





## Is Online Assessment Better? Examination of Pre-service Teachers' Views

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### ABSTRACT

The aim of this research is to examine the pre-service teachers' opinions on online assessment during the Covid-19 process. In the study, which was designed with a phenomenological design, data were collected from 138 teacher candidates with a structured interview form consisting of open-ended questions created by the researchers and analyzed by content analysis. According to the findings of the study, the pre-service teachers stated that they were evaluated by methods such as online exam, homework, online class participation, and online presentation and that each evaluation method had advantages and disadvantages. When the teacher candidates compared face-to-face assessment with online assessment, they focused on the disadvantages of homework and online exams. They indicated that the online assessment method could be in the form of online exam, qualified homework, and participation in the course, depending on the nature of the course. The findings were discussed within the framework of the literature, and suggestions were presented to researchers and practitioners.

Keywords:

Online assessment, pre-service teachers, Covid-19, distance education.

### 1. Introduction

As of January 2020, COVID-19 has turned into a pandemic that is effective all over the world. After this date, one of the first questions that arises in many countries is how educational institutions will continue to operate (Karadağ & Yücel, 2020). This process has required educational institutions to renew their learning processes (Naila & Sadida, 2020). Traditional teaching environments have been abandoned in all educational institutions, and the education-teaching process has been continued with distance and digital teaching opportunities. Due to the interruption of face-to-face education, which has been implemented in many countries in a short time, lessons have started to be continued with online methods, and this has affected millions of students, teachers, and parents (UNESCO, 2020a; 2020b).

The concept of distance education is one that develops as the technology used develops; in other words, technology plays a decisive role (Bozkurt, 2017). In short, it can be said that concepts such as distance learning, e-learning, and visual learning are not independent of each other and that each period includes the previous period and progresses by piling up (Rodriguez, 2012). For example, the development of distance education in Turkey has also progressed in parallel with the technological developments in the world, and Bozkurt (2017) divides it in four phases as (i) discussions and suggestions: conceptual (1923-1955), (ii) correspondence: by letter (1956-1975), (iii) visual-audio-based: radio-television (1976-1995) and (iv) informatics-based: Internet-web (1996-...). At this point, it is necessary to comprehend the concept of distance education and its evolution in order to comprehend the learning system that we will rely heavily on during the COVID-19 period.

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Distance education, which is used as an umbrella term (Keegan, 1996), refers to efforts that enable individuals who are geographically far away to reach education (Moore et al., 2011). While distance education expresses an activity that includes distance learning skills, distance learning is seen as a skill (Volery & Lord, 2000). The concept of online learning has evolved over the years into different learning styles such as e-learning, mediated learning, online collaborative learning, virtual learning, and web-based learning (Conrad, 2006). At this point, different views have emerged about the presentation of e-learning. For example, while Nichols (2003) defines e-learning as a type of learning that can be accessed through the use of technological tools such as web-based, web-distributed, or web-compatible, Ellis (2004) states that education offered not only via CD-ROM, internet, or intranet but also via audio, video tape, broadcast, and interactive TV is defined as e-learning. In short, since there is still no consensus on which technologies can be used, it is emphasized that concepts such as online learning, web-based learning, and distance learning can be used as synonyms for each other (Moore et al., 2011).

Another concept used with the concept of learning is assessment. Assessment refers to all activities performed by the teacher that provide feedback to organize learning and teaching activities (Black & Wiliam, 1998). Assessment, which is also considered as a process, is also defined as the process of noticing and responding to student learning in order to strengthen the learning of teachers and students (Cowie & Bell, 1999). As well as formative assessment to determine in which areas students need further explanation and practice (Broadfoot et al., 1999), it can also be in the form of assessment for learning used by students and their teachers to decide where learners are in their learning, where they should go, and how best to get there (Broadfoot et al., 2002). Computer-based assessment, on the other hand, refers to a series of activities that cover all kinds of computer use in the process of evaluating the knowledge, skills, and abilities of individuals, including the delivery, grading, and analysis of all or part of the student assessment process by using independent or networked computers and related technologies (Özden, 2005). Computer-based assessment can also be carried out in two ways: synchronous and asynchronous. Asynchronous assessment involves the use of assignments or portfolios to assess the student's knowledge and skills. Such assessments are important in that they enable students to examine different skill areas, such as problem solving and critical thinking. Synchronous assessment, on the other hand, is used to recreate traditional evaluation methods in the computer environment. Multiple-choice questions, open-book exams, objectively structured practical or clinical examination and vivas (online) can be used for such assessments. Multiple-choice questions are presented to students online at a predetermined date and within a fixed timeframe, and the results are evaluated. Open-book exams, on the other hand, are exams that allow students to evaluate their critical thinking, creativity, and problem-solving skills by analyzing and solving a problem. An objectively structured practical or clinical examination refers to taking it online using the "essay" format in learning management systems (LMS). Finally, vivas is used to evaluate students' decision-making, critical thinking, and reasoning skills based on a case using online video interviews (Khan et al., 2020).

Rahim (2020) has prepared a guide for implementing online assessment. Accordingly, assessing the prerequisites for conducting online assessment, ensuring that assessment activities are aligned with the stated learning objectives, addressing the diversity of students' situations, maintaining a good balance between formative and summative assessments, promoting student learning with online assessment, thinking about format, scheduling tests, communicating openly with students about assessment issues, providing high-quality feedback, and addressing threats in the assessment process are all important. However, considering the rapid transition to online learning and, therefore, the online assessment system with COVID-19, it can be thought that not all of these measures have been achieved. In this context, this study is aimed at examining the views of pre-service teachers about online assessment, which started in the spring semester of the 2019-2020 academic year in Turkey and has become a part of today's education. For this purpose, answers to the following questions were sought:

- What are the opinions of pre-service teachers about the online assessment method?
- What are the opinions of pre-service teachers about the differences between online and face-to-face assessment methods?
- What are pre-service teachers' thoughts on how online assessment methods should be implemented?
- What are the opinions of pre-service teachers on the positive and negative effects of online assessment methods?

