

## Mathematics Teachers' Opinions on Distance Education Using the Educational Informatics Network (EBA)

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### ABSTRACT

The aim of this study is to put forth the opinions of mathematics teachers about distance education carried out using the Educational Informatics Network known as EBA (Egitim Bilisim Agi) which is a new practice in Turkey. In accordance with this objective, 10 Mathematics teachers who work in institutions affiliated to Ministry of National Education in Giresun Province form the sample group of the study. The data were collected using a semi-structured interview technique consisting of eight open-ended questions developed by the researcher in this study where the special case method was used. Themes were created based on the data and the frequencies of the themes were determined and presented in tables. In line with the data obtained, it is seen that distance education using EBA prevents students from losing their ties with the school while they stay at home and provides them the experience that education can continue under all circumstances. That being said, students who did not have internet or computer at home were not able to benefit from the education since they could not attend the classes. Additionally, since the live courses held in EBA are not being recorded, students cannot find the opportunity to watch the lessons later on if they cannot attend them. For these reasons, it is suggested that live courses be recorded and made accessible to students and every student should be provided with free internet service in order to ensure equal opportunities in education.

**Keywords:** Educational Informatics Network (EBA), Teachers' opinions, Distance education

### INTRODUCTION

Technology is being increasingly involved in all of the areas of our lives in the current century and has a significant role in the field of training and education as well. Many innovations have also been implemented in Turkey in order to keep up with the developments in the world and to integrate technology and education. One of these innovations is the Educational Informatics Network (EBA) platform, which was introduced into education by the project called "Movement of Enhancing Opportunities and Improving Technology" (FATİH). Educational Informatics Network (EBA) is an online social education platform provided free of charge for the use of people by the Directorate General of Innovations and Education Technologies (Educational Informatics Network, 2016; as cited in Ozen, 2019). The EIN platform, which was started to be used in 2011 consists of different applications such as videos, books, presentations, activities and contents. By using this platform, teachers have the opportunity to create and share their own teaching materials, and students have the opportunity to repeat subjects, study the lessons they missed, and carry out activities (Alabay, 2015).

It is the responsibility of democratic societies to ensure that people can access the education they need wherever, whenever and however they want in order to increase their living standards (Duderstadt, 2001). Education is a phenomenon that continues in all areas of life rather than being a process just carried out at school.

The EIN platform, which provides the opportunity for the continuation of education outside of the school, is made accessible to individuals from anywhere where internet access is available and thus, it is intended to ensure the integration of technology into education.

It was decided to suspend face-to-face education in our country as of March 13 due to the Covid-19 pandemic affecting the whole world, and continue the courses through distance education. At first, distance education is started through EBA TV. Afterwards, the distance education process that will allow teachers to provide live courses from the EBA platform has started. Distance education is a system where people meet their educational needs whenever and wherever they want, using technological devices (Ozsoy, 2010). There are some institutions in our country that have preferred to use the distance education system for many years and continue their courses in this manner. However, during the recent period, distance education has become a necessity rather than being an option, as face-to-face education cannot be carried out. Distance education is a new practice and process both for teachers serving for Ministry of National Education and for students studying at schools affiliated to MoNE. Teachers had difficulties in adapting to this process as well as students.

In addition to the ability of information technologies to transmit information everywhere through the internet, its ability to store, maintain and reuse information makes it an effective model for education as well (Horzum, 2003; cited in Gurer et al., 2016). As a result of its ability to store and transmit information, it provides the opportunity to reach a great amount of people all at once. Using computer technology in distance education proves that education can be carried out simultaneously or asynchronously regardless of time and place. All types of activities that can be carried out in a classroom environment can also be actively carried out in distance education. As a result, it has been ensured that the students continued their education-training lives and not stayed away from their courses and it was tried to prevent them from cutting their ties with their schools.

Distance education using EBA platform is being provided through live lessons. Live lesson is a type of virtual learning practice where students and teachers attend the same lesson from different places at the same time. While it is possible to actively use EBA contents in live lessons, different contents (power point, video, pdf file, etc.) can also be uploaded to the EBA platform and accessed by teachers and students.

Even though distance education provided using EBA has advantages when compared to face-to-face education, it also has certain disadvantages that prevent education from being effective (Altınisik et al., 2016).

