalışmanın yapıldığı örneklem, eğitim kademesi, öğretmen nitelikleri gibi faktörlerle ilişkili olduğu düşünülmektedir.

Sınıf öğretmenlerinin sınıf yönetimi kaygı düzeylerinin tüm değişkenlere göre farklılaşmadığı sonucuna ulaşılmıştır. Ancak çalışmada öğretmenlerin mesleki kıdemi arttıkça sınıf yönetimi kaygılarında azalma olduğu belirlenmiştir. Bu doğrultuda deneyimli öğretmenlerin sınıf yönetimi kaygılarının daha düşük olduğu söylenebilir (Lampadan, 2014). Çar (2021), öğretmenlerin mesleki kıdemleri ile sınıf yönetimi kaygı düzeyleri arasında anlamlı bir fark olmadığını; Sağır ve Kökocak (2023), bu iki değişken arasında anlamlı ve ters orantılı bir ilişkinin olduğunu belirtmişlerdir. Öte yandan öğretmenlerin sınıf yönetimi kaygılarının sınıf mevcuduna göre farklılık göstermediği görülmüş fakat Çınar ve Tutkun (2022) bu iki değişken arasında anlamlı bir fark olduğunu belirtmişlerdir. Benzer şekilde sınıf mevcudu azaldıkça öğretmenlerin sınıf yönetimi kaygılarının da azaldığı belirlenmiştir (Yalçınkaya & Tonbul, 2002).

Çalışmada öğretmenlerin mülteci öğrenciler ve bu öğrencilerin velileri ile iletişim kurabilme değişkenine göre sınıf yönetimi kaygıları farklılık göstermese de öğretmenlerin, öğrenciler ve velileri ile iletişim kurabilme durumlarının sınıf yönetimi kaygıları üzerinde etkili olduğu belirtilmiştir (Cüceloğlu, 2009). Sınıftaki mülteci öğrenci sayısı ile sınıf öğretmenlerin sınıf yönetimi kaygıları arasında anlamlı bir fark görülmese de kaygı düzeyinin en yüksek olduğu öğretmen grubunun, sınıfında 5-6 mülteci öğrenci olanlardan oluştuğu söylenebilir. Uyum sınıflarının en az 10 kişilik sınıflardan oluştuğu göz önünde bulundurulduğunda mülteci öğrenci sayısının çok olduğu sınıfların uyum sınıfı olduğu düşünülmektedir.

Sınıf öğretmenlerinin mülteci öğrencilere yönelik tutumlarının ise olumlu düzeyde olduğu belirlenmiştir. Bu sonuç, alan yazınındaki başka çalışmaların sonuçlarını (Akman, 2020; Köse vd., 2019) destekler niteliktedir. Ayrıca öğretmenlerin mülteci öğrencilere yönelik tutumlarının mesleki kıdem, okuttukları sınıf düzeyi, sınıf mevcutları ve sınıftaki mülteci öğrenci sayısı değişkenlerine göre farklılık göstermediği sonucuna ulaşılmıştır. Bu durum, mülteci öğrencilere yönelik öğretmen tutumlarının mesleki kıdeme (Çiftçi vd., 2019) ve sınıfta mülteci öğrencinin bulunması (Vangölü, 2022) değişkenlerine göre farklılaşmadığını belirleyen çalışma sonuçları ile benzerlik göstermektedir. Öte yandan öğretmenlerin mesleki kıdemi arttıkça mülteci öğrencilere yönelik olumlu tutumlarında da artış olduğu görülmüştür. Ayrıca sınıf mevcutları arttıkça öğretmenlerin olumlu tutumlarında azalma olduğu tespit edilmiştir. Bu olumsuz durum, öğretmenlerin kalabalık sınıflarda öğrencilere daha fazla zaman ayırmaları gerektiği ile açıklanabilir.

Öte yandan öğretmenlerin mülteci öğrencilere yönelik olumlu tutumlarının gerek mülteci öğrencilerle gerek bu öğrencilerin velileri ile iletişim kurabilme durumlarına göre iletişim kurabilen öğretmenlerin lehine farklılık gösterdiği tespit edilmiştir. Dolayısıyla mültecilere yönelik olumlu bir tutumun geliştirilebilmesinde dil ve iletişim faktörünün etkili olabileceği düşünülmektedir.

Öneriler

Öğretmen ve öğrencilerin empatik becerilerinin geliştirilmesi, mültecilerle ortak etkinliklerin düzenlenmesi, veli ziyaretlerinin yapılması, yardımlaşma ve dayanışma duygularının pekiştirilmesi konusunda etkinlikler yapılabilir. Bunun için sınıf öğretmenleri, okul yöneticileri ve rehberlik servislerinin koordineli çalışması, etkili sonuçlar verebilir. Öte yandan öğretmenlerin sınıf yönetimi kaygılarını azaltmak için yüz yüze veya çevrim içi eğitimler verilebilir. Ayrıca öğretmenlere lisans eğitiminde kapsayıcı ve çok kültürlü eğitim ortamlarında etkili sınıf yönetimi becerileri kazandırılabilir. Öğretmenlerin hem sınıf yönetimi kaygılarını azaltmak hem de mültecilere yönelik tutumlarının olumlu olmasını sağlamak için öğretmen-öğrenci-veli ilişkilerinin güçlü, iletişim kanallarının açık tutulması önerilebilir. Hem okullarda hem de halk eğitim merkezlerinde mültecilere yönelik Türkçe dil kursları açılabilir. Eğitim yöneticilerine ise, denklik veya başka yollarla nakil gelen mülteci öğrencilerin sınıflara yerleştirilirken şubelerdeki gerek genel mevcudun gerekse mülteci öğrenci sayısının göz önünde bulundurulması, akademik başarısı düşük ve iletişim becerileri zayıf olan mülteci öğrencilerin uyum sınıflarında belli bir seviyeye gelene kadar eğitime tabi tutulduktan sonra normal sınıflara alınması ve mülteci öğrencilerin sınıflara eşit dağıtılmasının öğretmenlerin mülteci tutumlarına ve sınıf yönetimi kaygılarına olumlu yansıyabilir.

Designing Visual Abstracts Used in Scientific Publications

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Abstract

Visual abstracts (VAs) are visualized summary information that play an important role in increasing the reading rate and spreading of academic publications. This study, which focuses on the design of VAs used in scientific publications, has a compilation design. The visual abstracts design guide of five existing publishing houses and journals was examined in the study. The criteria suggested in the study are presented in the context of graphic/visual communication design criteria and visual perception theory, considering the Gestalt perception principles and based on scientific and artistic design principles. In addition, how VAs contributing to scientific publications should be drawn and within the framework of which rules scientific data should be converted into VAs are given with design criteria. As a result of the study, the framework of Gestalt perception theories and design principles was determined, and the new guide was reached by combining it with the criteria of the publishing houses considered. In the study, the design of the new design proposal on three bases was found successful in terms of clarity and perception. "Grouping scientific data as theoretical design: the phase of organizing theoretical knowledge", "visual design: determining the data to be converted into visuals" and "social media design: the phase of preparing for social media" has been a very useful process for researchers who will work in this field.

Keywords: Visual abstract, scientific visualization, data visualization, visual abstract design method, Gestalt perception principles, graphic design criteria.

Introduction

It is known that vision is more prominent than all other sense organs in learning. Because vision accounts for 87% of the five human senses (Lee & Yoo, 2023). Therefore, a person without vision problems first perceives information through the sense of sight and then combines and processes the data with the perceptions of other sensory organs. While learning, when any scientific definition is made, the first thing the brain does is to visualize a picture about that subject. It combines some images it has seen before that are suitable for the definition and provides understanding. With this method, the information is converted into visuals. Improving learning and making it permanent is the creation of meaningful images by interconnected images in the mind. This is why well-drawn or designed images are remembered for a long time. It can be said that transforming information into visuals and creating a meaningful image is a healthy way of learning. This means that information needs to be made visible so that it can be learned faster, accessible, better discussed, and combined with other information (Eppler & Burkhard, 2007; Gürdal, 2024). Recently, a change has begun to occur in the understanding of perception under the name of "active vision". Active vision means that we should think of graphical or visual designs as cognitive tools that develop and expand our brain (Ware, 2008). It is seen that the brain, which gets used to this teaching, can transfer the images it imagines in its mind to paper in a much better way. As the brain develops and expands with this perspective, it changes its perspective on its environment and combines watching with learning, not with blank stares. This situation increases the visual memory in the mind, combines information with useful background knowledge, and expands the limits of creative ability in translating it into visuals. In other words, the patterns observed in the brain are collected as grouping transformations rather than a disorderly distributed majority. Since the brain is directed to think according to the model of good order, the variety of possible expressions is organized into concepts that are typical of any field (Arnheim, 2015).

