ENAD ONLINE

Journal of Qualitative Research in Education
Eğitimde Nitel Araştırmalar Dergisi

Perspectives of Science and Art Center (BİLSEM) Teachers and Students on Distance Education: The Example of İzmir Province*

Fatma Törün** Aylin Mentiş Köksoy***

To cite this article:

Törün, F., Mentiş Köksoy, A. (2023). Perspectives of Science and Art Center (BİLSEM) Teachers and Students on Distance Education: The Example of İzmir Province. *Journal of Qualitative Research in Education*, 35, 302-345. doi: 10.14689/enad.35.1743

Abstract: The aim of this study is to reveal the perspectives of teachers working in Science and Art Centers (BİLSEM) and elementary-level students attending these schools in İzmir province regarding distance education. The research, which utilized the qualitative research method of phenomenology, was conducted in five Science and Art Centers located in İzmir during the second semester of the 2020-2021 academic year. Thirteen teachers and 35 elementary school students working in these centers participated in the study, which took place in April and May. The data was collected through structured interviews with the teachers and semi-structured and structured interviews with the students, using open-ended questions developed by the researcher. The data was analyzed using a descriptive approach. The findings of the study indicate that teachers employed various online communication tools and different methods and techniques in distance education. It was observed that no quantitative evaluation was conducted in BİLSEM; however, teachers resorted to various methods for tracking what was taught. Based on the findings from the teachers, it was concluded that university education, postgraduate education, and similar factors contributed to gaining technological competence. Although the students had positive feelings toward distance education, it was found that they still preferred face-to-face education.

Keywords: Science and Art Center, qualitative research, distance education.

About the Article

Received: 20 April 2022

Revised: 1 April 2023

Accepted: 17 May 2023

Article Type

Research

* This study was prepared from the master's thesis of the first author, of which the second author was the advisor.

** Corresponding Author: Fatma Törün, Bergama 100. Yıl Ortaokulu, İzmir, Turkey fatmatorun83tr@gmail.com.

*** Ege University, Faculty of Education, Turkey aylinmentiskoksoy@gmail.com.

Introduction

In the present day, in what is referred to as the information age of the 21st century, information technologies are rapidly and continuously advancing. Consequently, applications in distance education have greatly benefited from the development and progress of the universal communication network. Distance education, which was once considered difficult to access, has now become easily implementable as a universal communication network through the use of information technologies. Moreover, the universal communication network serves as the fundamental source for production, research required for science, universal trade, universal differentiation, and universal education. The universal communication network provides educators and teachers with the opportunity to offer distance education activities and applications universally (İşman, 1996).

The emergence and development of the concept of distance or remote education first appeared in the educational catalog of the University of Wisconsin in 1892. Later, in an article published in 1906, William Lighty, who was a member of the university's administration, mentioned the term "remote education" (Freeman et al., 2000). The concept of remote education is known to have gained popularity in Europe, initially in Germany through the efforts of Otto Peters, during the 1960s and 1970s and later in France with the educational institutions established with the main objective of providing education to individuals through various communication channels. These institutions used the term "remote education" in their names (Freeman et al., 2000). Therefore, the term "remote education" has been present in the literature since the beginning of the 1900s and is defined as the implementation of education through various communication channels when the learner and the instructor are not in the same physical environment. Educational activities related to remote education are conducted at different levels ranging from high school to postgraduate programs worldwide (İşman, 2011).

In Turkey, remote/distance education practices were predominantly used as an alternative to traditional education, particularly in higher education fields. With the increasing technological advancements and digitalization of the present day, there has been a growing interest and inclination toward alternative forms of education. Recent global events have signaled the importance of remote education and the need to increase and enhance digital learning and teaching activities for the continuity and improvement of education. Global education provides students with the opportunity to benefit from educational programs offered by universities located in different countries through distance education, enabling them to obtain a master's or doctoral degree from these universities (İşman, 2011).

The COVID-19 virus, which first emerged in the city of Wuhan, China, and rapidly spread to all parts of the world, turning into a pandemic, has significantly impacted the daily lives and work activities of people in many countries, including Turkey. It has had

a notable influence on the functioning and processes of public institutions and private enterprises. One of the areas most affected by this situation is the education system. With the onset of the COVID-19 pandemic, educational institutions initially suspended face-to-face education for a certain period as a precautionary measure. The rapid escalation and spread of the pandemic brought a critical role to the Education Informatics Network (EBA), which had previously been developed to integrate technology into educational environments and compensate for the inability to conduct face-to-face education in primary, middle, and high schools. Similarly, universities in higher education institutions took measures within their structs to continue education through distance education (online) to cover the instructional gaps during the pandemic. In this process, BİLSEM schools, where gifted students receive supportive education alongside their formal education in regular educational institutions in Turkey, were also affected.

Science and Art Centers (BİLSEM), which were established to provide supportive education in order to enhance the abilities and capacities of exceptional and gifted students who continue their regular education in traditional educational institutions, continued their education through distance education facilitated by subject teachers in the spring semester of the 2019-2020 academic year during the pandemic. . Subsequently, in the 2020-2021 academic year, education was predominantly conducted through distance education. This study aims to reveal the views of gifted BİLSEM students, who are defined as individuals who learn faster than their peers, excel in creativity, art, and leadership, possess special academic talents, comprehend abstract ideas, enjoy independent work in their areas of interest, and demonstrate high levels of performance, and BİLSEM teachers who provide education to these students regarding the distance education process using qualitative methods. Qualitative methods can provide deeper and richer data from a small number of participants. Thus, the experiences of students who are more curious and open to technology compared to their peers, as well as the teachers who educate these students, will be identified to develop recommendations for addressing deficiencies and improving quality in distance education.

It is seen in the history of BİLSEM in Turkey that the foundations of BİLSEM schools were laid through certain stages. In 1992, the Directorate General of Special Education and Guidance Counseling and Consultancy Services was established by the Minister of National Education of the time to provide education for children with special needs. Along with separate branches for various groups with disabilities requiring special education, a branch was established for the education of gifted individuals, and thus, the initiatives were initiated (Baykoç Dönmez, 2011).

In order to ensure reaching a higher number of gifted children with the most suitable model, models implemented in different countries were examined considering Turkey's current economic, social, cultural, and educational conditions, , their applicability was discussed, and a new model suitable for Turkey's conditions was developed based on the previous academic studies of Prof. Dr. Necate Baykoç Dönmez. This model, initially

referred to as the "Additional Course Application School" in Prof. Dr. Necate Baykoç Dönmez's studies and later named Science and Art Center, is a pilot project that started in five provinces (Ankara, Istanbul, Izmir, Bayburt, and Denizli) with student selection, teacher selection and training, parent education, and building preparations. The model has been implemented in over 50 centers (Baykoç Dönmez, 2011). BİLSEM (Science and Art Centers), which is unique to our country in the world, became particularly prominent after Prof. Dr. Necate Baykoç Dönmez was invited as the only foreign representative to the 2006 National Congress on Gifted and Talented Children held in England, following the implementation of the 2005 EU Leonardo da Vinci Project. The effectiveness and significance of the BİLSEM model were emphasized by foreign representatives during the conference, leading to the decision to implement it in the northern region of London (Baykoç Dönmez, 2011).

As of 2020, BİLSEM centers are present in every province of Turkey. Depending on population density and demand, multiple BİLSEM centers can exist in a single province. According to the information published on the official website of the Ministry of National Education,meb.gov.tr, as of 2020, there were 182 BİLSEM centers with approximately 2,300 teachers and around 63,000 students attending these schools. It has been stated that as of 2022, there are 279 BİLSEM centers, and the goal is to increase this number to 350. In 2022, a total of 67,375 students received education in BİLSEM centers, consisting of 12,579 primary school students, 43,954 middle school students, and 10,842 high school students. In the city of Izmir, the number of BİLSEM centers reached 15 in 2022 (2020, 2022 meb.gov.tr).

BİLSEM schools prioritize science and art education and provide face-to-face instruction. Examining their experiences with distance education during the pandemic is believed to have had an impact on the development of distance education. Therefore, this study focuses on BİLSEM schools and primary school-level BİLSEM students. It is observed that our gifted students receiving education in BİLSEM centers, which are increasing in importance and number, will make significant contributions to the future of our country. The aim is for the experiences of these technologically savvy students and their teachers during the distance education process to shed light on future studies and serve as examples for new research.

Several studies have been conducted on distance education during the COVID-19 pandemic. Demirçelik et al. (2021) focused on the problems faced by gifted high school students, while Yabacı et al. (2021) examined the communication methods of high school students. Okan (2020) explored the perception patterns of undergraduate students, and Özan et al. (2021) analyzed the metaphorical perceptions of Bilsem (gifted) students regarding the concept of "distance education." Saygı (2021) investigated the classroom teachers, Canpolat and Yıldırım (2021) examined middle school teachers, Türker and Dündar (2020) focused on high school teachers in terms of the problems they encountered. Tümen Akyıldız (2020) studied the challenges faced by English teachers while Bayburtlu (2020) discussed those experienced by Turkish language

teachers. Akgül and Oran (2020) gathered the opinions and thoughts of social studies teachers, middle school students, and parents regarding distance education during the pandemic. In addition, Başaran et al. (2020) examined the effectiveness of distance education as a consequence of the COVID-19 pandemic. Tüzün and Yörük Toraman (2021) investigated the factors influencing satisfaction with distance education during the pandemic. Ayfer Alper (2020) focused on remote education at the K-12 level during the pandemic, while Koçoğlu et al. (2020) studied the impact of COVID-19 on education in Turkey. Duban and Şen (2020), as well as Yolcu (2020), explored the experiences of student teachers during the COVID-19 pandemic. Kara (2020) examined student experiences during the pandemic, while Durak et al. (2020) analyzed the distance education systems of universities in Turkey. Genç et al. (2020) gathered the perspectives of graduate students on distance education practices during the COVID-19 pandemic. Ceviz et al. (2020) conducted an analysis of the variables affecting anxiety levels among university students during the COVID-19 pandemic. Er, Türküresin (2020) gathered the views of teacher candidates on distance education practices during the pandemic. Metin et al. (2021) focused on the opinions of teachers regarding remote education during the COVID-19 pandemic, and Aktan et al. (2021) examined the views of preschool teachers on distance education during the pandemic. Ergüç Şahan and Parlar (2021) investigated the problems faced by elementary school teachers during the pandemic and proposed solutions.

Upon reviewing these studies, it was seen that there was a need for research on distance education in Science and Art Centers, which provide education for gifted students. This study aims to fill this gap and provide guidance for future improvement and development efforts in this field.

Aim of the Research

The objective of the study is to reveal the opinions of elementary-level BİLSEM students and BİLSEM teachers regarding the process of distance education. Due to the pandemic, the scope of the study is limited to the example of Izmir province. The research problem statement is defined as "What are the views of classroom teachers and elementary school students studying at Science and Art Centers in Izmir regarding distance education?" and the following sub-problems are formulated:

1. How do BİLSEM teachers carry out the process of distance education?
2. How do the technological competencies of BİLSEM teachers affect the process of distance education?
3. According to BİLSEM teachers, what are the positive and negative aspects of distance education compared to face-to-face education?
4. According to BİLSEM teachers, what aspects of distance education need to be improved?

5. How do elementary school students at BİLSEM evaluate the process of distance education?

Method

Design

This is a qualitative study aiming to examine and interpret the opinions of primary school teachers and primary school students in BILSEM (Science and Art Centers) regarding the distance education process. The study intends to explore and describe the views of participating teachers and students about the distance education process.

The present study utilized the phenomenological research method, which provides inductive descriptive research that focuses on the phenomenon of human experience and aims to define the meanings expressed in real-life experiences. It encompasses the study of the phenomenon from a firsthand subjective perspective (Akturan & Esen, 2013; cited in Saban & Ersoy, 2019). Phenomenological research values everyday life and sees it as a source of knowledge, allowing us to gain insights about ourselves and enabling us to analyze how an event unfolds in daily life, thus providing us with foundational perspectives to evaluate events (Beck, 1992; cited in Morrissey & Higgs, 2006).

Phenomenology is both a philosophical stance and a research approach. In other words, phenomenology is a research design that is based on philosophical and psychological perspectives. It has evolved as a movement that seeks reality in individual perspectives and experiences, in contrast to the positivist paradigm. Phenomenology is a research design that emerged following this philosophical debate and introduced a new perspective to the scientific world. Data analysis is one of the most challenging aspects of qualitative and phenomenological studies due to dealing with rich and extensive datasets. It is not easy to analyze and interpret the data to reach the fundamental information and essence about the individual. However, phenomenological analysis procedures can be used for this purpose. Another challenge that can arise during data analysis is comparing and merging data sets if they are composed of interviews, observations, and documents. In this comparison, interview data should be considered as the main data source. Therefore, the interview data should be analyzed first, and then combined with other data, which is quite a time-consuming process. In cases of data inconsistency, there is no single correct approach. The researcher, relying on logical reasoning, is the one who makes decisions in this process (Saban & Ersoy, 2019).

In phenomenological studies, two important processes need to be carried out in the analysis phase to understand the essence of the phenomenon. These processes are phenomenological reduction and creative transformation, whichare necessary to extract the essence of the experience from participants' narratives. Phenomenological reduction involves the elimination of data expressed in an insignificant, irrelevant, repetitive, or unconscious manner regarding what the participant's experience is in the data analysis

stage. Creative transformation, on the other hand, is applied during the process of reaching an understanding from participants' experiences and is created to discover the shared meanings formed by all participants' experiences (Moustakas, 1994; cited in Ersoy & Saban, 2019).

