

Research Paper

Opinions of High School Students about Distance Education in Pandemic ProcessEbru Yılmaz İnce^{*a}, Nurcihan Kabul^b, Ahmet Kabul^a(ORCID ID: 0000-0001-9462-0363), Isparta University of Applied Sciences, Turkey, ebruince@isparta.edu.tr^b(ORCID ID: 0000-0002-5411-2775), Isparta Social Science High School, Turkey, nurcihankabul@gmail.com^c(ORCID ID: 0000-0002-9666-2660), Isparta University of Applied Sciences, Turkey, ahmetkabul@isparta.edu.tr^{*}Corresponding author**ARTICLE INFO**

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ABSTRACT

During the pandemic process, education and training have continued with distance education in public and private schools affiliated to the Ministry of National Education since 13 March 2020. The aim of this study is to determine the knowledge and opinion of students about distance education in high school during the pandemic process. A total of 251 students, 70 of whom were male and 181 were female, answered the questionnaire from high school in the fall term of 2020-2021. The high school was chosen due to the fact that it is a project and a boarding school and there are students from different settlements. Volunteering was taken as a basis in determining the participants. According to the research results, it was revealed that slightly more than half of the participants had a computer and non-telephone internet connection at home. Also, it has been determined that the participants' computer and internet facilities affect their views on distance education. When the participants compared formal education with distance education, it was determined that they think formal education is more efficient.

**INTRODUCTION**

COVID-19, spread rapidly all over the world and was declared a Pandemic by the World Health Organization (WHO). Due to the rapidly spreading Coronavirus "COVID-19" pandemic, schools have been closed in 191 countries around the world as of 17 April 2020 (Buluk and Eşitti, 2020). COVID-19, which started as a local health problem, has quickly become a global pandemic. Curfew restrictions, cities, regions and international travel restrictions taken to prevent the spread of COVID-19 stand out among international measures and practices put into effect (Başaran et al., 2020). Many countries were caught unprepared for this problem in the field of education and had to decide to switch to distance education in a very short time (Özer and Suna, 2020).

This process has effects similar way to the education system in Turkey with other countries. In the COVID-19 pandemic, face-to-face training was suspended to create social distance, especially to ensure that the young population stay at home and to prevent contagion. The Ministry of National Education (MEB) announced that education will continue through distance education in order not to interrupt education during the COVID-19 process, and a distance education system covering primary, secondary and high school levels has been introduced (Başaran et al., 2020). The adoption of the training practice at home by closing the school 18 million elementary, middle and high school students courses of the Ministry of digital education platform Education Information Network (EBA) and Turkey Radio and Television Corporation (TRT) began to follow through (Sezgin and Euphrates, 2020). Distance education has been brought to the agenda with the unexpected closure of educational institutions all over the world and the start of education and support from digital platforms at home due to quarantine days (Genç & Gümrükçüoğlu, 2020).

Turkey is not foreign to distance education system. Open education model applied in high school and university system in our country, many vocational and career certificate programs and language trainings have been carried out for years as a part of distance education. The number of students who receive online education is increasing day by day. The online education system applied for certain departments in public schools is an increasingly widespread and developing education model. In a sense, this system, which has a much more widespread use within the scope of Corona Virus measures, has made online education more widespread, the reason that it may be inconvenient for students to take lessons in a physical environment in order to prevent the spread of the pandemic in secondary education and universities that offer classical education (Genç and Gümrükçüoğlu, 2020).

Distance Learning; It is generally preferred due to physical disability, full-time work life, road problem or other personal impossibilities. The existence of many positive and sometimes critical approaches about distance education will not affect the use of this education in some special situations. After the coronavirus epidemic in 2020, it has made the distance education model, which has no space limitation, compulsory and has been used in many countries at all levels of education (İnce et al., 2020a; İnce et al., 2020b). Distance education can be defined as the education of students in an environment where they are settled individually without the need for a physical school environment (Tuncer and Taşpınar, 2008). Simonson (2006) defines distance education as a

learning process in which learners are distant from each other and from learning resources in the context of time or space, and their interactions with each other and with learning resources are based on distance communication systems.