Distance education is an effective teaching method since it provides the opportunity to receive education from anywhere where there is internet access. However, it is less effective when compared to face-to-face education as it is a process where the teacher and students cannot make eye contact and there is no mutual interaction.

## LITERATURE REVIEW

There are various studies on distance education in the literature. In his study, Ozer (2011) examined distance education in terms of student and lecturer opinions and concluded that lecturers have negative thoughts regarding the evaluation and content parts of the program, and positive opinions regarding the purpose and process parts of the program, and that the students have a positive view regarding the evaluation part of the program.

Mercan (2018), in the study carried out in order to determine the opinions and readiness of university students about distance education, concluded that the majority of students have positive approaches towards distance education.

Erfidan (2019), in the study carried out to research the opinions of lecturers and students regarding providing lessons through distance education, concluded that students did not find distance education generally advantageous, but were satisfied that its used for common courses.

Ozen & Baran (2020) examined teachers' attitudes towards distance education in terms of different variables in the study they carried out, and concluded that teachers who have less years of service compared to those with more, teachers with higher education status than lower, and those with more weekly EBA use compared to those with less had more positive attitudes towards distance education.

Ozbay (2015), in the study carried out to determine the current situation of distance education in the world and in Turkey concluded that distance education activities have recently increased in Turkey.

Fidalgo, Thormann, Kulyk & Lencastre (2020), as the result of the study carried out in order to determine the perceptions, attitudes and willingness of students from different countries to try distance education, established that the most significant concerns of students regarding distance education programs are time management, motivation and English language skills.

Arthur-Nyarko, Agyei & Armah (2020) researched whether distance education students are ready to use digital learning materials and found out that the majority of students are ready to use digital learning materials.

Since there isn't any qualitative study conducted on mathematics teachers regarding distance education with EBA, which is a new practice in our country, a deficiency was observed in this regard. This study was conducted to set forth the opinions of mathematics teachers about distance education carried out using Educational Informatics Network (EBA). Answers to the following questions will be sought depending on this purpose:

- What are the opinions of mathematics teachers about distance education carried out using EBA?
- Can distance education be as effective as face-to-face education?
- What are the opinions of mathematics teachers on whether distance education is beneficial for students or not?
- What are the problems encountered in distance education lessons?

- To what extent can interaction be provided in distance education?

## **METHOD**

### **Research Model**

The case study method, one of the qualitative research methods, was employed in this research. The case study method enables in-depth analysis of the subject being researched and aims to explain the theories (Merriam, 1998; Yildirim & Simsek, 2011; Cepni, 2018). Content analysis technique, which is one of the qualitative research techniques, was used in the collection, analysis and interpretation of the data obtained in the research. Qualitative research is a research where a qualitative process is followed in which qualitative data collection methods such as observation, interview and document analysis are used (Yildirim & Simsek, 2011). Interview which is one of the qualitative data collection techniques was preferred in this study.

### **Study Group**

The study group of the research was determined by using easily accessible sampling method, since working on a sample of the teachers who work in Giresun province of Turkey and continue to provide distance education with EBA on a voluntary basis will provide practicality in the study (Yildirim & Simsek, 2011). The participants, consisting of 6 women and 4 men, are from different age groups.

### **Data Collection**

A semi-structured interview form consisting of 8 open-ended questions has been prepared in order to determine the opinions of the participants on distance education with EBA (Annex 1). The semi-structured interview form consisted of 8 open-ended questions in its final form. The data obtained were coded by a researcher and a field education specialist and the reliability of the interview was found to be 83% for all questions. Content validity of interview questions was ensured by taking the opinions of experts in the field of field education and educational sciences. The necessary corrections were made in the semi-structured interview form and then it was proceed with the implementation. Since the Covid-19 disease, which is accepted as a pandemic globally by the World Health Organization, is fatal and also due to its rapid spread, it was not possible to meet mathematics teachers face-to-face and thus they were called by phone and their answers were noted. The answers acquired from these calls were gathered together in MS Word documents.

### **Data Analysis**

The data collected in the research were analyzed using content analysis technique. The aim of content analysis technique is to analyze the obtained data in depth and reach previously unknown themes and dimensions (Cepni, 2018). Themes were created based on the data obtained after the application and the frequencies of the themes were determined and presented in tables. The answers provided by the participants were included as raw data in a way to support the data analyzed.

