

Perspectives of Pre-Service Teachers on Distance Education: Covid-19 Process

Yakup Alan^a, Nurşat Biçer^b, Fatih Can^c

Abstract

The Covid-19 pandemic process increasing its impact day by day across the world has transformed education services into a new form. Distance education instead of face-to-face education has begun to be used effectively in many countries. Since it is available in many educational levels, it is also widely used in teacher education. This study was intended for identifying the perceptions of Turkish pre-service teachers regarding distance education conducted during the Covid-19 pandemic process. For this purpose, quantitative and qualitative data were collected from pre-service teachers and a research was conducted according to mixed research design. The sample of the study consisted of 699 Turkish pre-service teachers studying in 1st, 2nd, 3rd, and 4th grades at 13 state universities in Turkey, in the 2019-2020 academic year. In the qualitative part of the study, opinions of the 25 pre-service teachers selected from the sample were taken. Data were collected from pre-service teachers with the help of a scale and an interview guide. SPSS 22.0 program and content analysis method were used in the analysis of the data. Tests such as t test and one wayANOVA were used on the data. Quantitative and qualitative data were examined holistically and pre-service teachers' approaches to distance education were revealed. According to the results of the research, variables affecting the perceptions of pre-service teachers about distance education were revealed and the factors affecting their perceptions with detailed views were determined. These results are expected to contribute to the distance education in teacher training programs in the Covid-19 process.

Keywords: distance education, pre-service teachers, perspective, Covid-19

1. Introduction

Social changes play an important role in the shaping of education and training services. The newly emerging developments bring along some problems in accessing the education service, while leading to changes in the lives of individuals. With the recent covid-19 cases, significant changes have occurred in education and training services. 166 countries have implemented school closures for a period till 24 April 2020, which have impacted 1.5 billion students worldwide (UNESCO, 2020). School closures due to Covid-19 have led to some uncertainties about the way education is delivered (Wang, Zhang, Zhao, Zhang, & Jiang, 2020). Distance education (Lee, 2020, p. 187) used to

overcome educational, economic, social and geographical obstacles that prevent disadvantaged groups from accessing and succeeding in education, has begun to be considered as an alternative option. After the initial uncertainty, many countries have decided that the compulsory education would be carried out through the distance education system (Zhang, Wang & Yang, 2020).

2. Theoretical Framework

2.1 Distance Learning

In distance education—defined as a form of education service, whereby individuals in physically separate places receive education—people in different environments can interact with each other. According to Moore and Kearsley (2011, as cited in Başar, Arslan, Günsel & Akpınar, 2019), distance education is a planned learning activity done by individuals in different places, who communicate and interact with each other by using technological tools.

Distance education has important advantages in terms of its low-cost and accessibility (Traxler,

^a Faculty of Education, Kilis 7 Aralık University, Turkey

^b Faculty of Education, Amasya University, Turkey

^c Faculty of Education, Amasya University, Turkey

Author Note

Yakup Alan, alanyakup@gmail.com, Orcid: 0000-0002-9888-1357

Nurşat Biçer, nursatbicer@gmail.com, Orcid: 0000-0003-3680-7052

Fatih Can, fatihcan.fatih@hotmail.com, Orcid: 0000-0002-9593-2382

Correspondence concerning this article should be addressed to Yakup Alan, Email: alanyakup@gmail.com

2018, p. 4). Synchronous and asynchronous options, rich course materials and wide area provided for the student (Kırık, 2014, p. 78), flexibility offered to individuals, equality of opportunity, and education opportunities to individuals in need (Salar, 2013) are among the advantages of distance education. It is seen that the development of communication technologies and stakeholders' easy access to these technologies have an effect on the prevalence of distance education in the world. Being involved in education processes without time and space problems has become possible with distance education (Beldarrain, 2006). People with different characteristics can somehow take many lessons by taking the advantages of these environments (Rovai & Downey, 2010). It provides important benefits for teachers as well, in terms of providing learning resources and keeping their knowledge up-to-date (Kangai & Bukaliya, 2011). Educational institutions should find ways to ensure the continuity of teaching process, by focusing on how to help teachers and students develop skills to study online (Bojović, Bojović, Vujošević, & Šuh, 2020).

2.2. Covid-19 and the Transition to Distance Education

Transition to any teaching method is achieved over time by passing through certain stages. However, the sudden changes experienced in the Covid-19 pandemic process have taken an accelerating role in a new transformation. The sudden change in the form of higher education's self-reformation has turned into a matter that staff and students must adapt themselves for. Some people argue that Covid-19 is not a radical modifier, but just an accelerator of the process of change that has already started some time ago. In other words, something inevitable has become the easiest and most logical way in consequence of this crisis (Tesar, 2020, p. 556). Leading universities have reported that online learning has a critical importance for their long-term growth and added that the demand for online courses or programs is higher than that for face-to-face education (Kuo, Walker, Belland & Schroder, 2013). In societies, distance education is replacing traditional educational paradigms more and more with each passing day, since the widespread adaptation of online distance education practices at the higher education level, (Santosh & Panda, 2016). Distance education systems having important advantages especially for those who suffer from problems with accessing education due to social and economic reasons, have been the first solution that comes to

mind in the crisis period. Studies on distance education in Turkey have taken place in a similar nature. The notion of digital transformation in education that had started in previous years has gained considerable speed with the Covid-19 process, and has become a pioneer in the education system (Karadag & Yucel, 2020, p. 182). However, although there was already a distance education infrastructure before, the sudden change in the process has brought along some adaptation problems.

