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A Research about the opinions of pre-service Turkish teachers on the online education process

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Abstract

The Covid-19 virus, which emerged in Wuhan at the end of 2019, spread to the whole world in a short time, and became a pandemic. As a result of the pandemic, infected people were put in the quarantine process, and some people voluntarily got in quarantine. And the online operation is provided in many fields, such as education. This research, designed with the phenomenology method, was conducted to determine the opinions of 72 students (47 Females, 25 Males) about the online education process. The research data consisted of the answers given to the semi-structured interview form of 72 students. The collected data were analyzed as frequencies and percentages by creating codes and themes through content analysis According to the findings obtained from the data, 47% of the pre-service teachers were able to get efficiency from the course online, while 33% said that they could not get efficiency. 20% of the pre-service teachers stated that they did not entirely get efficiency. 80% of the pre-service teachers stated that they believed the lessons would be more productive if it held face-to-face. Pre-service teachers also listed problems such as lack of communication, inability to provide self-regulation and discipline, and internet connection problems as the supreme disadvantages of online education. The study concluded that pre-service teachers preferred face-to-face education due to the limitations of online education (lack of communication and interaction, lack of self-regulation and motivation, lack of technology such as the internet and computer, and so on).

1.Introduction

The Covid-19 virus, which emerged in Wuhan, China, as a rapidly spreading viral infection at the end of 2019, was transferred to pandemic status by the World Health Organization (WHO) on March 11, 2020, and offered people a lifestyle that they had not experienced before. With the rapid spread of the virus, the pandemic has become a grand problem threatening the world. Approximately 116 million cases were registered one year after the WHO declared a global pandemic in March 2021(WHO, 2020; Suryaman et al., 2020; WHO, 2021). In this process, many precautions have been taken to slow down the pandemic. Many countries have implemented strict protocols such as partial quarantines, social distance practices, curfews, working from home, flexible working hours, and closing many institutions (Bozkurt, 2020; Bozkurt & Sharma, 2020). One of the areas most affected by this threat has been education. Distance education, which allows modern people to renew themselves (Gökçe, 2008), has become a vitality to

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protect the health of the masses from the Covid-19 pandemic. After the pandemic declared, many countries continued their education partially face-to-face, while some countries continued their education completely online. And this situation affected approximately 826 million students (UNESCO, 2020). Some countries have suspended face-to-face classes until further notice, while others advised reducing only face-to-face education and replacing it with online solutions wherever possible (Gonzalez et al., 2020). After the outbreak of the pandemic, many countries such as Australia, Germany, Egypt, Jordan, Ireland, and Malaysia decided to switch to an online application by arranging the programs of universities (Crawford et al., 2020). In Turkiye, as a result of the detection of the first case in March 2020, with the recommendation of the Ministry of Health, the midterm holiday in the Ministry of National Education was moved to March 16-22. Afterward, it decided to switch to online education by both the Ministry of National Education (MEB) and Board of Higher Education (YOK). Thus, the distance and online education process have started in primary, secondary, high schools, and universities. The online education process at universities continued online (excluding applied sciences) from March 2020 to September 2021(MEB, 2020; YOK, 2020). The transition to distance education, which was considered to be only a three-week process at first, was prolonged to a whole semester. In the 2020-2021 academic year, while MEB continued with hybrid (face-to-face and online education) education, the Board of Higher Education continued with online education. After the closure of schools, many students started to learn from the internet, television, and radio. And this disrupted their learning process (Seyhan, 2021). In the 2021-2022 academic year, the Ministry of National Education decided to start face-to-face education, and universities settled on hybrid education. In this study, the opinions on the advantages and disadvantages of online education, challenging situations, and difficulties communicating in the online learning process, experienced by pre-service Turkish teachers for about one and a half years who took some of their courses online also in 2021-2022 academic year, were mentioned.

2. Literature

The Covid-19 pandemic has forced the whole world into a digital transformation. Teachers and schools had to train children for this sudden and unexpected digital transformation (Papagiannidis et al., 2020). Some countries and institutions did not prepare for this transformation as well as those prepared. For example, far eastern countries such as China and South Korea were prepared for this process due to Sars and Mers viruses (Crawford et al., 2020). This situation in these countries is also eligible for institutes and universities. While the transition was smoother for some universities that already provided online education with suitable infrastructure, some universities cannot carry out a simultaneous education process at the beginning and continue education asynchronously with forums. Online education has not only advantages but also disadvantages. For example, online education has created a gap between students who can and cannot reach education at all levels. Equality of opportunity in education has been compromised because of the disadvantaged students who do not have devices such as the internet or computers, tablets, and smartphones.

This online education process, which came with the pandemic, is an urgent distance education process, and it contains many shortcomings and disadvantages due to its urgency. While distance or online education is always an option for students, instant distance learning is vitality.