In other words, in one of the first discoveries in Gestalt psychology, groups of stimuli organize themselves automatically in visual perception (Wertheimer, 1912; cited in Gordon, 2004). The process of converting the text read by the brain into visuals is called data visualization. Data visualization is directly proportional to the brain's ability to keep as many images in its mind as possible and to combine these images with the theoretical knowledge learned under the right conditions. Card et al. (1998) define information visualization as the use of visuals as a supportive element to enhance cognition. It is known that visualizations can help people understand data better and accelerate the comprehension process. While analyzing with the visual thinking method strengthens human memory, they can become external cognitive aids (Fekete et al., 2008). In addition, Norman (2014) says that visuals can greatly help task performance and productivity. In addition, the advantages provided by the ever-developing technology in visual drawing also help the information visualization stage. Pictograms, infographics, diagrams, charts, maps, visual instructions, and technical illustrations are primary tools that help visualize information in the mind. Scientists who realize the importance of information or data visualization often use these useful graphical images in their academic articles. By using comprehensive visualizations in both their case studies and numerical data, the authors have managed to increase the understandability of the article. Therefore, it is seen that many articles that use comprehensive visual designs are read and understood more than those that consist only of text. In this context, it can be seen that many academic publications today have started to publish their studies with the help of visuals.

Scientific publications have recently become articles that attract the attention of not only scientists but also ordinary people. Especially the growth of digital access opportunities has increased the speed of access to scientific publications. Since accessing information faster and easier than before means that there is a lot of similar information or publications, it has brought to the fore the idea of designing the most understandable ones. Scientists who wanted to increase the recognition of the article in question, especially on digital platforms, felt the need to use their data in visual designs, so they looked for methods to reach their followers in the shortest way. Therefore, the desire to access scientific publications has brought to the agenda the question of how we can deliver the articles written by scientists and academics to wider audiences. The only way for a scientific article to become widespread and increase its readability on social media is to design VAs of the article. These visuals, which are designed as a single piece with visual graphics and statistical findings and form the essence of the article, are easily read and shared by many social media readers. According to research, it is seen that in recent years, academic publishing houses have taken this rise into consideration and asked authors for VAs of scientific publications. There has been a rapid increase in the use of visual abstracts in academic publications since 2016. Visual abstracts have increasingly been used in academic articles to improve screening and to assist in article selection for inclusion in academic publications on social media. One of the most striking studies on this subject was conducted by Ibrahim et al. (2017), in which 44 academic publications were shared on social media (Twitter) with and without visual summaries. As a result, it was seen that articles shared using visual abstracts created a significant difference in terms of being seen and read on social media (Ibrahim et al., 2017). In a study conducted by Yoon and Chung (2017), it was seen that the use of visual abstracts in articles published in the field of social sciences increased by 350%

between 2011 and 2015. Sharing the VAs of a published publication on all possible social platforms will ensure that the scientific information in question is read more and disseminated, thus ensuring that the author(s) are recognized, and the data is known to a wider audience. Publisher, taking advantage of the fact that visual reading is easier and faster than text reading, have started to use this in almost all magazine writing rules. Therefore, the authors wrote their research considering that they would be able to transform the data and findings into visual images in their publications. In this case, visual drawings such as scientific visualization and scientific illustration, which exist with the existence of science, can be used together with data visualization to help academic publications.

This study provides information about the design methods and criteria of VAs which have become quite frequently used in academic articles. When the literature is scanned for the study, there are some existing design criteria tables, but it is seen that there are deficiencies in terms of visual communication design and graphic design criteria. In addition, since the VAs in question appeal to the readership and the main theme is the visual representation of the summary text in the article, they should also be considered and designed in terms of perception theories. In the studies conducted, it is seen that these basic elements are not included in the criteria. Therefore, the VAs design criteria in this study offer a new and up-to-date draft by considering all these basic requirements. Literature was also used for the design criteria created. Thus, a strengthened criteria table was created by feeding from both the publications published by scientists and the principles of design and perception.

Visual Abstract: Using Visualized Information as a Summary

Scientific visuals in scientific publications are a frequently used method of expression. VAs also provide visualization of academic data and findings. VAs are the summary of the cause-effect and findings of textual information written on pages with visual figures or graphical designs. In simpler terms, VAs are a visual presentation of all the information contained in the abstract section of an article. Its purpose: The aim is to see the main findings and conclusions from the VA with a single glance, without reading the abstract of the article (Ibrahim, 2018a; Ramos & Concepcion, 2020; Yoon & Chung, 2017). VAs are concise, visually engaging representations of research papers, scientific papers, or complex ideas. They aim to convey the key findings and concepts in the publications in a clear and accessible way. VAs often include graphic elements such as charts, diagrams, and images to enhance understanding. Thus, they ensure that the article becomes widespread on academic and social platforms. VAs have been present in the scientific world under different names since the existence of science. In the past, scientific illustration, central illustration, visual map, graphical table, infographics, etc. Similar visual tools were used with different names such as. Nowadays, they have turned into visual tools that are used more result-oriented than purpose-oriented. They are designs that closely resemble infographics. Like infographics, they are visual representations of information using a combination of graphs, icons, or illustrations with minimal text. VAs, also known as VAs, are like infographics, but the term specifically refers to concise VAs of the main findings of an article (Spicer & Coleman 2022).

Since academic publications convey their findings to their readers faster with the help of visuals, VAs have begun to replace academic abstracts. Images and graphics are very useful

in literature searches and finding keywords, especially in scientific publications. VAs abstracts are a preferred method in literature reviews because they visually simplify a lot of information and facilitate meaning. Looking at the research, the journal Nature Chemistry wrote in an article published in 2011 that VAs were used in a chemistry journal called Angewandte Chemie, published in Germany in 1976, and then again in scientific publications in 1077 and 1982. Recently, especially since 2011, VAs have begun to be used frequently in scientific articles. Journals have started to use VA titles on their home pages (Figure 1). It is now possible to access articles using keywords on social media or the internet.

Figure 1.

Visual Abstract Neurosurgery Publications (Salem et al., 2023)
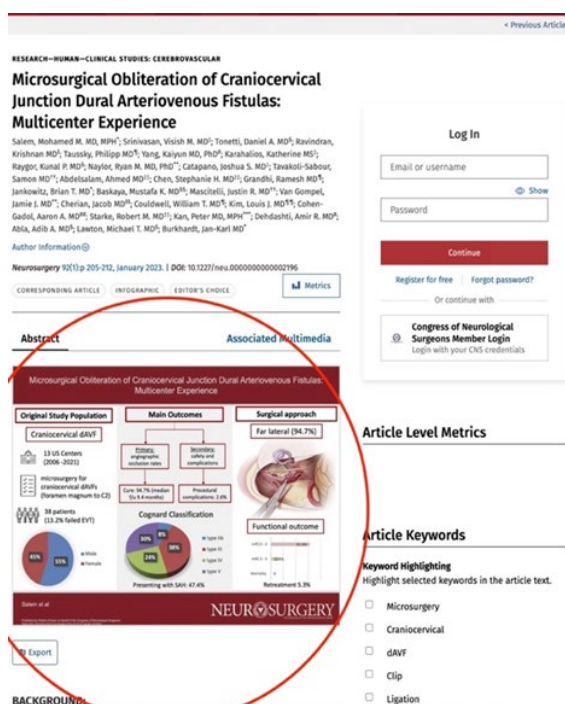
The Annals of Surgery editorial board found that articles shared as VAs on social media received nearly three times more visits than when shared as text titles alone. In addition, the publishing house said that the reader reads and perceives the VA faster than the text summary, thus saving the time of researchers looking for sources quickly. Many reputable journals use VAs as equivalent to article summaries (Ibrahim et al., 2017). Therefore, it is understood that VAs are a part of the publishing process that will be among the publishing criteria of many publishing houses. It is also now assumed to be a tool to replace posters. There is no comprehensive design method and method guide for VAs, which are new in the scientific world. Although many publishing houses try to create a guide for VAs by considering basic design principles, research shows that these guides are insufficient. Below are VAs used by some prestigious scientific publishing houses. Figure 2 includes a VAs published in the Annals of Surgery. Although it basically visualizes the data in the article summary, some design deficiencies stand out. The colors of the figures used are close to the background color, making perception difficult. It is appropriate to order the information in accordance with the summary text. The difference in proportion between the figures causes inconsistency in the perception of reality for the reader. In addition, since the images used differently and scattered are not

placed according to the grouping perception of the Gestalt theory, the eye trying to read each image one by one causes a waste of time.