The slow changes in teaching methods and curriculum in higher education could not resist this sudden change, and has failed in generating new ideas. Radical changes have been made in programs, plans and education processes overnight. In this case, people found it unnecessary to discuss whether online teaching and learning are the future of education, and no one raised an objection because there was no alternative policy or response for our current situation (Peters, Arndt, Marek et al., 2020). Swift transition to distance education in time of crisis poses the risk of decreasing the quality of the courses provided. The need for 'converting it online' immediately is inadequate compared to the effort made to develop a quality course in normal situations (Hodges, Moore, Lockee, Trust & Bond, 2020). The preparation, planning, implementation, operation and evaluation stages conducted in the transition from traditional to distance education model were accelerated in the pandemic process, and the transition was continued with the "operation" stage. However, this situation brought along deficiencies in many fields, especially in the field of infrastructure services (Bojović et al., 2020, p. 5). Such practices designed previously for limited groups have resulted in insufficiencies in terms of covering the entire education system worldwide. If we leave aside the shortcomings experienced during the crisis period, it is thought that the effect of online applications on the world of education will increase with the advantages they offer. Educational institutions should try to enhance their service standards in distance learning processes so that students do not experience significant losses arising from the pandemic process. It should be kept in mind that shortcomings in education may cause the emergence of some social problems and lost generations in the future.

2.3. Related Studies

According to the studies conducted, perceptions and attitudes towards distance education affect learning success (Offir, Barth, Lev & Shteinbok,

2003; Sankaran, Sankaran & Bui, 2000; Yildirim, Yildirim, Celik, Karaman, 2014). Preparing distance education programs in accordance with students' perceptions of distance education will increase functionality and success (Başar et al., 2019, p. 17). In addition to studies conducted on different groups, various studies have been conducted investigating the pre-service teachers' opinions and approaches regarding distance education (Barış, 2015; Başar et al. 2019; Karakus et al., 2020; Karatepe et al., 2020; Kidd & Murray, 2020; Moyo, 2020; Nasri et al., 2020; Paydar & Dogan, 2019; Scull et al., 2020; Varea & González-Calvo, 2020; Yenilmez, Balbag & Turgut, 2017). Studies based on the opinions of Turkish pre-service teachers on distance education are inadequate. It has been thought that a study investigating the perceptions of Turkish pre-service teachers about distance education in a wide sample by using quantitative and qualitative methods together will contribute to the field. This study will reveal the positive and negative aspects of distance education, which is so widely carried out for the first time. The fact that the Covid-19 epidemic still continues and the epidemic causes educational activities to be carried out in the form of distance education requires the organization of distance education activities to be given to pre-service teachers. The research will make significant contributions to the literature as it reveals the shortcomings and problems experienced in distance education for pre-service teachers and shows the perceptions of pre-service teachers about distance education.

This study was intended for identifying the perceptions of Turkish pre-service teachers regarding distance education conducted during the Covid-19 pandemic process. For this purpose, the answers to the following study problems were sought:

1. What is the arithmetic average of pre-service teachers' perceptions of distance education?
2. Is there a significant difference between the perceptions of pre-service teachers regarding distance education, based on the variable of gender?
3. Is there a significant difference between the perceptions of pre-service teachers regarding distance education, based on the variable of grade?
4. Is there a significant difference between the perceptions of pre-service teachers regarding distance education, based on the variable of using the distance education system in the past?
5. Is there a significant difference between the perceptions of pre-service teachers regarding

distance education, based on the variable of distance education tool?

6. Is there a significant difference between the perceptions of pre-service teachers regarding distance education, based on the variable of Internet opportunities?
7. Is there a significant difference between the perceptions of pre-service teachers regarding distance education, based on the variable of purpose of using distance education?
8. What are the opinions of Turkish pre-service teachers on the advantages and disadvantages of distance education?

3. Method

3.1. Sample

The universe of this research consisted of Turkish pre-service teachers studying at state universities in Turkey. The sample of the study consisted of 699 Turkish pre-service teachers studying in 1st, 2nd, 3rd, and 4th grades at 13 state universities in Turkey, in the 2019-2020 academic year. The simple random sampling method was used in the sample selection process. The sample included 517 female and 182 male pre-service teachers. Information about the distributions of the sample based on university is shown in Table 1:

Table 1. Distribution of the Sample Based on Universities

University	f	%
Ibrahim Cecen University	25	3.6
Amasya University	34	4.9
Abant İzzet Baysal University	26	3.7
Binali Yildirim University	130	18.6
Firat University	24	3.4
Mustafa Kemal University	38	5.4
Inonu University	50	7.2
Kafkas University	70	10
7 Aralık University	84	12
Hacı Bektasi Veli University	45	6.4
19 Mayıs University	64	9.2
Trabzon University	65	9.3
Yıldız Technical University	44	6.3
Total	699	100

In the qualitative part of the study, opinions of the 25 Turkish pre-service teachers selected from the sample were taken. In the selection of this study group, the appropriate sampling method was preferred. The study group included 15 female and 10 male pre-service teachers.

3.2. Design

In the study, the perceptions of Turkish pre-

service teachers regarding distance education were identified, and interviews were conducted with intent to understand their perceptions in depth. The study was designed as an exploratory sequential mixed design benefiting from qualitative data to better understand quantitative data. According to this method, the data obtained from qualitative and quantitative studies are combined and presented holistically (Creswell, 2014). In the research, a holistic approach was used and comprehensive information about distance education was obtained.

3.3. Data Collection

In the study, the scale developed by Yıldırım, Yıldırım, Çelik and Karaman (2014) was used to determine the opinions of the Turkish pre-service teachers on distance education. This scale was prepared in such a way as to include four sub-dimensions and 18 articles by conducting validity and reliability analyses. The Cronbach alpha reliability coefficient for the entire scale was calculated as .86 (Yıldırım et al., 2014). In this study, the reliability coefficient was found to be .90. In the literature, a reliability coefficient value of 0.70 and above is considered to be sufficient (McMillan & Schumacher, 2010). It was determined that the scale used in the study had an acceptable reliability coefficient. The scale data were collected via Google Forms.