While distance education is characterized by the independence of time and place between learners and learning resources, emergency distance education is a temporary solution to an urgent problem that emerges in situations such as the inability to perform education result of force majeure (Bozkurt & Sharma, 2020). Such a rapid transition has shown that many universities that notably upload documents asynchronously are not well prepared for distance or online education in a global crisis. However, distance education includes more than just uploading educational content instead, it is a learning process that provides students with meditation, responsibility, flexibility, and choice (Bozkurt & Sharma, 2020). Online learning is an interactive learning environment in which learners can communicate by accessing

the course contents synchronously or asynchronously, regardless of time and place, through internet technologies. It also provides students and educators with many opportunities, such as more diverse information sources and dynamic learning interfaces (Yavuzalp & Özdemir, 2020; Korkmaz & Kaya, 2012). Online education has both advantages and disadvantages. One of the major advantages of an online learning environment is to provide time and place independence to both learners and educators (Yavuzalp & Özdemir, 2020). On the other hand, it has a disadvantage that some students do not have technical devices such as the internet, computer, and tablet (Telli Yamamoto & Altun, 2020). Also, since it is a virtual environment, there is no group interaction, and this is insufficient compared to the success of face-to-face communication (Gökçe, 2008). Additionally, online education, which is carried out synchronously at universities, has been interrupted from time to time due to the difficulties brought about by technology.

The opinions of the pre-service teachers who have experienced online education are substantial to see the deficiencies and to make improvements. For this reason, this study aims to obtain opinions about the distance education system of the pre-service teachers who had experienced distance education for a year and a half.

3. Methodology

3.1. Research Model/Design

The design of this study is phenomenological research, one of the qualitative research designs. Qualitative research has an approach to discovering and understanding the meanings of a social or human problem attributed to individuals or groups (Creswell, 2014). Phenomenological research takes its source from philosophy and psychology. It aims to show how participants share an experience as an individual and as a group. It also reveals how they define and transform the shared experience (Patton, 2018; Creswell, 2016; Creswell, 2017). Such studies focused on how people perceive, describe, judge, remember, and feel about the phenomenon and how they talk to others (Patton, 2018). The findings from phenomenology help us to understand a phenomenon through the eyes of those who experience it (Neubauer et al., 2019). During the pandemic process, countless studies were carried out with teachers, students, faculty members, and school principals. (Demir & Özdaş, 2020; Adıgüzel, 2020; Dilekçi & Limon, 2020; Arslan & Şumuer, 2020; Alper, 2020; Özdoğan & Berkant, 2020; Ülker, 2020; Çiçek et al., 2020). Similarly, the number of studies about the opinions of university students regarding online education, mental health, stress, and academic performance are quite high (Agormedah et al., 2020; Usher & Barak, 2020; Fawaz et al., 2021; Gonzalez et al., 2020; Erşen & Yumak, 2021; Kapasia et al., 2020; Selvaraj et al., 2021; Duman, 2020; Yolcu, 2020; Er Türküresin 2020; Düzgün & Sulak, 2020; Eti & Karaduman, 2020; Akdemir & Kılıç, 2020; Gömleksiz & Pullu, 2020; Şengün & Toptaş, 2020; Giesbers et al., 2013).

This phenomenological research, which aims to discover the meaning of online learning for pre-service teachers, reveals the online education experiences of pre-service teachers and their opinions on this experience during the pandemic. In this study, the experiences of pre-service teachers regarding online education are emphasized.

3.2. Data Collecting Tools

In phenomenological research, in-depth interviews were performed with individuals who experienced phenomena (Patton, 2018: 104). A semi-structured interview form was used as a data collection tool. In this form of an interview, four questions were directed to the students. The questions were validated by two different field specialists. Then questions were delivered to the students online. The questions in the semi-structured interview form are as follows:

1) What do you think are the advantages and disadvantages of online education? Explain.
   a) Do you think you got enough efficiency from online education? Why?
   b) Do you believe that face-to-face education will be more efficient? Why?
2) What was the most challenging thing for you in the online education process? Why?
3) Do you think that the communication established during the online education process is sufficient? Why?
   a) Which channel do you use in communication? (Distance education system, email, social media, WhatsApp, and so on.)
4) Do you have any suggestions for the online education process and distance education system?

3.3. Sampling or Study Group

The study group consisted of 72 students, including 47 female and 25 male students who had experienced the online education process for a definite time from the Faculty of Education at Afyon Kocatepe University. The study group was determined by the easily accessible sampling method, considering time and appropriate conditions. These students had experienced the online learning process. The easily accessible sampling method is used in cases where the researcher cannot find the opportunity to use other sampling methods (Yıldırım & Şimşek, 2013). The research was carried out in the Fall Semester of the 2020-2021 academic year. The study group consisted of pre-service Turkish teachers coded as P1, P2, P3,..., and P72. Participants experienced the online and distance education process for a semester. As a result of the training they received for a semester, the pre-service teachers' opinions on online learning were consulted. The fall semester of the 2020-2021 academic year was the first semester in which pre-service teachers experience online learning synchronously.

3.4. Data Analysis

One of the qualitative data analysis methods, content analysis, which aims to reveal the facts by defining the data, was used. For this purpose, firstly, the data was conceptualized, and then a logical arrangement made according to the concepts emerged (Yıldırım & Şimşek, 2013). The collected data was also analyzed as frequencies and percentages by creating codes and themes through content analysis. Moreover, direct quotations were included in the study to express the opinions of the pre-service teachers.