## 2. Methodology

### 2.1. Research Model

This study was designed as a qualitative research approach, which is a process of inquiry that employs distinctive methodological traditions to comprehend and clarify a social or personal issue (Creswell, 2007). Proponents of the qualitative approach argue that generalizations that are independent of time and context are not possible or desirable; on the contrary, research is based on human values, causes and results cannot be separated from each other completely, a specific as opposed to a general point of view can be more effective for the results of the research, and the researcher and the researched object cannot be isolated from each other (Guba, 1990). Since this research was conducted to determine the views of pre-service teachers on online assessment experiences made through distance education during COVID-19, it was designed as a qualitative research approach. In qualitative research, various designs are used to reflect different methodologies and traditions (Yıldırım & Şimşek, 2008). In the study, a phenomenological design was used, which attempts to explain how participants experience a phenomenon by the researcher (Christensen et al., 2015). Since it was aimed to reveal in detail the critical perspectives of pre-service teachers regarding online assessment made through distance education during COVID-19, the phenomenological design was preferred.

### 2.2. Study Group

In this study, the participants were determined by using the convenient sampling method, which is one of the non-random sampling methods. In this sampling method, participants are asked whether they are eligible to participate in the study, or a group of participants who are easy to include in the study is formed (Christensen et al., 2015). In this direction, the participants of the research are 138 teacher candidates, 108 female and 30 male, studying at the Afyon Kocatepe University Faculty of Education in the 2021-2022 academic year. The real names of the pre-service teachers participating in the research were not used; instead codes such as K1, K2, and so on were given to each pre-service teacher.

### 2.3. Data Collection Tools and Procedure

Pre-service teachers' views on their online assessment experiences through distance education during COVID-19 were obtained using a structured questionnaire consisting of six open-ended questions. During the preparation of the survey form, the relevant literature was scanned, and the questions of the survey form were prepared by the researchers in line with the purposes of the research. The prepared questionnaires were examined by two field experts to ensure internal validity, expert opinions were examined, necessary corrections were made, and the measurement tool was finalized. An application was made to the Scientific Research and Ethics Committee of Afyon Kocatepe University in order to determine that the finalized data collection tool was not ethically objectionable and that the relevant document was attached to the end of the study. The questions prepared in line with the aims of the research are presented in Table 1.

**Table 1.** Interview Questions Prepared in accordance with the Purpose of the Research

| Aims of the Research  | Research Questions  |
|---|---|
| 1. Purpose: What are the pre-service teachers' opinions about the online assessment method?                                       | How have you been assessed in the online education process? Explain briefly.  |
| 2. Purpose: What are the pre-service teachers' opinions about the differences between online and face-to-face assessment methods? | When you compare the assessment process during distance education with the assessment process during face-to-face education, how do you evaluate the differences?             |
|   | When you compare the assessment process during distance education with the assessment process during face-to-face education, what are your thoughts on the assignments given? |
| 3. Purpose: What are the pre-service teachers' opinions about how online assessment methods should be?                            | How would you like the online assessment methods to be during COVID-19?   |
| 4. Purpose: What are the pre-service teachers' opinions on the positive and negative effects of online assessment methods?        | When you compare the assessment process during distance education with the assessment process during face-to-face education, how do you evaluate the differences?             |
|   | What do you think about the effect of online assessment methods on your psychological mood?   |

## 2.4. Data Analysis

The data collected within the scope of this research were analyzed using the descriptive analysis technique. The purpose of descriptive analysis is to present the findings to the readers in an organized and interpreted way (Yıldırım & Şimşek, 2008). The applied forms were numbered from 1 to 138, and the answers were read one by one. The data from this research were analyzed based on the 3-step cycle suggested by Saldaña (2009). (1) In the first cycle of this study, participants' statements were directly translated into codes. The reason for choosing this coding is to enable the researchers to analyze the pre-service teachers as much as possible through the eyes of the participants in order to make sense of the phenomena and understand their actions. (2) In the second cycle, the codes reached in this way were brought together in terms of their similarities and categories. At this stage, the codes were revised cyclically. (3) The codes reached in the third cycle were brought together according to their similarities in terms of the meaning patterns they contain and the themes they contained. In this cycle, both the previously accessed codes and categories were revised cyclically. Researchers have made an important reflection in this way about how the process of revealing themes is shaped, as well as the possible relationships of categories, subcategories, and codes (Saldaña, 2009). In order to ensure the reliability of the research, the themes and sub-themes created independently by two different researchers were compared and a consensus and correction was made on the differences. The findings were reached and interpreted on the basis of the themes and sub-themes that were organized and finalized. While presenting the findings, the themes and sub-themes created by giving direct quotations to some of the expressions used by the pre-service teachers were supported.

## 2.5. Validity and Reliability

The design of the research requires the logical presentation of the situations, and in order to increase the quality of this presentation, four validity and reliability paths suggested by Yin (2013) were followed in this study:

*Construct validity:* Construct validity means the creation of the most appropriate measurement tool for the researched subject (Cohen et al., 2011). In order to achieve this, the evidence chain suggested by Yin (2013) was preserved. Accordingly, when an outside reader looks at the whole of the research (from the research questions to the results or follows a path from the results to the research questions), he should express his opinion that the same evidence will be collected in the data collection process (Yin, 2013). In order to protect the evidence chain, two field experts were consulted during the creation of the measurement tool.

*Internal validity:* Internal validity can be defined as establishing relationships between different pieces of data, associating patterns of results, obtaining findings and interpretations from data in a transparent manner, and basing causal explanations on evidence (Cohen et al., 2011). In order to ensure the internal validity of this research, the time-series analysis suggested by Yin (2013) was performed. Accordingly, if the researcher wants to measure the effect of a variable, he should wait until the effect of that variable is clear and collect data. Otherwise, the data collected does not reflect the truth. In this study, the opinions of pre-service teachers about the online assessment process were taken, and considering that the pre-service teachers have experienced online assessment since the 2019-2020 spring semester, it can be said that internal validity is ensured by preserving the time-series analysis.