In the study, an interview guide was prepared to identify the opinions on distance education and to support the quantitative data. The guide was shaped by taking expert opinion on this guide, from two faculty members in the field of Turkish education. Participants voluntarily answered the questions in the interview guide, which contained 2 questions. Interviews were conducted with the participants by establishing an online connection. In order to ensure "plausibility" in the study, the texts written by the researchers were checked by the participants and consequently the participant's confirmation was obtained. In order to enable the research to be carried out, the data were collected after getting the necessary approval from the ethics committee of Kilis 7 Aralık University.

3.4. Data Analysis

The quantitative data collected within the scope of the study were analyzed using SPSS 20.0 package program. The positive items in the study were scored between 1 and 5. In the negative items on the scale, inversion operation was done. During the analyses, first Skewness and Kurtosis values were calculated to identify the normality distribution of

the data, and the values were found to be between -1.50 ile + 1.50. Parametric tests were used because the data is normally distributed according to these analyses. Arithmetic average and standard deviation values of the pre-service teachers' scores for their perception of distance education, independent group's t-test, and One-Way Analysis of Variance (One Way ANOVA) were used.

In the qualitative part of the study, content analysis was used. In content analysis, the voluminous qualitative material is taken, and data reduction and sense-making effort is found, which is intended for determining the core consistencies and meanings. In this framework, the data were converted into codes and categories, and then are presented and interpreted in tables. During the analysis and evaluation of the data, similar answers were categorized and the frequencies of the answers in the total ratio were given. The study was detailed by adding examples from student opinions, in order to ensure the reliability of the data. Two different encoders were used for coding the data in the study. As a result of the coding operation that the two researchers did independently of each other, it was concluded that the "encoder reliability" was sufficient, based on the compliance rate of .82, which was found by dividing the codes confirmed with consensus by the total of the codes confirmed and not confirmed with consensus (Miles & Huberman, 1994, p. 64). Lastly, in order to ensure "category clarity", the process was conducted with due diligence to ensure that the classification made by the researchers is clear, obvious, and consistent with the literature.

4. Findings

4.1 Quantitative Findings

According to the results obtained through the data collection tool used in the quantitative dimension of the study, distribution of the Turkish pre-service teachers' scores regarding their perception of distance education is given in Table 2.

Table 2. Arithmetic average and standard deviation values of the students' scores for their perception of distance education

Factors	\bar{X}	sd
Personal Conformity	2.24	1.01
Efficacy	1.83	.95
Instructiveness	1.77	.88
Aptness	2.06	.98
Total	1.99	.72

According to Table 2, it is seen that the average of the personal conformity, efficacy, instructiveness

and aptness dimensions among the sub-factors of the distance education scale is low. Based on these, it is understood that the general average is low, as well. Accordingly, it can be said that the perceptions of pre-service teachers about distance education are not positive.

According to Table 3, the t value ($t=3.046$ $p<0.05$) of the difference between the scores of the Turkish pre-service teachers' perceptions regarding distance education was found to be significant. This finding shows that the male Turkish pre-service teachers have a more positive attitude towards

distance education, compared to the female candidates. The calculated eta square effect size ($\eta^2=.013$) was found to be small.

Table 3. T-Test Results of Students' Perceptions Regarding Distance Education, based on Gender Variability

Gender	N	\bar{X}	sd	t	p	η^2
Male	182	2.13	.73	3,046	.02	.013
Female	517	1.94	.71			

Table 4. Variance Analysis of Students' Perceptions regarding Distance Education, based on the variable of grade?

	Grade	N	\bar{X}	sd		SS	df	MS	F	p
Perception Towards Distance Education	1	51	2.20	.773	BG	3,837	3	1,279	2,424	.065
	2	246	1.96	.721						
	3	223	1.94	.730	WG	366,703	695	.528		
	4	179	1.99	.728	T	370,540	698			

Grade: 1= 1st grade, 2= 2nd grade, 3= 3rd grade, 4= 4th grade

According to Table 4, no statistically significant difference was found as a result of one-way variance analysis ($F=3.101$ $p>0.05$). These results

show that there was no difference in the pre-service teachers' perceptions regarding distance education, depending on their grade levels.

Table 5. T-Test Results of Students' Perceptions Regarding Distance Education, based on the variable of using the distance education system in the past?

Have you received distance education before?	N	\bar{X}	sd	t	p
Yes	277	2.00	.72	.214	.831
No	422	1.99	.73		

According to Table 3, the t value ($t=.214$ $p>0.05$) of the difference between the scores of the Turkish pre-service teachers' perceptions regarding distance education was not found to be significant.

These results show that the perceptions of students, who had previously received distance education and those who had not received it, are similar.

Table 6. Variance Analysis of Students' Perceptions Regarding Distance Education, Based on the Variable of Tool They Used to Participate in Distance Education?

	Tool	N	\bar{X}	sd		SS	df	MS	F	p	Difference	η^2
Perception Towards Distance Education	1	236	2.01	.761	BG	8,925	3	2,975	5,718	.001	4- 1.2	.024
	2	363	1.92	.666								
	3	64	2.12	.760	WG	361,615	695	.520				
	4	36	2.40	.894	T	370,540	698					

Tool: 1= Computer, 2= Phone, 3= Tablet, 4= All

A statistically significant difference was found in the one-way variance analysis ($F=5.718$ $p<0.05$) performed to see whether there is a difference between the Turkish pre-service teachers' perceptions regarding distance education based on the variable of tool they used. As a result of the Scheffe test performed to identify the source of this difference, the direction of the difference was

found as all – computer and telephone. These results can prompt us to comment that the students who get connected to lessons by using all the technological tools listed above have a more positive perception compared to the students who get connected using only computers or phones. The calculated eta square effect size ($\eta^2=.024$) was found to be small.