Distance education, which dates back to the 1700s and started with letter teaching practices, has continued its development in parallel with the developments in information and communication technologies. Distance education practices, which are one of the written interaction tools and started with letters, have been one of the biggest steps taken towards overcoming the limitations of traditional education (Aydın et al, 2019). Distance education includes concepts such as open education, mail education and internet learning (Uşun, 2006). Distance education has three different generations from past to present (Tuncer and Taşpınar, 2008). The first generation (1930-1950s) is the traditional generation in which student-teacher communication is provided through correspondence. The second generation (1950-1980's) is also known as industrialized multimedia distance education. In this generation, there is a sound and video-based distance education structure. In the last generation (after 1995), computers and modem started to be used in education (Aydın et al., 2019). Third generation distance education, also known as interactive education, is the generation in which interactive media such as audio and video conferences are used and communication and learning are accepted as a social process. In this study, the concept of distance education is used in the sense of distance education via the internet. Distance education via the Internet is a distance education model in which the learner and the teacher can reach each other via the internet and more than one person can be active at the same time (Garrison et al., 2003).

LITERATURE REVIEW

The development of distance education in Turkey between the years 1927-1960 is the stage to create discussion and recommendations in this area. In these years, it was aimed to spread literacy by means of communication. The idea of organizing letter education courses in 1933-34; In 1950, Ankara University Faculty of Law, Banking and Commercial Law Research Institute studies; In 1960, in order to provide university opportunities for secondary vocational school graduates, these are the striking applications of letter teaching method. (Çallı et al., 2001). In 1961, a Correspondence Center was established by the Ministry of Education and started education, these studies were organized at the General Directorate level in 1966 and the system was spread in the field of formal and non-formal education (Tuncer and Taşpınar, 2008). In 1975, the Non-Formal Higher Education Institution (YAYKUR) was established and aimed to train intermediate manpower for high school and equivalent students with associate degree education in the fields needed by the society. YAYKUR added television education to its distance education studies between 1976-77, and ended its studies for various reasons in 1979. While the School Radio and TV School, which served under the Ministry of National Education in the 1980s and 1990s, supported formal education, it provided non-formal education to anyone who wanted (Tuncer and Taşpınar, 2008). After the 1980s, distance education process has been accelerated in Turkey, it has been given the task of making remote higher education of Anadolu University. In the 1982-1983 academic year, the Faculty of Open Education started distance education applications with undergraduate programs in Business and Economics. (Çallı et al., 2001). In the 1990s, Internet and "web" based technologies started to be used. In this context, the Informatics Institute was established within the body of Orta East Technical University, where distance education studies are conducted over the "web" (Aydın et al, 2019). The number of universities using web-based distance education applications is increasing day by day. Some of those; Istanbul University, Bilgi University, Sakarya University, Trakya University, Eastern Mediterranean University, Fırat University, Mersin University, Yaşar University etc. (Coşgun, 2007).

Advantages of distance education are mentioned in many studies. In this context, general evaluations about the advantages of distance education can be listed as follows; easy to access. Due to the fact that Distance Education is independent from the location, it enables students to receive education whenever they want from anywhere with internet access. It reduces the cost for the implementing organization. It is economical because it eliminates the cost of resident education and additional expenses such as road, accommodation, accommodation and nutrition for education. With formal education, it has a great role in providing equal opportunities that cannot be achieved due to economic conditions, region and personal differences. It ensures that people who have to work at work can continue their education. It is student-centered. It increases academic success. It provides the opportunity for each student to learn at their own pace. It is independent of time and place. It removes geographical and regional barriers. It provides 24/7 access to the education and training environment as there is no time limit. It provides the opportunity to access information quickly and easily, as well as teaching lessons with advanced tools. It provides the opportunity to provide educational services to a wide range of students. While the large number of students in the traditional classroom environment affects learning negatively, the number of participants can be kept more flexible in distance learning in virtual classes (MCBÜ-UZEM, 2021; Bakioğlu and Can, 2014; Özgöl et al, 2017; Çekiç, 2010; Uyar, 2020).