*External validity:* External validity refers to the generalizability of the results of the research to similar studies. Although there is no purpose to generalize in qualitative research, in qualitative research, generalization is made not to the universe but to the theory in question, and this is expressed as analytic generalization (Yin, 2013). In order to overcome this in this study, as Yin (2013) suggested, it was reach participants with different characteristics and tried to increase the external validity of the research.

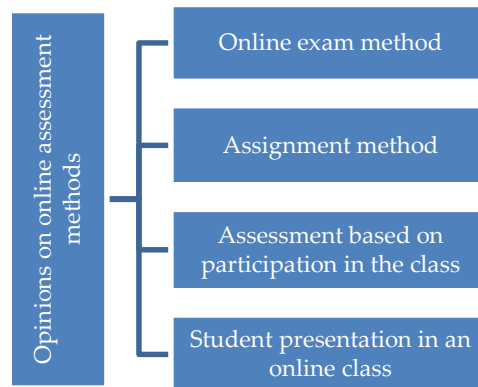
*Reliability:* In qualitative research, reliability means consistency (Neuman, 2006). Reliability means that when another researcher does the same study in the same way, he or she reaches the same result. In order to increase the reliability of the research, Creswell (2007) suggested using the blinding method while analyzing the data. In this research, the analysis was made without knowing who the expressions belonged to by using the blinding method, and codes and themes were created in line with the analyses obtained.

### 3. Findings

Considering the aims of the research and the interview questions, the answers given by the pre-service teachers to the questions in the questionnaire were examined, and the findings were gathered under five main themes.

#### 3.1. Pre-service Teachers' Opinions on the Online Evaluation Method

There were pre-service teachers who used more than one expression while expressing their opinions on online assessment methods. The expressions used by pre-service teachers while explaining how they assess the online education process are presented in Figure 1.



**Figure 1.** Pre-service Teachers' Opinions on Online Assessment Methods

As seen in Figure 1, while pre-service teachers explained how they were assessed in the online education process, they used the expressions (i) online exam method, (ii) assignment method, (iii) assessment based on participation in the class, and (iv) student presentation in the online class. While forty-five students stated that they were assessed using the assignment method in an online education process, some pre-service teachers also made explanations about the strengths and weaknesses of the assignment method. For example, the K10, talking about the strengths of the assessments made with the assignment method, said, "We are assessed through assignments that are not based on memorization rather than the exam," while the K94 said, "We are assessed through online exams in some courses and assignments in some courses. "Our assignments are done in detail." On the other hand, K52, who mentioned the weaknesses of the evaluations made by the assignment method, explained that assignments are difficult to do, while "Online assessments are in the form of assignments, and assignments are difficult to do at home because there are heavy assignment." The K58 described the assignment as a burden, and while explaining the reason for this, he used the statements, "I see the assignment given in the online assessment as a burden because I think that the assignment given in the online assessment does not contribute to my professional development." In addition, the K84 expressed his views that the assignments were not scored fairly as follows:

*"I think I have fulfilled my duties in the online education process. I take care to complete the assignments and tasks given to us completely, and I think that my efforts are rewarded and that I deserve it. When I talk to my friends when appropriate, I feel sad when I hear that they do not pay attention to their assignment, but that we get close scores."*

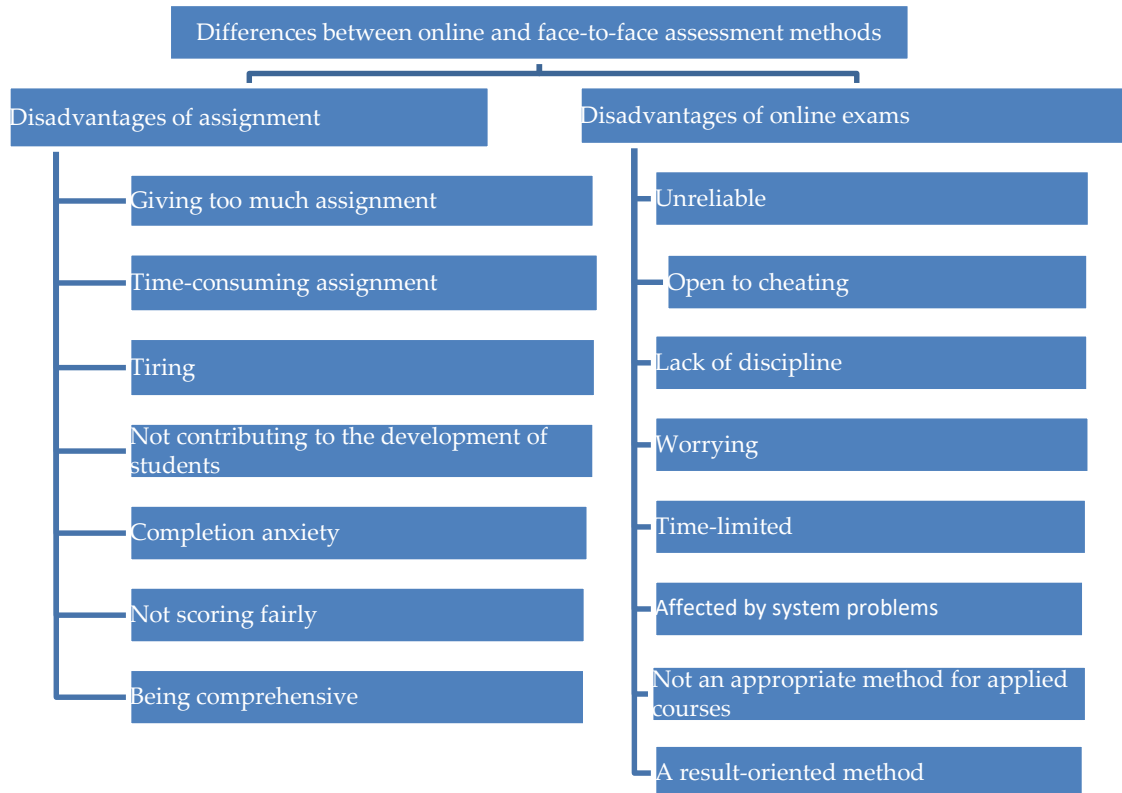
While 36 of the pre-service teachers stated that they were assessed using the online exam method, some pre-service teachers also made statements about its negative features, such as (i) inefficient assessment, (ii) systemic problems negatively affecting the process, (iii) being open to cheating, and (iv) not being an appropriate method in practice-oriented lessons. For example, while the K74 explained his views that this method is an inefficient one and that systemic problems affect the process negatively, he said, "I don't find it very efficient. "There are many problems, and since it is a new process, a solution may not be found in a short time in an unsettled system." In addition, K23 explained her views that this method is open to cheating, saying "It was a very inefficient process. In the exams, groups were formed, and students cheated, so the wider your