Different procedures were implemented to ensure trustworthiness in the research.. These include presenting the data initially without interpretation, adopting the constant comparative method in data analysis, and maintaining adherence to the theoretical framework during data analysis (Freeman, deMarrais, Preissle, Roulston, & St. Pierre, 2007; Guba & Lincoln, 1985; cited in Anagün & Ersoy, 2009).

Participants

The participants of the study consist of 13 teachers who work at five science and art centers located in the province of Izmir. The primary school students, on the other hand, are composed of 35 students who are enrolled in the BILSEM program (3rd and 4th-grade students attending each Science and Art Center). Due to the pandemic, BILSEM centers could not admit students t for approximately two years during the study period. Consequently, the number of BILSEM students is significantly lower compared to previous years. Additionally, since the scope of the study is at the primary school level, the number of teachers providing education to primary school students has also decreased. The participants were selected by taking the prevailing circumstances into account. Furthermore, BILSEM centers admit students in three different areas: general aptitude, music, and art with the majority of students being enrolled in the general aptitude field. Therefore, it is observed that the voluntary participants mainly come from the general aptitude section.

The personal characteristics of the participating teachers are given in Table 1, while the personal characteristics of the participating students are provided in Table 2.

Table 1.

Personal Characteristics of the Teachers Participating in the Research

Participant	Gender	Education Level	Branch	Professional Experience	School Assigned
Ö1	E	Undergraduate	Informatics	2 years	Aliağa BİLSEM
Ö2	E	Graduate	Mathematics	16 years	Aliağa BİLSEM
Ö3	E	Graduate	Classroom Teacher	18 years	Narlıdere BİLSEM
Ö4	K	Undergraduate	Turkish	16 years	Narlıdere BİLSEM
Ö5	K	Graduate	Music	8 years	Narlıdere BİLSEM
Ö6	K	Undergraduate	Mathematics	6 years	Konak BİLSEM
Ö7	E	Postgraduate	Music	19 years	Konak BİLSEM

Ö8	K		English		Çiğli BİLSEM
Ö9	K	Postgraduate	Turkish	15 years	Çiğli BİLSEM
Ö10	K	Graduate	Mathematics	8 years	Bornova BİLSEM
Ö11	K	Graduate	Informatics	16 years	Bornova BİLSEM
Ö12	K	Graduate	Visual Arts	24 years	Bornova BİLSEM
Ö13	K	Graduate	Mathematics	10 years	Bornova BİLSEM

Table 2.

Personal Characteristics of the Students Participating in the Research

Participant	Gender	Grade	Program	School
T1	K	4	General Abilty	Aliağa BİLSEM
T2	E	4	General Abilty	Aliağa BİLSEM
T3	K	3	General Abilty	Aliağa BİLSEM
T4	K	4	General Abilty	Bornova BİLSEM
T5	K	4	General Abilty	Bornova BİLSEM
T6	E	4	General Abilty	Bornova BİLSEM
T7	K	4	General Abilty	Bornova BİLSEM
T8	K	4	General Abilty	Çiğli BİLSEM
T9	E	4	General Abilty	Çiğli BİLSEM
T10	E	4	General Abilty	Çiğli BİLSEM
T11	E	3	General Abilty	Çiğli BİLSEM
T12	E	4	General Abilty	Çiğli BİLSEM
T13	E	4	General Abilty	Çiğli BİLSEM
T14	K	4	General Abilty	Çiğli BİLSEM
T15	E	4	General Abilty	Çiğli BİLSEM
T16	E	4	General Abilty	Çiğli BİLSEM
T17	E	4	General Abilty	Konak BİLSEM
T18	K	4	General Abilty	Konak BİLSEM
T19	K	4	General Abilty	Konak BİLSEM
T20	E	4	General Abilty	Konak BİLSEM
T21	K	4	General Abilty	Konak BİLSEM
T22	K	4	General Abilty	Konak BİLSEM

T23	E	4	General Abilty	Konak BİLSEM
T24	K	4	General Abilty	Narlıdere BİLSEM
T25	K	4	General Abilty	Narlıdere BİLSEM
T26	E	4	General Abilty	Narlıdere BİLSEM
T27	E	4	General Abilty	Narlıdere BİLSEM
T28	E	4	General Abilty	Narlıdere BİLSEM
T29	K	4	General Abilty	Narlıdere BİLSEM
T30	K	4	General Abilty	Narlıdere BİLSEM
T31	E	3	General Abilty	Narlıdere BİLSEM
T32	K	4	General Abilty	Narlıdere BİLSEM
T33	K	4	General Abilty	Narlıdere BİLSEM
T34	K	4	General Abilty	Narlıdere BİLSEM
T35	K	4	General Abilty	Narlıdere BİLSEM

Data Collection Tools

The teacher and student interview questions to be used as the data collection tool were prepared by the researcher in collaboration with domain experts after conducting a literature review. In addition to the interview method, online communication tools were also utilized due to the pandemic. The interviews were conducted face-to-face or through online communication and lasted for 10-15 minutes. Online forms were used alongside interview forms for document recording. Participants were informed about the purpose and process of the interviews through the interview forms. The participants were explained that their personal information would be kept confidential, and they could use pseudonyms if they wished. The questions were applied to three voluntary teachers and students through observation to detect any unclear points in the questions, which tested the validity of the prepared questions.

In this study, the following questions were asked to BILSEM teachers:

- How do you conduct the process of distance education?
- Which teaching methods and techniques do you employ in the distance education process?
- What measurement and evaluation tools do you use?
- How do your technological competencies affect distance education?
- How do you see yourself in terms of using technology?
- How did you acquire your technological competency?
- What impact do you think your professional experience has on technological competence?

• What do you think are the positive aspects of distance learning compared to face-to-face education?

• What do you think are the negative aspects of distance learning compared to face-to-face education?

• According to you, what are the aspects of distance learning that need improvement?

In this study, the following questions were asked to BİLSEM students:

• What would you like to say about distance education??

• How does your teacher conduct distance education?

• How does your teacher evaluate your distance lessons?

• How much do you like distance education lessons?

• What would you like to say if you compare distance education lessons with face-to-face lessons?

• What do you think are the positive aspects of distance education compared to face-to-face education?

• What do you think are the negative aspects of distance education compared to face-to-face education?

• How do you think distance education lessons would be better for you?

Due to the pandemic, the data collection process was conducted through face-to-face communication and online communication methods depending on the conditions. Therefore, the data were collected form teachers through structured interviews and from students through semi-structured and structured interviews.

Data Analysis

In this study, content analysis (Yıldırım and Şimşek, 2018) was performed by utilizing the participants' experiences as depicted in Figure 1:

Figure 1.

Steps Applied to Data Analysis

According to the steps outlined above, the following procedures have been carried out: In the analysis of the interview forms of the teachers working in BİLSEM (Science and Art Centers) and the students receiving education in these centers, the names of the teachers and students were first encoded. The data in the descriptive index section created in the first stage were grouped and matched under the corresponding interview question. The data obtained from the research questions were considered themes. In the creation of the interview coding key, the descriptive index section containing the answers given by the teachers and students to each question was taken into account. The answers given by the teachers and students to the questions were examined, and similar ideas were brought together to form themes. Then, the data obtained according to thematic frameworks were matched, and the teacher-student opinions were classified. After finalizing the themes and sub-themes, the data were organized by giving them their final forms. After the data classification stage, it was determined which of the opinions coded under specific themes would be directly quoted, and connections were established between teacher and student opinions. Instead of the participants' names, codes were used when directly quoting from the data. Following these procedures, the analysis phase was concluded.

Findings and Interpretation

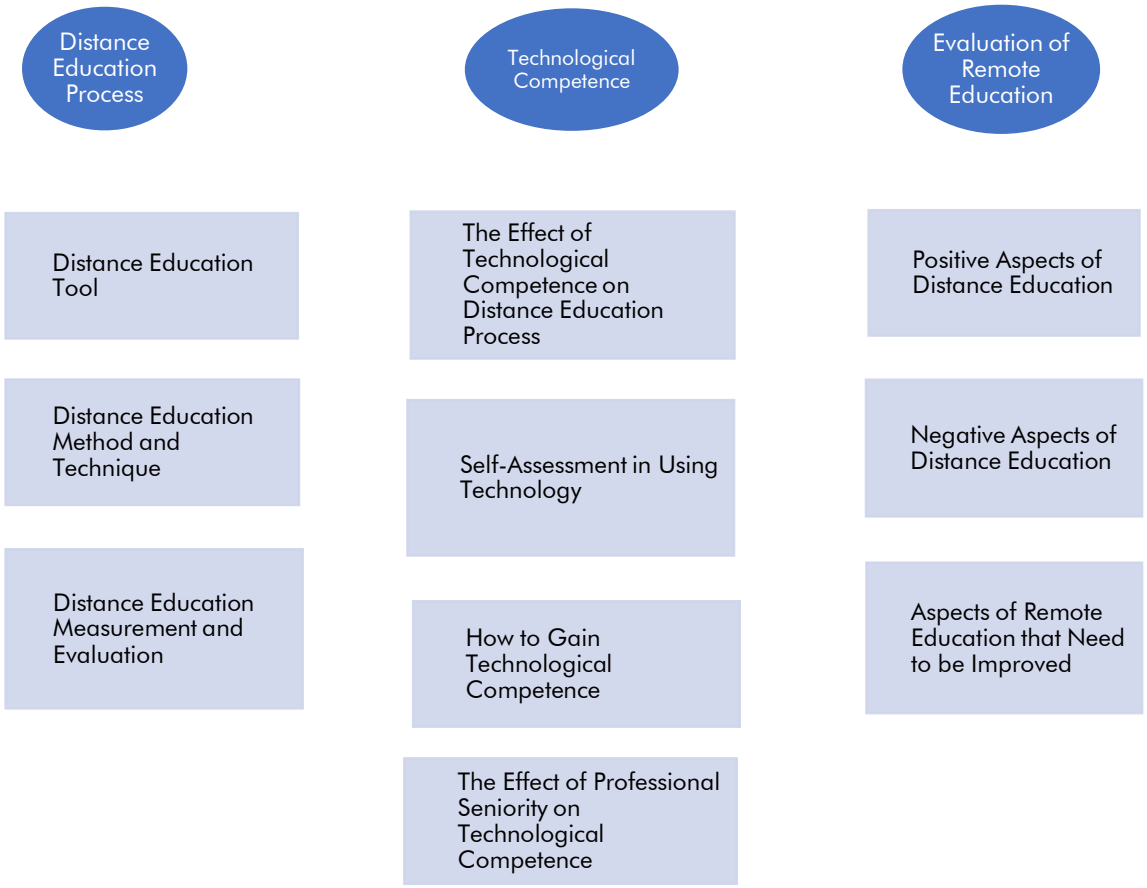
In this section, the findings obtained from the research and the interpretations based on these findings are presented. Since the participants consisted of two groups, the findings and interpretations related to the views of BİLSEM teachers were presented first, followed by the findings and interpretations obtained from the views of elementary-level students studying in BİLSEM.

I. Bilsem Teachers' Views on Distance Education

The analysis of the teachers' views who participated in the research has led to the identification of the themes and sub-themes provided in Figure 2.

Figure 2.

Themes Created According to the Data Obtained from the Research Questions



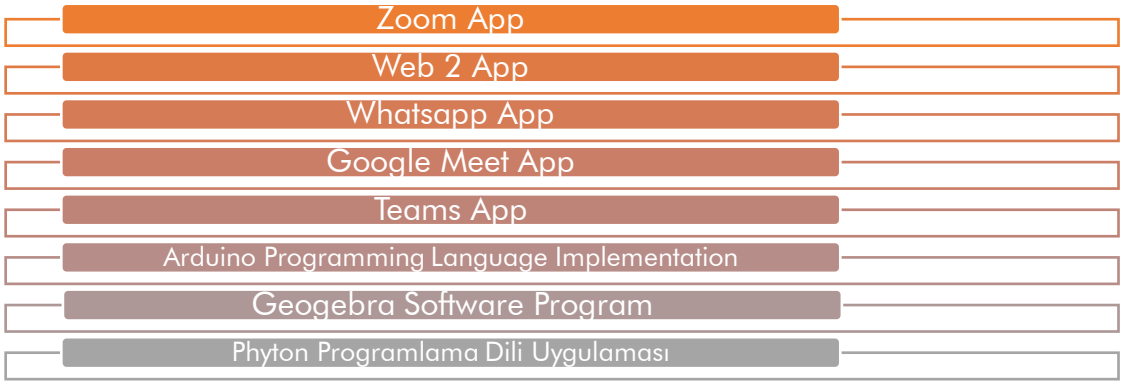
It can be seen in Figure 2 that the views of BİLSEM teachers regarding distance education are addressed under three main themes. Accordingly, the themes are categorized as "Distance Education Process Theme," "Distance Education Tools and Techniques," and "Distance Education Measurement and Evaluation" sub-themes. The theme of Technological Competence is further analyzed under the sub-themes of "The Impact of Technological Competence on the Distance Education Process," "Self-Evaluation in Using Technology," "Methods of Acquiring Technological Competence," and "The Effect of Professional Experience on Technological Competence." The theme of Evaluation of Distance Education is explored under the sub-themes of "Positive Aspects of Distance Education," "Negative Aspects of Distance Education," and "Areas in Need of Improvement in Distance Education."

Distance Education Tool

The majority of teachers have stated that they adhere to the school curriculum program during distance education and utilize online communication tools such as Zoom and Web 2 applications. Additionally, it has been mentioned that applications such as WhatsApp, Google Meet, and Teams are also used. In the process of distance education, the utilization of Arduino (programming language), Geogebra (mathematical software), Python (programming language), and videos related to lesson topics has been reported.

Figure 3.