Table 7. Variance Analysis of Students' Perceptions Regarding Distance Education, Based on the variable of Their Internet opportunities

Facilities	N	\bar{X}	sd		SS	df	MS	F	p	Difference	η^2
1	490	2.09	.732	BG	17,118	3	5,706				
2	121	1.69	.629	WG	353,422	695	.509	11,221	.000	1-2	.046
3	88	1.91	.714	T	370,540	698					

Facilities: 1= I have Internet access, 2= Internet is not available where I live, 3= I do not have Internet due to financial impossibilities

The one-way variance analysis revealed a significant difference ($F=11.221$ $p<0.05$) between the pre-service teachers' perceptions on distance education, depending on the Internet opportunities they have. With the Scheffe test conducted to identify the aspect of the difference, it was revealed that the direction of the difference was as follows: I

have Internet access - Internet is not available where I live. According to these results, students who do not have Internet in their residential addresses exhibit a more negative perception regarding distance education, compared to students with Internet access. The calculated eta square effect size ($\eta^2=.046$) was found to be small.

Table 8. Variance Analysis of Students' Perceptions Regarding Distance Education, Based on the Variable of Purposes of Using the Distance Education System?

	Purpose	N	\bar{X}	sd		SS	df	MS	F	p	Difference	η^2
Perception	1	183	2.07	.759	BG	6,601	3	6,840				
Towards	2	84	1.97	.751								
Distance	3	197	1.60	.679	WG	356,861	695	.530	9,721	.038	1.2-3	.017
Education	4	235	1.81	.743	T	370,504	698					

A statistically significant difference was found in the one-way variance analysis ($F=9.721$ $p<0.05$) performed based on the Turkish pre-service teachers' purposes for using the distance education systems. According to the LSD test performed to find the source of this difference, the direction of the difference is as follows: listening to lectures from recordings and listening to live lecture – to homework submission. According to these results, it can be said that the students using the system for listening to lectures from recordings or listening to live lecture have more positive perceptions regarding distance education, compared to students who use the system to submit homework. The calculated eta square effect size ($\eta^2=.017$) was found to be small.

4.2. Qualitative Findings

The pre-service teachers' opinions on distance education were themed as advantages and disadvantages, based on the data obtained from the interviews with Turkish pre-service teachers.

4.2.1. Advantages of Distance Education

The pre-service teachers' opinions on distance education were categorized and codes belonging to these categories were assigned. When the first category, i.e. duty and responsibility advantages were analyzed, the pre-service teachers were found to express their opinions mostly saying that they

developed independent learning skills (10). This is followed by 'Prompts student to take responsibility' (7), 'Requires having the necessary equipment', (3) and 'Requires keeping the attention alive' (3)'. According to the pre-service teachers, distance education provides them with these advantages to improve their ability to take responsibility. One of the student's views is as follows:

It helps the person to study independently and alone, contributing his/her effort to make a habit of this. (P4)

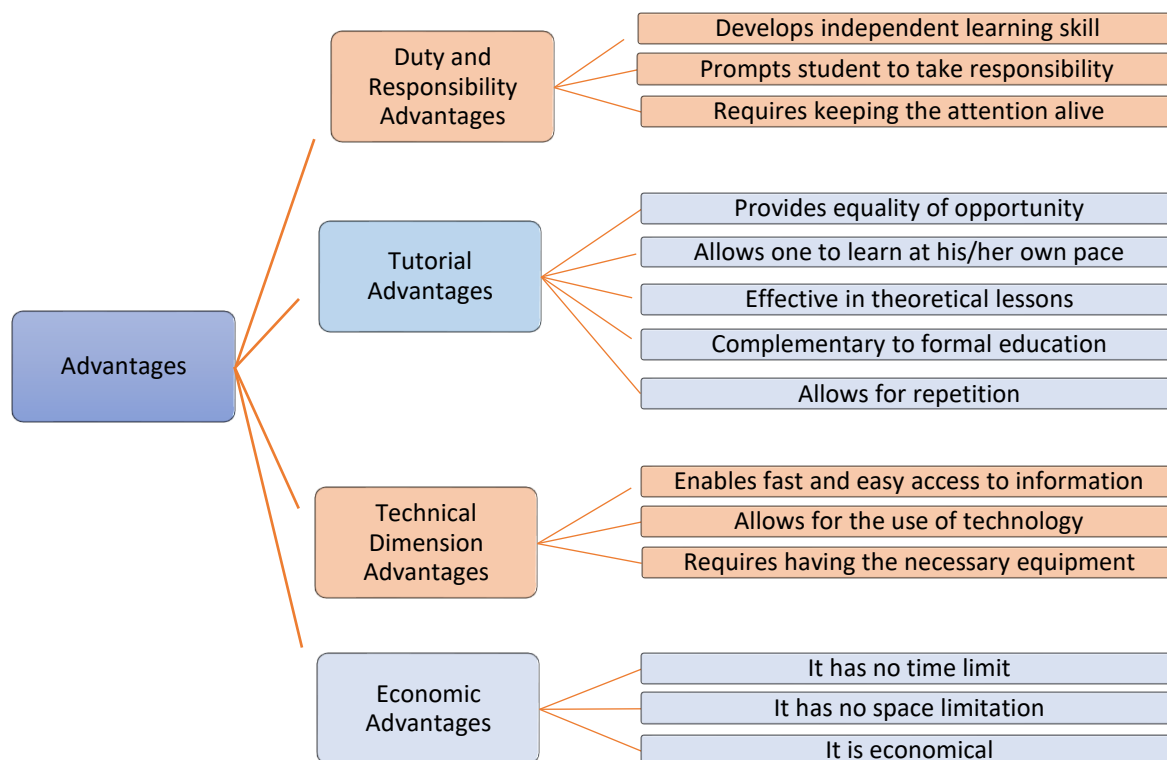
Another opinion of the participants on the advantages of distance education is related to its instructional advantages. According to the participants, one of the most important advantages of distance education is that it enables everyone to receive education and benefit from it equally, by providing them with equality of opportunity (19). This code is followed by the 9 opinions as 'Allows one to learn at his/her own pace', 3 opinions as 'Effective in theoretical lessons', and 1 opinion as 'Complementary to formal education' and as 'Allows for repetition'. One of the student's views is as follows:

There is equality of opportunity in distance education. It offers the opportunity of a flexible education for students who have difficulty in receiving face-to-face education. Conditions such as working and marriage do not pose obstacles to distance education. (P2)

Some of the opinions received from the participants were about the advantages related to the technical dimension of distance education. It is seen that these advantages are presented as 'Allows for the use of technology' (9), 'Enables fast and easy access to information' (4), and 'Requires having the necessary equipment' (3). One of the student's views is as follows:

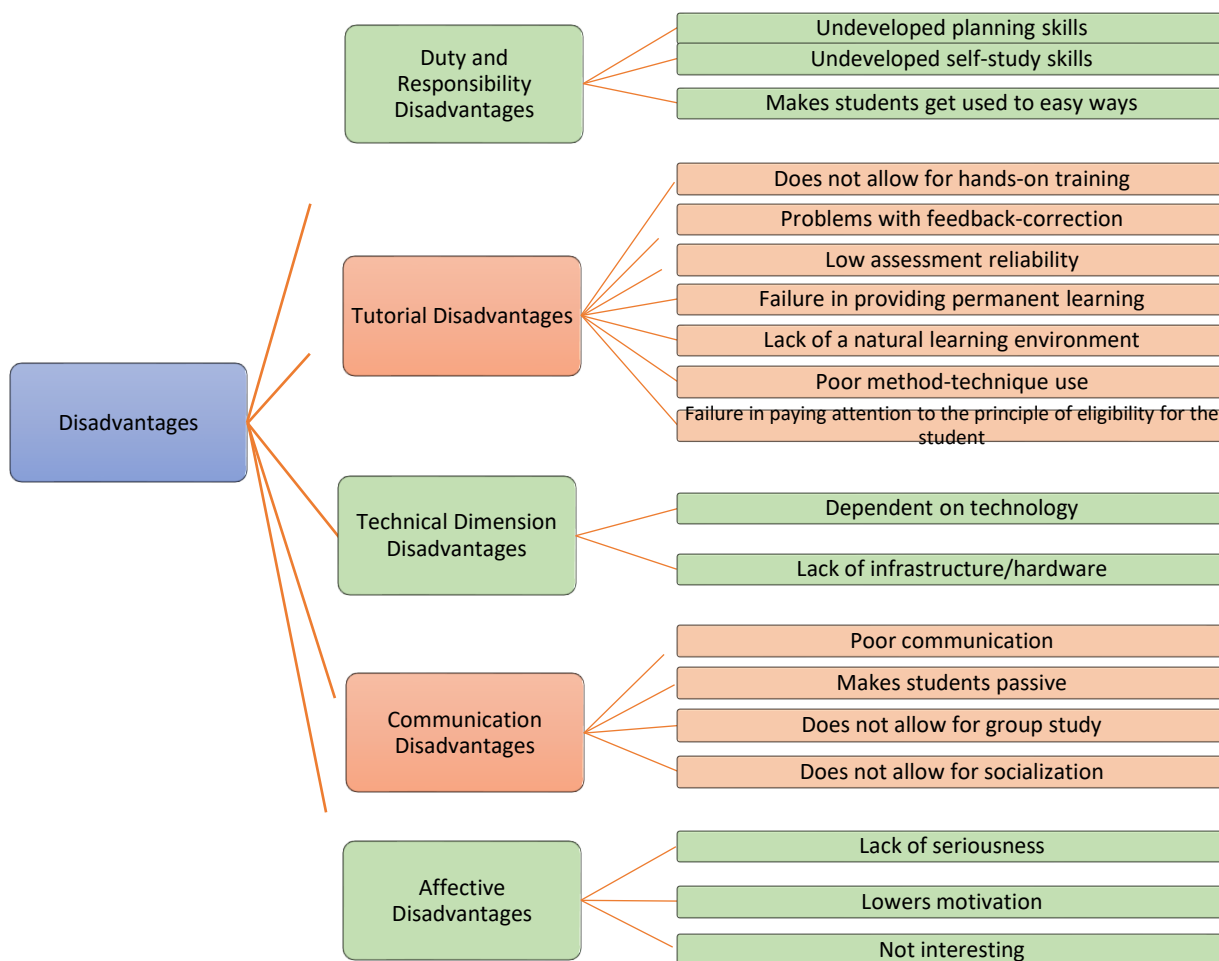
Technological facilities can be utilized actively in distance education. Rich audio and visual designs make education attractive and increase learning, thanks to technological facilities. (P16)

Based on the opinions received from the participants, it is seen that the last advantage of distance education offered to students is intended for providing economic conveniences. 25 participants stated that distance education offers economic advantages because it gives the opportunity to use time flexibly; 19 participants said because it is flexible in terms of using space; 18 participants said because it eliminates expenditures for transportation, accommodation, food etc. and also provides the opportunity to offer service for a large number of students with fewer teachers.