The VA of the publication in the Journal of Hospital magazine designed by DocWithBotie in Figure 3 is also different from Figure 2 in terms of placement. Using a dark background in the design that includes the data in the publication summary will increase the possibility of causing problems for readers with vision difficulties. In addition, the small size of the figure drawing makes it difficult to understand. It is also recommended to include keywords in every VA. According to the Gestalt theory of perception, the understanding of the design is made quite difficult because the figure-ground relationship, front-back placement and perspective rules are ignored.

Figure 2.

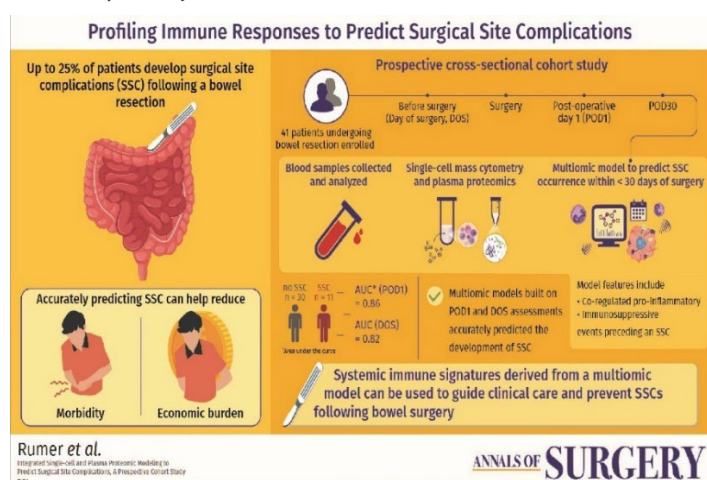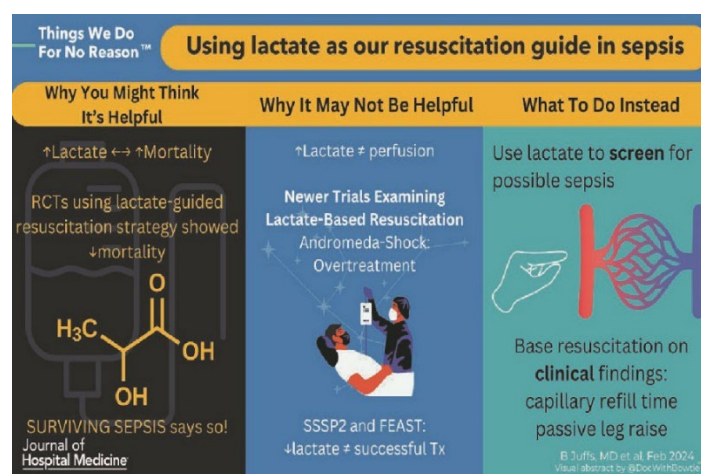*Visual Abstract (Rumer et al., 2022)*

Figure 3.

Visual Abstract (Juffs & Russo, 2023)

The VA in Figure 4 visualizes the data of the study titled "Incidence of ESKD Among Native Hawaiians and Pacific Islanders Living in the 50 US States and Pacific Island Territories". In the VA, it is seen that the images are insufficient. Basic data are shown with numbers and country flags, and scientific illustrations are not used for the publication content. The small size of the images used makes visual reading difficult. In addition, in a design where

a gradual-divided design approach is used, the texts and images are separate and scattered, making perception difficult.

Figure 4.

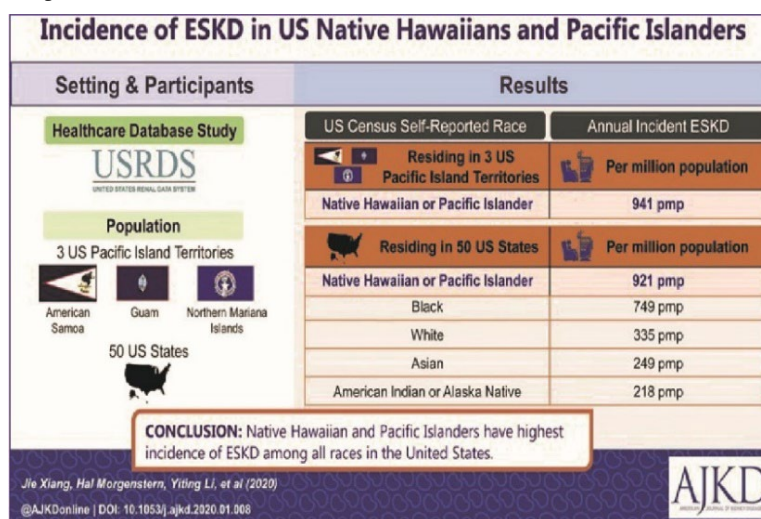*Visual Abstract (Xiang et al., 2020)*

Figure 5 is the VA of the study titled "CT-based deep learning model: a novel approach to the preoperative staging in patients with peritoneal metastasis". It is one of the designs that best fits the definition of VA design. The data are presented in three sections. The first part of the summary includes the key message and two illustrations that give preliminary information to the reader from whole to part. This allows the reader to have a quick idea about the subject. In the second part, a meaningful scientific illustration visualizes the main results under the title main result. In the third chapter, the method is written and supported by scientific illustration.

Figure 5.

Visual Abstract (Wang et al, 2023)
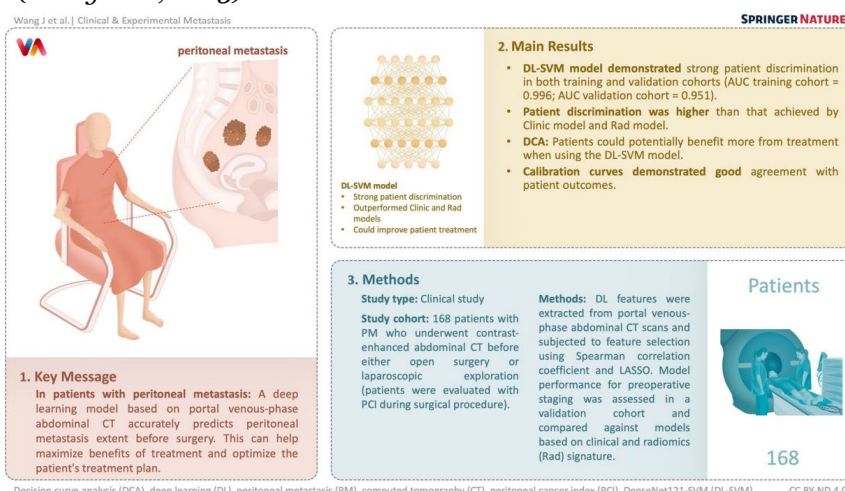
As can be seen from the examples, each VAs are different from the others. They do not offer integrity. Each publishing house has published its own design method on its website and requested it from its authors. In this study, the examples discussed were examined and a new and comprehensive criteria table was proposed by completing the deficiencies.

Rationale

As can be seen from the examples, there is no single standard for VAs that have started to be used for academic publications. However, just like the basic headings that articles must have, VAs must include design methods and criteria. Summarizing pages of textual information in a single image requires a lot of creativity and design skills. For this reason, VAs used for scientific publications must have design criteria. Today, especially in reputable journals, these guidelines are used although they may not show complete integrity. The design guidelines created assist journal editors. The five examples discussed are VAs published in high impact factor journals of different publishing houses. It is seen that each visual summary has its own design approach and does not provide consistency with other designs. The main reasons for this situation are that there is no commission unity for VAs design method and criteria guides. In addition, the existing guides lack basic design criteria for visual communication design and graphic design. This study, which is thought to contribute to the formation of a consistent common design guide for VAs, which are still new in the scientific world, has also been adapted from existing guides. Considering the missing design elements, it has been rearranged from a designer's perspective, adhering to the literature.

Some of the journal and publishing houses that create visual abstract design guides are as follows:

Ibrahim (2018b) created criteria for designing visual abstracts with his doctor colleagues, in his study titled "Use of a visual abstract to disseminate scientific research". Lee and Yoo (2023) presented design suggestions in his article "The current state of graphical abstracts and how to create good graphical abstracts".

Duke University School of Medicine (n.d.) has created a website called "Getting published: Visual & video abstracts" and outlined a roadmap for academics publishing academic material".

