

Student Satisfaction in Distance Education: A Research on Teacher Candidate

Cemal TATLI¹

Abstract

The aim of this study is to examine the satisfaction levels of distance education students in terms of various variables. Survey study design, one of the quantitative research method designs, was used in the study. The study group of the research consists of 374 teachers candidate studying at Muş Alparslan University Faculty of Education. According to the results obtained from the study, it was determined that the satisfaction levels of the students were high. It was revealed that the satisfaction of the students differed according to gender, frequency of internet use, the device usually connected to the internet, the level of information technology use, the device used to connect to the internet, the ability to create content in the digital environment and the competence to solve technical problems encountered in the digital environment. Student satisfaction in distance education has a critical importance for the success and effectiveness of education. Therefore, distance education practitioners and planners should consider the important factors affecting student satisfaction in distance education to increase student satisfaction. Improvements and measures to be taken can be determined through research to increase student satisfaction and education quality in distance education.

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Introduction

Distance education is an education method that is rapidly becoming widespread today with the effect of technological developments. This new method of education provides flexibility and accessibility to students, overcoming geographical barriers. However, unlike the traditional classroom environment, the need to balance between the various challenges and opportunities available to students in the distance education process has significant effects on student satisfaction.

Student satisfaction is closely related to educational effectiveness and refers to students' satisfaction with their educational experience (Liaw & Huang, 2013; Parlak, 2007; Reevy, Ozer & Ito, 2010; Sanchez Franco, 2009). This concept is shaped by various factors in distance education. For example, factors such as easy access to online learning resources, richness and attractiveness of content, ease of use of platforms, and interaction opportunities directly affect student satisfaction (Cameron & Schofield, 2017).

Student satisfaction in distance education positively affects the success levels

of students by ensuring their active participation and motivation in the education process (Moore, 2002). Students with a high sense of satisfaction make more effort and participate in learning more willingly. Student satisfaction has been taken into consideration by researchers as one of the quality dimensions in distance education (Bartley-Bryan, 2010; Moore, 2005; Şimşek, 2012). Allen et al. (2002) emphasised that student satisfaction is of great importance for the effectiveness of teaching. Şimşek (2012), quoted from Rivera, et. al (2002), stated that student success has important effects on the success of distance education applications and student satisfaction has important effects on student success.

Student satisfaction is also accepted as one of the indicators of success in distance education (Şahin, 2009; Şahin & Shelley, 2008). In many studies evaluating the effectiveness of distance education applications and determining quality standards, students' satisfaction levels have been an important focal point. Student satisfaction in distance education also plays an important role in terms of the continuity of education. The quality of educational materials and platforms affects students' commitment to the distance education

¹ Dr., Mus Alparslan University, Turkey, c.tatli@alparslan.edu.tr, ORCID: 0000-0002-3261-394X

process (Bartley-Bryan, 2010). Educational materials that offer quality content and are designed in accordance with the needs of students increase students' interest and participation in education.

Student satisfaction in distance education is vital for the success and effectiveness of education (Baturay & Yukseltürk, 2015; Şahin, 2009). In order to increase student satisfaction in distance education, distance education practitioners and planners should consider the factors affecting student satisfaction in distance education. However, there are many factors affecting student satisfaction in distance education. In this context, firstly, the factors affecting student satisfaction in distance education should be determined by scientific researches. Designing distance education applications by taking these factors into consideration can lead to more motivated and satisfied students in distance education and a more effective learning experience. In this context, in this study, it was aimed to examine the satisfaction of distance education students towards distance education in terms of various variables. The factors affecting student satisfaction in distance education are quite diverse and scientific research is needed to determine them. The factors determined by research will guide distance education applications to make them more effective and satisfying. In this way, students will have a more satisfying learning experience and their success will increase. The aim of this study is to determine the possible variables that will affect student satisfaction in distance education. Determining the variables affecting student satisfaction in distance education will provide important tips and strategies to increase student satisfaction in distance education. In line with the general purpose of the research, answers to the following questions were sought:

1. What is the level of satisfaction of distance education students in distance education?
2. Do the satisfaction levels of distance education students differ according to the departments?
3. Do the satisfaction levels of distance education students differ according to gender?