Some Applications Used by Teachers in Distance Education



Most of the participating teachers have stated that they conduct their classes using the Zoom program. In addition, Ö4, Ö9, and Ö13 have mentioned that they benefit from Web 2 tools. . Some of the participating teachers, specifically Ö6, Ö9, and Ö12, have also stated that they make use of the Whatsapp messaging application. Among the participants, Ö9 mentioned using the Teams application, while Ö13 stated that they use the Google Meets application. Below are some of the related opinions of the teachers:

> "We conduct our lessons by first drawing electronic circuit diagrams in the computer environment, and then writing the necessary program with Arduino code and uploading it to the Arduino." Ö1
>
> "I use the Zoom program. I conduct classes through the Zoom application during hours outside of the student's school hours, as per the program prepared by our central administration." Ö3
>
> "I plan the distance education process with pre-determined links through Zoom and Whatsapp programs at specific intervals. My classes usually last for 30-40 minutes in two sessions. Occasionally, I also resort to web2 tools." Ö6
>
> "I conduct my classes through the Zoom application, within the framework of the current curriculum and topics." Ö7
>
> "I carry out the distance education process using applications such as Zoom, WhatsApp, web2 tools, and Teams. Pre-prepared topic videos, documents shared on common platforms with other BILSEM teachers, and various videos, applications, and documents suitable for the content and student level help create our lesson content." Ö9

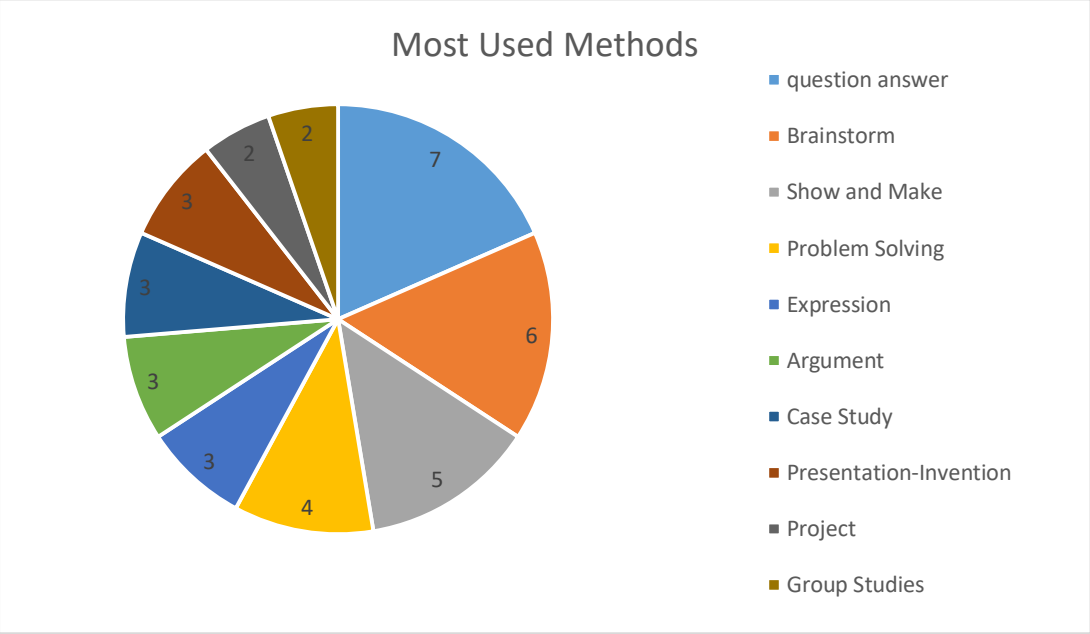
These findings indicate that teachers use various communication tools, applications, and programs during the distance education process.

Methods and Techniques Used in Distance Education

According to the teachers' opinions, the methods and techniques most commonly used by teachers in distance education are shown in Figure 4.

Figure 4.

The Most Used Methods and Techniques in Distance Education According to the Responses of the Teachers



The majority of the participating teachers have mentioned the following methods and techniques as their preferrences in distance education: Question-Answer (Ö2, Ö3, Ö6, Ö9, Ö10, Ö12, Ö13), Brainstorming (Ö3, Ö4, Ö6, Ö9, Ö10, Ö13), Show-Do (Ö1, Ö2, Ö3, Ö4, Ö10), Problem-Solving (Ö3, Ö4, Ö6, Ö13), Lecture (Ö3, Ö12, Ö13), Discussion (Ö7, Ö9, Ö10), Case Study (Ö3, Ö9, Ö12), Presentation-Invention (Ö5, Ö6, Ö10), Project (Ö1, Ö8), Discovery Method (Ö2, Ö9), Group Work (Ö3, Ö9). In addition to these methods and techniques, they have also mentioned utilizing the Six Thinking Hats Technique (Ö3), Collaborative Learning (Ö3), Synectics (Ö4), Talking Circle (Ö4), Exhibition Technique (Ö4), Research-Investigation (Ö5, Ö10), Orff and Kodaly Techniques in Music Education (Ö5), Creative Drama (Ö9), Project-Based Learning (Ö8), Creative and Critical Thinking (Ö10), and Web Applications (Ö11).

Below are some opinions of teachers regarding this matter.

"I mostly use the show-do technique, but I also support it with project assignments." Ö1

"I utilize problem-solving, lecture, question-answer, brainstorming, demonstration technique, group work, Six Thinking Hats technique, discussion, case study, and collaborative learning." Ö3

"It varies depending on the students' group level. For example, teaching through presentation, invention, and research-investigation-based instruction. In music education, I use techniques such as developing auditory perception and employing Orff and Kodály methods." Ö5

"I employ brainstorming, question-answer, creative thinking in mathematics, critical thinking questions, large group and small group discussions, show-do applications, invention method, research." Ö10

"Especially in mathematical modeling questions, I naturally utilize brainstorming, problem-solving, and application techniques (usually through coding). Besides modeling, I use methods like question-answer, problem-solving, lecture, and question-answer." Ö13

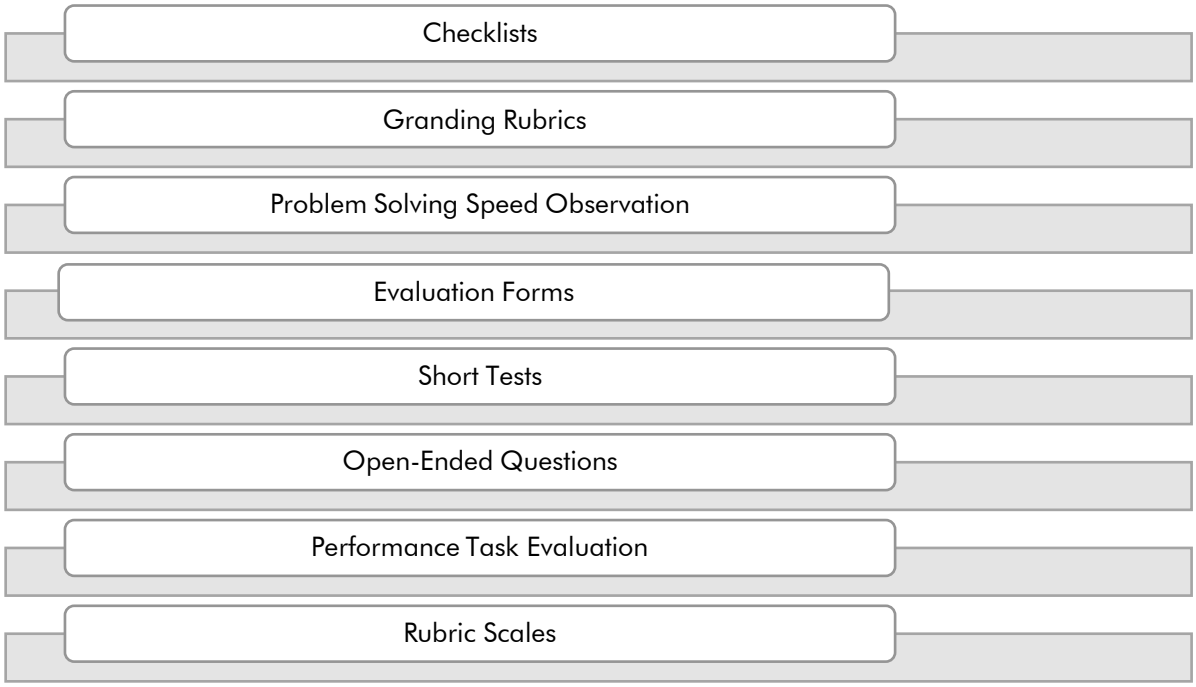
These data show that teachers use a variety of methods and techniques in the distance education process.

Distance Education Measurement and Evaluation

The data obtained from the teachers, demonstrate that quantitative assessment is not conducted in Science and Art Centers. Additionally, it has been stated that during the distance education process, measurement and evaluation are qualitative, observation-based, product-oriented, application-based, and process-based. Despite the absence of quantitative assessment, teachers have mentioned using tracking checklists, graded scoring rubrics, problem-solving speed, assessment forms created by themselves or provided by the institution, short tests, open-ended questions, performance task evaluation, and rubric scales to monitor the materials taught, as shown in Figure 5. Among the participating teachers, Ö1 and Ö2 have expressed that although there is no quantitative assessment in BILSEM, they measure and evaluate the learning outcomes qualitatively through observation. Similarly, Ö3 and Ö12 have stated that despite the absence of quantitative assessment in BILSEM, they determine students' learning through feedback, group work, and performance evaluation. Ö4 has mentioned conducting assessment and evaluation through Web 2 tools. Ö5, Ö8, Ö10, and Ö13 have stated that they use rubric scales, checklists, and assessment forms. Ö6 expressed performing measurement and assessment through problem-solving speed and feedback, while Ö7 mentioned process evaluation. Ö9 conducts measurement and evaluation through short tests, small competitions using the Kahoot application, and open-ended questions. Ö11 has mentioned conducting performance evaluations at the end of each lesson.

Figure 5.

Methods Teachers Use to Observe What is Learned



Concerning views of some of the teachers are given below:

> "I don't have a quantitative assessment in BILSEM; I only observe behaviors. I receive feedback based on observation." Ö2
>
> "I mostly use web 2.0 tools for evaluation." Ö4
>
> "I use assessment forms that I have determined myself and those provided by my institution." Ö8
>
> "I frequently utilize performance tasks and evaluations as assessment tools. I give performance assignments to students after each lesson, and we review their work together at the beginning of the next lesson." Ö11
>
> "Generally, there is no quantitative assessment conducted in BILSEM. However, I evaluate students based on their activities and works." Ö12

According to these findings, it can be understood that besides the absence of quantitative assessment in BILSEM under normal circumstances, teachers resort to different measurement and evaluation methods and techniques during distance education to identify learning outcomes and qualitatively evaluate the resulting products.

The technological Competence theme, Effect of Technological Competence on Distance Education Process sub-theme, Self-Evaluation in terms of Using Technology sub-theme,

Technological Competency Acquisition Sub-theme, and Effect of Professional Seniority on Technological Competence sub-themes are given below based on the findings.

The Effect of Technological Competence on the Distance Education Process

According to the data obtained from the teachers, 13 teachers who participated in the study stated that technological competence had a positive effect on the distance education process.

Some of the teacher's views on this subject are given below:

> "My good technological skills have a positive impact. We didn't face any problems related to technological inadequacy because our students have a high economic level." Ö3

> "There was a period when we realized the importance of being technologically competent. Every day, we added something new to our knowledge. We mutually developed ourselves and the students during this process. It was a period of expanding my technological knowledge." Ö9

> "As a computer science teacher, I had the advantage of being in distance education. Despite it being my first time teaching online, I quickly adapted. I believe it made my course materials more accessible online." Ö11

> "In this mandatory period, we continue to learn technology ourselves." Ö12

> "It has a very positive effect. In face-to-face classes, we had to run applications like Geogebra, Python, and Desmos from a single computer because students didn't have their computers. Now, every student has a computer. They can use these applications and conduct research. When writing a project report, each student can contribute simultaneously." Ö13

It is understood from these findings that technological competence has a positive effect on the distance education process.

Self-Assessment in Using Technology

In line with the answers given by the teachers, 13 teachers who participated in the study also stated that they saw themselves at a sufficient level in terms of using technology. According to the answers given to this question, teachers stated their technological competencies as being at a sufficient level (five teachers: T1, T2, T5, T10, T12), sufficient-good level (four teachers: T3, T7, T8, T9), sufficient-active level (two teachers: T4, T6), sufficient-high level (two teachers: Ö11, Ö13).