Elsevier (n.d.) created templates for its authors by opening a space called "Graphical abstract" on its corporate page and provided information about graphical abstract/visual abstract.

The publication titled "That table of contents image looks really interesting: *Click*!" published by Buriak (2023) also created a roadmap with the author.

However, each VAs are different from the others. They do not provide integrity. In addition, almost all scientists who created the criteria table are from the medical field and have worked very little with designers. This has brought up deficiencies in the context of some design and visual perception theories. These deficiencies include color, typography, balance, rhythm, space, ratio-proportion, visual hierarchy, emphasis, unity, integrity and continuity. In this study, a new design method and criteria table is presented based on the old ones in the existing VAs design criteria guides. The proposed criteria are presented in the context of graphic/visual communication design criteria and visual perception theory, considering Gestalt perception principles and based on scientific and artistic design foundations.
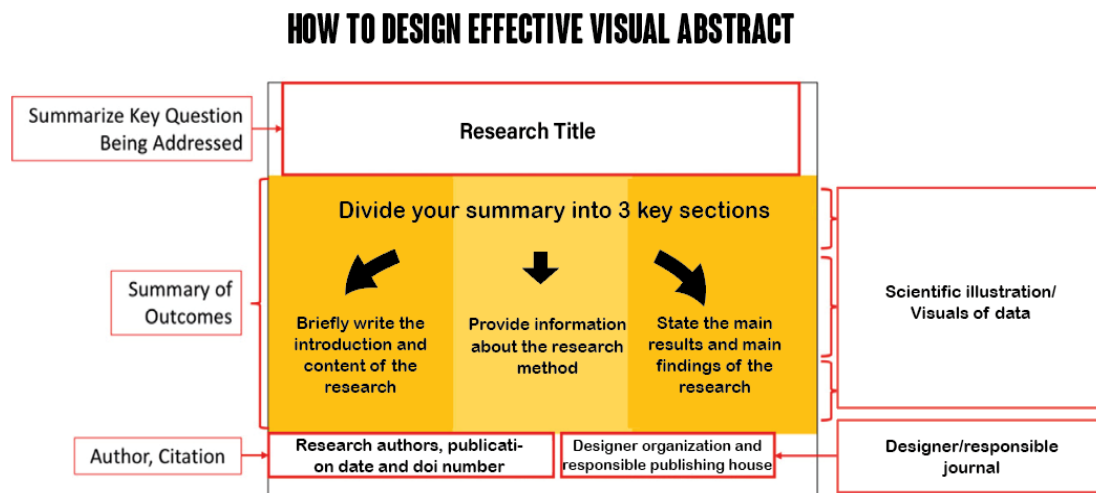
Visual Abstract Design Methods and Criteria

The study sought an answer to the question of what a VAs design method is created with the basis of design criteria and perception theories. A literature review was conducted for the study and a new proposal was presented by completing the deficiencies of the existing criteria. The new design method and criteria table proposal was presented in the context of graphic/visual communication design criteria and visual perception theory, based on scientific and artistic design principles, considering Gestalt perception principles.

VAs are visual representations of summary texts in scientific publications. Therefore, when VAs are being designed, the research in question must be completed and ready for printing (ready for sharing) by the researcher. When designing VAs, the designer should not make any changes to the summary text. Scientific problems and findings should not be left to the designer's interpretation. VAs are more simplified versions of central-scientific illustrations, and graphical abstracts are more detailed versions. Therefore, the aim of scientific illustration should not be deviated from the aim of faithfulness to science and reflecting reality. Visual information should be arranged, organized, and interconnected information should be coded with close visuals and colors. Linked data should be used closely and complex information should be simplified. Simple graphics should be used, and the main message or key findings of the content should be identified. According to the summary text, the order in which you can see the problem, method, findings and results in order of reading from left to right is followed. In this context, the VAs creation methods and criteria are as follows. (Figure 6)

Figure 6.

Graphical Abstract (Elseiver, n.d.)

Visual Abstract Design Method

It is recommended that designs be vector-based. The reason is that if the designed or drawn visual Criteria for designing effective VAs are line-based and are to be printed, the printing quality must be perfect. Among the professional design programs in question, Adobe Illustrator and Adobe Photoshop come first. If users use such design-based programs, they can also edit and share the extension on all kinds of social media platforms. Other basic graphical-

based programs that can be used are Power Point, Google Charts, Venngage, Visualize, Canva, Piktocharts, Snappa, Visme (West et al., 2020).

The criteria below are presented based on scientific and artistic design principles, considering the Gestalt principles of perception in the context of graphic/visual communication design criteria and visual perception theory. While creating the theoretical design title, information and data visualization literature sources were examined and a design-based proposal was presented (Katz, 2012). While creating the title visual design, many sources were used, especially Gordon's (2004) work "Theories of visual perception". Verstegen's (2005) "Arnheim, Gestalt and art: A psychological theory" is also among the basic sources. For data visualization, "Computational visualization: graphics, abstraction and interactivity" (Strothotte, 2012), and for graphic design basics, "Design elements: A graphic style manual" were used (Samara, 2007). The title of social media design was based on Ibrahim's (2018b) work titled "Use of a Visual Abstract to Disseminate Scientific Research"

Visual Abstract Design Criteria

VAs are visual representations of scientific data in academic publications. Therefore, making some literary and numerical data visible is a process that requires design intelligence. The reader needs to understand the results or findings in the article in question by just looking at the visuals. As with all visual communication design elements, considering design principles while designing VAs facilitates understanding. Below are the stages that the designer should consider from the theoretical stage to the sharing stage on social media.

Design criteria can be listed in three basic criteria (Figure 7).

1. Theoretical design: The stage of organizing theoretical knowledge

2. Visual design: Determining the data to be converted into visuals

3. Social media design: Preparation phase for social media

Figure 7.
Visual Abstract Design Methods and Criteria
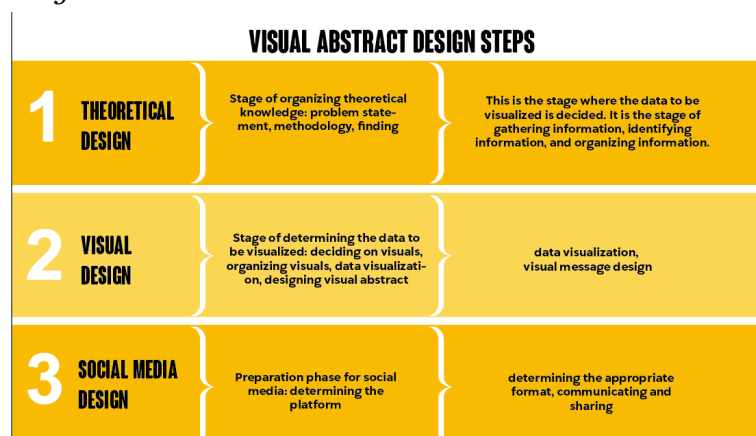
1. Theoretical Design: Organizing Theoretical Knowledge

It is the study carried out on the theoretical information that will form the essence of the article to be illustrated and will be represented. It is the process of collecting information, determining information, and organizing information. This stage deals with the preparation of

the summary written by the researcher for the visual editing stage. Editing of theoretical information is usually done at the request of the author of the article. The author determines the information or group of information he wants to highlight. Creating visual representations of scientific data or scientific concepts is about what and how we explain. The author's request and the designer's interpretation must coincide exactly. This is the stage where the decision is made about which data will be in which order and whether it will support the previous or the next one (Katz, 2012).

Since not all the information in a summary text can be included in VAs, the writer or designer must decide what will be included in the visuals. The importance and learning order, which we call the information hierarchy, will turn into a visual hierarchy during visualization. This situation aims to guide readers to the findings section of the study through visual images. Since visual designs always include a sequence that focuses the reader on the target, image and text integrity must be well thought out and designed. The problem statement, method, results and findings, which are the most important stages of the study in the summary text, are sequentially followed by the next stage of design to decide on their groups and visuals.

2. Visual Design: Determining the Data to be Converted into Visuals, Data Visualization, Designing A Visual Abstract

It is the design phase where visuals are determined according to the problem, purpose and findings in the textual summary, and the visual hierarchy is planned from the problem to the findings. In this part, the designer and researcher work integrated. Or the researcher who will make his own drawing should not deviate from the reality of the summary text. Research shows that VAs of science experienced from past to present should use simple, clear colors, textures, lines, light, shadows and fonts. The data to be converted into visuals must be determined in advance, as explained in the first article. Visual representations can explain the scientific concepts claimed in publications much better than terms and can even accelerate learning thanks to their memorability (Samara, 2007). Gestalt perception theories for visual design elements are as follows: figure-ground relationship, proximity, similarity, completion, continuity and simplicity principle (Gordon, 2004).