Participants were provided with necessary explanations before being asked any questions and were asked to give sincere answers, and it was stated that they would be safe and not suffer any consequences due to participating in the study. The obtained findings were analyzed by two researchers and common themes were formed and the frequencies of these themes were established and the quality of the study was tried to be increased. It was stated that the names of the teachers participating in the study would be kept confidential and it was tried to ensure anonymity with the codes assigned to them (T1, T2...).

## **FINDINGS**

The findings obtained from the data regarding the opinions on distance education with EBA of 10 mathematics teachers working in Giresun province are presented in this section. The names of the participants were kept confidential, the data were displayed in tables using the codes assigned to them, and supported with raw expressions.

***Teachers' opinions on the question "Have you received any training (in-service, professional development, etc.) about using Educational Informatics Network (EBA) and distance education? How did this situation affect the distance education process for you?"***

The first question was asked to the participants in order to determine whether they received any training on EBA use and distance education or not, and the data obtained are presented in Table 1.

**Table 1.** Teachers' opinions on the question "Have you received any training (in-service, professional development, etc.) about using Educational Informatics Network (EBA) and distance education? How did this situation affect the distance education process for you?"

Themes	Sub themes	Participants	f
I have received training	Had a positive effect	T1, T3, T4	3
I have not received training	Had no effect	T2, T5, T6, T8	4
	Had a negative effect	T7, T9, T10	3
<b>Total</b>			<b>10</b>

Table 1 reveals the teachers' answers to the question "Have you received any training (in-service, professional development, etc.) about using Educational Informatics Network (EBA) and distance education? How did this situation affect the distance education process for you?". Since distance education with EBA is a new process, based on the answers given, it has been observed that many of the mathematics teachers have adaptation problems to this practice. 3 of the participants stated that they had received training and this training had a positive effect on the distance education process. 7 of the participants stated that they had not received any education, and 4 of those who did not receive education stated that this situation did not affect the distance education process for them, and 3 of them stated that not being able to receive education had a negative effect on the distance education process. The participant with the code T1 answered as follows: "I attended the distance education course provided in the professional development section of the website regarding EBA and watched the videos there. This situation helped me understand the system and teach my lessons more comfortably." and the participant with the code T5 answered as follows: "I have not received any training. I was already using it at school. It did not have an effect. I just watched training videos." and the participant with the code T2 answered as follows: "I had received training about the use of EBA before in professional studies. However, I did not receive any training related to distance education. I got acquainted with the process by watching videos myself and by consulting my teacher colleagues. In this way, I have increased my command of the subject. I think it's simple and straightforward to use anyway. I did not have the need to get a training." and the participant with the code T9 answered as follows: "I did not receive any training. This situation caused me to be inexperienced at first, but I tried to overcome it over time."

**Teachers' opinions on the question "Do you think distance education with EBA is beneficial for students? Please explain and provide reasons for your answer."**

This second question was asked to the participants in order to determine whether distance education is beneficial or not, and the data obtained thereof are presented in Table 2.

**Table 2.** Teachers' opinions on the question "Do you think distance education with EBA is beneficial for students? Please explain and provide reasons for your answer."

Themes	Sub themes	Participants	f
Beneficial	Experience proving that education can be provided under any circumstance	T2, T6, T9	3
	Preventing them from cutting their ties with the school	T7, T9	2
Partially Beneficial	Low interaction	T1	1
	Financial impossibilities	T3, T5, T8, T10	4
	Inconvenience of physical conditions	T4, T10	2
<b>Total</b>			<b>12</b>

Table 2 reveals the teachers' answers to the question "Do you think distance education with EBA is beneficial for students? Please explain and provide reasons for your answer." The most frequently mentioned answer among the benefits of distance education was that it provides the experience that education can be given under any condition, and there were quite a few teachers who responded that distance education was not beneficial enough due to financial impossibilities.

It is concluded that distance education is beneficial for students based on the answers given by 40% of the teachers participated in the study, and the remaining 60% of the participants stated that distance education was partially beneficial for students. The participant with the code T2 answered the question as follows: "The students had a learning experience regardless of time and place." and stated that distance education was beneficial because it proves that education can be provided and received under any condition.