Some of the teacher's views on this subject are given below:

> "I can evaluate it as good. Especially in distance education, I started using web 2.0 tools more effectively. Throughout the course, I used over 20 web 2.0 tools to increase student participation and ensure their engagement in the next class." Ö3

> "There are no limits to learning. However, I actively use many applications that are suitable for my students' level." Ö4

"I can use basic programs. I believe I have developed myself enough to teach my students video editing. However, I wish I had advanced skills in features like advanced audio recording, arrangement, and mixing." Ö5

"While being an intermediate-level technology user, I can say that through the training we received and the experiences we had during this period, I have reached a good level." Ö9

"Since technology is already my field, I had a high level of readiness. When I encounter new applications and programs, I work on them and take extensive notes." Ö11

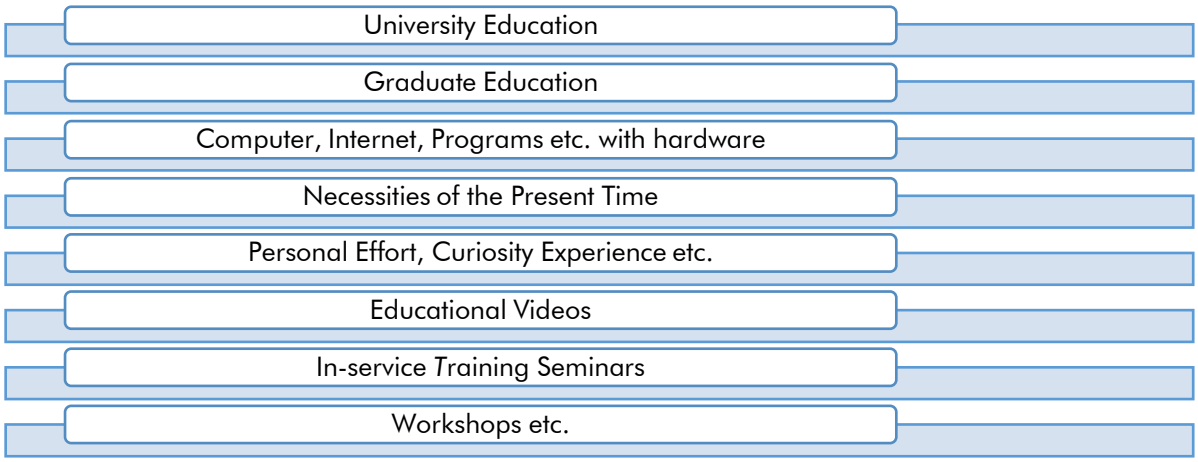
According to these findings, it is understood that teachers find themselves at a sufficient level in terms of technological competence in distance education.

How to Gain Technological Competence

According to the responses of the participating teachers, it is stated that teachers mostly acquire technological competence through education and personal effort. The findings from the teachers' responses indicate that obtaining a university education, postgraduate education; having access to computers, the internet, etc.; the necessity of the current time, training, programs, educational videos, in-service seminars, workshops, etc.; experience gained over time, personal effort, curiosity, and the need for self-improvement play significant roles in acquiring technological competence. Additionally, it is mentioned that students also contribute to their teachers' technological proficiency.

Figure 6.

Teachers' Ways of Gaining Technological Competence



Some of the concerning teacher views are given below:

"Previously, I knew the basics. I learned additional information from the internet and students as well." Ö2

"Having my computer since my student years was the biggest influence on this. In the last year, the E-Twinning platform also enhanced my competence." Ö5

"I acquire it through my 24 years of teaching experience and in-service training. I haven't attended a specific course for this." Ö1

"Through workshops, seminars, videos, and hands-on experience." Ö6

"Since 1997, I have had my personal computer, and starting from 1998, I have been using the Internet. I am a technology enthusiast who can use the computer as needed and perform basic repairs." Ö8

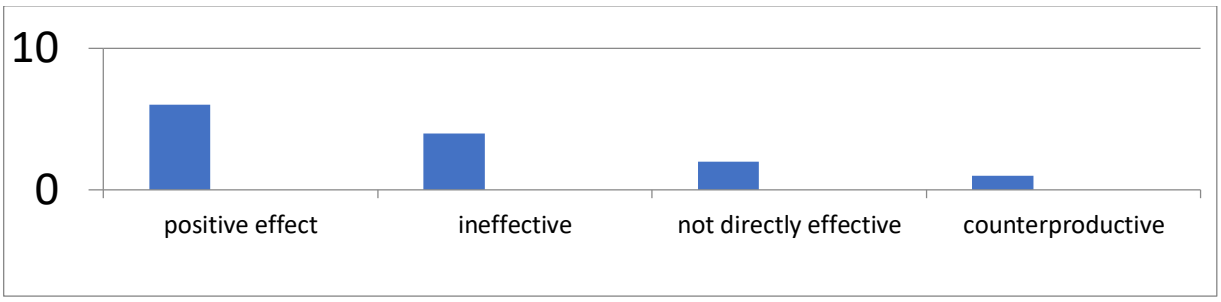
According to these findings obtained from the teachers, it is understood that they have gained these competencies with various pieces of training related to technological competency in line with personal effort and personal development, as in Figure 6.

The Effect of Professional Seniority on Technological Competence

According to the responses provided by the teachers to the interview questions, six teachers (Ö1, Ö2, Ö3, Ö4, Ö10, Ö11) stated that professional experience has a positive impact on technological competence, as depicted in Figure 8. On the other hand, four teachers (Ö6, Ö7, Ö8, Ö9) think that professional experience does not influence technological competence. In addition, two teachers (Ö5, Ö13) believe that professional experience does not directly affect technological competence while one teacher (Ö12) stated that professional experience has an inverse relationship with technological competence.

Figure 7.

The Effect of Professional Seniority on Technological Competence for Teachers



Some of the concerning teacher views are given below:

"Of course, it has a positive impact. Especially in BILSEM, students' ability to manage their time well requires their teachers to keep up with educational developments quickly. My professional experience has helped me understand my students' characteristics accurately. Therefore, I believe that I keep up with educational developments effectively." Ö3

"Being senior does not automatically make you a competent BILSEM teacher. If you don't continuously improve yourself, you cannot be sufficient here. Developing the skill of using technology is one of the most important areas to focus on. In other words, being senior does not have a direct impact." Ö5

"I don't think professional experience has an impact on this, but I can say that academic studies or progress greatly contribute to it." Ö8

"As the years go by, there is a growing need to learn more tools. Therefore, compared to the early years of my teaching career, I am using a much wider range of technological tools. I believe that my competence has improved." Ö10

"Technological competence can be inversely proportional to professional experience. However, conducting classes via Zoom does not require high-level technological knowledge." Ö12

According to the findings obtained from the responses of the participating teachers, the evaluation of distance education reveals the following sub-themes: Positive Aspects of Distance Education, Negative Aspects of Distance Education, and Areas for Improvement in Distance Education.

Positive Aspects of Distance Education

According to the findings obtained from the responses of the teachers, the positive aspects of distance education compared to face-to-face education can be summarized as follows: According to Ö1 and Ö9, distance education provides location independence. According to Ö3, Ö11, and Ö12, distance education reduces expenses for those who have difficulty coming to school due to financial constraints. According to Ö1, Ö2, Ö3, Ö5, Ö6, Ö7, Ö9, Ö10, and Ö13, the use of technology in education is a positive aspect of distance education. According to Ö3 and Ö13, distance education has increased attendance and continuity in certain subjects. Ö3, Ö9, and Ö11 thinks distance education is beneficial in terms of reaching all students. Ö3, Ö6, Ö8, Ö9, and Ö10 see thatdistance education provides time flexibility. According to Ö13, distance education allows for efficient use of time and Ö3 suggests distance education provides students with the opportunity to use and enjoy technology, and increased motivation in certain subjects is a positive aspect of distance education. According to Ö4, distance education provides an opportunity for active learning through computer and web-supported programs and applications. According to Ö5, distance education promotes the development of information and communication technology skills and contributes to the enhancement of 21st-century skills. It also provides the possibility of reducing or eliminating negative situations such as peer bullying and mobbing. According to Ö6, distance education saves time, space, and energy. According to Ö7, distance education increases the use of media, printed, visual, and auditory resources. It also facilitates the use and development of new teaching methods, techniques, and practices in distance education. According to Ö8, distance education enhances a student's self-control mechanism and ensures accessibility in terms of education for every student. According to Ö10, distance education facilitates the examination of products, assignments, answers, and projects, providing ease of access and review. According to Ö11, information and note exchange speed increases in distance education. Additionally, according to Ö12, in the context of a pandemic or other infectious disease periods,

distance education is necessary to ensure the continuity of education and instruction. Some of the teachers' opinions on this matter are provided below:

> "The positive aspects include a decrease in absenteeism, the opportunity to reach all students, the absence of restrictions on time and location, students' ability to use and enjoy technology, increased motivation in classes, and the opportunity to add expert support to lessons without being limited by space and time." Ö3

> "The development of ICT skills, the enhancement of 21st-century skills, and the absence of peer bullying and mobbing." Ö5

> "We can spend our time more efficiently, minimizing time and energy wastage. The time spent preparing for school is replaced by preparing for lessons at home. With the use of technology and visual aids, children can grasp the content more easily." Ö6

> "The absence of limitations on place and time, accessibility for every student with internet access, and the ability to demonstrate technological applications and teach lessons using them have been more beneficial." Ö9

> "The positive aspects of distance education are that students have a more comfortable environment at home with their computers. Online information exchange is much faster. The rate of non-participation in class when there are no attendance issues is very low, and students always inform us when they cannot attend. There are no transportation issues. During face-to-face education, many students would arrive late due to traffic." Ö11

According to the findings obtained from the responses of the participating teachers, it is stated that distance education has many positive aspects.

Negative Aspects of Distance Education

According to the findings obtained from the responses of the participating teachers, the negative aspects of distance education compared to face-to-face education are as follows: According to Ö1, distance education is less effective in practical courses compared to face-to-face education. According to Ö2, Ö5, Ö7, Ö10, Ö11, and Ö12, technological inadequacies in distance education have a negative impact. According to Ö3, Ö6, and Ö9, distance education is not conducive to socialization. Ö3 states that the limited social interaction in distance education leads to motivation issues and restricts peer learning; furthermore, instructional activities are limited in distance education. According to Ö3, the potential for screen addiction and resulting health problems in distance education is a negative aspect. According to Ö4, the lack of mandatory camera usage in distance education leads to a lack of control and allows students to engage in non-academic activities due to their lack of self-discipline. According to Ö5, difficulties arise in subjects such as music and practical courses in distance education; synchronization issues come up, and the distance education programs used are inadequate. According to the majority of the participating teachers in the study, distance education is accompanied by problems related to internet and communication issues, as well as technical and financial limitations. Financial constraints in distance education

result in unequal opportunities among students. According to Ö12, parental intervention during lessons negatively affects distance education, and inadequacies are encountered in group work and art education. According to Ö13, the weakening of the teacher-student relationship due to communication issues in distance education is a negative aspect. Here are some of the opinions expressed by the teachers on this matter:

> "Instrumental training that enhances performance skills is indispensable in music education alongside theoretical knowledge. At the beginning of distance education, there were synchronization issues. The Zoom program we used has been relatively improved. However, occasional internet inadequacy can create communication difficulties." Ö5

> "Children have no breathing space and no opportunity to socialize during breaks. This can lead to a loss of motivation. However, for some students, the situation can be the opposite. It can vary from person to person." Ö6

> "The efficiency of lessons can decrease due to the infrastructure issues of teachers or students, and distance education, especially for practical courses, requires more time and provides fewer benefits." Ö7

> "Due to the minimal social interaction, minor issues can escalate, and there is less eye contact and interaction, resulting in less learning compared to face-to-face education." Ö9

> "There can be difficulties related to the internet. Sound and visual quality (working image) can be insufficient, which unfortunately highlights the inequality in students' opportunities. We cannot prevent parental intervention in student work. We may also encounter unexpected challenges with the chosen technique in online education, such as differences in location, materials, and application areas. During the pandemic, I have tried and seen that a significant portion of the gains can be achieved through online education. Group work holds a significant place in art education. Consequently, some gains are missing." Ö12

Adaptation problem arises due to technical problems in distance education. In addition, the difficulties encountered in receiving feedback are among the findings that emerged as a negative aspect of distance education.

Aspects of Distance Education that Need to be Improved

Based on the answers provided by teachers to interview questions, the areas that need improvement in distance education compared to face-to-face education are as follows: internet infrastructure, technical infrastructure, provision of financial and technical support such as tablets to students in need, increased availability of activities and materials, more organized and structured approach, scheduling of class hours, integration of distance education to support face-to-face education, establishment of criteria regarding mandatory attendance and absenteeism in distance education, emphasis on equal opportunities in distance education, enhancement and development of platforms such as EBA (Education Information Network) TV, increased visual content in theoretical lessons conducted through distance education, increased financial and moral support for teachers in distance education, resolution of technical and technological deficiencies, organization of online competitions in distance education,

creation of activities for distance education, conducting remote education seminars for teachers, improvement of teachers' technological competencies, development of new programs for distance education, soliciting student participation and feedback in distance education, enhancement of student control mechanisms in distance education, establishment of a rich shared archive for distance education, creation of video and lesson presentation repositories for distance education, establishment of online libraries for distance education, development of innovative applications, creation of online platforms, development of practical applications and videos for art education in distance education. These findings are based on teacher opinions, some of which are provided below.

> "I believe that the internet infrastructure needs to be improved." Ö1
>
> "There should be more activities, materials, and a more organized approach. The class hours should be reduced, and distance education should support face-to-face education. It should not be solely based on remote learning." Ö3
>
> "There are students who do not have their tablets or computers. If there is equal opportunity, distance education can be implemented. On the other hand, I find EBA TV quite successful. Such platforms should be increased and developed." Ö5
>
> "I think that having a rich shared archive, video and lesson presentation repositories, accessible e-libraries through e-schools, presentations prepared with innovative applications, and a wider range of content would be more effective." Ö9
>
> "The technical deficiencies of students should be addressed. Online competitions and activities can be organized for students on the online platform. Training sessions on distance education can be provided to teachers, parents, and students." Ö11

The teachers who participated in the research primarily expressed views on the development of the technical infrastructure of distance education..