circle of friends, the better grades you would get.” On the other hand, the K123 expressed his views on the fact that the online exam method is not a suitable method in practice-oriented lessons, so this method is not sufficient in the context of teacher education as follows:

*“Assessments are made with open-ended questions or multiple choice exams. I do not think it is enough for the teaching profession. It will be more beneficial if we explain the subject with more applications.”*

### 3.2.Pre-Service Teachers’ Opinions on the Differences in Online and Face-to-Face Evaluation Methods

It was determined that the views of pre-service teachers on the differences between online and face-to-face assessment methods were grouped under two sub-themes: (i) disadvantages of assignments and (ii) disadvantages of online exams. Pre-service teachers’ views on the differences between online and face-to-face assessment methods are presented in Figure 2.



**Figure 2.** Pre-service Teachers’ Opinions on the Differences between Online and Face-to-Face Assessment Methods

#### 3.2.1. Disadvantages of assignment

As seen in Figure 2, pre-service teachers explained their views on the disadvantages of assignment: (i) giving too much assignment, (ii) time-consuming assignment, (iii) tiring, (iv) not contributing to the development of students, (v) completion anxiety, (vi) not scoring fairly, and (vii) being comprehensive. There were pre-service teachers who used more than one expression while expressing their opinions on the disadvantages of assignments. Seventy-six of the pre-service teachers stated that too many assignments were given while applying online assessment methods. However, many pre-service teachers who stated that they were given too many assignments also stated that these assignments were time-consuming and tiring. Twenty-nine of the pre-service teachers stated that they had to devote a lot of time to the assignment, while twenty-eight pre-service teachers stated that the assignment was very tiring and heavy. For instance, K13 expressed his views that too many assignments are given and the reasons for this, and that these assignments take a lot of time and are tiring, as follows:

*“Before the COVID period, of course, we had a load of assignments. But when we really switch to online education, I have teachers who give homework every week. They do this by thinking about whether we are following the lesson... But I think the educators are right, considering that they have also developed a method to let the students know that their lessons are understood and that the students are really listening to them. Of*

*course, we were very tired. We spent a lot of time on assignments, especially this year when we were preparing for KPSS<sup>2</sup> .”*

Fifteen pre-service teachers stated that the assignments were unqualified and did not contribute to their professional development. For example, the K58 stated that the assignment is tiring and of low quality: “I consider assignments that will not provide preparation for my professional development or an exam such as the KPSS as a burden. As senior students, we are preparing for KPSS, assignment is given not only from one course but from many other courses. Of course, I am not against assignment, but I do not think that quality assignment is given. Assignments do not lead to research.” However, one pre-service teacher also stated that the assignments are comprehensive. For example, the K57 said, “Our increasing assignment load has made us quite tired. Face-to-face assignments were not so strenuous and extensive. We couldn't find enough time to improve ourselves academically because the assignment obligation was too much. The assignment given was not satisfactory for our field education.” While six pre-service teachers stated that they were worried about not being able to complete the assignment due to being given too many assignments, the pre-service teacher with the code K17 told an incident about this issue: “I wrote 57 pages for one assignment, 30 pages for another, and 19 pages for a third. It was too heavy. It's okay to worry that it won't be enough. It was exhausting.” The pre-service teacher with the code K34 said, “Our teachers are right to give assignments for things that we cannot see face-to-face, and to enable us to put what we have learned into practice. Only when there is more than one assignment, there can be a situation of difficulty, and this can be achieved with a little flexibility in terms of training.” In addition, two pre-service teachers stated that fair scoring was not done while evaluating the assignment, and they stated that “I don't have a problem in terms of increasing the number of assignments, but it makes me sad to see the copy and paste assignment get high grades”.

*“I do not have a problem with teachers who give assignments as needed, but some of them give pages of assignments every week and do not even take it into consideration. There is a sentence in education ‘do not give the assignment you cannot check’, I guess this sentence does not serve the purpose.”*

### 3.2.2. Disadvantages of online exams

As seen in Figure 2, while pre-service teachers explained their views on the disadvantages of online exams, they stated features as follows: (i) unreliable; (ii) open to cheat; (iii) lack of discipline; (iv) worrying; (v) time-limited; (vi) affected by system problems; (vii) not an appropriate method for applied courses; and (viii) a result-oriented method. There were pre-service teachers who used more than one expression while expressing their opinions on the disadvantages of online exams. Fifty-six of the pre-service teachers stated that online exams were not reliable, while twelve pre-service teachers stated that there was a lack of discipline. Regarding these issues, participant K57 said, “I do not think that the results reflect the truth, since the online exams through distance education are not conducted in a very serious, disciplined, and reliable environment. But for face-to-face, there was no such problem.” Fourteen of the pre-service teachers stated that cheating behavior is common in online exams. However, five pre-service teachers stated that the instructors gave more limited time to the exams in order to prevent cheating behavior. In this regard, K13 explained his experience as follows:

*“Since there may be problems such as cheating in online exams and not being able to control it, it has been tried to put short periods in the exams. Even though some exams are handled very easily, I can say that I had exams that I could not make up my time or I had a very hard time even while I was studying some of them.”*

While eight of the pre-service teachers stated that online exams are worrying, five pre-service teachers stated that the problems caused by the system, not the exams themselves, affect the online evaluation process. For example, in this regard, While K77 used the expression, “The thought of freezing and internet interruption during the exam can cause stress in online assessment through distance education,” K122 said, “We are worried that the internet will break during the exams. I can't even sleep because of the stress I experienced the day before the exam because my internet is weak, and my computer is broken.” Four pre-service teachers stated that online assessments are not a suitable method for applied courses. For example, while K115 said that “It is very sad for me to only take an exam in our lessons where we can do most of the practice.”, K72 said that “It was better for us to be face-to-face when we applied. I think this situation negatively affects our

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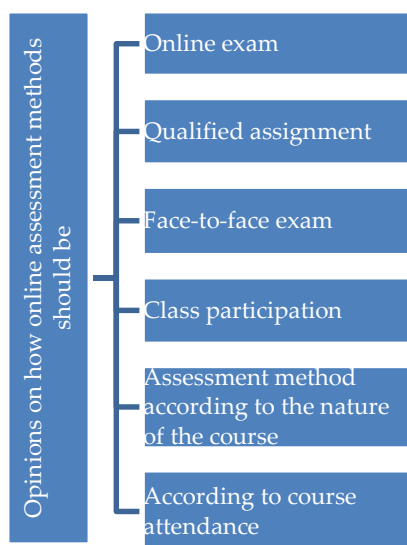
<sup>2</sup> KPSS: Abbreviation of Public Personnel Selection Examination which is obligatory in Turkey to be a teacher in public schools.



performance as well as our evaluation.”. One of the three teacher candidates, K24, who stated that online exams are a form of assessment that focuses only on the result and does not take the process into account, expressed his opinion in this direction: “In online evaluations, we had to look only at the result. It was checked whether the results were learned or whether the product was suitable for the targets.”

### 3.3. Opinions of Pre-Service Teachers on How Online Evaluation Methods Should Be

Pre-service teachers' views on how online assessment methods should be included in the COVID-19 process are presented in Figure 3. As seen in Figure 3, the answers given by the pre-service teachers about how the online assessment methods should be in the COVID-19 process were grouped under 6 themes: (i) online exam; (ii) qualified assignments; (iii) face-to-face exam; (iv) class participation; (v) assessment method according to the nature of the course; (vi) according to course attendance.



**Figure 3.** Pre-Service Teachers' Opinions on How Online Assessment Methods Should Be

Thirty-five of the pre-service teachers stated that online assessments should be in the form of online exams. However, they suggested that the camera should be activated, the duration should be appropriate, and different questions should be asked to each student during the implementation of these exams. In this regard, K55 said that “I'm in favor of taking an online exam, but it's a different question for everyone...because many people get high grades without studying.” While six of the pre-service teachers suggested that online exams should be held and the camera should be on while this exam is being administered, K86 said that “I would like to see at least each student taking the online exam with the cameras and sounds on. Because I heard a lot of people around me taking the exam rather than someone else.” While four pre-service teachers explained that online exams should be held, but the instructors should be careful to give enough time, K21 said that “I would like online exams and the duration of these questions to be adjusted appropriately.”

Twenty-three of the pre-service teachers stated that assignments should be used online, but these assignments should contribute to the development of students. In addition, seven pre-service teachers, who stated that online assessments should be done with assignments, explained that the instructors should make a fair assessment when evaluating these assignments. K84 said that “I wish there was a difference between those who give due attention to the lessons and the assignments and those who do not. Because at this time there is no clear difference between those who make sacrifices and those who do not.” In addition, K125 explained why assignments should be used in online assessments by saying, “As online exams are more vulnerable to cheating, their reliability naturally decreases. It is questionable whether the learner really gets points or who cheats better. That's why I think there should be assignments.” expressed an opinion. The participant K57, on the other hand, stated that online assessment should be in the form of assignments and at the same time explained his views on how these assignments should be, along with their reasons, as follows:

*“I would definitely like the online assessments to be in the form of assignments. However, I would like to have shorter assignments that can improve ourselves in our field rather than long, comprehensive, and tiring*