The participant with the code T7 answered as follows: *"Yes, I think so, because the students have contributed to their development process by not cutting their ties with the school in these challenging times."* and stated that distance education was beneficial because it prevents students losing their connections with the school. The participant with the code T9 answered as follows: *"I think distance education with EBA is beneficial for students. In this way, students were able to continue with their lessons. The students saw that education and training can continue under all conditions."* and stated that distance education was beneficial in both regards.

Among the teachers who stated that distance education with EBA was partially beneficial and who was assigned the code T1 stated as follows: *"I think it is partially beneficial for students. It cannot replace the education carried out in a classroom. Because not all students have the same equipment and the same physical conditions. For example, we have students who try to attend distance education lessons in a room with a television or with their siblings which decreases the efficiency."* The participant with the code T4 answered as follows: *"I think it is partially beneficial, because some students are at a disadvantage because they do not have internet access and computers because they live far from city centers."* and the participant with the code T5 answered as follows: *"It is beneficial for students who have the opportunity to attend and follow the lessons continuously. It is also useful in terms of repeating lessons, they can repeat as many times as they want. They can solve questions. But I don't think it is as effective as in school in terms of teaching a lesson through EBA which they haven't learned before."*

**Teachers' opinions on the question "What are the problems you encounter during distance education with EBA? What kind of solutions would you suggest to these problems?"**

This third question was asked to the participants in order to determine the problems they have encountered in the distance education process and the data obtained thereof are presented in Table 3.

**Table 3.** Teachers' opinions on the question "What are the problems you encounter during distance education with EBA? What kind of solutions would you suggest to these problems?"

Themes	Participants	f
System-related problems	T1, T3, T5, T6, T7, T8, T10	7
Low participation	T4, T5	2
Lack of equal opportunity	T2, T4, T6, T9	4
Inexperience	T9	1
<b>Total</b>		<b>14</b>

Table 3 reveals the answers of teachers to the question "What are the problems you encounter during distance education with EBA? What kind of solutions would you suggest to these problems?" 5 of the mathematics teachers participated in the study stated that they had problems related to the system the most, 1 of them stated that they had problems related to both the system and the low participation of students.

1 of the mathematics teachers stated that he/she had problems due to the lack of equal opportunities as well as the problems related to the system, and another 1 of them stated that he/she had problems related to both lack of equal opportunity and inexperience. Another 1 of the mathematics teachers stated that he/she had problems due to low participation and lack of equal opportunity, while 1 of them stated that lack of equal opportunity could be a problem.

Participant with the code T1 answered as follows: *"There can be systemic problems. The system can drop us from the lessons or we can have difficulties when connecting to the lessons. Its infrastructure needs to be developed to overcome these problems."* and the participant with the code T5 responded as follows *"We generally have problems related to the system and the most important problem is the lack of student participation."* The participant with the code T4 answered the question as follows: *"Since there are very few students attending the lesson, the students cannot benefit from the education process sufficiently. Since there is no face-to-face training, the communication process cannot be experienced. Every student should have internet access and tools such as computers."* The participant with the code T9 answered the question as follows: *"The most important problem I encounter is that not every student has internet access and some students cannot use EBA."* The participant with the code T6 said that there were problems due to system density and continued as follows: *"In order to avoid intensity on a classroom basis, it may be a solution to distribute the lessons into days instead of spreading them over the week. In addition, students can be provided with the opportunity to use the internet."*

**Teachers' opinions on the question "Do you think EBA content is sufficient for distance education? Why?"**

This fourth question was asked to the participants in order to determine whether the EBA content was sufficient for distance education and the data obtained are presented in Table 4.

**Table 4.** Teachers' opinions on the question "Do you think EBA content is sufficient for distance education? Why?"

Themes	Sub themes	Participants	f
Sufficient		T4, T5, T6, T7, T8, T9, T10	7
Not sufficient	Not Enough Interactive Content	T1, T2, T3	3
	Courses Not Being Recorded	T2	1
<b>Total</b>			<b>11</b>

Table 4 reveals the answers of teachers to the question "Do you think EBA content is sufficient for distance education? Why?" 70% of the mathematics teachers who participated in the study stated that EBA content was sufficient for distance education, while 30% stated that it was not sufficient. It is seen that all mathematics teachers who stated that EBA content is not sufficient for distance education think that it is not sufficient due to the lack of interactive content, and that one of them thinks that it is not sufficient because the lessons are not recorded and the system does not provide the opportunity to watch the lessons later on.