Data Visualization

Data visualization is the most important stage in VA design. Since it addresses the cognitive field, it deals with drawing the most accurate visual that will help the reader understand the defined cognitive data. First of all, while writing their publications for which a VAs will be drawn, authors should also imagine visual images that can represent their problems, methods and findings. Then, the most appropriate scientific images are selected and sorted according to the information hierarchy. According to the completed preparations, the most appropriate drawing technique should be selected for the visual to be represented. Represented concepts, graphs, icons, pictograms and illustration techniques are used to visualize the data under consideration. At this stage, we should focus on the center of information and choose infographics, which have been an important language of communication since the past, correctly and appropriately (Gürdal-Pamuklu, 2022). Visuals must be interesting, catchy and instructive. Data visualization is an element that requires attention both artistically and scientifically. Since the visualized data must be considered

according to the common understanding of readers from every nation and language, it is necessary to bring up the rules of cognitive perception when it comes to visualizing scientific data. Visual communication does not include speech or explanation. Images represent and reference the article. Therefore, the designer or researcher cannot convert random data into visuals. It should be designed considering its scientific and intellectual infrastructure (Strothotte, 2012).

In many studies; Card et al. (1998), Bertschi et al. (2011), Estrada and Davis (2015) expressed how important visuals are in understanding to strengthen cognition and suggested that some cognitive consequences be considered when visualizing. They viewed visualization as the most important stage of the learning process and stated that visualization not only strengthens reasoning but also provides signals for making effective decisions and other solutions (Bertschi et al., 2011). Experts state that the essence of the benefit provided by visualization is that a set of permanent data that references basic information and is stored in memory using human cognitive processes affects people throughout their lives.

Although people have become accustomed to digital, learning still takes place in the physical world (Bertschi et al., 2011). Therefore, he says that the data to be converted into visuals should be expressed with known and frequently encountered objects in the physical world. The cognitive and perceptual arguments that should be taken into consideration when visualizing data are the rules that should be considered to perceive the designed visual and to accelerate learning according to the readers' thinking. When designing VAs, considering cognitive and perceptual arguments contributes to creating effective VAs.

Using cognitive and perceptual bases in visual abstract:

Increasing memory and available processing resources,
Decreased search for information,
Fast recognition of patterns,
Activation of perceptual inference processes,
Tracking coding information and clues in a manipulable environment,
It will enable the use of perceptual attention mechanisms.

Designing Visual Abstract

In order for the designed visual to be perceived correctly and the message to be perceived quickly, it must be designed on a cognitive and perceptual basis. For this, it is useful to consider visual perception theories and Gestalt rules (Kerren et al., 2008; Verstegen, 2005).

Complying with these theories ensures that the designed summaries are perceived instantly and accurately.

1. During design, images drawn close to each other create groups in perception according to those that are farther away. This situation is called the proximity principle in visual perception. Images that are close to each other are perceptually grouped together.

2. When visualizing data, similar colors, textures, shapes and sizes are considered perceptually close to each other. The similarity principle is close to the tendency for similar images to be perceived as grouped together.

3. Similar images that repeat each other are continuous in the design. This causes images that have continuity in perception to be grouped in perception.

4. During drawings, images designed in a planned manner and forming symmetry with each other are grouped in perceptual alignment.

5. In the perception principle called closure, the drawing with a completed contour or a linear unity is perceived as a single image.

General image editing method:

Image size: Recommended to be at least 1328 x 531 pixels (wxh) using a minimum resolution of 300 dpi. If a larger image is to be submitted, the same ratio (500 width x 200 height) should be used.

Font: A sufficiently large font such as Times, Arial, Courier or Symbol can be used. The font size should be at least 8 and at most 12. Otherwise, the image will be scaled down to fit the table of contents in a 200 pixel high window.

File type: Preferred file types are TIFF, EPS, PDF or MS Office files.

Additional text: No outline or abstract should be included. Any text or labels should be part of the image file.

If all authors, journal and publication year are not listed, add "First Author et al."

Include a link to the article, for example a DOI.

Must be readable from top to bottom or left to right (Elseiver, n.d.; Duke University, n.d.).

It is an important step to decide which drawing technique will be used to draw the decided data. In designs where digital drawing methods are generally used, images should be drawn simply, simply and clearly, without requiring excessive detail. Scientific illustration drawing rules also apply to image drawings in VAs. The designer or illustrator must make drawings in color and texture that match the original of the representation in question, without deviating from scientific truth. Since VAs consist of graphical images that serve the result, photorealistic drawings are not made as much as central illustrations. An infographic or pictogram can replace detailed illustrations. Since the VA is images designed to read, understand and share the scientific publications in all kinds of digital environments, the design elements used during the design are very important.

Below are the graphical basics that should be taken into consideration when drawing images.

1. Establishing a visual information hierarchy, establishing an order of importance among visuals, provided that they do not deviate from the summary text,

2. Arranging images in a logical and easy-to-follow order,

3. Creating meaningful concept visualizations and avoiding visuals that have connotative meanings,

4. Using international and common graphics,

5. More text should not be used unless necessary. Fonts used in drawings should be chosen in legible characters and sizes whenever possible, and excessive serifed or handwritten fonts should be avoided,

6. Using true-to-life colors, drawing in CMYK color codes if it will be printed, and RBG color codes if it will be used digitally,

7. Using light tones as the background color and avoiding colors close to each other that will create confusion and cause vision problems. Assuming that the designed VAs can also be read by visually impaired readers, international color harmony should be observed,

a) Avoiding mixed textures and shading,

b) Using simple, clear and few lines,

c) It is recommended to pay attention to the space ratios and to draw realistically the size, smallness, distance and closeness between the images (Samara, 2007).

3. Social Media Design: Adaptation to Social Media Platform

With the spread of social media, scientific articles are followed with interest by many people who are interested in that field. The widespread and accelerated access to information has brought people closer to social media. In this context, it is seen that scientific publications are becoming more widespread on social media shared online should be taken into consideration. In addition, keywords should be entered according to the status of social media and making the readership more diverse. Therefore, it has been brought to the agenda to adapt the VAs designed based on this need to social media platforms. First of all, during the data visualization and VAs creation stages, the designer must design the size and colors of the images used to be suitable for use in digital environments. For this, the first step is to select social media platforms where VAs will be shared. Then, the design is made according to the digital screen dimensions (pixel ratio) to be shared. Like desktop computers, smartphones or tablets. Care should be taken to ensure that the color code of colored VAs to be shared in digital environments is RGB. The platform rules and system of VAs to be and the VA should be found quickly in search engines (Ibrahim, 2018b).

Method

This study, which focuses on the design of VAs used in scientific publications, has a review design. Review articles organize studies conducted on a specific topic or field within the framework of the author's research approach. The study was considered as a systematic review study among the review methods. Since certain methods are considered in systematic reviews, it is a very useful method especially in scientific results (Çınar, 2021). The aim of reviews studies is to summarize the approaches and ideas of other researchers on the research topic at hand and to create a synthesis (Herdman, 2006; Khan et al., 2003). Review articles are not just collecting all the information. They should be organized according to the main ideas, not just as a list of sources. For this reason, it can be said that instead of listing and detailing each source separately, the main themes and topics that unite these sources should be presented (Karasar, 2009; Uman, 2011). In the study, five existing publishing house and journal VAs design guides were examined. A new VAs design guide was proposed by revealing their deficiencies. The criteria proposed in the study were considered in the principles of Gestalt perception and based on the foundations of scientific and artistic design. It is presented in the

context of communication design criteria and visual perception theory. In addition, how VAs that contribute to scientific publications should be drawn and within which rules scientific data should be converted into VAs are given with design criteria. It has been determined that many researchers conducting academic studies need VAs to increase the accessibility of their publications on digital platforms.

Ethical Permits of Research:

In this study, all the rules specified to be followed within the scope of "Higher Education Institutions Scientific Research and Publication Ethics Directive" were complied with. None of the actions specified under the heading "Actions Contrary to Scientific Research and Publication Ethics", which is the second part of the directive, have been taken.

Ethics Committee Permission Information:

Since the research is conducted with open access documents, ethics committee approval is not required.

Discussion and Conclusion

In this study, which aims to evaluate VAs within the framework of Gestalt perception theories and design principles determined based on literature, VAs was evaluated within the framework of different variables of perception theories. In this context, the framework of Gestalt perception theories and design principles was determined, and the new guide was reached by combining it with the criteria of the publishing houses considered.