3.5. Validity and Reliability

The opinions of the students were examined by the researcher, and codes were created. An expert opinion was applied to provide clarity in code determination. Codes by the experts and the researcher were compared. As a result of the opinions received from the experts, the formula of number of agreements/ (total number of agreements + disagreements) developed by Miles and Huberman (1994) in terms of the reliability of the coding was used. Reaching a value of more than 70% using the formula of number of agreements/ (total number of agreements + disagreements) shows the reliability of the coding (Miles& Huberman, 1994). As a result of the calculation made according to this formula, the reliability of this research was found 86%.

4. Findings

The opinions of pre-service teachers for online education are presented in tables. The answers of pre-service teachers to the question *"What do you think of the advantages and disadvantages of online education?"* are discussed in Table 1.

Table 1

Pre-service teachers' opinions on online learning

Themes	Sub-themes	Codes	f
Advantages	Flexibility	Attending classes at any time	29
		Attending classes at any places	26
	Unlimited replay possibilities		32
	Economics		27
	Ease of access to course documents		12
	Time management	Saving time	12
	Protecting health	Reducing the risk of catching the infection	6
		Low stress level	1
	Teaching and learning process	Suitable for individual learning	7
		Multiple learning options	3
		Developing self-discipline	5
		Ensuring continuity in education	4
		Encourage searching	3
		Being a technological literate	1
Disadvantages	Communication	Lack of interaction	36
		Lack of feedback	9
	Technical problems	Internet connection problems	19
		Problems with distance education system	13
		Lack of technical knowledge	1
		Power cuts	4
	Inequality of opportunity in education	Accessibility issues for some devices	24
		Problems with following the course due to work	2
	Distractibility	Being at home	13
		Focusing problems	18
	Teaching and learning process	Inability to conduct applied lessons	8
		Lack of permanence in learning	3
		Inability to get efficiency from continuous lecture	2
	Health issues	Physiological disorders	6
		Intense stress level	5
	Assessment and evaluation	Insecurity of the exam environment	3
		Failure to measure the student's learning level properly	2
	Increased student load		3
	Affective problems	Lack of motivation	4
		Technology addiction	1
		Lack of self-confidence	1
	Missing out on university facilities such as library		2

Table 1 shows the answers given by the pre-service teachers to the advantages and disadvantages of online education. Among the advantages of online learning, table shows that the density is in the sub-theme, such as the flexibility (f=55), the unlimited replay possibilities (f=32), and economics (f=27). There are two codes named attending classes at any time and attending classes at any place under the code of flexibility. The P4-coded pre-service teacher answered this question as follows: *"The advantage of online education is that if we cannot follow the course synchronously, then we watch it asynchronously. There is no such thing as face-to-face education."* Another pre-service teacher declared, *"One of the advantages of online education is to listen to the course again when we miss the lesson or when we do not understand*" (P5). These answers are examples of the unlimited replay possibilities of online education. Another pre-service teacher answers the question as noted: *I think the advantage of online education is that it can be reached anywhere, and we can repeat courses at any time"* (P6). This answer shows the flexibility of online education and the accessibility from anywhere and at any time. Economics is also another sub-theme mentioned by the pre-service teachers. *"It is economically beneficial as there are no expenses like bus, dormitory, and so on*." (P12), *"I think the advantages of distance education are that I can listen and watch the lessons whenever I want, wherever I want and as much as I want. As a result, I have the opportunity to do more repetitions. I can follow specific topics, which I consider significant in the lesson."* The pre-service teacher who expressed her thoughts thus (P18) set an example for both the flexibility and unlimited replay possibilities. Other generated codes are ranked as ease of access to course documents (f=12), saving time (f=12), reducing the risk of catching the infection (f=6), and low-stress level (f=1) under the sub-theme of protecting health. The other codes are suitable for individual learning (f=7), developing self-discipline (f=5), ensuring continuity in education (f=4), encouraging searching (f=3), multiple learning options (f=3), and being a technological literate (f=1) under the sub-theme of teaching and learning process. The table also shows that the disadvantages of online education focused on the sub-themes of communication (f=45), technical problems (f=37), inequality of opportunity in education (f= 26), and distractibility (f= 31). The pre-service teacher with the code P43 mentioned technical problems, lack of interaction, and inequality of opportunity as disadvantages of online learning: *"Sound and visual loss while watching the lessons, poor interaction with the instructors, difficulty taking notes, and not having a computer or internet at home can show as the disadvantages of online education."* Technical problems are such as internet connection problems, technical problems that occur in the distance education system, lack of technical knowledge, and power cuts. *"There were problems due to inadequacies in the system. Factors such as the disconnection of the internet and the loss of electricity negatively affected online education"* (P49). Another pre-service teacher summarized the technical problems as follows: "*Internet problems, not being able to connect to the lesson, problems with the digital platform used in the lesson, poor screen and sound quality, and not transmitting written messages during the lesson are the factors affecting the lesson"* (P50). The lack of interaction also affects the pre-service teachers negatively: *"Frankly, not being able to have one-on-one dialogue with the teachers during the lesson forced me. I can say that not being able to get instant feedback is the biggest disadvantage of online education"* (P18). Another pre-service teacher also drew attention to the lack of motivation due to the lack of interaction. "*Since there is not much interaction in online education, I could not motivate myself for the lessons"* (P54). The pre-service teacher coded P41 also stated that sincerity in face-to-face education did not find in online education. However, interaction has an important place in online learning. This interaction includes not only the interaction between the educator-the student but also the interaction between the student-the student, and the student- the technology (Singh & Thurman, 2019). The negative effect of online education on pre-service teachers was the inability to interact with their friends and the lecturer. Besides, there are some situations, such as the lack of sufficient computers, tablets or the frequent disconnection of the internet due to excessive loads because of a large number of family members who have to continue their education with distance education at home. For example, P16 explained this situation as noted: *When there are undesirable noises in the house, it is more difficult to listen to the lessons, and there may be internet interruptions, so you*