4. Do the satisfaction levels of distance education students differ according to the device they usually use while connecting to the internet?

5. Do the satisfaction levels of distance education students differ according to the frequency of internet use?

6. Do the satisfaction levels of distance education students differ according to their skills to use information technologies?

7. Do the satisfaction levels of distance education students differ according to creating new things in digital environment?

8. Do the satisfaction levels of distance education students differ according to their ability to solve technical problems?

Method

Research design

This research was conducted using a survey research design, one of the quantitative research designs. With the survey design, detailed data are collected to examine certain characteristics of large groups (Büyüköztürk, Çakmak, Akgün, Karadeniz & Demirel, 2012). This design enables researchers to collect data and make generalisations based on a sample representing a large population (McMillan & Schumacher, 2019). In this study, since it is aimed to investigate the relationship between various variables and student satisfaction level in distance education, survey design was used.

Participants

In this study, 374 teacher candidates studying at the Faculty of Education of Muş Alparslan University in the 2022-2023 academic year participated. The sample was determined by purposive sampling method. Maximum diversity sampling, one of the purposeful sampling types, was used in the study. In this framework, 61 (16%) teacher candidate from Educational Sciences, 83 (22%) from Turkish and Social Sciences, 79 (21%) from Mathematics and Science, 94 (25%) from Basic Education and 57 (15%) from Foreign Language Education Department of Muş Alparslan University Faculty of Education

participated in the study. The adequacy of the sample number in the study was determined according to Can (2014). The Cronbach Alpha (α) internal consistency coefficient obtained for the whole scale consisting of 30 items was calculated as 0,95.

Data collection instruments

In the study, data were collected with an electronic form consisting of two parts. The first part of this form consists of demographic information. This section consists of 10 items. The second part of the form consists of the “student satisfaction scale in distance education” developed by Tatlı (2021) and consisting of 30 items. The scale consists of items graded with five-point Likert type (Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree). This scale is categorised under five factors. The Cronbach Alpha (α) internal consistency coefficient obtained for the whole scale consisting of 30 items was calculated as 0,95. In this study, Cronbach Alpha (α) internal consistency coefficient was calculated as 0,96.

Data analysis

Data analysis was carried out by considering the questions in the research. In this direction,

frequency, percentage, mean, standard deviation and one-way analysis of variance were performed on the data. Before the predictive analyses, the distributions of the groups were examined. For normality assumptions, kurtosis and skewness values were examined. In this study, the -1/+1 range specified by Tabachnick and Fidell (2013) as kurtosis and skewness values for normal distribution was taken into consideration. In cases where the normality assumption was met, parametric analyses were performed and in cases where it was not met, non-parametric tests were used. In the analyses, the significance level for the statistical test was accepted as 0,05. Since the variances of the analysed groups were homogeneous but the number of elements in the groups was not equal, Bonferroni test, which is a multiple comparison test used in cases where variances are homogeneous and does not require the number of groups to be equal, was used.

Findings

In this section, the findings obtained within the framework of the research questions are presented. The headings were formed and presented based on the research questions:

Table 1.
Distance education satisfaction levels of teacher candidate

Department	N	X	SD
Guidance Psychological Counseling	61	92,08	18,94
Foreign Languages Education	57	98,22	15,98
Mathematics and Sciences Education	83	98,49	16,80
Basic Education	94	100,75	15,59
Turkish and Social Sciences Education	79	102,46	18,22
Total	374	98,81	17,30

When Table 1 was analysed, it was seen that the mean scores of the teacher candidate studying in each of the five departments participating in the study were high in satisfaction with distance education. It was also determined that the overall mean score ($X= 98,81$) of the teacher

candidate' satisfaction with distance education was also high.

Distance education satisfaction levels of teacher candidate according to the departments they study

Table 2.