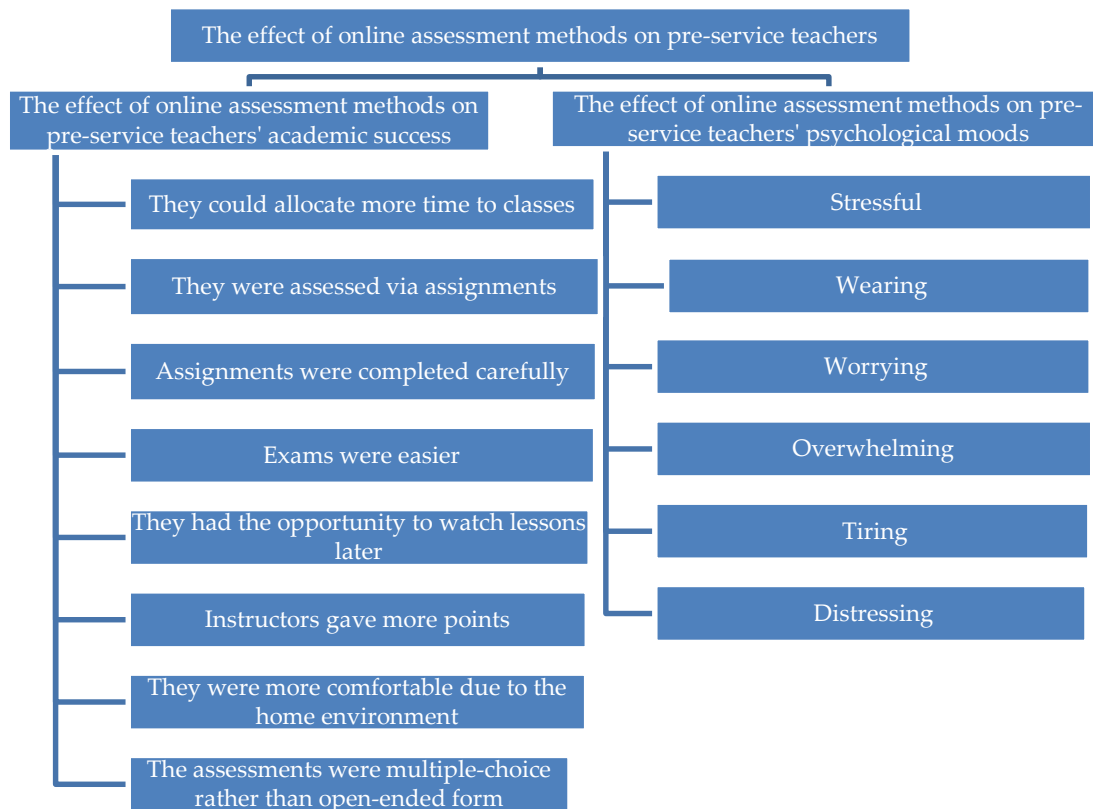
*assignments. On the other hand, I think it would be much more appropriate to do the assignments in a different and individual way for everyone. In this way, cheating would have been prevented in the exams and everyone would have the right points."*

Twenty of the pre-service teachers stated that the current situation should be maintained in the online assessments. However, when the views given by the pre-service teachers were examined, it was seen that the reasons of the pre-service teachers who gave this answer were different. While some of the pre-service teachers stated that the current situation should be maintained in online assessments because a better assessment is not possible under the current conditions, others stated that the current system should be maintained because they are satisfied with it and find it sufficient. For example, while K122 said, "I can't think of any other form of assessment other than our current evaluation. This is how I would evaluate my students if I were you," K91 said, "I don't have any problems with online assessment. I think it's fine."

While eleven of the pre-service teachers stated that the assessments should be made face-to-face, not online, K15 explained their views on this subject as "I think that the reliability and validity errors that interfere with the online assessment process cannot be avoided, so I think that face-to-face assessment should be done." While three of the pre-service teachers stated that assessment should be based on participation in the class, two pre-service teachers stated that assessment should be based on attendance. In this regard, K76 expressed his views on this subject by saying, "I think that class participation and attendance should be reflected in the grade." While all three pre-service teachers expressed that the type of exam should be determined according to the nature of the course, K75 expressed his opinion, saying, "This process is difficult for all of us. It is also possible to see difficulties in online assessment. It is necessary to make an assessment according to the nature of the courses."

### 3.4. Pre-Service Teachers' Opinions on the Positive and Negative Effects of Online Assessment Methods

It was observed that the views of pre-service teachers on the positive and negative effects of online assessment methods were grouped under two sub-themes: (i) the effect of online assessment methods on pre-service teachers' academic success and (ii) the effect on their psychological moods. Pre-service teachers' views on the positive and negative effects of online assessment methods are presented in Figure 4.



**Figure 4.** The Pre-Service Teachers' Opinions on the Positive and Negative Effects of Online Assessment Methods

### 3.4.1. The effect of online assessment methods on the academic achievement of the pre-service teachers

Ninety-nine percent of the teacher candidates stated that the exams made with the online assessment method had a positive effect on their GPA. This was because (i) they could allocate more time to classes, (ii) they were assessed via assignments, (iii) assignments were completed carefully, (iv) exams were easier, (v) they had the opportunity to watch lessons later, (vi) instructors gave more points, (vii) they were more comfortable due to the home environment, and (viii) the assessments were multiple-choice rather than open-ended form. Fourteen pre-service teachers thought that their academic success was positively affected because they could allocate more time to the lessons and nine pre-service teachers had the opportunity to watch the lessons afterwards since the courses were asynchronous. For example, K114 stated as "It affected positively. Because for me, it was much more difficult to work in a dormitory, now I work comfortably at home by taking notes and stopping the videos." Thirteen of the pre-service teachers thought that their academic success increased due to the fact that they did their assignments carefully; eleven thought that the assessments were done via assignments, and eleven thought that the exams were easier. In this regard, K57 expressed his opinion as follows: "I think it has a positive effect because, while scoring, points are given mostly based on the assignments. I also try to prepare the assignments perfectly, which is reflected in my scores well. In online exams, on the other hand, I think that since the lessons are given remotely, the instructors ask a little more easily than usual." K124 who thought that their academic achievements increased due to the fact that the instructors gave more points, used expressions such as "It has a positive effect. Because the teachers were considerate and gave everyone high grades." K84, who thought that their academic achievements increased because of the multiple-choice exams, and not the open-ended ones, said, "Of course, the fact that our exams are not classical [open-ended questions] but tests have positively affected our grades. Thus, our GPA has also increased." K112, who thought that their academic achievements were positively affected because of the comfortable home environment, said that "It had a positive effect because I think that we are more comfortable in the home environment."