cannot attend the classes. If there are several students at home and the lessons are at the same time, separate environments and equipment to attend the classes sometimes cannot be found." Under the sub-theme of inequality of opportunity in education, some explanations were made like the pre-service teachers do not have any resources such as computers, tablets, and the internet. And those pre-service teachers who have to work, and cannot follow the lesson on time, are also mentioned. For example, a pre-service teacher (P34) made the following statement on this subject: *"We all must work at home and on the farm with our families. For example, my father is a farmer. With the arrival of spring, I cannot attend my classes on time and do my repetitions after class because I am constantly dealing with farms and animals. And I get low grades in exams."* Being in front of the computer at any time also causes some physiological disorders. A pre-service teacher expressed his discomfort on this issue as follows: *"You are attending the class, you need a computer, you will study for the exam, you need a computer, you will do homework, you need a computer, you are bored at night, you want to watch something, and you need a computer! All these lead to eye and posture disorders"* (P3). Other categories identified under the disadvantages of online education are as follows: lack of feedback (f= 9) and lack of interaction (f=36) under the sub-theme of communication, inability to conduct applied lessons (f =8), lack of permanence in learning (f=3), and inability to get efficiency from continuous lecture (f=2) under the sub-theme of teaching and learning process, being at home (f= 13) and focusing problems under the sub-theme of distractibility, physiological disorders (f =6) and intense stress level (f =5) under the sub-theme of health issues, insecurity of the exam environment (f=3) and failure to measure the student's learning level properly (f=2) under the sub-theme of assessment and evaluation, increased student load (f=3), lack of motivation (f=4), lack of self-confidence (f=1), and technology addiction (f=1) under the sub-theme of affective problems, and missing out on facilities such as library (f=2).

The pre-service teachers were asked the question "Do you think you get enough efficiency from online education? Why?" and the answers shown in Table 2.

Table 2

Pre-service teachers' opinions on the efficiency of online and face-to-face learning

Themes	Sub-themes	Codes	f
Efficiency	Efficiency in online education	Efficient	33
		Not efficient	22
		Partially efficient	17
	Efficiency in face-to-face education	Efficient	62
		Not efficient	10

In Table 2, the answers given by the pre-service teachers to the question of whether they got efficiency from online education and the comparison they made about the efficiency if they would receive the same course face-to-face. 46% of the pre-service teachers (33 pre-service teachers) stated that they got efficiency from online education, while 30% (22 pre-service teachers) expressed that they could not get efficiency. And 24% (17 pre-service teachers) stated that they got some efficiency from the course or could not get enough efficiency. The pre-service teachers who stated that they could not get enough efficiency from online education claimed that lack of interaction, distraction, technical problems, and self-discipline problems were the reasons: *"I do not think distance education is efficient enough. If I speak for myself, we do not learn well enough in the courses we attend. Since there is no classroom environment, we do not attend classes in a disciplined manner. We can say that there is almost no face-to-face interaction in online education. Therefore, there is a high chance of distraction. There is a*

problem of motivation and focus" (P15). Another pre-service teacher (P32) said, *"I think we did not get enough efficiency. Since I am not in the classroom environment, I cannot focus on the lesson. I cannot get over the comfort of being at home. There is a lack of attention."* Some pre-service teachers stated that they could not get efficiency because there was the possibility of listening again. *"I think online education is efficient because I can listen to the part I do not understand repeatedly. It was a good chance for me to follow the classes I could not attend because I had to work"* (P27). Pre-service teachers think that the lesson will be more productive face-to-face based on the fact there is more interaction in the classroom and the classroom environment is more disciplined and more effective in providing attention. *"Yes, the lesson would be more effective if there was face-to-face education. We could interact more with our teacher and our classmates. In my opinion, the effect of the discussion on the understanding of a subject is also excellent. We would discuss the subject we did not understand with our teacher or friends. It would be more efficient*" (P5). Some pre-service teachers do not think that face-to-face education will be more productive than online education. Due to the lack of opportunities to listen to the courses repeatedly in face-to-face education and accessing the documents make online education more efficient for pre-service teachers.