The difference between distance education satisfaction levels of teacher candidate according to the departments they study

Department	N	X	Sd	F	p	The Groups with significant difference
Guidance Psychological Counseling	61	92,08	18,94			
Foreign Languages Education	57	98,22	15,98			Basic Education - Guidance Psychological Counseling
Mathematics and Sciences Education	83	98,49	16,80	3,605	,007	Turkish and Social Sciences Education - Guidance Psychological Counseling
Basic Education	94	100,75	15,59			
Turkish and Social Sciences Education	79	102,46	18,22			

As seen in Table 2 the difference between the mean satisfaction levels of teacher candidates according to the departments they were studying was found to be statistically significant ($F(3,605), p < .05$). In order to determine which groups the differences between the satisfaction levels of teacher candidate according to the departments they were studying stemmed from, a multiple comparison test was conducted. Bonferroni Test was used as a multiple comparison test. According to the results of the analysis, it was determined that the difference between the satisfaction levels stemmed from the difference between Basic Education ($X=100,75$) and

Guidance Psychological Counseling ($X=92,08$) and Turkish and Social Sciences Education ($X=102,46$) and Guidance Psychological Counseling ($X=92,08$) departments. According to the results of the analysis, it was determined that the difference between the satisfaction levels was caused by the difference between Basic Education ($X=100,75$) and Guidance Psychological Counseling ($X=92,08$) and Turkish and Social Sciences Education ($X=102,46$) and Guidance Psychological Counseling ($X=92,08$) departments.

Distance education satisfaction levels of teacher candidate according to gender

Table 3.

The difference between distance education satisfaction levels of teacher candidate according to their gender

Gender	N	X	Sd	t	p
Male	162	104,98	17,75		
Female	212	94,10	15,41	6,33	,016

It is seen in Table 3 that mean of male teacher candidate' satisfaction levels ($X=104,98$) is higher than the mean of female teacher candidate' satisfaction levels ($X=94,10$). As a result of the t-test conducted to determine whether this difference was significant or not, it

was found that there was a significant difference in favour of male teacher candidate at 0,05 level ($t:6,33(374), p < .05$).

Distance education satisfaction levels of teacher candidate according to the device they usually use while connecting to the internet

Table 4.

The difference between distance education satisfaction levels of teacher candidate according to the device they usually use while connecting to the internet

Device to connect to the Internet	N	X	Sd	t	p
Mobile phone	272	97,56	17,38	-2,29	,022
Computer	102	102,14	16,73		

When Table 4 was examined, it was determined that the mean satisfaction of the teacher candidate who usually use computers while connecting to the Internet (X=102,14) was higher than the mean satisfaction of the teacher candidate who usually use mobile phones (X=97,56). As a result of the t-test conducted to determine whether this difference was

significant or not, it was found that there was a significant difference in favour of those who usually use computers at 0,05 level (t:-2,29 (374), p<,05).

Distance education satisfaction levels of teacher candidate according to internet usage frequency

Table 5.

The difference between distance education satisfaction levels of teacher candidate according to their internet usage frequency

Frequency of internet use	N	X	SD	F	P	The groups with significant difference
Low	69	88,37	15,94	17,67	,000	Medium-low High-low
Medium	236	100,48	16,62			
High	69	103,55	17,03			

It is seen in Table 5 the difference between the mean satisfaction levels of teacher candidate according to the frequency of internet use (F (17,67), p<,05) is statistically significant. A multiple comparison test was conducted to determine which frequency of use caused the differences between the satisfaction levels of teacher candidate according to the frequency of internet use. Bonferroni Test was used as a multiple comparison test.

According to the results of the analysis, it was determined that the difference between the satisfaction levels was caused by the difference between medium (X= 100,48) and low (X=88,37) and high (X=103,55) and low (X=88,37) frequency of use.

Distance education satisfaction levels of teacher candidate according to their information technology usage skills levels

Table 6.

Distance education according to teacher candidate skills of using information technologies difference between satisfaction levels

Information technology utilisation skills	N	X	Sd	F	p	The groups with significant difference
Beginner	45	89,71	18,70	10,08	,000	Intermediate- Beginner

Intermediate	255	98,90	16,59	Advanced- Beginner
Forward	74	104,05	16,81	

As seen in Table 6 the difference between the mean satisfaction levels of teacher candidate according to their information technology usage skills levels ($F(10,08)$, $p < .05$) is statistically significant. A multiple comparison test was conducted to determine which skill levels caused the differences between the satisfaction levels according to the levels of teacher

candidate' skills of using information technologies. According to the results of the analysis, it was determined that the difference between the satisfaction levels was caused by the difference between intermediate ($X=98,90$) and beginner ($X=89,71$) and advanced ($X=104,05$) and beginner ($X=89,71$) skill levels.