Sixteen of the pre-service teachers stated that the exams made with online assessment methods did not have an effect on their academic success but did not provide a reason for this. Fifteen pre-service teachers stated that they had a negative impact. They stated that this situation stemmed from (i) the lack of time given to the exams, (ii) their inability to focus, (iii) the problems caused by the internet, (iv) difficulties in following the courses, and (v) anxiety. While four pre-service teachers stated that their success was adversely affected due to the insufficient time given, three pre-service teachers stated that their success was negatively affected because they had problems with the internet, and two pre-service teachers stated that their success was negatively affected because of anxiety, and K118 expressed his thoughts on this subject as "There is a negative effect. Because time constraints and internet problems are driving me to panic." Among the four pre-service teachers who thought that they were negatively affected because they could not focus, K37 said, "I think it had a negative impact because I was getting better grades face-to-face. I understood the lessons better. At home, I am constantly distracted and unable to focus." Among the three pre-service teachers who thought that they were negatively affected because they had difficulty in following the lessons, K30 expressed his opinion as "I think that it has a negative effect on me because I have difficulties following the lessons."

### 3.4.2. The effect of online assessment methods on the psychological moods of pre-service teachers

Seventy-nine of the pre-service teachers mentioned negative emotions when talking about the effects of online assessment methods on their psychological moods, and there were pre-service teachers who used more than one expression while explaining the effects of online assessment methods on their psychological moods. As seen in Figure 4, while the pre-service teachers talked about the negative effects of online assessments on their psychological moods, they used the expressions (i) stressful, (ii) wearing, (iii) worrying, (iv) overwhelming, (v) tiring, and (vi) distressing. Some of the pre-service teachers also explained the source of these negative emotional states. While explaining the factors that cause negative moods, the pre-service teachers used expressions such as problems arising from the internet, problems arising from the system, not being able to socialize, having to stay at home, attending classes at home, and fear of a family member getting sick. Thirteen of the pre-service teachers mentioned problems arising from the internet, nine of them mentioned problems arising from the system, eight of them mentioned problems due to not being able to socialize, seven of them mentioned problems because of the obligation to stay at home, and five of them mentioned problems arising

from the difficulty of attending classes in difficult conditions at home. For example, K24 explained the negative emotions that online assessments created in him and their reasons as follows:

*"It affected my psychology negatively. You are at home, after all, you have a life at home, you have responsibilities. It is difficult for me to arrange the whole plan and schedule at home. No socialization. Internet will be interrupted in online exams. If I cannot upload assignments on time, the teacher will evaluate it negatively. I am stressed. I double-check my uploaded assignment. I turn on the computer 1 hour before the exam so that there is no technical problem, and I wait. What more..."*

Twenty-four of the pre-service teachers mentioned positive emotions, and there were pre-service teachers who used more than one expression while explaining the effects of online assessment methods on their psychological moods. While the pre-service teachers talked about the positive effects of online assessments on their psychological moods, they stated that they were less stressed, and this was due to the easy questions, high exam grades, lack of control mechanisms, and taking the exam comfortably in their home environment. While four of the pre-service teachers explained that online assessments had a positive effect on their emotional state because of their high exam grades, and three of them stated that the questions were easy, K89 said, "I think it has a positive effect because in this process, instructors also learn to ask easy questions and give easy assignments compared to the face-to-face education process. They do not force students to be in a difficult situation. In such an environment, students work less than they do and reach their target score more easily, and this is a situation that pleases students." While two of the pre-service teachers explained that they took the exam comfortably at home and did not experience stress because of this reason, K123 used expressions like "Of course, being evaluated online at home makes us more comfortable. We are assessed without experiencing the excitement of the exam."

Fifteen of the pre-service teachers stated that online assessment methods did not create a change in their psychological or emotional states. In this regard, K78 used expressions such as "It did not affect me psychologically, I took my online exams the same way I took my regular face-to-face exams."

#### **4. Conclusion and Discussion**

The COVID-19 pandemic, which has affected the whole world as of January 2020, has caused a change process in many areas, and the education system has to enter a change process in order to keep up with the changing conditions. Due to the interruption of face-to-face education in many countries due to the COVID-19 pandemic, lessons in schools have started to be continued using online methods. The first decision taken in the field of education after the first case report in Turkey is to suspend education for three weeks at all levels, including pre-school education institutions, primary education institutions, secondary education institutions, and higher education institutions, as of March 16, 2020. Thus, face-to-face education could not be conducted in the spring semester of the 2019-2020 academic year, and the practice continued in the 2020-2021 academic year. In the 2021-2022 academic year, higher education institutions have implemented the hybrid education method by continuing some of the courses online and some of them face-to-face. It is very important to evaluate the learning of future teachers in the process of preparing teachers, who are considered the main actors in the human training process, for the profession. At this point, online assessment emerges as an important process. In addition to strengthening teachers' learning and preparing them for the profession, it is also crucial to get the opinions of pre-service teachers who have knowledge about online assessment. In this context, the aim of this research is to examine in depth the opinions of pre-service teachers about the online assessment process.

According to the findings of the study, pre-service teachers state that they are evaluated by methods such as online exams, assignments, student participation, or student presentations in the online lesson, and each of these methods has strengths and weaknesses. Elzainy et al. (2020) also reveal the strengths and weaknesses of online assessment in their research. Accordingly, the existence of different online assessment processes and the ability to be rescheduled are determined as the strengths of online assessment. Pre-service teachers state that they are assessed mostly with assignments, and that one of the strengths of this method is an assessment that focuses on the process. Richards-Babb et al. (2015) who examine the opinions of the students who are evaluated with online assignments, state that the online assignments positively affect the students' study habits and their perceptions of the course and the lecturer. Similarly, year-end mathematics achievement

scores of students who are given online assignments are higher than those who are not given online assignments, according to the findings of an experimental study (Roschelle et al., 2016). In this context, it would not be wrong to state that online assignments are perceived as an effective assessment method that focuses on the process by which prospective teachers acquire knowledge about their profession. While the focus of the online assignments on the process is seen as a strength by the pre-service teachers, the fact that the assignments are too difficult and not scored fairly is seen as one of the weaknesses. The fact that assignments are difficult for students is consistent with Richards-Babb et al. (2011)'s finding. According to them, most of the students find online assignments very difficult. In addition, according to the pre-service teachers, one of the weaknesses of the assignments is that they are unqualified and not suitable for the purpose of the course or preparation for the profession.