I. BİLSEM Students' Views on Distance Education

Findings and Comments Obtained from Student Interviews

In this section, the answers given by the student group to the questions asked in the interviews were analyzed and the following themes and sub-themes were formed according to the research questions:

1. Thoughts on Distance Education
   a. The Teacher's Approach to Conducting Distance Education
   b. The Teacher's Approach to Evaluating Distance Education
2. How Much Do You Enjoy Distance Education Lessons?
3. Comparing Distance Education to Face-to-Face Education

a. Positive Aspects

b. Negative Aspects

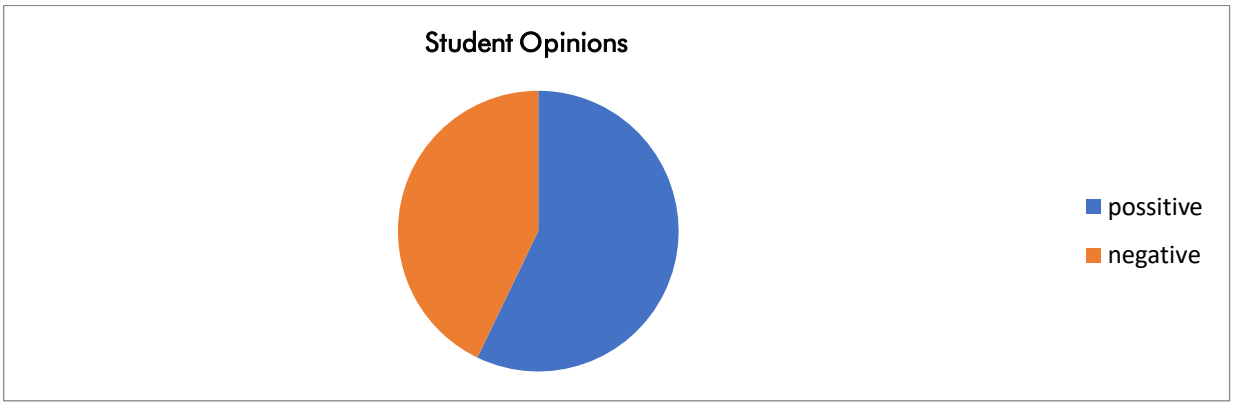
General View on Distance Education from the Perspectives of Students

In this study, questions about remote education were asked of 35 elementary-level students attending BİLSEM (Science and Art Centers) in İzmir province. In this section, the data obtained through the students' responses to the interview questions within the scope of the research are presented. Findings and comments based on the findings are presented in consideration of the order of the questions in the Student Interview Questions Form.

According to the answers given to the Student Interview Questions, out of the 35 participating students, 20 (T1, T2, T3, T5, T6, T7, T8, T9, T12, T14, T15, T16, T20, T24, T25, T26, T27, T28, T30, T35) expressed positive opinions about distance education, while 15 (T4, T10, T11, T13, T17, T18, T19, T21, T22, T23, T29, T31, T32, T33, T34) expressed negative opinions. The findings indicate that there is a close balance between positive and negative views regarding distance education.

Figure 8.

General View on Distance Education from the Perspectives of Students



Some of the student views on this subject are given below:

"For me, teaching in school is more understandable. Distance education is not as fun and instructive as face-to-face education. Despite these drawbacks, I am happy to see my friends and teachers. Even in distance education, my BİLSEM classes are still enjoyable." T3

"I think it's great, I have a lot of fun." T6

"It's good, but face-to-face education is better. In face-to-face education, our teachers teach us new things. I'm always curious about what new things we will learn in each class." T12

"I think it's not sufficient. I think we are falling behind in education. In short, we are not receiving proper education. Sometimes our families don't have the means, and some families do not show enough sensitivity to remote education." T21

"It doesn't replace face-to-face education. Communication is not very effective. In face-to-face education, we understood the topics better, but in remote education, we grasp them, but something feels missing." T23

The sub-theme of "Teacher's Approach to Conducting Distance Education from the Students' Perspective" is presented below based on the findings. It is understood from the student's responses to the interview questions that the classes are generally conducted using the Zoom program. In addition, according to the responses obtained from the 35 participating students, it has been indicated that teachers use various methods to conduct distance education. Based on the findings, these methods include activities, solving tests, mental activities, lectures and discussions, competitions, programs, topic explanations, videos, worksheets, online (live) sessions, software instruction, fun games, drawing pictures, reading, exercises, question-answer sessions, problem-solving, use of internet resources, internet applications, project work, visual materials, and experiments. Some of the students' opinions on this matter are provided below:

"Our teacher conducts our classes through Zoom. With features like screen sharing, screen projection, and whiteboard, we can easily follow our lessons with interactive activities." T5

"Our teacher takes great care of us and assigns us various activities." T7

"In computer science classes, we are asked to install software programs and enter commands based on a specified topic. In each new lesson, we add new commands to the previous one to accomplish the software. It creates a fun class. In English class, we also use applications. After teaching the topic, we engage in practical exercises, which is also very enjoyable." T15

"Even though it's remote education, our teachers at BİLSEM show great interest in us. They engage us in active work and assign projects. They also organize fun games. I enjoy listening to my teachers at BİLSEM." T29

"Our teachers try their best to teach us a lot. We listen to them very carefully. They explain everything and provide links for us to access certain applications. We have good lessons." T31

The sub-theme of 'Teacher's Evaluation Methods in Distance Education from the Students' Perspective' is presented based on the findings. It is evident from the students' responses that teachers use different techniques to assess the knowledge acquired during the lessons. The majority of the 35 students (19 students: T2, T5, T7, T10, T12, T16, T19, T21, T22, T23, T24, T25, T27, T28, T30, T31, T32, T33, T35) mentioned that their teachers evaluate the learned material through question-and-answer sessions. Other students mentioned various methods, including question-and-answer, class participation, activity scoring, homework/activity checks, live exams, experiments or tasks, grading, tests, activity filing, checks, observation, revision, assignment, activity check, Kahoot (a learning-based quiz game used in educational institutions as an educational technology tool), and Evaluation of Assignments.

These findings indicate that teachers employ diverse methods to evaluate the student's learning, as reported by the students. Some of the student opinions on this matter are provided below:

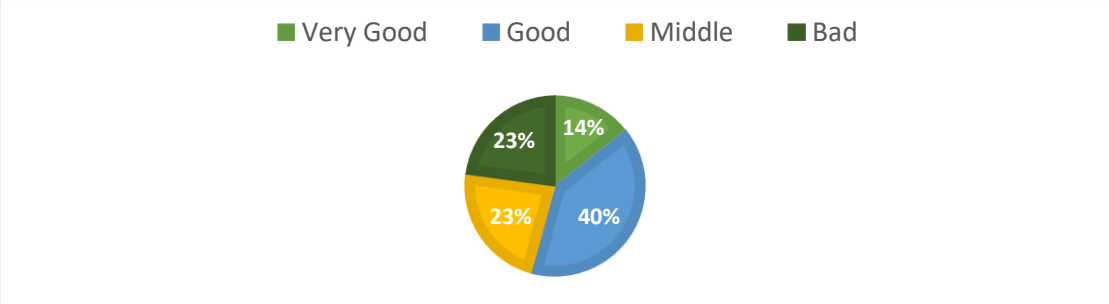
> "By conducting experiments or assigning tasks." T6
>
> "Through class participation and documenting the activities." T11
>
> "Using games and computer applications to review what we have learned and test ourselves." T15
>
> "Asking questions and using the Kahoot application." T28 "We are given activities to complete. The teacher asks questions. We also benefit from certain applications." T33

Students' Enjoyment of Distance Education

In line with the answers given by the students, the question was classified into two themes. These themes are the level of students' enjoyment levels and enjoyment status in distance education. According to the answers received from 35 students who participated in the research, their levels were described as very good, good, medium, and bad. In line with the answers obtained, the levels of enjoyment are as in Figure 9.

Figure 9.

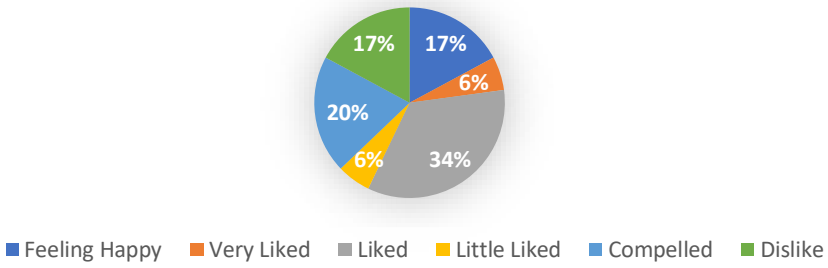
Distribution of Students' Enjoyment Levels



According to the findings obtained from these data, it has been shown that 8 out of 35 students (T10, T13, T17, T18, T21, T29, T32, T33) had negative feelings toward distance education. Another theme derived from the responses to this question is the enjoyment status. Based on the answers obtained from the 35 participating students, their enjoyment statuses have been categorized as shown in Figure 10.

Figure 10.

Distribution of Students' Enjoyment Status



Some students who participated in the research, such as T2, T3, T6, T13, T15, and T24, have expressed that they feel happy during distance education classes. T26 and T28 have mentioned that they enjoy distance education classes a lot, while T4, T5, T7, T8, T9, T12, T14, T16, T25, T27, T30, T35 have stated that they enjoy distance education. T22 and T31 have expressed that they do not enjoy distance education very much. Participants such as T1, T11, T19, T20, T23, and T33, mentioned that although they don't like distance education, they perceive it as a necessity during the pandemic period. Based on these findings, it has been concluded that some students may not enjoy distance education or enjoy it less, but it is considered necessary due to the ongoing pandemic situation. Additionally, one student (T23) who does not enjoy distance education has shown a more tolerant approach towards it for the sake of educational continuity.

The findings indicate that students have varied emotions towards distance education, with some feeling very happy and engaged in the classes, while others feel unhappy and bored. Based on the responses obtained from the students, it can be concluded that distance education is liked by the majority as a preferred form of education. Some student opinions on this matter are provided below:

> "I don't think distance education is very effective, but I can still benefit from these classes. We are obliged during the pandemic." T1
>
> "I enjoy seeing the positive side of everything, so I try to enjoy distance education and have a lot of fun in the classes. It's quite funny when our frozen images remain on the screen during internet interruptions." T5
>
> "I like distance education in BILSEM classes, but I prefer face-to-face classes more." T12
>
> "Of course, face-to-face education is better, but I think BILSEM has organized this process very well. They prepared many activities, so I was happy." T24
>
> "Even though my teachers are good and attentive, I don't like distance education. In face-to-face education, we used to do more hands-on activities, which were more effective." T29

Comparison of Distance Education and Face-to-face Education in terms of Students

According to the responses given by the students, 27 students (T1, T3, T4, T5, T7, T9, T10, T11, T12, T13, T15, T16, T17, T18, T19, T20, T21, T22, T23, T24, T25, T29, T31, T32, T33, T34, T35) stated a preference for face-to-face education, five students (T2, T6, T26, T28, T30) preferred distance education, and three students (T8, T14, T27) indicated a preference for both face-to-face and distance education. While in previous questions most students expressed positive thoughts towards distance education and their liking for it, in this question, it was found that the majority preferred face-to-face education. Based on the students' responses, it can be concluded that being away from their teachers and peers, lack of socialization, and inability to spend time and play with friends were the reasons for preferring face-to-face education during the distance education process. Among the reasons for choosing distance education, the possibility of seeing family during breaks and the comfort of the home environment, as well as the flexibility of time, were identified. The findings also indicate that technical issues such as internet disruptions, technical glitches, and limited class duration were reasons for not preferring distance education. It was also mentioned that difficulties in maintaining attention in front of the screen and decreased motivation during interruptions led to a preference for face-to-face education. The preference for face-to-face education was found to be driven by encountering situations of inequality of opportunities during the distance education process. According to the students' responses, issues such as deficiencies in class control, behavioral problems during classes, and decreased importance given to the lessons in distance education were stated as reasons for not preferring distance education, as face-to-face education was perceived to have better class control. While some students found distance education fun, the majority of students indicated that face-to-face education was more enjoyable. Furthermore, based on the responses, it was concluded that due to the difficulties experienced during the pandemic, distance education was deemed necessary for the continuity of education and learning. Some student opinions on this matter are provided below:

> "Distance education is convenient. Since everything is within reach at all times, there is no worry about forgetting something." T2

> "In distance education, I don't enjoy staring at the computer for long periods. In face-to-face education, we don't have to constantly look at the computer. Going out with friends during breaks, playing and having fun with them, gives more pleasure. After the class ends, nobody can see each other. I end up going through the term without getting to know my friends closely." T15

> "Face-to-face education is better. Regardless of how the lessons are conducted, something is missing in distance education. I need to be face-to-face with my teachers and be with my friends." T23

> "In distance education, we never get tired, and we stay at home." T30

> "In face-to-face education, we learn more and in a more enjoyable way. But in distance education, it's not as fun to go through the lessons. We can't socialize with our friends because we can't see them in person, and we can't interact with our teachers." T31

The Positive Aspects of Distance Education from the Students' Perspective, based on the findings, are presented below. According to the responses of students to this question, the positive aspects of distance education compared to face-to-face education can be categorized into themes such as Pandemic Necessity, Time Saving, Space Saving and Comfort, Technology Usage, Effective Lessons, and Energy (in terms of performance) Saving. Out of the 35 participating students, 17 (T3, T4, T7, T11, T12, T13, T14, T17, T21, T23, T24, T25, T29, T31, T33, T34, T35) identified distance education as a necessity during the pandemic. Thirteen students (T2, T5, T6, T8, T9, T16, T18, T20, T22, T23, T26, T28, T33) mentioned that the positive aspect of distance education compared to face-to-face education is the comfort and ease of being at home, in terms of saving space. Nine students (T1, T2, T3, T10, T19, T22, T27, T28, T32) stated that one of the positive aspects of distance education is time-saving. Three students (T5, T29, T32) expressed that technology usage is a positive aspect of distance education. One student (T15) mentioned that the positive aspect of distance education is the efficient delivery of lessons, while another student (T30) stated that distance education saves energy in terms of performance. Based on all the responses given by the students, it can be concluded that the positive aspects of distance education from the students' perspective are expressed in a very limited manner compared to face-to-face education. These responses, along with the limited expression of the positive aspects of distance education compared to face-to-face education, indicate a preference for face-to-face education. Some student opinions on this matter are provided below:

> "I don't see any positive aspect. I can only answer this question when everyone participates in the class without interruptions and with complete equipment. Face-to-face education is a fair system, but there is no justice in distance education, so I can't find a positive side unless it is mandatory during illness." T4
>
> "In distance education, I can do things at home that I couldn't do at BILSEM in various situations." T6
>
> "We grasp the subjects better because we only focus on the teacher. The intensive completion of lessons and covering the topics are positive aspects." T15
>
> "During this pandemic period, it reduces the risk of getting sick. Also, working on the computer is often fun." T29
>
> "For me, not having to wake up at 6:30 am and rush to commute on Saturday mornings was a positive aspect. Additionally, being able to conduct classes by sharing the screen on Zoom is also a positive situation in my opinion." T32

The negative aspects of distance education from the student's perspective, based on the findings, are provided below.