When the studies are examined, the disadvantages of distance education can be listed as follows; In distance education, although the student can easily benefit from the educational opportunity remotely and without going to school, it is actually far from face-to-face interaction, group work, classroom activities and responsibilities and social development. Other disadvantages of distance education that are frequently expressed are; Inability to solve the learning difficulties encountered in the learning process immediately and the problems that may develop after this situation, lack of measurement and evaluation, loss of motivation, especially for individuals who do not have the habit of working on their own and have not developed this ability, lack of internet and computer, lack of interaction, technical problems, socialization lack of preparation for the process, ineffectiveness in gaining affective and psycho-motor behaviors, difficulty in planning, coordination, and inability to access the instructor can be listed as the obligation of working individuals to study at their own time. In order for an institution or organization to engage in distance education activities and achieve the desired success in distance education, it must have technological infrastructure, sufficient technical and administrative staff, and field expert lecturers. Lack of timely and continuous support services for students in distance

education, lack of extracurricular social activities, insufficient communication infrastructure, students' inability to manage time effectively due to the busy work life can be listed as student resources problems. Educational problems are; lecturers' inability to adapt to technology, not preparing student-centered course content, and not using communication tools effectively (Torkul, 2012; Çiğlik and Bayrak, 2015; Özdoğan and Berkant, 2020; Uşun, 2006; İşman, 2005).

Distance education is widely used today for formal education courses, open education courses or certificate training. There are many studies in the related literature on the possibilities and problems of distance education (Hayes and Jamrozik, 2001; Valentine, 2002; Silva et al., 2015; Liu et al., 2019). In addition to these studies, there are also studies on the comparison of distance education with formal education (Hannay and Newvine, 2006; Mollenkopf et al., 2017; Cavalli, 2017). Many studies have been conducted in our country (Göktaş et al., 2012; Gökmen et al., 2017; Shooter, 2004).

Studies on this subject are considered important in terms of increasing the quality of distance education activities in formal education. Because when an application is new, many deficiencies and problems may occur. It is necessary to identify these deficiencies and problems to reach a solution. In this context, this study is important in order to evaluate the distance education activities carried out in formal education from the perspective of students and to identify the quality, limitations, advantageous and disadvantageous parts of education more easily. Feedback from students will pave the way for a healthier education system by detecting adverse situations encountered. In this context, this study aims to determine the views of secondary school students studying in the COVID-19 process on distance education, to identify the problems they encounter and to make suggestions.

The purpose of this research is to determine the knowledge and opinions of secondary school students about distance education carried out during the 2020-2021 Academic Year Pandemic Period. The world of science is trying to determine the situation of distance education compared to traditional education today. This research is considered important in terms of contributing to the ongoing debates on online and traditional education and training, determining future education-training orientations and increasing the quality of distance education activities in formal education.

In this study, evaluation of distance education activities carried out in formal education from the perspective of students is important in order to more easily identify the quality, limitations, advantageous and disadvantageous parts of education. It is aimed to establish a greater education system by determining the negative situations encountered with feedbacks from students and to contribute to the use of distance education with formal education.

METHOD

In this study, the situation of distance education in high school was discussed during the COVID-19 pandemic. In the study, the opinions of high school students were taken using the questionnaire method. In the study, İnce et al. (2020) used the questionnaire items by changing them in accordance with secondary education distance education systems. The change of the questionnaire items was carried out by converting the distance education system of university students to EBA, which high school students use as a learning management system, in the necessary items, EBA and self-evaluation factor questions were used, and no other changes were made.