One of the biggest disadvantages of online multiple-choice exams, which are stated as another type of online assessment by pre-service teachers, is that they are open to cheating. According to Bojović et al. (2020), who randomly select among the courses offered at the university and compare the grades in which students are assessed face-to-face and online, the results of online assessment and face-to-face assessment are almost the same. In addition, teachers think more than students that there is a possibility of cheating in online assessments. Therefore, according to the findings of this research, it can be said that pre-service teachers' perceptions of the possibility of cheating in online exams are similar to teachers' perceptions. According to Rowe (2004), it is a common belief that the probability of cheating in online multiple-choice exams is high; however, this belief can be broken by taking some precautions. Again, according to the findings of this study, the limited time, which is shown as one of the weaknesses of online multiple-choice exams, is a necessary condition to minimize cheating in online multiple-choice exams, according to Elzainy et al. (2020). It is even recommended that the entire exam duration should not be more than 30 minutes, besides setting the timer for each question.

According to the findings of the study, some of the pre-service teachers state that it is more appropriate to evaluate with online multiple-choice exams, some state that online assignments are more appropriate, and others state that the assessment method should be decided according to the course. Considering that the concept of assessment is considered a process used to decide where students are in their learning, where they should go, and how they can best get there (Broadfoot et al., 2002), the right assessment method should be chosen so that pre-service teachers can become qualified teachers. According to Dunn et al. (2003), before deciding on the type of assessment of the course, it is necessary to pay attention to many points, such as the characteristics of the students, their learning outcomes, the student assessment load of the instructor who will evaluate, and the context of the course in the curriculum. However, in order to minimize cheating, pre-service teachers recommend that the camera and microphone be turned on in all online assessments. Again, according to the research findings, pre-service teachers believe that evaluating students based on their level of participation in class is appropriate. These thoughts of pre-service teachers coincide with the findings of Davies and Graff (2005). According to the results of the research conducted by Davies and Graff (2005), students who attend the online course more and are more interested in the course have higher success scores at the end of the term than those who participate less in the course. Similarly, those who receive low achievement scores from the course attend more online courses than those who fail the course. In short, the online course participation rate is a process-oriented assessment that brings academic success, and it is an assessment that allows pre-service teachers to improve themselves in the field.

Finally, according to the findings of the research, pre-service teachers emphasize that online assessment has positive and negative effects on their academic achievement and mood. Pre-service teachers, who think that online assessment has a positive effect on their academic achievement, cite the comfort of their home environment as one of the reasons for this situation. Although the teachers think that the comfort of the home environment increases the probability of students forgetting and missing the lesson, the students state that they are more comfortable with the online education they receive in the home environment (Bojović et al., 2020). Pre-service teachers emphasize that in addition to the comfort of the home environment, being evaluated with online multiple-choice exams and the ease of online multiple-choice exams affect their academic success positively. However, according to studies, there is no significant difference between the success scores obtained from online multiple-choice exams and the success scores obtained from face-to-face multiple-choice exams (Bojović et al., 2020). Students perceive online multiple-choice exams more easily

because they have open access to resources during the online exam process. In this context, online multiple-choice exams can be considered open-book exams. When the open-book and closed-book multiple-choice results are compared in the studies conducted, no significant difference is found in the achievement scores of the students (Brightwell et al., 2004). The fact that students study less for open book exams has been shown by Theophilides and Koutselini (2000) as the reason for this situation. Therefore, the reason why pre-service teachers perceive online multiple-choice exams to be easier than face-to-face multiple-choice exams can be interpreted as their open access to resources. However, this situation is only a perception; it is seen in the literature that it is not reflected in success scores.

In addition, according to the findings of the research, it is seen that online assessment affects the emotional states of teacher candidates positively or negatively. When the literature is examined, students feel mostly positive towards online assessment (Daniels & Gierl 2017; Harley et al., 2021). It has been observed that the pre-service teachers who state that online assessment negatively affects their feelings use the expression that this situation is due to their responsibilities at home and the fact that the house is a common living space. Harley et al. (2021) also emphasize that the home environment can affect students' emotional states, but there has been no deep research on this.

Online assignments, which are a process of assessment and positively affect students' perceptions of the course, can positively affect their attitudes towards teaching from the point of view of pre-service teachers. However, the online assignments given must be of the appropriate difficulty level and in accordance with the requirements of teaching. The recommendation of Elzainy et al. (2020) can be fulfilled for unfair assessment, which is seen as one of the weaknesses of online assignments. In order to make online assignment evaluations fairer, an online assessment commission consisting of academic members of the field can be formed, and this commission can assess the assignments.

Due to the perception that online multiple-choice exams are more open to cheating, exam duration and questions should be prepared meticulously. It can be suggested that faculty members prepare online multiple-choice questions considering the limited time. In this context, as Rowe (2004) states, it can be suggested that faculty members create a large pool of questions about the course and that the online assessment system asks each student randomly. In addition, the faculty member who prepared the questions can prepare a large question bank with questions of different difficulty levels for each acquisition, and the online assessment system can offer each student an exam in which some questions and their order will be different, taking into account these difficulty levels. In addition, pre-service teachers' cameras and microphones should be turned on in online assessments.

Considering online assignments in terms of teacher training, assignments based on class participation in the course gain importance. Considering the assumption that online learning is an autonomous (self-directed) learning process (Kemp & Grieve, 2014), it can be seen that the assessment ensures their professional development. However, at this point, the qualifications of the course should be taken into consideration.

In this study, it was seen that online assessment affected the emotional states of pre-service teachers positively or negatively. In this context, it can be suggested that future studies investigate the effects of attending online classes at home and evaluate students' emotional states in detail.

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