According to the responses given by students to this question, the negative aspects of distance education compared to face-to-face education are categorized thematically as follows: According to T3, T5, T7, T8, T9, T15, T19, T21, T23, T26, T27, T30, T32, T33, and T35, technical problems are encountered in distance education. According to T4,

T6, T12, T13, T14, T16, T22, T23, T24, T25, T27, T28, T33, and T34, distance education is negative in terms of sociability. According to T4, T10, T15, T18, T25, and T31, distance education leads to screen addiction and resulting health problems. According to T12, T17, T22, T32, and T33, the efficiency of distance education is lower compared to face-to-face education. According to T2, T5, T19, and T23, communication is limited in distance education. According to T4, T15, and T21, distance education can cause inequality of opportunities.

According to T10, T20, and T23, there is a distraction of attention in distance education. According to T29, T31, and T34, there are difficulties in implementing practical lessons such as music, art, and laboratory in distance education. According to T1, there are challenges in terms of lesson control in distance education. According to T11, there is a lack of motivation in distance education classes, and the emotional effects of distance education are low. According to T18, distance education requires more tasks and responsibilities. Additionally, according to T21, negative consequences arise when there is no compulsory participation in distance education, as indicated by the findings.

Out of the 35 participating students, 15 responded that technical issues such as internet problems and disruptions in the technical infrastructure were the negative aspects of distance education. 14 students expressed the lack of social interaction as a disadvantage of distance education compared to face-to-face learning, citing the absence of teachers and classmates. Six students mentioned eye strain, screen addiction, and resulting health issues as negative aspects of distance education due to spending excessive time in front of screens. Five students pointed out the decreased efficiency of learning compared to face-to-face education as a drawback of distance education. Four students mentioned communication problems with teachers and peers, highlighting communication as a negative aspect of distance education. Another four students stated that the lack of internet and computer access created inequalities, leading to limited opportunities in distance education. Three students mentioned distractions during distance education due to external factors such as noise pollution and other stimuli at home, resulting in difficulties maintaining focus. Three students expressed that implementation came up as an issue due to the limitations to practical subjects requiring physical activities and in distance education. One student stated that students could easily get distracted and, therefore, lack control over the lesson, and student engagement was a negative aspect of distance education. Another student mentioned low motivation and subsequent unhappiness as negative aspects in terms of motivation and emotional effectiveness in distance education. One student mentioned the increased workload in distance education, requiring more tasks, as a negative aspect. Lastly, one student pointed out the lack of mandatory attendance in distance education, highlighting it as a negative aspect.

Based on the student's responses, it can be concluded that each student expressed individual difficulties experienced during the distance education process as negative aspects compared to face-to-face learning. The findings indicate that one of the most

commonly mentioned negative aspects of distance education is related to technical issues and infrastructure deficiencies. Additionally, it is observed that distance education is generally perceived as lacking in terms of social interaction. Some student opinions on this matter are provided below:

> "Sometimes the internet goes out, and I can't connect to the class for a long time. Sometimes our teacher's internet cuts off, and I can't hear them. Power outages can be a problem. Similarly, my friends can have connection issues, and then I can't understand their questions and answers." T3

> "I think distance education is nice, but I would have liked to see my teachers in person at least once." T6

> "We have to look at the computer for a long time, which makes us physically uncomfortable. Our eyes hurt, and we get headaches from the sound. If there are internet problems, we can miss the class, or our friends who don't have internet access can't join and fall behind." T15

> "There are many negative aspects. Not everyone has internet access, and even for those who do, there can be interruptions. Communication is not very good, and I can't play games and have fun with my friends. Since we already have fewer classes at Bilsem, it's difficult to concentrate when it's online." T23

> "Being away from my friends, occasional internet disruptions, missing the class, or the tablet/phone breaking." T27

How to Teach Distance Education Lesson According to the Student

In line with the answers given by the students to this question, the following findings were reached: It could be obligatory to open a microphone and camera to increase interest in the lesson. Applications that are not affected by the internet interruption can be developed. Before the lesson, teachers can shoot videos about the subject and send them to the student if there is a disruption in the live lessons. Lessons can be taught in groups of 4 or 5 students to increase efficiency. It would be better if the technical problems with the internet problems are fixed. It would be better if each student had the devices like computers, tablets etc. Lessons can be shorter and individual. Games, more activities, and projects can be applied in the lessons. It would be better if there was no time limit. Lessons can be made more fun. It may be better if the number of daily lessons is reduced and the breaks are longer. More efficient and fun lessons can be taught by using auxiliary course sites. More visual materials can be used. Regular and timely attendance is required. For applied courses, a system can be developed for students to practice. A solution to time and space constraints can be found.

According to the responses given by the students to this question, 13 out of 35 students (T2, T6, T8, T11, T13, T14, T16, T20, T23, T24, T25, T29, T30) expressed that they are quite satisfied with the teaching methods of their teachers in distance education. In addition, the majority of students believe that the aspect that needs improvement in the implementation of distance education classes is the resolution of technical and internet issues. Four students (T4, T10, T15, T35) stated that dividing students into small groups or personalizing the lessons during the distance education process could enhance the

efficiency of teaching. Two students (T12, T32) expressed the opinion that no matter what is done in the implementation of distance education classes, it cannot replace face-to-face education. Based on the findings, it can be understood that there is general satisfaction with the teaching methods in distance education at BILSEM schools. Furthermore, it can be concluded that the internet and technical problems experienced are a nationwide issue. Some student opinions on this matter are provided below:

> " It would be better if it could be done with applications that are not affected by internet disruptions. We can also overcome some of the difficulties experienced in live classes if our teachers record lecture videos and send them to us." T3
>
> "At times, I can't make my voice heard by my teacher or express what I want to say clearly. If we were in face-to-face education, my teacher would understand my feelings immediately." T5
>
> "The current teaching methods are quite good." T13
>
> "It would be more enjoyable if the connection was not bad, Zoom didn't kick us out of the class, and we could interact with our friends during breaks." T22
>
> "First and foremost, all of my friends should attend the class regularly and without interruption. Relativity is crucial. Since some lessons require a practical application, there should be a system where students can also practice. Solutions should also be found for time and space constraints." T33

Results and Discussion

The majority of teachers stated that they use online communication tools and applications such as Zoom, developed by "Video Communications" utilizing end-to-end encryption, and Web 2. Additionally, they mentioned the use of Whatsapp, an instant messaging and communication application developed for smartphones with cross-platform functionality, Google Meet, a video conferencing and video calling platform developed by Alphabet and Google, and Teams, a platform combining video conferencing, video calling, workplace chat, meetings, notes, and attachments. It was also mentioned that Arduino (programming language), Geogebra (mathematics software), Phyton (programming language), and educational videos related to the subjects are utilized during the distance education process. These findings indicate that teachers make use of various online communication tools, applications, and programs during distance education. In other studies conducted in this field, Çok (2021) discussed the use of EBA and Zoom programs in distance education. Another study indicated that distance education was carried out using EBA, Zoom, and Whatsapp applications (Erbil et al., 2021).

The majority of the teachers participating in the research were found to use question-answer, show-do, brainstorming, problem-solving, lecture, discussion, case study, presentation-invention, problem-solving methods, and techniques. In addition to these methods and techniques, the use of project assignments, discovery-based learning, group work, six thinking hats technique, collaborative learning, synectics, speaking

circle, exhibition technique, research-inquiry, Orff and Kodaly techniques in music education, creative drama, project-based learning, as well as creative and critical thinking methods and techniques were also mentioned. These findings indicate that teachers employ various methods and techniques during the process of distance education.

According to the data obtained from the teachers, it was observed that there is no quantitative assessment in BILSEM schools. Additionally, it was stated that during the process of distance education, measurement and evaluation are qualitative, product-based, application-based, and process-oriented. Despite the absence of quantitative assessment, it was found that teachers utilize various assessment methods and techniques for tracking what is taught, such as checklists, graded scoring keys, problem-solving speed, assessment forms created by themselves or provided by the institution, short tests, open-ended questions, performance task evaluation, and rubric scales. These findings indicate that although there is no quantitative assessment in normal circumstances in BILSEM schools, teachers resort to different measurement and evaluation methods and techniques in distance education to identify what has been learned and evaluate the resulting products qualitatively.

According to the findings obtained from the teachers, it is observed that technological competence has a positive impact on the process of distance education. Teachers consider themselves to be sufficiently competent in terms of technological proficiency for delivering distance education. In one of the studies conducted in this field, Ağır (2007) emphasizes the importance of teachers adapting to advancing technology, becoming technologically literate, and accepting the changes in their responsibilities and roles about the evolving technology. Baran and Sadık (2021), in their study on the examination of classroom teachers' experiences and opinions on emergency remote teaching during the Covid-19 process, state that teachers already used technology before the pandemic, indicating that they possess the necessary technical knowledge and skills to carry out distance education even if they had not previously been engaged in it.

Based on the findings obtained from the teachers, it is indicated that acquiring technological proficiency is influenced by factors such as university education, postgraduate education, access to computers, the internet, etc., the demands of the current time, training programs, educational videos, in-service seminars, workshops, etc., experience gained over time, personal effort, curiosity, and the need for self-improvement. Additionally, it is concluded that students also contribute to their teachers' technological knowledge. Studies conducted in this field are examined, it is observed that personal effort and experiences play a significant role in teachers' acquisition of technological proficiency (Çok, 2021). Ağır (2007) stated that in-service training can effectively enhance teachers' technological proficiency for distance education.

Regarding the impact of professional seniority on technological proficiency, teachers hold different opinions. While some teachers believe that professional seniority has a

positive effect on technological proficiency, others think it has no impact. According to some teachers, professional seniority does not directly affect technological proficiency, while another teacher suggests an inverse relationship between professional seniority and technological proficiency. In other words, there is an opinion that technological proficiency decreases as professional seniority increases if individuals do not develop themselves and adapt to the requirements of the time. The teachers' perspectives on the influence of professional seniority on technological proficiency differ based on the obtained findings., Ağır (2007) observed that professional seniority significantly influences teachers' attitudes towards distance education, with teachers having 0-5 years of professional experience demonstrating a positive attitude. Similarly, Ergin (2010) emphasized that teachers with 10-14 years of professional experience have a more positive outlook compared to those with 1-4 and 5-10 years of professional experience. Ülkü (2018) found that while the attitudes of primary school teachers towards distance education vary based on professional seniority, this difference is not statistically significant.

According to the findings obtained from the teachers, the positive aspects of distance education compared to face-to-face education include the independence from physical location, reduction in expenses in terms of material resources, utilization of technology in education, increased attendance in certain subjects, the ability to reach all students despite financial constraints or distance-related issues, time flexibility, efficient use of time, opportunity for students to use and develop technology skills, increased motivation in certain subjects, opportunity for active learning through computer and web-supported programs and applications, improvement of information and communication technology skills, enhancement of 21st-century skills, absence of negative situations such as peer bullying and mobbing, savings in time, space, and energy, increased use of media and visual and auditory resources, utilization and development of new teaching methods, techniques, and practices, improvement of student self-control, accessibility of education to every student, ease of examination and accessibility in reviewing and evaluating products, assignments, responses, and projects, increased speed of information and note exchange, and ensuring the continuity of education and instruction during pandemic periods. When the studies conducted in this field are examined, it is evident that teachers identify similar positive aspects of distance education. Seferoğlu (2015) stated in their study that the practices and resources used in distance education provide equal educational opportunities by reaching many students simultaneously.

According to the findings obtained from the teachers, the negative aspects of distance education compared to face-to-face education include lower efficiency in practical courses, negative impact of technological inadequacies on distance education, lack of socialization opportunities, motivational issues due to reduced social interaction, limitations on peer learning, restricted teaching activities, increased screen addiction and resulting health problems, inadequate control due to the absence of mandatory camera use, potential for students to engage in non-academic activities due to the absence of

mandatory camera use and insufficient self-discipline, challenges in music and other skill-based and practical courses, synchronization issues, insufficiency of the distance education programs used, internet and communication problems, technical and financial constraints, inequality among students due to financial limitations, parental intervention during lessons, weakened teacher-student relationship resulting from communication issues, limitations in group work and art education, adaptation issues arising from technical problems, and difficulties in receiving feedback. Similar studies conducted in this field generally highlight infrastructure problems, internet issues, hardware deficiencies, lack of attention given to distance education, communication, and interaction problems, challenges in practical courses, and low attendance in distance education classes. Keskin and Özer Kaya (2020) reported that students experience communication deficiencies in their studies. The lack of eye contact between teachers and students in distance education and the difficulty in controlling students result in reduced student participation in classes (Gürer, Tekinarslan, & Yavuzalp, 2016). In a study by Akgül (2021), it was found that teachers encounter issues such as infrastructure and internet problems, lack of technological knowledge and hardware, low student attendance, inability to monitor students, parental indifference, lack of importance given to classes, and deficiencies in assessment and evaluation in distance education.