Graph 1. Advantages of Distance Education

4.2.2. Disadvantages of Distance Education



Graph 2. Disadvantages of Distance Education

When we look at the Turkish pre-service teachers' opinions on the disadvantages of distance education, the first category we see is the category of disadvantages related to duties and responsibilities. The problems seen in this category are 'Undeveloped self-study skills' (3), 'Making students get used to easy ways' (2), and Undeveloped planning skills (2). One of the student's views is as follows:

Students with planning problems can experience confusion because they cannot know what to do or when to do it. (P19)

Another problem we face is the educational disadvantages of distance education. One of the most important disadvantages of distance education is that the majority of the students who participated in the study cannot get the opportunity to practice in distance education, and consequently

they think they cannot thoroughly practice their learning. According to pre-service teachers, distance education has disadvantages due to some causes such as 'It does not allow for hands-on training' (15), 'Problems with feedback-correction' (14), 'Low measurement reliability' (11), 'Failure in providing permanent learning' (9), 'Distance education is not a natural environment' (7) and 'Failure in paying attention to the principle of eligibility for the student'. One of the student's views is as follows:

Distance education is not a natural environment. There is sincerity in face-to-face training. In a natural atmosphere, students feel better and are aware of the fact that they are in a school and act accordingly. (P26)

According to pre-service teachers, some problems we face in distance education are caused

by technical factors as well. Other facts considered to be a disadvantage are that distance education depends on some elements such as Internet, phone, tablet, computer, and electricity; and that any possible failure in one of these affects the lessons. According to pre-service teachers, the problems we encounter in this category are 'distance education's dependence on technology' (25), and 'Lack of infrastructure/hardware' such as Internet, and electricity (5). One of the student's views is as follows:

With the current conditions, it seems unlikely for distance education to replace face-to-face education due to infrastructure deficiencies. (P20)

According to pre-service teachers, the lack of healthy communication in distance education is another disadvantage. Accordingly, the problems encountered include poor interaction (25), not allowing for group study (9), students staying passive in the process (5) and not allowing for socialization (3). According to pre-service teachers, who think communication has an important place in the learning-teaching process, the possible problems in this area will directly affect course efficiency. One of the student's views is as follows:

One of the greatest drawbacks of distance education is the lack of teacher-student interaction. Students may experience difficulties in case of inability to get immediate feedback for problems faced during learning. (P14)

Another disadvantage that we come across when the opinions on distance education are analyzed is that distance education leads to affective problems. Accordingly, pre-service teachers think that distance education has disadvantages such as lowering student motivation (7), lack of seriousness (1), and not being interesting (1).

5. Discussion

Significant efforts have been made within the scope of compulsory distance education practices started with the Covid-19 process. In this process, analyzing distance education provided at universities from the perspective of pre-service teachers will contribute to the process. In this context, the results of the study are important.

When we look at the arithmetic averages of the pre-service teachers' perceptions on distance education, they are found to be below the middle level. Accordingly, it can be said that pre-service teachers do not consider distance education positively. In the study conducted by Fidalgo, Thormann, Kulyk and Lencastre (2020), Portuguese and Ukrainian students evaluated distance

education more positively compared to UAE students. Having previous experience and aptness are thought to have an impact on this.

As a result of the analyses performed based on the variable of gender, gender was found to create a significant difference. According to the data obtained, male pre-service teachers have more positive perceptions on distance education, compared to female pre-service teachers. There are studies in the literature, which support or do not support this. Graham and Jones (2011) observed in their study that female students had more negative opinions on distance education than male students, in their responses; and Başar et. al. (2019) observed in his study that male pre-service teachers have higher perceptions on distance education than female pre-service teachers. However, in the studies conducted by Ataş and Altun (2008), and Barış (2015), it was ascertained that students' attitudes towards distance education did not differ significantly based on gender. When the Turkish pre-service teachers' perceptions on distance education are compared based on the grade levels, it has been ascertained that the pre-service teachers' perceptions on distance education do not have a significant difference. According to these data, grade levels also do not affect the pre-service teachers' perceptions on distance education. Similarly, as a result of the study conducted by Ataş and Altun (2008), it was revealed that perceptions on distance education did not differ significantly based on grade levels.

It was determined that there was no significant difference between pre-service teachers' perceptions on distance education, based on the variable of pre-service teachers' previous use of the distance education system. However, no statistically significant difference was found between the perceptions of Turkish pre-service teachers on distance education, based on the variable of tool they used. According to the results, it can be said that students using phones, tablets and computers for connecting to the distance education service have a more positive perceptions compared to students using only a computer or a phone to connect to the service. Barış (2015) in his study revealed that students who have a computer have more positive attitudes than those who do not have; and that those having a smart phone and tablet have more positive attitudes than those who do not have. Significant difference was found between the Turkish pre-service teachers' perceptions on distance education, based on the variable of the Internet opportunities they have. These results can prompt us to comment that

students having Internet access where they live have more negative perceptions on distance education than students who have no Internet access. In the study conducted by Barış (2015), those who had uninterrupted access to the Internet were observed to display more positive attitudes than those who have no Internet access. In the analyses performed based on the Turkish pre-service teachers' purposes for using the distance education systems, a significant difference was found between the students using the system for listening to lectures from recordings or listening to live lecture and students who use the system to submit homework. According to this difference, it can be said that the students using the system for listening to lectures from recordings or listening to live lecture have more positive perceptions regarding distance education, compared to students who use the system to submit homework.

In the qualitative part of the study, the themes of duty and responsibility, teaching, technical dimension, economic dimension, communication, affective and health were revealed in consequence of taking the opinions of pre-service teachers on distance education. The theme of duty and responsibility was the first one of these themes, whereby pre-service teachers mentioned the advantages and disadvantages of distance education. According to students, distance education has advantages such as developing independent learning skills, requiring taking responsibility, and keeping interest alive. On the other hand, the fact that students' planning and self-study skills are not developed prevents the desired efficiency in distance education. In addition, making students get used to easy ways is considered to be another disadvantage. Kara, Erdoğan, Kokoç & Cagiltay (2019) in his study ascertained that individuals face challenges caused by their own individual characteristics or the lack of some skills that they need to deal with such challenges in distance education.

Another situation discussed was the theme of instructiveness. The positive opinions obtained in this theme were generally towards the providing students with the equality of opportunity, enabling them to learn at their own paces, and allowing for repetition. However, the facts that it does not allow for hands-on training, fails in providing permanent learning, it has low assessment reliability, and fails in paying attention to the principle of eligibility for the student are considered to be the disadvantages of distance education. According to Moyo (2020), although universities have started online education for some modules, they have yet to find the ways to

solve the problem of evaluating the practices.