Participant T8 who stated that it was sufficient answered the question as follows: *"I think EBA content is sufficient for distance education. Because there are documents available such as books, questions, videos about the courses."* and the participant T5 answered as follows *"I think it is sufficient for the science branch. There are very good activities and animations related to my branch."* Participant with the code T3 who stated that it was not sufficient since there were not enough interactive content answered the question as follows: *"I don't think there are sufficient resources in terms of my field. Even though there are more resources and lectures in other branches, there are not enough resources in the field of English."* and the participant with the code T2, who stated it was insufficient since the contents were not enough and the lessons were not being recorded answered the question as follows: *"EBA content has improved since its beginning, it is an active platform rather than a static platform, but of course it has deficiencies. For example, interactive activities related to lessons can be increased. Country-wide exams can be held frequently for students preparing for exams. Besides, I think that some branches are less focused (such as music, information technologies, physical education). Also, the lessons can be recorded and a tape broadcast can be provided for students who cannot watch them live at that moment."*

**Teachers' opinion on the question "Do your students participate in the lessons that you provide through distance education via EBA? If there is not enough participation, what could be the reasons for this?"**

The data obtained from this fifth question asked to mathematics teachers in order to determine student participation are given in Table 5.

**Table 5.** Teachers' opinion on the question "Do your students participate in the lessons that you provide through distance education via EBA? If there is not enough participation, what could be the reasons for this?"

Themes	Sub themes	Participants	f
Sufficient participation			
Low participation	Financial impossibilities	T1, T2, T4, T5, T6, T8, T9, T10	8
	Physical conditions	T1, T7, T8	3
	Being engaged in agriculture	T1, T7	2
	Negative motivation	T3	1
	Insensitive parent and student	T5, T6, T8	3
	Inexperience	T5, T9, T10	3
	System-related problems	T9, T10	2
<b>Total</b>			<b>22</b>

Table 5 reveals answers of mathematics teachers to the question "Do your students participate in the lessons that you provide through distance education via EBA? If there is not enough participation, what could be the reasons for this?" It is seen that the answers provided by all the mathematics teachers participating in the study state that there is not enough participation. 80% of the teachers who stated that the participation was low said that they did not attend the courses due to financial difficulties, 30% of them stated that it was due to inadequate physical conditions, 20% stated that it was due to helping their families related to agriculture, 10% of them stated that it was due to negative motivation of students, 30% of them said that it was due to insensitive students and parents, 30% said that it was due to inexperience and 20% of them stated that it was due to the problems related to the system.

The participant with the code T1 who stated that the participation is low, answered the question as follows: "Our student participation is above the average of the class size. But it is not at the desired level, of course. Our students who do not have any internet access or who live in places where no internet is available are not able to participate in the lessons. Another reason is that because we live in the Black Sea region, our students may not be able to attend classes due to gardening works." the participant with the code T3 answered as follows: "There is not enough participation. The number of students related to the school and courses is very low in terms of student profiles, the fact that there is no attendance requirement is a negative motivation for the students and the fact that the ministry told the students that they are directly passed to the next grade, decreases the participation." The participant with code T5, who stated that the participation is low, answered the question as follows: "In general, participation is very low. There reasons are: Inadequate technological opportunities of the students. Insensitive and indifferent parents. This is the first time this practice is implemented." and the participant with the code T7 answered as follows: "There is not enough participation because there is no internet in the homes of students in rural areas and they help their families because of the intensity of agricultural work in this period." The participant T9 answered as follows: "Unfortunately, there is not enough participation to the lessons we provide through EBA. The reasons for this are the fact that not every student has an internet connection, some students cannot use EBA, and cannot enter the lessons due to system-related problems."

**Teachers' opinions on the question "The importance of student-school-parent cooperation in the education and training process at school is frequently emphasized. Do you think this cooperation can be achieved in distance education? Why?"**

The sixth question of the study was asked to the participants in order to determine whether a student-school-parent cooperation could be achieved in the distance education process, and the data obtained thereof are given in Table 6.

**Table 6.** Teachers' opinions on the question "The importance of student-school-parent cooperation in the education and training process at school is frequently emphasized. Do you think this cooperation can be achieved in distance education? Why?"