In this study, the reliability of the questionnaire was calculated as 88.6%. In order to test the validity of the questionnaire, Kaiser-Meyer-Olkin (KMO) and Bartlett test analyzes were performed on the data, KMO = 0.889, Bartlett test value is $\chi^2 = 1792.023$ ($p = 0.000$). Direct Oblimin Factor analysis is used and the analysis was made regardless of the item load below 0.30. As a result of these processes, it was seen that 17 items in the scale were gathered under 2 factors. It was determined that the items and factors included in the scale explained 56.347% of the total variance. As seen in Table 1, the EBA factor of the scale includes 11 items and the factor loadings vary between 0.514 and 0.867. The eigenvalue of this factor in the general scale is 6.236; The amount of contribution it provides to the general variance is 36.684%. Self-evaluation factor of the scale includes 6 items, and factor loadings vary between 0.739 and 0.886. The eigenvalue of this factor in the general scale is 3.343; The amount of contribution it provides to the general variance is 19,663%.

Table 1. Factor analysis results

Factors	Items	F1	F2
EBA	I can quickly and easily access LIVE COURSES in the distance education system	0.724	
	I know that I can complete my shortcomings about LIVE COURSE on EBA TV later, which I could not attend	0.738	
	I regularly follow the LIVE LESSONS in the distance education system	0.654	
	I am satisfied with the AUDIO quality of the system during live lessons in the distance education system.	0.747	
	I am satisfied with the VIDEO quality of the system during live lessons in the distance education system.	0.867	
	I am satisfied with the "TECHNICAL SUPPORT" given about the solutions of the problems in the distance education system	0.615	
	Overall, my level of satisfaction with the system's work and intelligibility	0.580	

Self-evaluation	I am satisfied with the harmony of the teachers with the system and the LIVE LESSON expressions	.684
	I am satisfied with the adequacy of the COURSE DOCUMENTS and contents on the EBA Academic Support platform.	0.514
	I am satisfied with the LIVE COURSE SCHEDULE and LESSON HOURS in the distance education system	0.766
	I am satisfied with the LIVE COURSE TIME in the distance education system	0.621
	I am satisfied with your internet connection and access status	0.780
	I can always find my own (closed to external factors) or a suitable environment while receiving distance education.	0.739
	Thanks to distance education, I can save my time and turn to other areas of interest	0.779
	I find distance education more efficient than formal (face-to-face) education	0.886
	My family members or relatives think positively about the distance education system	0.767
	Overall, my level of satisfaction with distance education in general	0.828

In the questionnaire, there are a total of 17 5-point Likert-type questions, 11 of them about EBA and 6 items about distance education. The questionnaire items were done using mean, standard deviation and t-test SPSS package program. Bonferroni correction is a method used to control Type I error during paired comparison of study groups containing more than 2 independent groups or dependent groups containing more than 2 comparisons, and it is used as being 2 factors regarding p as 0.025 (calculated by 0.05/2). 5-point Likert evaluation scale options and score ranges are made as in Table 2 (Karadağ et al., 2008).

Table 2. Scale Options and Score Ranges

Options	Scale options	Score ranges
I totally agree	5	4.20–5.00
I agree	4	3.40–4.19
Undecided	3	2.60–3.39
I do not agree	2	1.80–2.59
I totally disagree	1	1.00–1.79

The research was carried out with the participation of a total of 251 students, 181 whom were female (72.1%) and 70 whom were male (27.9%) at high school in the pandemic term of 2020-2021 (Table 3). Volunteering was taken as a basis in determining the participants. When participants were asked about their place of residence, 53 people (42 village 16.7%;11 town 4.4%) were answered as rural (21.1%), 57 district (22.7%) and 141 of them were answered as province (56.2%). The high school is a project and boarding school and includes students from different settlements.

Table 3. Demographic information of the participants

Demographic information		Frequency	Percentage
Gender	Female	181	72.1
	Male	70	27.9
Living place	Rural	53	21.1
	District	57	22.7
	Province	141	56.2
Device used in distance education	Computer	93	37
	Mobile phone	143	57
	Tablet	15	6
Computer status	Yes	170	67.7
	No	81	32.3
Internet connection except telephone	Yes	214	85.3
	No	37	14.7

When the participants are asked about the device, they use in distance education; 143 respondents answered as mobile phones (57%), 93 people as computers (37%), and 15 people as tablets (6%). "Is there a computer you can use separately, even if you can access it from the phone?" When asked, 170 people (67.7%) answered yes. "Do you currently have an Internet connection other than the telephone internet in your home to access the distance education system?" 214 people (85.3%) answered yes to the question.