It was deemed appropriate to divide the new design proposal in the study into three basics and grouped as Theoretical design: The stage of organizing theoretical knowledge, Visual design: Determining the data to be converted into visuals and social media design: Preparation phase for social media. Each title was written based on literature and its content. It was taken into consideration that the visual summary design would affect the whole based on Gestalt perception theories. The proximity principle was taken into consideration in the design process within the framework of perception theory, and the characteristics of the reader audience were also taken into consideration. The similarity principle was taken into consideration by recommending its use throughout the design. The principle of continuity in perception was taken into consideration in order to enable the reader to follow the ongoing information. During the drawings, images that are designed in a planned manner and create symmetry with each other are grouped in perceptual alignment. This important theory of perception is taken into consideration throughout the VAs design. The basic design principles of figure-ground relationship, proximity, similarity, completion, continuity and simplicity were taken into consideration for the entire comprehensive use of the design.

As a result of the study, five literature sources were examined, and their deficiencies were completed, and a new proposal was created. Ibrahim (2018b), in his study titled "Use of a visual abstract to disseminate scientific research", established criteria for designing VAs with his team of physician colleagues. Lee and Yoo (2023) presented design suggestions in his article "The current state of graphical abstracts and how to create good graphical abstracts". Duke University School of Medicine has created a website called "Getting published: Visual & video abstracts" and outlined a roadmap for academics publishing academic material. Elsevier

created templates for its authors by opening a space called "Graphical abstract" on its corporate page and provided information about graphic al abstract/visual abstract. The publication titled "That table of contents image looks really interesting: *Click*!" published by Buriak (2023) also created a roadmap with the author. As a result, the new design method and criteria table proposal was presented in the context of graphic/visual communication design criteria and visual perception theory, based on scientific and artistic design principles, considering Gestalt perception principles.

As a result, we know that summaries designed according to these criteria increase the reading of the publication and ensure its dissemination. A well-designed visual design can keep a person's viewing time for many seconds. Just like we want to stand in front of a work of art in museums for hours and watch every detail of the work. Well-designed VAs like this attracts the reader's attention and help them read the article. In the light of all this information, it is anticipated that all scientific visuals designed by considering the VAs design methods and criteria in the study will attract the attention of readers and researchers. Since the methods given were created as a result of long research and experience, with the fact that visuals enable communication without speaking, academic researchers will be able to have their publications read from all over the world, regardless of the language they speak.

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BIOGRAPHICAL NOTES

Contribution Rate of Researchers

Author 1: 100%

Conflict Statement

There is no conflict of interest that the authors will declare in the research.

Bilimsel Yayınlarda Kullanılan Görsel Özetlerin Tasarlanması

Özet

Görsel özetler (GÖ), akademik yayınların okunma oranının artmasında ve yaygınlaşmasında önemli rol oynayan görselleştirilmiş özet bilgilerdir. Bilimsel yayınlarda kullanılan GÖ'lerin tasarlanmasına odaklanan bu çalışma, derleme tasarımına sahiptir. Çalışmada var olan beş adet yayınevi ve derginin görsel özet tasarlama kılavuzu ele alınmıştır. Çalışmada önerilen kriterler, Gestalt algı ilkelerini dikkate alarak ve bilimsel ve sanatsal tasarım temellerine dayanarak grafik/görsel iletişim tasarımı kriterleri ve görsel algı teorisi bağlamında sunulmaktadır. Ayrıca bilimsel yayınlara katkı sağlayan görsel özetlerin nasıl çizilmesi gerektiği, bilimsel verilerin hangi kurallar çerçevesinde görsel özete dönüştürülmesi gerektiği tasarım kriterleri ile verilmiştir. Çalışma sonucunda Gestalt algı kuramları ve tasarım ilkelerinin çerçevesi belirlenmiş ve ele alınan yayınevlerinin kriterleri ile birleştirilerek yeni kılavuza ulaşılmıştır. Çalışmada yeni tasarım önerisinin üç temelde tasarlanması açıklık ve algı açısından başarılı bulunmuştur. "Bilimsel verilerin teorik tasarımı: teorik bilginin organize edilmesi aşaması", "Görsel tasarım: görsele dönüştürülecek verilerin belirlenmesi" ve "sosyal medya tasarımı: sosyal medyaya hazırlık aşaması" olarak gruplandırılması bu alanda çalışma yapacak araştırmacılar için oldukça kullanışlı bir süreç olmuştur.

Anahtar Kelimeler: Görsel özet, bilimsel görsel, veri görselleştirme, görsel özet tasarlama metodu, Gestalt algı ilkeleri, grafik tasarım ilkeleri.

Giriş

Görmenin öğrenmede diğer tüm duyu organlarından daha ön planda olduğu bilinmektedir. Çünkü görmenin öğrenme sürecindeki rolü %87'dir. (Lee & Yoo, 2023). Bu nedenle görme sorunu olmayan bir kişi önce görme duyusu ile bilgiyi algılar ve daha sonra bu veriyi diğer duyu organlarının algılarıyla birleştirerek işler. Öğrenme sırasında herhangi bir bilimsel tanımlama yapıldığında beynin ilk yaptığı şey o konu hakkında bir resim canlandırmaktır. Tanıma uygun daha önce gördüğü bazı resimleri birleştirerek anlamayı sağlar. Bu yöntemle bilgiler görsellere dönüştürülür. Öğrenmenin geliştirilmesi ve kalıcı hale getirilmesi, zihinde birbirine bağlı resimlerle anlamlı resimler oluşturulmasıdır. Bu yüzden iyi çizilmiş veya tasarlanmış resimler uzun süre akılda kalır. Bilginin görsellere dönüştürülerek anlamlı bir resim oluşturulmasının sağlıklı bir öğrenme yolu olduğu söylenebilir. Bu, bilginin daha hızlı öğrenilebilmesi, erişilebilir olması, daha iyi tartışılabilmesi ve diğer bilgilerle birleştirilebilmesi için görünür hale getirilmesi gerektiği anlamına gelir (Eppler & Burkhard, 2007; Gürdal, 2024). Son zamanlarda algı anlayışında "etkin görme" adı altında bir değişiklik yaşanmaya başlanmıştır. Etkin görme, grafiksel veya görsel tasarımları beynimizi geliştiren ve genişleten bilişsel araçlar olarak düşünmemiz gerektiği anlamına gelir (Ware, 2008). Bu öğretiye alışan beynin, zihninde canlandırdığı imgeleri çok daha iyi bir şekilde kâğıda aktarabildiği görülmektedir. Beyin bu bakış açısıyla gelişip genişledikçe, çevresine ilişkin bakış açısını değiştirmekte ve boş bakışlarla değil, izlemeyle öğrenmeyi birleştirmektedir. Bu durum,

zihindeki görsel hafızayı artırmakta, bilgiyi yararlı arka plan bilgisiyle birleştirmekte ve onu görsellere dönüştürmede yaratıcı yeteneğin sınırlarını genişletmektedir. Başka bir deyişle, beyinde gözlemlenen örüntüler, düzensiz dağılmış bir çoğunluk yerine, gruplama dönüşümleri olarak toplanmaktadır. Beyin iyi düzen modeline göre düşünmeye yönlendirildiğinden, olası ifadelerin çeşitliliği herhangi bir alana özgü kavramlar halinde düzenlenir (Arnheim, 2015). Başka bir deyişle, Gestalt psikolojisindeki erken keşiflerinden birinde uyaran grupları görsel algıda kendilerini otomatik olarak organize etmektedir (Wertheimer, 1912; akt. Gordon, 2004). Beyin tarafından okunan metnin görsellere dönüştürülmesi sürecine veri görselleştirme denir. Veri görselleştirme, beynin zihninde mümkün olduğunca çok sayıda görüntüyü tutma ve bu görüntüleri doğru koşullar altında öğrenilen teorik bilgiyle birleştirme yeteneğiyle doğru orantılıdır. Card vd. (1998) bilgi görselleştirmeyi, bilişi geliştirmek için destekleyici bir unsur olarak görsellerin kullanılması olarak tanımlar. Görselleştirmelerin insanların verileri daha iyi anlamalarına ve kavrama sürecini hızlandırmalarına yardımcı olabildiği bilinmektedir. Görsel düşünme yöntemi ile analiz yapmak insan hafızasını güçlendirirken harici bilişsel yardımcılar haline gelebilir (Fekete vd., 2008). Ayrıca Norman (2014), görsellerin görev performansına ve üretkenliğe büyük ölçüde yardımcı olabileceğini söylemektedir. Ayrıca görsel çizimde sürekli gelişen teknolojinin sağladığı avantajlar, bilgi görselleştirme aşamasına da yardımcı olmaktadır. Piktogramlar, infografikler, diyagramlar, çizelgeler, haritalar, görsel talimatlar ve teknik çizimler, bilgiyi zihinde görselleştirmeye yardımcı olan birincil araçlardır. Bilgi veya veri görselleştirmenin önemini fark eden bilim insanları, akademik makalelerinde sıklıkla bu yararlı grafiksel görüntüleri kullanırlar. Yazarlar hem vaka çalışmalarında hem de sayısal verilerde kapsamlı görselleştirmeler kullanarak makalenin anlaşılırlığını artırmayı başarmışlardır. Bu nedenle, kapsamlı görsel tasarımlar kullanan birçok makalenin, yalnızca metinden oluşan makalelere göre daha fazla okunduğu ve anlaşıldığı görülmektedir. Bu bağlamda, günümüzde birçok akademik çalışmanın görseller yardımıyla yayımlanmaya başladığı görülebilir.