Themes	Sub themes	Participants	f
Cooperation cannot be achieved	Insensible parent	T1, T2, T3, T4, T5, T6, T7, T8, T9	9
	Inexperience	T10	1
<b>Total</b>			<b>10</b>

Table 6 reveals the answers of mathematics teacher to the question "The importance of student-school-parent cooperation in the education and training process at school is frequently emphasized. Do you think this cooperation can be achieved in distance education? Why?" 9 of the participants stated that cooperation could not be achieved due to the insensibility of the parents, and 1 of them said it was because they were inexperienced and could not attend the parents' meetings held via EBA.

The participant with the code T7 answered the question as follows: "Conscious families receive information by calling, of course, but there is a lack of communication with other families on this issue." and the participant with code T2 responded as follows: "The parents who are caring towards their children are always there for their children. The opposite is also true. Parents who did not care about education when it was carried out at schools were not there for their children during this period as well. I, as a teacher and together with our administrators, we tried to inform and notify our parents about the process as much as we could. However, there were a few parents we couldn't reach."

The participant with the code T10 answered the question as follows: "Our parents have difficulties in using technology. There was very low participation in the meetings we tried to hold during the distance education process."

**Teachers' opinions on the question "Is distance education advantageous compared to other types of education? Please explain."**

The seventh question was asked to the participants in order to determine their opinions about whether distance education is advantageous or not, and the data obtained there of are presented in Table 7.

**Table 7.** Teachers' opinions on the question "Is distance education advantageous compared to other types of education? Please explain."

Themes	Sub themes	Participants	f
Advantageous	Support for face-to-face education	T1, T5	2

	Attention and motivation	T2	1
	Use of technology	T6	1
Disadvantageous	Low interaction	T3, T6, T8, T9, T10	5
	No feedback	T4, T7	2
<b>Total</b>			<b>11</b>

Table 7 reveals the answers of mathematics teachers to the question "Is distance education advantageous compared to other types of education? Please explain." 2 of the mathematics teachers who stated that distance education is advantageous stated that it was advantageous in terms of supporting face-to-face education, 1 of them stated it was because it could lead to better attention and motivation, and 1 of them stated that it was because it was beneficial in terms of technology use.

One of the participants, T1 answered the question as follows: *"If it can be provided after face-to-face training, and provided together then it would be advantageous."* and the participant T2 stated as follows: *"I saw that the students were able to focus more on the lesson in distance education. Issues such as attention problems and noise in the classroom encountered in face-to-face education are not experienced on this platform. Many students in the classroom were timid, especially in mathematics class. Here, they received an education in an environment where they felt comfortable, away from social pressure."* Participant with the code T6 answered this question as follows: *"It is advantageous in terms of saving time and use of technology, but it cannot replace one-to-one education in terms of appealing to all feelings of the student and making the subject more understandable."*

Among the mathematics teachers who stated that distance education was disadvantageous, 5 of them stated that it was disadvantageous because of low interaction and 2 of them stated that it was disadvantageous because no feedback was provided. Participant T3 answered the question as follows: *"No, it's not advantageous. I don't think we can get the efficiency we have in one-to-one interactive training."* and participant T8 answered the question as follows: *"It is not advantageous when compared to face-to-face training. Because the most advantageous environment is a classroom environment where the teacher and student interact and the teacher can have access to all children."* and the participant with the code T10 responded as follows: *"It's not advantageous. The most efficient education is provided when we are together with the students in the same environment and we can share mutually."*

Participant with the code T6, who stated that distance education is advantageous in terms of technology use and disadvantageous in terms of less interaction answered this question as follows: *"It is advantageous in terms of saving time and use of technology, but it cannot replace one-to-one education in terms of appealing to all feelings of the student and making the subject more understandable."*

**Mathematics teachers' opinions on the question "Do you think there is interaction in distance education? Please explain."**

The eighth question was asked to the participants in order to determine their opinions on whether there was any interaction in distance education, and the data obtained there of are presented in Table 8.

**Table 8.** Teachers' opinions on the question "Do you think there is interaction in distance education? Please explain."

Themes	Sub themes	Participants	f
There is interaction	Positive psychology	T7	1
	Interest and will	T6	1
	Live lessons	T3	1
Low interaction	Technical issues	T1, T2, T8, T9	4
	Lack of attention	T1	1
	Inability to see the person's behavior and movements	T4, T5, T10	3
<b>Total</b>			<b>11</b>

Table 8 reveals the answers of mathematics teachers to the question "Do you think there is interaction in distance education? Please explain." 30% of the mathematics teachers stated that there was interaction and 70% stated that the interaction was low.