Table 3

Findings related to challenges for the pre-service teachers in online learning

Themes	Sub-themes	Codes	f
Challenges	Physical environment- related problems	Focusing problems	26
		Not having a special study room	1
	Self-disciplinary issues	Accumulated assignments and topics	7
		Discipline problems	7
	Communicative and Interactional Problems	Being away from social environments and classrooms	11
		Communication problems	5
	Technical Problems	Internet problems	23
		Problems with the distance education system	13
		Lack of technical equipment	5
	Affective problems	Exam stress	11
		Psychological problems	4
		Fear of getting infected	3
		Fear of failing a class	2
	Cognitive problems	Difficulty understanding lessons	7
		Mental tiredness	1
	Physiological problems	Health issues	13
	Personal problems	Obligation to work	9
		Overlap of siblings' lessons	5
		Being unfamiliar with the distance education system	2
	Operational problems	Assignment load	9
		Boring lessons	1

In Table 3, pre-service teachers' opinions about challenging situations in online learning were given. Answers were grouped under nine sub-themes (physical environment-related problems, self-disciplinary issues, communicative and interactional problems, technical problems, emotional problems, cognitive

problems, physiological problems, personal problems, and operational problems). Codes belonging to these sub-themes are determined. Under the physical environment-related problems, focusing problems (f=26) are highly mentioned. And the pre-service teachers claimed that the comfort of the house environment and living in crowded families were the reason for this. *"The most challenging thing for me in this process was studying at home because I had a hard time focusing at home. In the dormitory, studying was much easier since everyone was studying during the midterm and finals weeks"* (P25). Another pre-service teacher said: *"Studying at home, listening to lessons in my room all day, lack of activity and noises at home during exams were the things that challenged me. These situations distracted me and made me miss the silence in the dormitory and the faculty. Especially during exam weeks, it made me feel more stressed"* (P38). Again on this subject, the pre-service teacher with the code P54 said, *"One of the most challenging things for me in online education was studying at the family house. It was challenging to study and pay attention to the lesson. When there was even the slightest distraction at home, everything got out of balance, and I could not concentrate on the lessons because the house environment was too comfortable."* He mentioned the difficulty of concentrating in the house. There are two codes named "accumulated assignments and subjects" (f=7) and "discipline problems" (f=7) in the sub-theme of the self-disciplinary issues. Under the heading of accumulated assignments and topics, a pre-service teacher stated that in case of repeating the course, there was a lot of accumulation in the topics: *"For a teacher who teaches the lesson quickly, it is not enough to watch the lecture once. I cannot take notes. I also know that it is important to attend class on time. Thus, it is necessary to attend class on time and to re-enter to take notes later. This situation is repeated each week for a few lessons. My mental fatigue is inevitable."* (P61). Under the discipline problem, the comfort and flexibility of being at home are shown as follows: *"The issue that I have difficulty the most is indiscipline. I feel comfortable at home. This comfort made me indisciplined. Besides, I suffer from low motivation and lack of attention"* (P32). Opinions were collected under the codes of being away from the social environment and classrooms (f=11) and communication problems (f=5) under the sub-theme of communicative and interactional problems. *"In this process, we could not meet our friends and teachers face-to-face. It can be challenging. University means socializing. We are going to the university once, at this age. It is a pity not to be able to go to university and spend these good times at home."* (P47), a pre-service teacher mentioned the difficulty of being away from the classroom and university. Regarding communication, a pre-service teacher who said, "*The problems such as not being able to communicate synchronously with the lecturer were the most challenging situations for us in distance education"* (P56) mentioned the difficulty of communicating with the lecturer. Another pre-service teacher said, *"The most challenging thing for me in distance education was not getting instant feedback from our lecturers. For our questions, we can communicate through forums or communication groups. Sometimes we could not get instant feedback"* (P18) and the pre-service teacher mentioned the difficulty of not being able to communicate with the instructors immediately. There are three codes named internet problems, problems with the distance education system, and lack of technical equipment under the sub-theme of technical problems. A pre-service teacher said, *"We had technical problems while uploading assignments or attending classes in online education. It is the biggest problem because distance education is a new system. Both the infrastructure problems of distance education and the slow and insufficient internet have caused these situations"* (P21) and the pre-service teacher mentioned both system and internet problems. Additionally, since the system is new, the difficulties experienced both in the exams and in the lessons at the beginning were challenging for the pre-service teachers: *I think during the exam, due to the system or other reasons puts us all in trouble. In addition, even if we attend the classes, seeing the "Not Completed" text was quite troublesome at first."* (P65). Not having access to a computer or internet at home was also a challenge for pre-service teachers: *"The most difficult thing for me in distance education was that I did not have a computer. I had to attend classes over the phone. Not to have any problems during the exams, I went to my aunt's house. Somehow I tried to stay in the system."* (P58). Under the heading of affective problems, it was determined that the pre-service teachers had some fears and were under intense stress. In this