Bilimsel yayınlar son zamanlarda sadece bilim insanlarının değil sıradan insanların da ilgisini çeken makaleler haline geldi. Özellikle dijital erişim olanaklarının artması bilimsel yayınlara erişim hızını artırdı. Bilgiye eskisinden daha hızlı ve kolay erişim, çok sayıda benzer bilgi veya yayın olması anlamına geldiğinden, en anlaşılır olanları tasarlama fikrini ön plana çıkardı. Özellikle dijital platformlarda söz konusu makalenin tanınırlığını artırmak isteyen bilim insanları, verilerini görsel tasarımlarda kullanma ihtiyacı hissettiler, bu nedenle takipçilerine en kısa yoldan ulaşmanın yollarını aradılar. Dolayısıyla bilimsel yayınlara erişim isteği, bilim insanları ve akademisyenler tarafından yazılan makaleleri daha geniş kitlelere nasıl ulaştırabiliriz sorusunu gündeme getirdi. Bilimsel bir makalenin yaygınlaşmasının ve sosyal medyada okunabilirliğinin artmasının tek yolu makalenin görsel özetlerini (GÖ) tasarlamaktır. Görsel grafikler ve istatistiksel bulgularla tek parça olarak tasarlanan ve makalenin özünü oluşturan bu görseller, birçok sosyal medya okuyucusu tarafından kolayca okunup paylaşılmaktadır. Yapılan araştırmalara göre son yıllarda akademik yayınevlerinin bu artışı dikkate alarak yazarlardan bilimsel yayınların görsel özetlerini istedikleri görülmektedir. 2016 yılından itibaren akademik yayınlarda görsel özetlerin kullanımında hızlı bir artış görülmektedir. Sosyal medyada akademik yayınlara dahil edilmek üzere taramayı iyileştirmek ve makale seçimine yardımcı olmak amacıyla görsel özetler akademik makalelerde giderek

daha fazla kullanılmaktadır. Bu konuda en dikkat çeken çalışmalardan biri Ibrahim vd. (2017) tarafından yapılmış, çalışmada 44 adet akademik yayın görsel özetli ve görsel özetsiz olarak sosyal medyada (Twitter) paylaşılmıştır. Sonuç olarak görsel özet kullanılarak paylaşılan makalelerin sosyal medyada görülme ve okunma açısından anlamlı bir fark yarattığı görülmüştür Yoon ve Chung (2017) tarafından yapılan bir çalışmada, sosyal bilimler alanında yayımlanan makalelerde görsel özet kullanımının 2011-2015 yılları arasında %350 oranında arttığı görülmüştür. Yayımlanmış bir yayının görsel özetlerinin mümkün olan tüm sosyal platformlarda paylaşılması, söz konusu bilimsel bilginin daha fazla okunmasını ve yayılmasını sağlayacak, dolayısıyla yazar(lar)ın tanınmasını ve verilerin daha geniş kitlelerce bilinmesini sağlayacaktır. Görsel okumanın metin okumaya göre daha kolay ve hızlı olmasından yararlanan yayıncılar, bunu hemen hemen tüm dergi yazım kurallarında kullanmaya başlamıştır. Bu nedenle yazarlar, yayınlarında verileri ve bulguları görsel imgelere dönüştürebileceklerini düşünerek araştırmalarını yazmışlardır. Bu durumda bilimin varlığıyla birlikte var olan bilimsel görselleştirme, bilimsel resimleme gibi görsel çizimler, akademik yayınlara yardımcı olmak için veri görselleştirmeyle birlikte kullanılabilir.

Bu çalışmada akademik makalelerde oldukça sık kullanılmaya başlanan GÖ tasarım yöntemleri ve kriterleri hakkında bilgi verilmektedir. Çalışma için literatür tarandığında mevcut bazı tasarım kriter tabloları bulunmaktadır ancak görsel iletişim tasarımı ve grafik tasarım kriterleri açısından eksiklikler olduğu görülmektedir. Ayrıca söz konusu GÖ'ler okuyucu kitlesine hitap ettiği ve ana temanın makaledeki özet metnin görsel temsili olduğu için algı teorileri açısından da ele alınmalı ve tasarlanmalıdır. Yapılan literatür taramalarında yer alan kılavuzlarda bu temel unsurların yer almadığı görülmektedir. Dolayısıyla bu çalışmadaki GÖ tasarım kriterleri tüm bu temel gereklilikleri göz önünde bulundurarak yeni ve güncel bir taslak sunmaktadır. Oluşturulan tasarım kriterleri için literatürden de yararlanılmıştır. Böylece hem bilim insanlarının yayımladığı yayınlardan hem de tasarım ve algı ilkelerinden beslenerek güçlendirilmiş bir kriter tablosu oluşturulmuştur.

Örneklerden de görülebileceği üzere akademik yayınlarda kullanılmaya başlanan GÖ'ler için tek bir standart bulunmamaktadır. Ancak makalelerin sahip olması gereken temel başlıklar gibi, GÖ'ler de tasarım yöntemleri ve kriterlerini içermelidir. Metinsel bilgi sayfalarını tek bir görselde özetlemek çok fazla yaratıcılık ve tasarım becerisi gerektirir. Bu nedenle bilimsel yayınlar için kullanılan GÖ'lerin tasarım kriterlerine sahip olması gerekir. Günümüzde özellikle saygın dergilerde bu kılavuzlar tam bir bütünlük göstermeseler de kullanılmaktadır. Oluşturulan tasarım kılavuzları dergi editörlerine yardımcı olmaktadır. Ele alınan beş örnek, farklı yayın evlerinin yüksek etki faktörlü dergilerinde yayımlanmış GÖ'lerdir. Her GÖ'nin kendine özgü bir tasarım yaklaşımı olduğu ve diğer tasarımlarla tutarlılık sağlamadığı görülmektedir. Bu durumun başlıca nedenleri, GÖ tasarım yöntemi ve kriter kılavuzları için komisyon birliği olmamasıdır. Ayrıca mevcut kılavuzlarda görsel iletişim tasarımı ve grafik tasarım için temel tasarım kriterleri eksiktir. Bilim dünyasında henüz yeni olan GÖ'ler için tutarlı bir ortak tasarım kılavuzunun oluşumuna katkıda bulunacağı düşünülen bu çalışma da mevcut kılavuzlardan uyarlanmıştır. Eksik tasarım öğeleri göz önünde bulundurularak ve literatüre bağlı kalınarak bir tasarımcının bakış açısından yeniden düzenlenmiştir.

Görsel soyut tasarım kılavuzları oluşturan dergi ve yayınevlerinden bazıları şunlardır:

Ibrahim (2018b), "Use of a visual abstract to disseminate scientific research" başlıklı çalışmasında doktor meslektaşlarıyla birlikte görsel özetleri tasarlamak için kriterler oluşturmuştur.

Lee ve Yoo (2023), "The current state of graphical abstracts and how to create good graphical abstracts?" başlıklı makalelerinde tasarım önerileri sunmuşlardır.

Duke Üniversitesi Tıp Fakültesi (t.y.), "Getting published: Visual & video abstracts" adlı bir web sitesi oluşturmuş ve akademik materyal yayımlayan akademisyenler için bir yol haritası çizmiştir.

Elsevier (t.y.), kurumsal sayfasında "Graphical abstract" adlı bir alan açarak yazarları için şablonlar oluşturmuş ve grafiksel özet/görsel özet hakkında bilgi vermiştir.