One of the mathematics teachers who stated there was interaction, who is participant T7 answered the question as follows: *"There is interaction. At least hearing the voices of the students and seeing their face contributes to them"*



and us psychologically. I think there is still interaction in terms of education" and stated that there is an interaction because it provides a positive psychology. The participant with code T6 answered the question as follows: "Education is not a one-sided process. So as long as there are interested and willing students, there is interaction." and stated that interaction was possible with interested and willing students. Participant T1, who stated that the interaction was low, responded to the question as follows: "There is absolutely interaction but it is not sufficient. Because during the lesson, voices can interfere with each other, the sound may not be received by the opposite side, freezing may occur, and the student's attention may not be sufficient as in the classroom environment. This, of course, prevents the interaction from being at the desired level." and stated that the interaction was low due to both technical problems and lack of attention. The participant with the code T4 answered as follows: "There is very little interaction because we do not see the behavior and movements of the students, so there is no effective communication." and stated that there was low interaction due to the inability to see each other.

## CONCLUSIONS AND DISCUSSIONS

In this research, it was aimed to determine the opinions of mathematics teachers on distance education using the Educational Informatics Network (EBA). As a result of interviews conducted with mathematics teachers who attend distance education lessons through EBA, it was seen that mathematics teachers have both positive and negative opinion on distance education.

According to mathematics teachers, the distance education lessons provided through EBA motivated students during the time they had to stay away from school, ensured that their ties with the school remained the same, and provided the experience that education can be received at any time and under any condition. Distance education is beneficial as long as students can attend classes. However, since not every student has the same opportunities, it contradicts with opportunity equality in education. According to many mathematics teachers interviewed, the number of students who do not have internet access and computers at home, who live in places where internet is not available and therefore cannot attend classes is quite high.

Both students and mathematics teachers had difficulty adjusting to the system as they experienced the distance education process for the first time. The fact that students and teachers are not used to distance education process and do not have the required competencies for distance learning-teaching reduces their participation and performance in classes (Johnson, 2008).

Mutual communication can be established with students in face-to-face education, and their behavior in the classroom can be observed (Gurer, Tekinarslan, & Yavuzalp, 2016). However, in distance education lessons, adequate interaction cannot be established with students. This is because the inability to see the behaviors and movements of the students and inability to make eye contact damages one-to-one interaction. This proves that face-to-face education is more efficient than distance education.

Students should be able watch the recorded lessons later on since there is no obligation to attend classes (Gurer, Tekinarslan, & Yavuzalp, 2016). However, there is no such advantage in distance education provided through EBA. Since the lessons are not being recorded, students cannot watch them later.

The major problem teachers encounter in terms of distance education lessons is that students cannot attend the lessons. Different circumstances of students, financial difficulties, unfavorable physical conditions, and inexperience in using technology are among the reasons for not attending the lessons. As stated by most of the teachers, there are also problems that are not related to the students and caused by the system. Especially during the pandemic, there have been difficulties in entering lessons due to the intensity of the distance education through EBA, which is a new practice that covers all of the students in the whole country.

As stated by the teachers as well, distance education can be an effective education method only if the participation of students in the lessons is at the desired level. If students' participation and interest in the lessons can be increased, teachers' satisfaction levels will be at the desired level as well (Bolliger & Wasilik, 2009).

## RECOMMENDATIONS

Live lessons carried out through distance education are not recorded on the EBA platform. In terms of the efficiency of distance education, if lessons are recorded, students may have the opportunity to watch the lessons they missed. Infrastructure arrangements can be made to improve the technical problems encountered while entering and during the live lessons.

Adequate amount of free internet service can be provided to students in order to ensure equality of opportunity in education. Online pilot exams can be held for 8th grade students preparing for the High School Entrance Exam

(LGS) to prepare them for the exam.

In order to make generalizations about the opinions of students and teachers on distance education, quantitative data can be collected and researches can be conducted. This research has been carried out using the opinions of teachers. Studies can be conducted on students in order to set forth the opinions of students as well. Distance education and technology are interrelated phenomena. The effect of technology literacy on distance education can be investigated in this framework as well.