According to the findings obtained from the teachers, the areas that need improvement in distance education are internet infrastructure, technical infrastructure, providing financial and technical support such as tablets to students in need, providing more activities and materials, operating in a more organized and planned manner, scheduling class hours, supporting face-to-face education and integrating it with distance education, establishing criteria regarding compulsory attendance and absenteeism, giving necessary importance to equal opportunities, increasing and enhancing platforms like EBA TV, enhancing visual elements in theoretical lessons, increasing financial and moral support for teachers, addressing technical and technological deficiencies, creating online competitions and activities, conducting distance education seminars for teachers, students, and parents, enhancing teachers' technological competencies, developing new programs, ensuring student participation in feedback collection and class management, improving student monitoring mechanisms, establishing a rich shared archive, creating video and presentation repositories, establishing online libraries, developing innovative applications, and creating online platforms for art education. Similar recommendations for improving distance education and addressing deficiencies have been proposed in other studies (Koyunoğlu, 2008). Additionally, Arık (2020b; 2020c) emphasized the importance of supporting teachers, who are one of the most important factors in both face-to-face and distance education, to develop and improve this process. According to the findings obtained from the students, it is concluded that students have a moderately positive perception of distance education, while a slightly lower proportion of students have a negative perception. The similarity in the proportions indicates that opinions about distance education are on an average level.

Based on students' responses, it is observed that teachers use various methods and techniques in the process of conducting distance education, such as activities, test solving, mental activities, lectures and discussions, competitions, programs, topic presentations, videos, worksheets, online activities, software instruction, educational games and fun activities, drawing, reading, exercises, question and answer sessions, problem-solving, use of internet resources, internet applications, project work, visual information, and experiments.

According to the students, the evaluation methods used by teachers in distance education include a question and answer sessions, class participation, activity scores, assignments, activity control, live exams, experiments or tasks, grading, tests, activity filing, checks, observation, review, assignment submission, activity control, the application of the educational game "Kahoot" (a learning-based quiz game used in educational institutions) (Can, 2020; Erbil et al., 2021), and evaluation of the work conducted. These findings indicate that teachers use various assessment methods based on what students have learned.

Based on the findings obtained from the students, it is concluded that while most students enjoy distance education, a small percentage of the students do not. Additionally, some students feel happy while participating in distance education, while others express unhappiness. However, distance education is perceived as a mandatory form of education during the ongoing pandemic period.

When students were asked to compare face-to-face education and distance education, it is understood that although the majority of students also enjoy distance education, they prefer face-to-face education. The main reason for students' preference for face-to-face education over distance education is generally the fact that they are away from their teachers and friends during the distance education process, the lack of social interaction, and the inability to spend time and play with their friends. In the studies conducted in this field, Akgül (2021) also found that face-to-face education is preferred more and that students miss the school and social environment during the distance education process. Kantos (2020) conducted a study asking primary school teachers which type of education they prefer, face-to-face or distance education, and the results showed that primary school teachers face difficulties in communication with students who have internet and technological infrastructure problems, and that distance education is not suitable for them.

According to the responses given by the students, the reasons for choosing distance education include the possibility of being with family during breaks and the comfort provided by the home environment, as well as the flexibility of time.

According to the students, the reasons for not preferring distance education include problems such as internet disruptions, technical difficulties, and limited class duration. They also mentioned difficulties in focusing on the screen, decreased motivation when experiencing interruptions during lessons, encountering situations of inequality during the distance education process, disruptions in lesson control, behavioral issues during

classes, and a decrease in the importance given to the lessons. It is concluded that face-to-face education provides better control over the lessons. Similar results have been obtained in other studies conducted in this field. Akgül (2021) found that face-to-face education is preferred more and that students miss the school and social environment during the distance education process. Additionally, Ünal (2021) examined the eating habits and weight changes of young people during the pandemic period while receiving distance education and found that on average, students gained weight. This can be seen as a reason for not preferring distance education in terms of physical activity.

While some students find distance education enjoyable, it is understood that the majority of students find face-to-face education more enjoyable. According to students' responses, it is concluded that distance education is considered necessary for the continuity of education and instruction due to the difficulties experienced during the pandemic. In a similar study, Akgül (2021) found that according to student-teacher and parent perspectives, distance education is seen as a necessity during the pandemic period.

The positive aspects of distance education compared to face-to-face education, as perceived by students, are mostly related to the necessity during the pandemic period, time and space savings, convenience of the learning environment, use of technology, more effective lesson delivery according to some students, and energy-saving in terms of performance. These responses indicate that the positive aspects of distance education are seen in a limited number compared to face-to-face education, which is why face-to-face education is preferred more.

The negative aspects of distance education compared to face-to-face education, as perceived by students, include technical problems, lack of social interaction, health issues due to screen dependency, lower efficiency in lesson delivery according to some students, communication problems with teachers and peers, inequality among students due to financial constraints, distraction caused by excessive environmental stimuli, practical application issues in practical lessons, decrease in lesson control due to features such as microphone and camera control, low motivation, emotional dissatisfaction due to the absence of teachers and peers, increased responsibility for studying at home, and the absence of compulsory participation according to some students. In a study conducted by Fidan (2020), it was observed that 74 negative aspects were identified based on the opinions of classroom teachers regarding the negative aspects of distance education.

Based on the findings obtained from students' responses, the results regarding how distance education lessons should be conducted include the possibility of mandatory microphone and camera usage to increase interest in the lesson, the development of applications that are not affected by internet disruptions, teachers recording videos related to the subject before the lesson and sending them to students in case of interruptions during live lessons, conducting lessons in groups of 4 or 5 students to enhance lesson efficiency, resolving internet and technical issues, ensuring that each student has access to a computer, tablet, or similar devices, shorter and more

individualized lessons, implementation of games, more activities, and projects in lessons, putting no time restrictions, making lessons more enjoyable, reducing the number of daily lessons and extending break times, utilizing supplementary educational websites for more effective and enjoyable lessons, using more visual materials, ensuring regular and timely participation in lessons, developing a system for students to practice and apply concepts in practical lessons, and finding solutions to time and space constraints.

Based on the obtained findings, it is understood that there is general satisfaction with the teaching methods in BILSEM (Science and Art Centers) schools during the distance education process. However, it can be concluded that internet and technical issues are nationwide challenges.

Suggestions

Suggestions developed according to the results obtained from the research:

- Considering that Science and Art Centers (BILSEM) are educational institutions focused on art and science, it is understood that technology-based methods should be more integrated into the lessons in these institutions. Therefore, instead of being solely used as an educational method during pandemic periods, distance education can be integrated into the lessons as an alternative to face-to-face education. This way, the use of technology-based methods can increase in BILSEM schools.
- In-service seminars and workshops can be organized for the teachers working in BILSEM schools to increase their awareness and skills regarding the methods and techniques used in distance education.
- Specific distance education programs and applications can be developed and incorporated into the school curriculum to enable BILSEM teachers to use them in distance education lessons.
- Considering the finding that there is no quantitative measurement and evaluation in BILSEM schools, observation-based assessment scales compatible with the school regulations and curriculum can be developed to monitor students' learning, instead of using different applications.
- Engaging and appealing activities can be developed for BILSEM students according to their developmental levels and interests.
- Seminars and training related to distance education can be organized for BILSEM students.
- Practical programs such as simulations can be developed to address the challenges students face in practical lessons during distance education. This can help foster creativity and hands-on learning skills in distance education.
- During the process of distance education, BILSEM students can be grouped individually or in minimum groups to address issues such as attention, motivation,

and low learning efficiency. To enhance the positive aspects of distance education and address its negative aspects, the following actions can be taken:

- Efforts can be made to address technical issues such as internet problems to ensure uninterrupted participation of both teachers and students in distance education.
- Family education seminars can be organized to promote regular and enthusiastic participation of students in distance education. This can help eliminate distractions and low motivation caused by stimuli in the home environment.
- Giving more importance to visual elements in lessons can make distance education more effective and enjoyable.

Suggestions for future research:

- Research can be conducted with BILSEM teachers and students from different levels.
- The research can be expanded by conducting it in different cities.
- The study can include parents as participants as well.
- The research questions can be developed to allow observations from different dimensions.
- The research can be conducted using various methods.

References

Ağır, F. (2007). Determination of primary school teachers' attitudes towards distance education in private and public schools. Balıkesir University Journal of Science Institute, Master's Thesis. https://doi.org/10.29129/inujgse.446906

Akgül, G. (2021). Views of social studies teachers, middle school students, and student parents on distance education during the pandemic. Uşak University Graduate School of Education, Master's Thesis. https://doi.org/10.14520/adyusbd.862639

Akgül, G., & Oran, M. (2021). Views of social studies teachers, middle school students, and student parents on distance education during the pandemic. *Journal of New Approaches in Education, 3*(2), 15-37. https://doi.org/10.20493/birtop.818308

Akgün, Ö.E., Büyüköztürk, Ş., Çakmak, E.K., Demirel, F., & Karadeniz, Ş. (2013). Scientific research methods. (14th edition). Ankara: Pegem Akademi. https://doi.org/10.14527/9789944919289

Aktan Acar, E., Erbaş, Y. H., & Eryaman, M. Y. (2021). Examination of preschool teachers' opinions on distance education during the Covid-19 pandemic. *Journal of Open Education and Research, 7*(4), 31-54. DOI: 10.51948/auad.979726

Alper, A. (2020). Distance education in K-12 education during the pandemic: a case study. *Journal of National Education, Education in Turkey and the World in the Epidemic Process,* 45-67. DOI: 10.37669/milliegitim.787735

Anagün, Ş. A., & Ersoy, A. (2009). Classroom teachers' views on the homework process in science and technology classes. Necatibey Faculty of Education Electronic Journal of Science and Mathematics Education (EFMED), 3(1), 58-79. https://doi.org/10.17522/balikesirnef.506518

Arık, B. M. (2020b). The Effects of Coronavirus on Education in Turkey - II. https://www.egitimreformugirisimi.org/turkiyede-koronavirusun-egitimeetkileri-ii-uzaktan-egitim-nasil-olacak-ve-bu-surecte-neler-dikkate-alinmali/

Arık, B. M. (2020c). The Effects of Coronavirus on Education in Turkey - IV, How does the digital divide affect distance education? The Effects of Coronavirus on Education in Turkey - IV | How does the digital divide affect distance education? | ERG (egitimreformugirisimi.org) 1

Baran, A., & Sadık, O. (2021). Examination of elementary school teachers' emergency distance teaching experiences and opinions during the Covid-19 process. *Uludağ University Faculty of Education Journal, 34*(2), 813-854. Retrieved from https://dergipark.org.tr/en/download/article-file/1584859

Bayburtlu, Y.S. (2020). Turkish language education according to teacher opinions in the distance education process during the COVID-19 pandemic period. *Turkish Studies, 15*(4), 131-151. https://dx.doi.org/10.7827/TurkishStudies.444

Baykoç Dönmez, N. (2011). Education of gifted and talented children.

Brantlinger, E., Jimenez, R., Klingner, J., Pugach, M., & Richardson, V. (2005). Qualitative studies in special education. *Exceptional Children, 71*(2), 195-207. https://doi.org/10.1177/001440290507100205

Bozkurt, A. (2020). Evaluations on education in the world during and after the coronavirus (Covid-19) pandemic: New normal and new education paradigm. *Journal of Open Education and Research, 6*(3), 112-142. Retrieved from [link]

Can, E. (2020). Pedagogical reflections of the coronavirus (COVID-19) pandemic: Open and distance education practices in Turkey. *Journal of Open Education and Research, 6*(2), 11-53.

Canpolat, U., & Yıldırım, Y. (2021). Examination of middle school teachers' experiences of distance education during the COVID-19 outbreak. Journal of Open Education and Research, 7(1), 74-109. https://doi.org/10.51948/auad.841632

Ceviz, N., Tektaş, N., Basmacı, G., & Tektaş, M. (2020). Analysis of variables influencing university students' anxiety levels during the Covid-19 pandemic. *International Journal of Scholars in Education, 3*(2), 312-329. Retrieved from [link]

Çelik, S. (2021). Biology teachers' views on distance education during the COVID-19 pandemic (Ankara-Sincan Example). Gazi University Institute of Educational Sciences, Master's Thesis. https://doi.org/10.14520/adyusbd.862639

Çok, C. (2021). Teachers' self-efficacy perception regarding distance education and the obstacles they face in distance education during the pandemic. Van Yüzüncü Yıl University Institute of Educational Sciences, Master's Thesis. https://doi.org/10.17943/etku.942850

Demirçelik, E., Bağcı, M. I., & Usta, İ. Scaling the problems experienced by high school students with special abilities during the pandemic process with ranking judgments. *International Journal of Social Sciences in Turkish Culture Geography, 6*(2), 277-289.

Duban, N., & Şen, F. G. (2020). Classroom teacher candidates' views on the Covid-19 pandemic process. Electronic Turkish Studies, 15(4).