FINDINGS

This section includes individual assessment questionnaire items about EBA and self-evaluation, analysis of the factors according to computer status and non-telephone internet connection.

Questionnaires about EBA

High school students were asked 11 questionnaire items about the distance education they received through EBA during the pandemic process. Participants with an average of 3.82 "I regularly follow the LIVE LESSONS in the distance education system" (sd = 1.287), with an average of 3.56, "I can quickly and easily access LIVE COURSES in the distance education system." (sd = 1.203), with an average of 3.55, "I am satisfied with the LIVE COURSE TIME in the distance education system." (sd = 1.428) and with an average of 3.54, "I am satisfied with the harmony of the teachers with the system and the LIVE LESSON expressions." (sd = 1.233), it was determined that they answered at the agree level (Table 4).

Table 4. Questionnaires about EBA

No	Items	Mean (\bar{x})	Standard deviation (sd)
1	I can quickly and easily access LIVE COURSES in the distance education system	3.56	1.203
2	I know that I can complete my shortcomings about LIVE COURSE on EBA TV later, which I could not attend	2.78	1.529
3	I regularly follow the LIVE LESSONS in the distance education system	3.82	1.287
4	I am satisfied with the AUDIO quality of the system during live lessons in the distance education system.	2.74	1.194
5	I am satisfied with the VIDEO quality of the system during live lessons in the distance education system.	3.02	1.229
6	I am satisfied with the "TECHNICAL SUPPORT" given about the solutions of the problems in the distance education system	2.61	1.267
7	Overall, my level of satisfaction with the system's work and intelligibility.	2.98	1.255
8	I am satisfied with the harmony of the teachers with the system and the LIVE LESSON expressions	3.54	1.233
9	I am satisfied with the adequacy of the COURSE DOCUMENTS and contents on the EBA Academic Support platform.	3.03	1.319
10	I am satisfied with the LIVE COURSE SCHEDULE and LESSON HOURS in the distance education system	2.50	1.372
11	I am satisfied with the LIVE COURSE TIME in the distance education system	3.55	1.428

Participants with an average of 2.50 "I am satisfied with the LIVE COURSE SCHEDULE and LESSON HOURS in the distance education system." (sd = 1.372) stated that they did not agree with this item. Therefore, according to the results of this item in the questionnaire, secondary school students have declared their dissatisfaction with the curriculum.

Self-Evaluation

Participants were asked 6 items to indicate their self-evaluations about distance education. Participants said, "I can always find my own (closed to external factors) or a suitable environment while receiving distance education." ($\bar{x} = 3.51$) and "I am satisfied with your internet connection and access status" ($\bar{x} = 3.46$) (see Table 5).

Table 5. Questionnaires about self-evaluation

No	Items	Mean (\bar{x})	Standard deviation (sd)
12	I am satisfied with your internet connection and access status	3.46	1.243
13	I can always find my own (closed to external factors) or a suitable environment while receiving distance education.	3.51	1.454
14	Thanks to distance education, I can save my time and turn to other areas of interest	2.59	1.503
15	I find distance education more efficient than formal (face-to-face) education	1.76	1.265
16	My family members or relatives think positively about the distance education system	2.18	1.238
17	Overall, my level of satisfaction with distance education in general	2.37	1.263

"Thanks to distance education, I can save my time and turn to other areas of interest." ($\bar{x} = 2.59$), "My level of satisfaction with distance education in general." ($\bar{x} = 2.37$) and "My family members or relatives think positively about the distance education system." ($\bar{x} = 2.18$). In addition, participants with an average of 1.76 "I find distance education more efficient than formal (face-to-face) education." (sd = 1.265) were found to be absolutely disagree.