theme, there are some codes such as exam stress (f= 11), psychological problems (f=4), fear of getting infected (f=3), and fear of failing a class (f=2). A pre-service teacher (P44) stated that she was nervous because of a possible internet interruption in the exams: *"I stay with my sister because there is no internet at home. There may still be internet interruption or system-related problems. I am constantly worried that I will have a misfortune during the online exam process."* Under the heading of psychological problems, there is stress caused by the pressure during the pre-service teachers' concentration on the lectures while their families are suffering from Covid-19. *"The hardest thing for me was that my family caught Covid-19 during the mid-term exam week. My family's pain due to the virus forced us all psychologically."* (P55). Also, some pre-service teachers, who did not catch the virus, are afraid of getting infected. *"It is obvious that we are going through a very difficult time as we live in fear of our loved ones catching the virus and have to go to work and study at the same time"* (P14). A pre-service teacher expressed her concerns about catching the virus herself and her loved ones. Another fear experienced by pre-service teachers is failing the course due to the difficulties arising from the distance education system. *"The most challenging thing for me during the distance education process was absenteeism. I had a lot of fear of failing the course because of the system problems"* (P4). There are two codes named difficulty understanding the lesson (f= 7) and mental tiredness (f=1) under the sub-theme of cognitive problems. Some pre-service teachers stated that they had difficulty understanding the lessons in the distance education system: *"The most challenging thing for me in this process was having difficulty understanding and comprehending the subjects"* (P15). One pre-service teacher stated that the most challenging thing for her was mental tiredness: *"Mental tiredness was the most challenging for me during the distance education process because it is not enough to watch the lesson once for a teacher who teaches the lesson quickly, I cannot take notes"* (P61). Health problems are under the title of physiological problems. And health problems are eye and posture disorders caused by constantly looking at the screen and diseases caused by the pandemic: *"I have had minor eye problems from using the computer all the time on this system"* (P24). *"I was not much of a computer user. We use it a lot during this period. We stay in front of the computer all day. When the day ends, back pain and eyestrain begin"* (P44). The most challenging situation for pre-service teachers is spending a long time in front of the screen. Under the heading of personal problems, codes such as the obligation to work (f=9), the overlap of siblings' lessons (f=5), and being unfamiliar with the distance education system (f=2) were created. The pre-service teachers mentioned they could not follow the lecture because they had to work. And some of them stated their lessons overlapped with their siblings, and they also had difficulties because they were unfamiliar with the system: *"I was unable to attend class in the distance education system when I was working"* (P10), and *"Working on the farm and dealing with animals and having lessons at the same time wore me out"* (P34). It was understood the pre-service teachers who had to work had difficulties following the lessons. The high number of siblings in the family also made it difficult for the pre-service teachers to attend classes: "*Due to my large family, I sometimes had problems listening to the lecture. I could not attend my lessons much because my younger brother attended his lessons, then I watched the recorded lesson videos"* (P50). Assignment load (f=9) and boring lessons (f=1) codes were created under the heading of operational problems. In particular, giving assignments from each course is challenging for pre-service teachers: *"It was very challenging to do all of them in a limited time since most of our assignments were given at a definite time, and doing them took a very long time"* (P20). Another pre-service teacher stated that the method of teaching reduced her interest in the lesson: *"The fact that most teachers do not ask us any questions over the chat and teach as if they were shooting a presentation video prevented my participation in the lesson"* (P33).

Table 4

Opinions of the pre-service teachers on the established communication and communication channels in online learning

Themes	Sub-themes	Codes	f
Sufficiency	Sufficiency in communication	Sufficient	38
		Not sufficient	27
		Partly sufficient	7
Communication channels	Social media		68
	Distance education system		51
	E-mail		43

Table 4 shows the opinions of the pre-service teachers about the sufficiency of the communication established in the online education process and the information through which channels they provide this communication. According to the table, 53% of the pre-service teachers (38 pre-service teachers) found the communication established during the online education process sufficient, 37% (27 pre-service teachers) found the communication in the online education process insufficient, and 10% (7 pre-service teachers) found it partially sufficient. It has been determined that the pre-service teachers use many channels simultaneously in communication. A pre-service teacher made the following statement about this situation: "*Obviously, I use all communication channels except social media. This may vary according to our instructors. To get faster feedback, I prefer to use whichever channel the instructor is more active*" (P18). It was defined that 71% (51 pre-service teachers) of the pre-service teachers use the distance education system, 60% (43 pre-service teachers) use e-mail, and 94% (68 pre-service teachers) use social media. The pre-service teachers use communication channels such as distance education system, e-mail and social media to communicate with their friends and faculty members. Pre-service teachers especially preferred social media to communicate with their friends, and they used e-mail or the distance education system to communicate with faculty members: *"If I am going to contact the lecturers, I usually send them an e-mail or a message from the system. I keep in touch with my friends through the groups we set up on WhatsApp"* (P36). In social media, it was determined that the most preferred one was WhatsApp (98%) and the least preferred one was Twitter (3%). Apart from these, the pre-service teachers used social media applications such as Telegram (35%), Instagram (4%), and Discord (4%).