The fact that distance education is conducted with tools such as Internet, electricity, computers and phones leads to some advantages and disadvantages in terms of technical aspects, as well. In the research, distance education was found to be advantageous for reasons such as fast and easy access to information, and the opportunity to use technology. On the other hand, its dependence on technology and infrastructure deficiencies is considered to be the disadvantages of distance education. In the study conducted by Karadağ & Yücel (2020), university students expressed that the universities were not prepared for distance education in the Covid-19 process, and that they did not find their digital content/teaching materials satisfactory. In the study conducted by Kaleli Yılmaz & Guven (2015), pre-service teachers had negative opinions due to technical problems such as freezing of the image and reverberation of sound. Karakus et al. (2020) concluded that the most common technical problems are the problems with Internet/connection and unsupported devices/hardware.

According to pre-service teachers, distance education is in conformity with the principle of affordability because it is independent of time and space, and eliminates additional expenditures for accommodation, transportation, and food. But, distance education leads to affective problems. According to pre-service teachers, deprivation of classroom seriousness, and lowering student's interest and motivation are its affective disadvantages. In distance education, negative opinions are observed due to affective reasons. (Gillies, 2008; Karakus et al., 2020; Kara et al., 2019). Fidalgo et al. (2020) in his study revealed that also students in Ukraine, UAE and Portugal had difficulty with motivation and therefore did not want to enroll in distance education.

6. Conclusion

When the quantitative findings of the study were analyzed, it was revealed that the pre-service teachers' perception on distance education did not differ based on the variables of grade levels and whether they had previously received distance education; however, their perceptions on distance education were observed to differ based on the variables of gender, the tool they use for participating in distance education, Internet opportunities that students have, and the purposes of using the distance education system. The qualitative findings revealed that the opinions taken from the students were about the advantages

and disadvantages of distance education; and that the disadvantages were prevalent in the opinions. As a result, it is understood that pre-service teachers are aware of the advantages and disadvantages of distance education and that they are shaping themselves accordingly. The Covid-19 process creates a different format of distance education and contains more unfavorableness compared to the previously applied systems. The newly emerging technical deficiencies, the adaptation problem of teachers, and the use of new digital tools contain some problems due to the sudden change.

7. Suggestions

In consequence of the results obtained in the study, recommendations can be made as follows:

- The fact that some students may not have Internet access in their residential areas should not be ignored, and the necessary steps should be taken to resolve this problem.
- Opinions on the disadvantages of distance education should be taken into account, and high efficiency should be achieved by eliminating the deficiencies mentioned here.
- Teachers should use different methods to make lessons efficient in distance education.
- Researchers should be encouraged to carry out studies with students from different departments.

References

- [1] Ateş, A. & Altun, E. (2008). Investigating preservice computer teachers' attitudes towards distance learning regarding various variables. *Journal of Gazi Educational Faculty*, 28(3), 125-145.
- [2] Barış, M. F. (2015). Analyzing the university students' attitudes towards distance education: Namık Kemal University case study. *Sakarya University Journal of Education*, 5(2), 36-46.
- [3] Başar, M., Arslan, S., Günsel, E. & Akpınar, M. (2019). Distance education perceptions of prospective teachers. *Journal of Multidisciplinary Studies in Education*, 3(2), 14-22.
- [4] Beldarrain, Y. (2006). Distance education trends: Integrating new technologies to foster student interaction and collaboration. *Distance Education*, 27(2), 139-153. <https://doi.org/10.1080/01587910600789498>
- [5] Bojović, Ž., Bojović, P. D., Vujošević, D. & Šuh, J. (2020). Education in times of crisis: Rapid transition to distance learning. *Comput Appl Eng Educ*, 1-23. <https://doi.org/10.1002/cae.22318>
- [6] Creswell, J. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Thousand Oaks, CA: Sage.
- [7] 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(18), 1-18 <https://doi.org/10.1186/s41239-020-00194-2>
- [8] Gillies, D. (2008). Student perspectives on video-conferencing in teacher education at a distance. *Distance Education*, 29(1), 107-118.
- [9] Graham, C. M., & Jones, N. (2011). Cognitive dissonance theory and distance education: Faculty perceptions on the efficacy of and resistance to distance education. *International Journal of Business, Humanities and Technology*, 1(2), 212-227.
- [10] Hodges, C., Moore, S., Lockee, B., Trust, T. & Bond, A. (2020). The difference between emergency remote teaching and online learning. Available at <https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remoteteaching-and-online-learning> Accessed 11 November 2020.
- [11] Kaleli Yılmaz, G. & Güven, B. (2015). Determining the pre-service teachers' perceptions on distance education by metaphors. *Turkish Journal of Computer and Mathematics Education*, 6(2), 299-322. <https://doi.org/10.16949/turcomat.75936>
- [12] Kangai, C. & Bukaliya, R. (2011). Teacher development through open and distance learning: The case for Zimbabwe. *International Journal on New Trends in Education and Their Implications*, 2(4), 124-141.
- [13] Kara, M., Erdoğan, F., Kokoç, M. & Cagiltay, K. (2019). Challenges faced by adult learners in online distance education: A literature review. *Open Praxis*, 11(1), 5-22. <https://doi.org/10.5944/openpraxis.11.1.929>
- [14] Karadağ, E., & Yücel, C. (2020). Distance education at universities during the novel coronavirus pandemic: an analysis of undergraduate students' perceptions. *Journal of Higher Education (Turkey)*, 10(2), 181-192. <https://doi.org/10.2399/yod.20.730688>
- [15] Karakuş, N., Ucuşsatar, N., Karacaoğlu, M. Ö., Esendemir, N. & Bayraktar, D. (2020). Turkish pre-service teachers' views on distance education. *RumeliDE Journal of Language and*