Differences according to computer status

"Is there a computer you can use separately, even if you can access it from the phone?" When asked, 170 people (67.7%) answered yes. Finding a significant difference between the factors according to the computer state variable was analyzed with the t-test. Factors with significant differences according to the analysis results are given in Table 6 ($p < 0.025$). When the items found to be significantly different in Table 6 are examined, it has been determined that the participants who have a computer at home have higher average participation in both factors EBA and self-evaluation than those who do not have a computer. It has been determined that having a computer at home causes more participation in the questionnaire items.

Table 6. T-test results according to computer status

Factor	Computer status	Mean (\bar{x})	Standard deviation (sd)	F	P
EBA	Yes	3.196	0.787	3.066	0.018
	No	2.914	0.915		
Self-evaluation	Yes	2.757	0.867	3.121	0.008
	No	2.412	0.980		

Differences according to having Internet connection except telephone

"Do you currently have an Internet connection other than the telephone internet in your home to access the distance education system?" 214 participants answered yes (85.3%) to the question. The effect of non-telephone internet presence at home to participate in the factors and the significant difference in factors were analyzed with the t-test. Factors with significant differences are given in Table 7 ($p < 0.025$). Those who have internet other than telephones participated with a higher average with a significant difference. It was determined that the presence of internet at home other than telephones for distance education caused a more positive answer to the questionnaire.

Table 7. T-test results according to internet connection except telephone

Factor	Internet connection except telephone	Mean (\bar{x})	Standard deviation (sd)	F	p
EBA	Yes	3.20	0.808	0.130	0.000
	No	2.56	0.816		
Self-evaluation	Yes	2.76	0.869	0.073	0.000
	No	1.98	0.921		

CONCLUSION

This study was carried out to determine the knowledge and opinions of students about distance education in secondary education during the 2020-2021 Academic Year Pandemic. According to the results of the research, it was revealed that a little more than half of the participants had an internet connection other than computers and telephones at their homes, so it should be taken into consideration that the participants' facilities were not sufficient and they expressed their opinions about distance education according to these possibilities. It was determined that the students participating in the survey were not satisfied with the distance education program. In addition, the participants stated that they were satisfied with the compatibility of the teachers with the system, live lectures and live course times. When the participants compared formal education with distance education, it was determined that students think formal education is more efficient. When the questionnaire items were analyzed by t-test according to having a computer and having an internet other than a telephone, it was determined that the fact that the participants had a computer and non-telephone internet at home affected their distance education views.

Distance education is now seen as an alternative to existing education (İnce et al., 2022). Today, expert education is independent from time and place, it provides the people who cannot benefit from traditional education the chance to complete the education they cannot get, students can reach the education environment 24/7, it is economical etc., many advantages are mentioned. However, according to the findings of our study, it was determined that the students studying in secondary education were not satisfied with the distance education activities that started with the pandemic process, and they preferred formal education to distance education.

Distance education was criticized by the students because of the difficulties in asking questions and receiving feedback, the lack of computer and internet connection, and their lack of socialization and face-to-face interaction in this process (Fiş Erümit, 2021). In this process, the lack of understanding of the lessons for the student due to the lack of interaction between the student and the teacher, the difficulty of adapting the students to the lesson due to the excessive distractions around them, the students' lack of equal access to the lesson, had a negative effect on the students' negative view of distance education. In terms of students, the lack of study environments at home, the inadequacy of face-to-face interaction, lack of computer and internet infrastructure reduced the students' course follow-up and efficiency. As a result of the research, it was determined that distance education was found to be

inefficient compared to face-to-face education. The effect of secondary school students' being unprepared for the pandemic process is great in their preference of formal education over distance education.

Suggestions

- In line with the process for the development and improvement of distance education, improving communication with students and parents in order to encourage student participation, providing the students and parents with the necessary information about distance education by the school counselor,
- Preparation of course materials in accordance with the philosophy of distance education,
- Providing necessary technological support for students to benefit from distance education efficiently,
- Strengthening the internet infrastructure throughout the country.

Ethics and Consent: Ethics committee approval for this study was received from the Ethics Committee of Isparta University of Applied Sciences (Date: August 13, 2021; Approval Number: 2021/62/01).

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