Table 5

Findings about the pre-service teachers' suggestions for online learning

Themes	Sub-themes	Codes	f
Suggestions for online education	Suggestions for the learning-teaching process	Making students more active in distance education	19
		Frequent breaks in classes	9
		Changing the teaching method	8
		Uploading documents before classes	5
		Increasing the number of synchronized lessons	5
		Replacing the exam system with assignments	4
		Reducing the load of assignments	3
		Not forcing students to open the camera and microphone	3
		Making synchronized lessons attendance compulsory	1
		Instructors' checking for their communication channels frequently	1
		Increasing the time for the exams	1
		Short and extract documents	1
	Suggestions for the distance education system	Developing the system	10
		Active use of forums	4
	No suggestions	No suggestions	16

Table 5 presents the suggestions of the pre-service teachers for online learning. According to Table 5, the sub-themes grouped under the suggestions for the learning-teaching process and suggestions for the distance education system, and no suggestions for those who did not make any suggestions. Under the sub-theme of suggestions for the learning-teaching process, codes such as making students more active in distance education (f=19), frequent breaks in classes (f=9), changing the teaching method (f=8), uploading documents before classes (f=5), increasing the number of synchronized lessons (f=5), and replacing the exam system with assignments (f=4) are frequently mentioned by pre-service teachers. The codes such as reducing the load of assignments (f=3), not forcing students to open the camera and microphone (f=3), making synchronized lessons attendance compulsory (f=1), instructors' checking for their communication channels frequently (f=1), increasing the time for the exams (f=1), and short and extract documents (f=1) are less mentioned. In the answers given by the pre-service teachers, the intensity was on the code of making students more active in the system: "*You can connect students to the lesson by asking questions. When a question is asked, I listen to the lecturer more carefully."* (P32). Another pre-service teacher mentioned the necessity of active participation in the lesson in terms of the continuity of speaking skills: *"Since we started the distance education system, I gradually lose my ability to form sentences apart from the daily routine conversations. To prevent this, I recommend lecturers to open our mics"* (P62). Additionally, the necessity of taking a break in classes also emphasized: *"I do not think it is efficient to do long-term lectures since the lectures generally do not include communication and interaction. A lesson lasting for two hours is not efficient for the student because we can get bored and lose attention quickly. I think the course should complete in a sufficient time"* (P64). Suggestions also mentioned for changing the teaching method of the lesson and uploading the course documents before the

classes week by week: "*My suggestions are to make the lesson more fun with applications like Kahoot. In this way, the lecture will be more permanent. Additionally, instead of evaluating the student with the exam system, the student can be given points for both fun and lesson-oriented activities and assignments. Thus, negative things that may occur during the exam (such as excitement, cheating, and system errors) can prevent."* (P12). Due to the lack of time given to the exams, many pre-service teachers stated that the exam should replace by assignments: *"I think it would be more beneficial for us if our exams were in the form of assignments rather than online. When it is online, we only study for the exam and forget everything after. It is not permanent and effective learning for us. We get more information by doing assignments. And this information will be more permanent for us"* (P37). In the suggestions for the distance education system, there are opinions about developing the system (f=11) and the active use of the forums (f=4). Suggestions were made for improving the system and eliminating errors and deficiencies. For example, a pre-service teacher stated that it would be appropriate to receive a notification for each new piece of information entered into the system: *"Semester plan should be prepared and shared from the system at the beginning of the semester. Each lecturer should upload the lectures to the system in pdf format. There should be a notification about everything. So we do not miss anything."* (P17). Some pre-service teachers argued that forum hours should use more actively with discussions and exams: *"Quizzes related to the subject can send during forum hours. In this way, students strengthen the subject and use the forum actively"* (P26). On the other hand, 22% of the pre-service teachers (16 pre-service teachers) stated that they were satisfied with the process and did not have any suggestions.

5. Discussion and Conclusion

The opinions of the pre-service Turkish teachers about their experience in online education are mentioned in this study. They had to continue their education online during the Covid-19 pandemic. Even though the pandemic has reduced its impact, online education continues for some courses. Online education, which will ensure education's functioning and continuity in case of any natural disaster or pandemic, is a part of future education life. For this reason, it is necessary to take steps to see the deficiencies and correct them to make improvements in online education. Thus education will be in better conditions in the future. It is significant to take the opinions of those who have experienced this process to complete these deficiencies or correct the mistakes. In the first sub-problem of the study, the advantages and disadvantages of online education were asked to the pre-service teachers. And the answers showed that the pre-service teachers having the opportunity to watch the lessons repeatedly whenever and wherever they want while being protected from the pandemic is the greatest advantage of online education. As a matter of fact, following the lessons at the desired time and place, watching the courses at the desired frequency, and reducing the risk of the pandemic revealed as the positive aspects of distance education in the study by Erşen and Yumak (2021), which they received the opinions of mathematics pre-service teachers for distance education during the Covid-19 pandemic. In a similar study conducted by Özdoğan and Berkant (2020), the advantages of distance education, such as being independent of time and place, watching the lessons many times, and protection from the pandemic have been mentioned. Also, in Duman's (2020) study, independence from the environment, the possibility to watch the lesson repeatedly, and no absenteeism problems are stated as advantages of distance education. Apart from these advantages, it declared as a significant advantage of online learning is that the pre-service teachers can continue their education without extra expenses for their needs, such as accommodation and food consumption. In Er Türküresin's (2020) study, economics is also mentioned as an advantage of distance education by pre-service teachers. Easy access to documents, saving time, and being suitable for individual learning are also mentioned as the advantages of online learning. Besides these advantages, the disadvantages of online learning are focused on sub-themes such as communication, technical problems, distractibility, and inequality of opportunity in education. The fact that the pre-service teachers in online education were away from their classroom and social environments during the pandemic have been a topic they frequently mentioned.