## REFERENCES

- Alabay, A. (2015). *A research into secondary education teachers' and students' views on EBA (education information network) usage*. [Unpublished master's thesis]. İstanbul: İstanbul Aydın University Institute of Social Sciences.
- Altınisik, U., Solak, S., İnal, M., & Yildiz, U. (2016). Implementation of live courses in the university electronic elective courses. *Journal of Research in Education and Teaching*, 5(2), 409-416.
- Arthur-Nyarko, E., Agyei, D. D. & Armah, J. K. (2020). Digitizing distance learning materials: Measuring students' readiness and intended challenges. *Education and Information Technologies*, 1-16.
- Bolliger, D. U. & Wasilik, O. (2009). Factors influencing faculty satisfaction with online teaching and learning in higher education. *Distance education*, 30(1), 103-116.
- Cepni, S. (2018). *Arastirma ve proje calismalarina giris[Introduction to research and project studies]*.(Devoleped 8th. ,ed). Trabzon: Celepler Printing
- Duderstadt, J. J. (2001). The future of the university in the digital age. *Proceedings of the American Philosophical Society*, 145(1), 54-72.
- Erfidan, A. (2019). *Perspectives of lecturers and undergraduate students on university distance education courses: The case of Balıkesir University*. (Unpublished master's thesis). Balıkesir: Balıkesir University Graduate School Of Natural And Applied Sciences
- Ozsoy İlhan, F. (2010). *Comparison of distance learning and formal learning in vocational and technical education* (Unpublished master's thesis). Ankara: Gazi University Graduate School Of Natural And Applied Sciences.
- Fidalgo, P., Thormann, J., Kulyk, O., & Lencastre, J. A. (2020). Students' perceptions on distance education: A multinational study. *International Journal of Educational Technology in Higher Education*, 17, 1-18.
- Guler, A., Halicioğlu, M.B. & Tasgin, S. (2015). *Sosyal bilimlerde nitel arastirma*. [Qualitative research in social sciences]. Ankara: Seckin Publishing.
- Gurer, M. D., Tekinarslan, E. & Yavuzalp, N. (2016). Opinions of instructors who give lectures online about distance education. *Turkish Online Journal of Qualitative Inquiry*, 7(1), 47-78.
- Horzum, M. B. (2014). Sakarya Üniversitesi eğitim fakültesinde görev yapan öğretim elemanlarının internet destekli eğitime yönelik düşünceleri [The opinions of faculty members working at the education faculty of Sakarya University on internet-based education]. *Sakarya Üniversitesi Eğitim Fakültesi Dergisi*, 6, 17-22.
- Johnson, A. E. (2008). A nursing faculty's transition to teaching online. *Nursing Education Perspectives*, 29 (1), 17-22.
- Mercan, A. (2018). *Opinions and Readiness of University Students about Distance Education: Afyon Kocatepe University Faculty of Science and Literature*. [Unpublished master's thesis]. Afyon: Afyon Kocatepe University Graduate School of Natural and Applied Sciences.
- Merriam, S. B. (1998). *Qualitative research and case study applications in education*. San Francisco: Jossey-Bass Publishers. Oxford: Routledge.
- Ozbay, O. (2015). The current status of distance education in the world and Turkey, *The Journal of International Education Science*, (5), 376-394.
- Ozen, E. (2019). Eğitimde dijital donusum ve eğitim bilisim ağı (EBA). *Acikogretim Uygulamaları ve Arastirmaları Dergisi*, 5(1), 5-9.
- Ozen, E. & Baran, H. (2020). Öğretmenlerin uzaktan eğitime yönelik tutumlarının farklı değişkenler açısından incelenmesi: Eskisehir Örneği. *International Open & Distance Learning Conference*.
- Ozer, B. (2011). *Evaluation of distance education programs in terms of students and teaching staff views* [Unpublished master's thesis]. Bolu: Abant İzzet Baysal University Graduate School of Educational Sciences.
- Ozmen, H. & Karamustafaoglu, O. (2019). *Eğitimde arastirma yöntemleri[Research methods in education]*. Ankara: Pegem Akademy
- Yıldırım A. & Simsek, H. (2011). *Sosyal bilimlerde nitel arastirma yöntemleri[Qualitative research methods in the social sciences]*. (8th Ed.). Ankara: Seckin Publishing.