- Literature Studies, 19, 220-241. <https://doi.org/10.29000/rumelide.752297>.
- [16] Karatepe, F., Küçükgençay, N. & Peker, B. (2020). What are the perspectives of pre-service teachers on synchronous distance education?: a survey study. *Journal of Social and Humanities Sciences Research*, 7(53), 1262-1274. <http://dx.doi.org/10.26450/jshsr.1868>
- [17] Kırık, A. (2014). Historical development of distance education and the situation in Turkey. *Marmara University Journal of Communication*, 21, 73-94. <https://doi.org/10.17829/midr.20142110299>
- [18] Kidd, W. & Murray, J. (2020) The Covid-19 pandemic and its effects on teacher education in England: how teacher educators moved practicum learning online. *European Journal of Teacher Education*, 43(4), 542-558, <https://doi.org/10.1080/02619768.2020.1820480>
- [19] Kuo, Y.-C., Walker, A. E., Belland, B. R., & Schroder, K. E. E. (2013). A predictive study of student satisfaction in online education programs. *The International Review of Research in Open and Distributed Learning*, 14(1), 16-39. <https://doi.org/10.19173/irrod.v14i1.1338>
- [20] Lee, K. (2020) Who opens online distance education, to whom, and for what? *Distance Education*, 41(2), 186-200, <https://doi.org/10.1080/01587919.2020.1757404>
- [21] Mcmillan, J. H. & Schumacher, S. (2010). *Research in Education: Evidence - Based Inquiry*, (7 th Edition), Pearson, London.
- [22] Miles, M. B. & Huberman, M. A. (1994). *Qualitative data analysis*. London: Sage Publication.
- [23] Moyo, N. (2020). COVID-19 and the future of practicum in teacher education in Zimbabwe: rethinking the 'new normal' in quality assurance for teacher certification. *Journal of Education for Teaching*, 1–10, Page numbers and issue not yet known. <https://doi.org/10.1080/02607476.2020.1802702>
- [24] Nasri, N. M., Husnin, H., Mahmud, S. N. D. & Halim, L. (2020). Mitigating the COVID-19 pandemic: a snapshot from Malaysia into the coping strategies for pre-service teachers' education. *Journal of Education for Teaching*, 1-8, Page numbers and issue not yet known. <https://doi.org/10.1080/02607476.2020.1802582>
- [25] Offir, B., Barth, I., Lev, Y., & Shteinbok, A. (2003). Teacher–student interactions and learning outcomes in a distance learning environment. *The Internet and Higher Education*, 6(1), 65-75.
- [26] Paydar, S. & Doğan, A. (2019). Pre-service teachers' views on open and distance learning environments. *Education and Technology*, 1(2) 154-162.
- [27] Peters, M. A., Arndt, S., Marek, T. et al. (2020). Philosophy of education in a new key. *Educational Philosophy and Theory*. 1-22, Page numbers and issue not yet known. <https://doi.org/10.1080/00131857.2020.1759194>
- [28] Rovai, A. P. & Downey, J. R. (2010). Why some distance education programs fail while others succeed in a global environment. *The Internet and Higher Education*, 13(3), 141-147. <https://doi.org/10.1016/j.iheduc.2009.07.001>
- [29] Salar, H. C. (2013). Student and faculty readiness for open and distance learning in Turkey. PHD Disstertion, Anadolu University.
- [30] Sankaran, S. R., Sankaran, D., & Bui, T. X. (2000). Effect of student attitude to course format on learning performance: An empirical study in web vs. lecture instruction. *Journal of Instructional Psychology*, 27(1), 66-73.
- [31] Santosh, S. & Panda, S. (2016). Sharing of knowledge among faculty in a mega open university. *Open Praxis*, 8(3), 247–264. <http://dx.doi.org/10.5944/openpraxis.8.3.317>
- [32] Scull, J., Phillips, M., Sharma, U. & Garnier, K. (2020). Innovations in teacher education at the time of COVID19: an Australian perspective. *Journal of Education for Teaching*, <https://doi.org/10.1080/02607476.2020.1802701>
- [33] Tesar, M. (2020). Towards a Post-Covid-19 'New Normality?': Physical and social distancing, the move to online and higher education. *Policy Futures in Education*, 18(5) 556–559. <https://doi.org/10.1177/1478210320935671>
- [34] Traxler, J. (2018). Distance learning-predictions and possibilities. *Education Sciences*, 8(35), 1-13.
- [35] UNESCO. (2020). COVID-19 educational disruption and response. Available at <https://en.unesco.org/covid19/educationresponse> Accessed 9 November 2020.
- [36] Varea, V. & González-Calvo, G. (2020). Touchless classes and absent bodies: teaching physical education in times of Covid-19. *Sport, Education and Society*,

<https://doi.org/10.1080/13573322.2020.1791>

814

- [37] Wang, G., Zhang, Y., Zhao, J., Zhang, J., & Jiang, F. (2020). Mitigate the effects of home confinement on children during the COVID-19 outbreak. *Lancet* (London, England), 395(10228), 945–947. [https://doi.org/10.1016/S0140-6736\(20\)30547-X](https://doi.org/10.1016/S0140-6736(20)30547-X)
- [38] Yenilmez, K., Balbağ, M. Z. & Turgut, M. (2017). Investigation of prospective teachers' perceptions on distance education with respect to certain variables. *Erzincan University Journal of Education Faculty*, 19(2), 91-107. <https://doi.org/10.17556/erziefd.305902>
- [39] Yıldırım, S., Yıldırım, G., Çelik, E., Karaman, S. (2014). Perception of distance education students about distance education: a scale development study. *Journal of Research in Education and Teaching*, 3(3), 365-370.
- [40] Zhang, W., Wang, Y., & Yang, L. (2020). Suspending classes without stopping learning: China's education emergency management policy in the COVID-19 outbreak. *Journal of Risk and Financial Management*, 13(3), 1–6. <https://doi.org/10.3390/jrfm13030055>