Although attending the courses from their houses provided a comfortable learning environment for the pre-service teachers, it also prevented them from being disciplined and caused them to be distracted. Akdemir and Kılıç (2020) declared that students exhibit attitudes such as not having the discipline required by distance education, not acting consciously, not taking responsibility, and experiencing difficulties due to the lack of face-to-face communication in their studies. Also, it was mentioned that students are happy to be in their homes, but being at home causes them to be complacent and makes them asocial in the study. Savaş (2020) also mentioned that the majority of university students had difficulty focusing on distance education at home. Kapasia et al. (2020) concluded in their study that many students attended classes over the phone and faced various problems, such as poor internet connection and lack of a proper studying environment at home. In the study of Yolcu (2020), the lack of communication and interaction and distractions at home were evaluated as the negative sides of distance education by pre-service teachers. Not only students or pre-service teachers but also many teachers have the same opinions on the disadvantages of online education. For example, in the study of Arslan and Şumuer (2020), in which they discussed the problems faced by teachers in virtual classroom environments, teachers stated problems, such as internet connection, external noise, lack of digital content, lack of interaction, short lesson duration, and voice transmission. Also, Alper's (2020) study, in which he received the opinions of teachers about distance education, stated that the teachers adapt to the situation and technology with ease. However, they mentioned the lack of face-to-face interaction and being constantly on the screen as the disadvantages of online education. Additionally, problems such as internet connection loss and power cuts were the subjects that pre-service teachers complained about most in online education. Another disadvantage of online learning is the inequality of opportunity. Some pre-service teachers who live in rural areas and do not have devices such as computers, tablets, or internet at all or who have to work due to economic concerns and cannot follow the lessons do not have equal opportunities. Apart from these disadvantages, the pre-service Turkish teachers indicated items such as an insecure assessment-evaluation environment, increased student load and stress, and lack of permanence in learning as the disadvantages of online learning. In the study of Er Türküresin (2020), pre-service teachers stated disadvantages of online education such as the impermanence of learning and problems with measurement and evaluation. In the second sub-problem of the study, in terms of efficiency from online education, 46% (33 pre-service teachers) of the pre-service teachers said that they got efficiency from online education, while 30% (22 pre-service teachers) did not get efficiency. And 24% (17 pre-service teachers) partially got efficiency from the online education. In the study of Düzgün and Sulak (2020), pre-service Mathematics and elementary school teachers emphasized that distance education was not effective enough. Also, in the study conducted by Ülker (2020) on teachers and students in Kosovo, in which the educational practices during the pandemic were evaluated by teachers and students, it was determined that traditional education is more effective and functional than education practices during the coronavirus period. In the study of Selvaraj et al. (2021), all the answers about various aspects of online courses, such as establishing online education at home, transferring information, comfort, assessments, and future-oriented topics, were in favor of traditional education. Also, in the study of Karadağ and Yücel (2020), the students stated that they were satisfied with the practices of higher education during the pandemic, but they were not satisfied with the digital content and teaching materials. In the third sub-problem of the study, the opinions of pre-service teachers about challenging situations in online education were declared. The answers were grouped under nine sub-themes, such as physical environment-related problems, self-disciplinary issues, communicative and interactional problems, technical problems, affective problems, cognitive problems, physiological problems, personal problems, and operational problems. In the study of Fawaz et al. (2021), attention is drawn to affective problems. It is inferred that the most challenging situations for university students are stress, anxiety, overwhelming load, coping with technical issues, and fear of catching the virus. Besides, Kapasia et al. (2020) mentioned that many students faced affective problems, such as depression and anxiety. Copeland et al. (2021) also tried to measure the impact of the Covid-19 pandemic on the mental health of university students. They determined that the Covid-19 pandemic had permanent

negative effects on the behavioral and emotional functions of university students, especially on concentration problems. In the fourth sub-problem of the study, pre-service teachers declared their opinions about the sufficiency of communication during online education. 53% of the pre-service teachers found the communication established during the online education process sufficient, 37% found it insufficient, and 10% found it partially sufficient. Also, pre-service teachers use many communication channels, such as e-mail, distance education systems, and social media therewithal. Zarzycka et al. (2021) investigated the factors affecting communication and collaboration in the distance education process of students during the Covid-19 pandemic and the role of social media in this process. This study determined that the more students use the social media applications such as Facebook and LinkedIn, the more they improve their communication and collaboration skills. In the fifth sub-problem of the study, pre-service teachers make suggestions for online education. These suggestions were collected under three sub-themes named the suggestions for the learning-teaching process, suggestions for the distance education system, and no suggestions. Suggestions for the learning-teaching process are teaching methods, document uploads, exams, lesson length, and so on. 22% of the pre-service teachers stated that they were satisfied with the process and did not make any suggestions.

In general, the pre-service teachers stated that online and distance education meets the needs to a large extent in an extraordinary situation such as a pandemic, but they prefer face-to-face education. Problems such as teaching the lessons in a single method, increasing the student load with the assignments given, increasing stress of the students due to the system problems, the inability to get immediate feedback, and the insecurity of the measurement cause the students to have a negative attitude towards online education. In order to prevent such negativities as stated by the pre-service teachers, various practices should be implemented such as improving the system, reducing the assignments given, using different methods-techniques to make the students more active, and shortening the lesson durations.

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