Durak, G., Çankaya, S., & İzmirli, S. (2020). Examination of distance education systems of universities in Turkey during the COVID-19 pandemic. *Necatibey Faculty of Education Electronic Journal of Science and Mathematics Education, 14*(1), 787-809. DOI: 10.17522/balikesirnef.743080

E. Koçoğlu Et Al, "Covid-19 Pandemi Sürecinde Türkiye Eğitim," Social Sciences Studies, vol.6, no.65, pp.2956-2966, 2020

Erbil, D. G., Demir, E., & Erbil, B. A. (2021). Examination of classroom teachers' opinions regarding distance education during the pandemic process. *Turkish Studies, 16*, 3. https://doi.org/10.47423/turkishstudies.49745

Ergin, C. (2010). Primary school teachers' perspectives on distance education (Van province example). Yüzüncü Yıl University Institute of Social Sciences, Master's Thesis. https://doi.org/10.31592/aeusbed.1031333

Ergüç Şahan, B., & Parlar, H. (2021). Problems encountered by classroom teachers during the pandemic period and solutions. *OPUS International Journal of Society Researches, 18*(40), 2375-2407. DOI: 10.26466/opus.883814

Er Türküresin, H. (2020). Examination of distance education practices conducted during the Covid-19 pandemic in terms of opinions of teacher candidates. *National Education Journal, Education in Turkey and the World during the Pandemic*, 597-618. DOI: 10.37669/milliegitim.787509

Fidan, M. (2020). Education in the uncertainty of Covid-19: Primary school teachers' views on mandatory distance education. *Uşak University Journal of Education Research,* 24-43

Freeman, H., Patel, D., Ryan, S., & Scott, B. (2000). The virtual university: the internet and resource-based learning. London, Kogan PageGenç, S. Z, Engin, G. & Yardım, T. (2020). Pandemi (covid-19) sürecindeki uzaktan eğitim uygulamalarına ilişkin lisansüstü öğrenci görüşleri. *Atatürk Üniversitesi Kazım Karabekir Eğitim Fakültesi Dergisi, 41*, 134-158. DOI: 10.33418/ataunikkefd.782142

Gürer, M. D., Tekinarslan, E., & Yavuzalp, N. (2016). Views of instructors teaching online courses on distance education. *Turkish Online Journal of Qualitative Inquiry, 7*(1), 47-78.

İşman, A. (1996). Living in the information age: Global Distance Education. ED Journal, v:10-8

İşman, A. (2011). Distance education. PegemA Publishing, 3-4.

Kantos, Z., E. (2020). Classroom teachers' thoughts on distance education. International Scientific Research Congress - Social and Educational Sciences - Asos Publications, Hattuşa, Çorum.

Kara, Y. (2020). Student experiences during the pandemic: The example of Bakırköy district. *Eurasian Journal of Social and Economic Research, 7*(7), 165-176. Retrieved from https://dergipark.org.tr/en/pub/asead/issue/56000/757429

Kaya, Z. (2002). Distance education. PegemA Publishing.

Keskin, M., & Özer-Kaya, D. (2020). Evaluation of students' feedback on web-based distance education during the COVID-19 process. *Izmir Katip Celebi University Journal of Health Sciences Faculty, 5*(2), 59-67. Access address: https://dergipark.org.tr/en/download/article-file/119633

Koyunoğlu, F. (2008). Distance education from a systems approach: Model proposal for İnönü University Distance Education Center. İnönü University Institute of Social Sciences, Master's Thesis. https://doi.org/10.31592/aeusbed.911791

Lambert, V., & Lambert, C. (2012). Qualitative descriptive research: An acceptable design. *Pacific Rim International Journal of Nursing Research, 16*(4), 255-256. Access address: https://www.tcithaijo.org/index.php/PRIJNR/article/view/5805

Metin, M., Gürbey, S., & Çevik, A. (2021). Teachers' views on distance education during the COVID-19 pandemic. *Maarif Mektepleri Uluslararası Eğitim Bilimleri Dergisi, 5*(1), 66-89. DOI: 10.46762/mamulebd.881284

Ministry of National Education Official Website, meb.gov.tr

Morrissey, G., & Higgs, J. (2006). Phenomenological research and adolescent female sexuality: Discoveries and applications. *The Qualitative Report, 11*(1), 161-181.

Okan, N. (2020). Examination of the effectiveness of online classes during the pandemic and comparison with face-to-face classes. International COVID-19 Congress: New Norms in Education, 23-35.

Öz, S. H. (2021). Risk communication during the pandemic: Analysis of coronavirus news in the Turkish national press. Ankara University Institute of Social Sciences, Master's Thesis.

Özan, M. B., Karagözoğlu, A. A., & Yapıcı, Z. (2021). Perception of science and art center students towards distance education during the COVID-19 pandemic: A metaphor analysis. *Turkish Journal of Educational Studies, 8*(3), 319-342. https://doi.org/10.33907/turkjes.933298

Saban, A., Ersoy, A. (2019). Qualitative Research Designs in Education, 82-84.

Saygı, H. (2021). Challenges faced by classroom teachers in the COVID-19 pandemic distance education process. *Journal of Open Education Applications and Research, 7*(2), 109-129. https://doi.org/10.51948/auad.841632

Seferoğlu, S. S. (2009). Use of technology in primary schools and perspectives of administrators. XI. Academic Computing Conference. Şanlıurfa: Harran University.

Şimşek, H., & Yıldırım, A. (2005/2008/2011/2018). Qualitative research methods in the social sciences. Ankara: Seçkin Publishing.

Tümen Akyıldız, S. (2020). English teachers' views on distance education practices during the pandemic (A focus group discussion). *RumeliDE Journal of Language and Literature Research,* (21), 679-696. DOI: 10.29000/rumelide.835811. https://doi.org/10.29000/rumelide.835811

Türker, A., & Dündar, E. (2020). High school teachers' views on distance education were conducted through the Education Informatics Network (EBA) during the COVID-19 pandemic. Journal of National Education, 49(1), 323-342. https://doi.org/10.37669/milliegitim.738702

Tüzün, F. & Yörük Toraman, N. (2021). Pandemi döneminde uzaktan eğitim memnuniyetini etkileyen faktörler. *Ömer Halisdemir Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 14* (3), 822-845. DOI: 10.25287/ohuiibf.780189

Uşun, S. (2006). Distance education. Ankara: Nobel Publishing.

Ülkü, S. (2018). Attitudes of primary school teachers towards distance education. Abant İzzet Baysal University Institute of Educational Sciences, Master's Thesis. https://doi.org/10.26449/sssj.3801

Ünal, D. (2021). Examination of physical activity behaviors, exercise barriers, sleep, and quality of life of young people receiving distance education during the pandemic. Gazi University Institute of Health Sciences, Master's Thesis. https://doi.org/10.34087/cbusbed.827769

Yabacı, A., Kurt, M., Öz, N., Özdemir, M., & Aydın, R. (2021). A study on the relationship between social media usage level and identity confusion of high school students during the pandemic. *Atlas Journal of Social Sciences, 1*(8). https://doi.org/10.38155/ksbd.824932

Yolcu, H. H. (2020). Distance education experiences of prospective classroom teachers during the coronavirus (COVID-19) pandemic. *Journal of Open Education Applications and Research, 6*(4), 237-250. Retrieved from https://dergipark.org.tr/en/pub/auad/issue/57638/788890.

Genişletilmiş Türkçe Özet

Bu araştırmanın temel amacı, İzmir ilinde bulunan Bilim Sanat Merkezleri'nde görev yapan öğretmenler ile bu okullarda eğitim gören ilkokul düzeyindeki öğrencilerin uzaktan eğitim ile ilgili görüşlerini ortaya koymaktır. Çalışmada nitel araştırma yöntemlerinden fenomenoloji (olgubilim) deseni kullanılmıştır. Araştırma 2020-2021 eğitim öğretim yılının ikinci döneminde gerçekleştirilmiştir. Çalışmanın evrenini ve çalışma grubunu İzmir ilinde bulunan beş bilim ve sanat merkezi (Aliağa ilçesinde bulunan Habaş Mehmet Rüştü Başaran Bilim ve Sanat Merkezi, Bornova ilçesinde bulunan Şehit Fatih Satır Bilim ve Sanat Merkezi, Çiğli ilçesinde bulunan Karşıyaka Aydoğan Yağcı Bilim Sanat Merkezi, Konak ilçesinde bulunan Konak Şehit Ömer Halisdemir Bilim ve Sanat Merkezi, Narlıdere ilçesinde bulunan Narlıdere Sıdıka Akdemir Bilim ve Sanat Merkezi) öğretmenleri ve ilkokul düzeyi öğrencileri oluşturmaktadır. Çalışmaya 13 öğretmen ve 35 öğrenci katılmıştır. Çalışma sürecinde pandemiden ötürü yaklaşık iki yıl BİLSEM'lere öğrenci alımı gerçekleşememiştir. Dolayısıyla BİLSEM öğrenci sayısı diğer yıllara göre oldukça azdır. Ayrıca çalışma kapsamı ilkokul düzeyinde olduğu için, ilkokul düzeyindeki öğrencilere eğitim veren öğretmenlerin sayısı da azalmıştır.

Katılımcıların seçiminde içinde bulunan durum göz önünde bulundurulmuştur. Ayrıca BİLSEM'lere genel yetenek, müzik ve resim grubu olmak üzere 3 farklı alanda öğrenci alınmaktadır. Ama çoğunluk genel yetenek alanındadır. Dolayısıyla gönüllü katılımcıların genel yetenek bölümünden olduğu görülmüştür. Veriler toplanırken pandemi sürecinden kaynaklı olarak bazen yüz yüze iletişim, bazen de online iletişim yollarına başvurulmuştur. Bu nedenle veriler öğretmenler ile yapılandırılmış görüşme yoluyla, öğrenciler ile yarı-yapılandırılmış ve yapılandırılmış görüşme yolu ile toplanmıştır. Döküman kaydı için görüşme formlarının yanısıra online formlardan yararlanılmıştır. Katılımcılara görüşme formları ile görüşmenin amacı ve süreci hakkında bilgilendirme yapılmıştır. Katılımcılara kişisel bilgilerinin gizli kalacağı, isterlerse takma isim kullanabilecekleri bilgisi verilmiştir. Sorular gönüllü üç öğretmen ve üç öğrenciye gözlem yolu ile uygulanarak, sorularda anlaşılmaz bir yer olup olmadığı gözlemlenmiştir. Hazırlanan soruların geçerliliği böylelikle test edilmiştir. Veri toplama aracı olarak kullanılacak öğretmen ve öğrenci görüşme soruları alan yazın taraması yapıldıktan sonra alan uzmanı görüşleri ile araştırmacı tarafından hazırlanmıştır. Veriler katılımcıların deneyimlerinden yararlanılarak içerik analiz işlem basamaklarına göre gerçekleştirilmiştir. Araştırma sonucunda elde edilen bulgulara göre öğretmenlerin uzaktan eğitim sürecinde teknolojiyi verimli bir şekilde kullanarak farklı yöntem-tekniklerle, çeşitli uygulama ve programlarla derslerini yürüttükleri anlaşılmıştır. Öğretmenlerin mesleki kıdemlerinin teknolojik yeterliliklerine katkı sağladığı anlaşılmıştır. Öğretmenlere göre uzaktan eğitimin mekân bağımsızlığı, fırsat eşitliği sunması, ulaşılabilirlik imkânı, teknoloji kullanımının artması gibi olumlu yönleri varken; internet alt yapı sorunları ile teknik sorunlar, maddi imkânsızlıklar yüzünden malzeme eksikliği, sosyalleşme ve iletişimin az olması gibi olumsuz yönleri olduğu görülmüştür.

Ayrıca öğrencilerin çoğunun uzaktan eğitime olumlu yaklaşmasına rağmen sosyallik, iletişim ve manevi açıdan yüz yüze eğitimi daha çok tercih ettikleri sonucuna ulaşılmıştır. Bunun yanı sıra salgın hastalıklar ve pandemi durumunda eğitim-öğretimin devamlılığı ve teknoloji-bilgi çağının gerekliliği açısından uzaktan eğitime ihtiyaç duyulduğu anlaşılmıştır. Araştırmadan elde edilen sonuçlar doğrultusunda çeşitli öneriler geliştirilmiştir. Bilim ve sanat merkezlerinin sanata ve bilime yönelik eğitim kurumları olması sebebiyle teknoloji kullanımının artması için yüz yüze eğitimle uzaktan eğitimin iç içe kullanılabileceği, uzaktan eğitim program ve uygulamalarının geliştirilebileceği, uzaktan eğitimin olumlu yönlerinin artırılıp olumsuz yönlerini azaltıcı çalışmalar yapılabileceği gibi önerilerde bulunulmuştur. Ayrıca bu çalışmanın ileriki çalışmalara örnek olup; araştırmanın BİLSEM öğretmenleri ve BİLSEM öğrencilerinin farklı kademeleri ile yapılabileceği, farklı illerde yapılarak genişletilebileceği, katılımcılara velilerin de eklenebileceği, sorular geliştirilerek farklı boyutlarda gözlem yapılabileceği ve farklı yöntemler kullanılarak çalışmanın geliştirilebileceği gibi öneriler sunulmuştur.

Ethics Committee Approval: This study constitutes a section of the master's thesis titled "Perspectives of Bilim Sanat Merkezleri (BILSEM) Teachers and Students on Distance Education" conducted by Fatma Törün under the supervision of Assoc. Prof. Aylin Mentiş Köksoy. The research received ethical committee approval with protocol number 822, decision number 04/13, dated 22.02.2021, from the Ethics Committee of Ege University, Faculty of Social Sciences and Humanities.

Informed Consent: Informed consent was obtained from the participants.

Referee evaluation: This study was peer-reviewed.

Authors Contribution: This study constitutes a section of the master's thesis titled "Perspectives of Bilim Sanat Merkezleri (BILSEM) Teachers and Students on Distance Education" conducted under the supervision of Assoc. Prof. Aylin Mentiş Köksoy by Fatma Törün.

Conflict of Interest: The authors declared no conflict of interest.

Financial Disclosure: The authors declared that this study did not receive any financial support

Authors	Contact
Fatma TÖRÜN	Bergama 100.Yıl Ortaokulu, Bergama, Turkey E-mail: fatmatorun83tr@gmail.com.
Aylin MENTİŞ KÖKSOY	Ege University, Faculty of Education, İzmir E-mail: aylinmentiskoksoy@gmail.com.