Buriak (2023) tarafından yayımlanan "That table of contents image looks really interesting: *Click*!" başlıklı yayında yazarlara bir yol haritası oluşturulmuştur.

Ancak her GÖ diğerlerinden farklıdır. Bütünlük sağlamaktadır. Ayrıca, kriter tablosunu oluşturan bilim insanlarının neredeyse tamamı tıp alanındandır ve tasarımcılarla çok az çalışmışlardır. Bu, bazı tasarım ve görsel algı teorileri bağlamında eksiklikler ortaya çıkarmıştır. Bu eksiklikler arasında renk, tipografi, denge, ritim, alan, oran-orantı, görsel hiyerarşi, vurgu, birlik, bütünlük ve süreklilik yer almaktadır. Bu çalışmada, mevcut GÖ tasarım kriteri kılavuzlarındaki eski kriterlere dayalı yeni bir tasarım yöntemi ve kriter tablosu sunulmaktadır. Önerilen kriterler, Gestalt algı prensipleri göz önünde bulundurularak ve bilimsel ve sanatsal tasarım temellerine dayanarak grafik/görsel iletişim tasarımı kriterleri ve görsel algı teorisi bağlamında sunulmaktadır.

Yöntem

Bilimsel yayınlarda kullanılan GÖ'lerin tasarımına odaklanan bu çalışma, bir derleme tasarımına sahiptir. Derleme makaleleri, yazarın araştırma yaklaşımı çerçevesinde belirli bir konu veya alanda yürütülen çalışmaları düzenler. Çalışma, derleme yöntemleri arasında sistematik bir derleme çalışması olarak sürdürüldü. Sistematik derlemelerde belirli yöntemler dikkate alındığından özellikle bilimsel sonuçlarda oldukça kullanışlı bir yöntemdir (Çınar, 2021). Derleme çalışmalarının amacı, ele alınan araştırma konusu hakkındaki diğer araştırmacıların yaklaşımlarını ve fikirlerini özetlemek ve bir sentez oluşturmaktır (Herdman, 2006; Khan vd., 2003). Derleme makaleleri sadece tüm bilgileri toplamak, bir kaynak listesi olarak değil ana fikirlere göre düzenlenmelidir. Bu nedenle her bir kaynağı ayrı ayrı listelemek ve detaylandırmak yerine, bu kaynakları birleştiren ana temaların ve konuların sunulması gerektiği söylenebilir (Karasar, 2009; Uman, 2011). Çalışmada mevcut beş yayınevi ve derginin GÖ tasarım kılavuzları incelenmiştir. Eksiklikleri ortaya konularak yeni bir GÖ tasarım kılavuzu önerilmiştir. Çalışmada önerilen ölçütler Gestalt algısı ile bilimsel ve sanatsal tasarım temellerine dayanmaktadır. İletişim tasarımı kriterleri ve görsel algı teorisi bağlamında sunulmaktadır. Ayrıca, bilimsel yayınlara katkıda bulunan GÖ'lerin nasıl çizilmesi gerektiği ve bilimsel verilerin hangi kurallar çerçevesinde GÖ'lere dönüştürülmesi gerektiği tasarım kriterleri ile verilmektedir. Akademik çalışma yürüten birçok araştırmacının, yayınlarının

dijital platformlarda erişilebilirliğini artırmak için GÖ'lere ihtiyaç duyduğu belirlendiğinden çalışmanın bu ihtiyaca karşılık geleceği ön görülmektedir.

Araştırmanın Etik İzinleri:

Bu çalışmada "Yükseköğretim Kurumları Bilimsel Araştırma ve Yayın Etiği Yönergesi" kapsamında uyulması gerektiği belirtilen tüm kurallara uyulmuştur. Yönergenin ikinci bölümü olan "Bilimsel Araştırma ve Yayın Etiğine Aykırı Eylemler" başlığı altında belirtilen eylemlerin hiçbiri gerçekleştirilmemiştir.

Etik Kurul İzin Bilgileri:

Araştırma açık erişimli dokümanlarla yürütüldüğünden etik kurul onayı gerekmemektedir.

Tartışma ve Sonuç

Literatüre dayalı olarak belirlenen Gestalt algı kuramları ve tasarım ilkeleri çerçevesinde GÖ'leri değerlendirmeyi amaçlayan bu çalışmada GÖ'ler algı kuramlarının farklı değişkenleri çerçevesinde değerlendirilmiştir. Bu bağlamda Gestalt algı kuramları ve tasarım ilkelerinin çerçevesi belirlenmiş ve ele alınan yayınevlerinin kriterleri ile birleştirilerek yeni kılavuza ulaşılmıştır.

Çalışmada yeni tasarım önerisinin üç temelde bölünmesi ve gruplandırılması (Teorik tasarım: Teorik bilginin organize edilmesi aşaması, Görsel tasarım: Görsele dönüştürülecek verilerin belirlenmesi ve Sosyal medya tasarımı: Sosyal medyaya hazırlık aşaması) uygun görülmüştür. Her başlık literatüre ve içeriğine dayalı olarak yazılmıştır. Gestalt algı kuramlarına dayalı görsel özet tasarımının bütünü etkileyeceği dikkate alınmıştır. Algı kuramı çerçevesinde tasarım sürecinde yakınlık ilkesi dikkate alınmış ve okuyucu kitlesinin özellikleri de göz önünde bulundurulmuştur. Tasarım boyunca kullanımı önerilerek benzerlik ilkesi dikkate alınmıştır. Okuyucunun devam eden bilgiyi takip edebilmesi için algıda süreklilik ilkesi dikkate alınmıştır. Çizimler sırasında, planlı bir şekilde tasarlanmış ve birbirleriyle simetri oluşturan görüntüler algısal hizalamada gruplandırılır. Bu önemli algı teorisi, GÖ tasarımı boyunca dikkate alınır. Tasarımın tüm kapsamlı kullanımı için figür-zemin ilişkisi, yakınlık, benzerlik, tamamlama, süreklilik ve sadelik temel tasarım ilkeleri göz öznünde bulundurulur.

Çalışma sonucunda beş literatür kaynağı incelendi ve eksiklikleri tamamlanarak yeni bir öneri oluşturuldu. Ibrahim (2018b), "Use of a visual abstract to disseminate scientific research" başlıklı çalışmasında, doktor takım arkadaşlarıyla birlikte GÖ tasarlamak için kriterler oluşturdu. Lee ve Yoo (2023), "The current state of graphical abstracts and how to create good graphical abstracts?" adlı makalelerinde tasarım önerileri sundular. Duke Üniversitesi Tıp Fakültesi (t.y.), "Getting published: Visual & video abstracts" adlı bir web sitesi oluşturdu ve akademik materyal yayımlayan akademisyenler için bir yol haritası çizdi. Elsevier (t.y.), kurumsal sayfasında "Graphical abstract" adlı bir alan açarak yazarları için şablonlar oluşturdu ve grafiksel özet/görsel özet hakkında bilgi verdi. Buriak (2023) tarafından yayımlanan "That table of contents image looks really interesting: *Click*!" başlıklı yayın da yazarla bir yol haritası oluşturdu. Sonuç olarak, Gestalt algı ilkelerini göz önünde bulundurarak, bilimsel ve sanatsal tasarım ilkelerine dayalı, grafik/görsel iletişim tasarımı

tasarım kriterleri ve görsel algı teorisi bağlamında yeni tasarım yöntemi ve kriter tablosu önerisi sunuldu.

Sonuç olarak, bu kriterlere göre tasarlanan özetlerin yayının okunmasını artırdığı ve yayılmasını sağladığı görülmektedir. İyi tasarlanmış bir görsel tasarım, bir kişinin görüntüleme süresini saniyelerce koruyabilir. Tıpkı müzelerde bir sanat eserinin önünde saatlerce durup eserin her ayrıntısının izlenmek istenmesi gibi. Bu tür iyi tasarlanmış GÖ'ler okuyucunun dikkatini çeker ve makaleyi okumasına yardımcı olur. Tüm bu bilgiler ışığında, çalışmada GÖ tasarım yöntemleri ve kriterleri dikkate alınarak tasarlanan tüm bilimsel görsellerin okuyucuların ve araştırmacıların dikkatini çekeceği öngörülmektedir. Verilen yöntemler uzun araştırmalar ve deneyimler sonucunda oluşturulduğundan, görsellerin konuşmadan iletişimi mümkün kılması sayesinde, akademik araştırmacılar konuştukları dil ne olursa olsun yayınlarının dünyanın her yerinden okunmasını sağlayabileceklerdir.