Distance education satisfaction levels of teacher candidate according to their ability to create new things in digital environment

Table 7.

According to the teacher candidate skills of creating new things in digital environment the difference between education satisfaction levels

Skills to create new things in the digital environment	N	X	SD	F	P	The groups with significant difference
Insufficient	81	93,43	17,50	5,85	,003	Moderately sufficient - insufficient
Moderately sufficient	230	99,67	16,68			
Fully sufficient	63	102,60	17,972			Fully sufficient - insufficient

When Table 7 is analysed, it is seen that the difference between the mean satisfaction levels of teacher candidate according to their skills of creating new things in digital environment ($F(5,85)$, $p < .05$) is statistically significant. In order to determine which skill levels the differences between the satisfaction levels of teacher candidate according to their skills of creating new things in digital environment arise from, a multiple comparison test was conducted. According to the results of the analyses, it was determined that the difference

between the satisfaction levels was caused by the difference between those with moderately sufficient ($X=99,67$) and insufficient ($X=93,43$) and fully sufficient ($X=102,60$) and insufficient ($X=93,43$) skills.

Distance education satisfaction levels of teacher candidate according to their competences to solve digital technical problems

Table 8.

Distance education according to teacher candidate competences to solve digital technical problems difference between satisfaction levels

Competences to solve technical problems	N	X	Sd	F	p	The groups with significant difference
Insufficient	79	93,39	17,91	8,86	,000	Medium sufficient - insufficient Fully sufficient - insufficient Fully sufficient - moderately sufficient
Moderately sufficient	262	99,30	16,76			
Fully sufficient	33	107,87	16,03			

When Table 8 is analysed, it is seen that the difference between the mean distance education satisfaction levels of pre-service teachers according to their competencies to solve digital

technical problems ($F(8,86)$, $p < .05$) is statistically significant. A multiple comparison test was conducted to determine between which competence levels the differences between the

satisfaction levels of teacher candidate according to their competences in solving digital technical problems originated. According to the results of the analyses, it was determined that the difference between the satisfaction levels was caused by the difference between those with moderately sufficient ($X=99,30$) and insufficient ($X=93,39$) and fully sufficient ($X=107,87$) and insufficient ($X=93,39$) competences.

Discussion and Conclusion

In this study, it was determined that teacher candidate' satisfaction level with distance education was high. This satisfaction level shows that teacher candidate evaluate the distance education process positively and that their distance learning experiences have a positive effect. In many studies (Baber, 2020; Bray, Aoki & Dlugosh, 2008; Karataş & Üstündağ, 2008; Tatlı, 2021; Sudarwo, Umasugi, Hafel & Simabur, 2020), it was determined that students' satisfaction levels with distance education were high. These results support the acceptance of distance education as a student-centred, flexible and effective education method.

Distance education satisfaction levels of teacher candidate were found to be high according to the departments they studied. However, significant differences were found between the departments of teacher candidates in terms of distance education satisfaction levels. Satisfaction levels of Guidance and Psychological Counselling students were found to be lower than the satisfaction levels of Basic Education and Turkish and Social Sciences Education students. This is thought to be due to the fact that there are more applied courses in the department of Guidance and Psychological Counselling. Therefore, the fact that the students of this department encounter with courses that require more intensive practice may have affected their distance education experiences.

It was found that there was a statistically significant difference between distance education satisfaction levels of teacher candidate according to their gender. In the study, it was concluded that the distance education satisfaction levels of male teacher candidate were higher than female teacher

candidate. This result shows that gender has an effect on distance education experience. It can be said that male teacher candidate teachers achieved more satisfaction in the distance education process. However, many studies (Karataş & Üstündağ, 2008; Kukul, 2011) have found that there is no significant difference in terms of gender demographic variable in students' distance education satisfaction.

A statistically significant difference was found between the distance education satisfaction levels of teacher candidate according to the type of device they use to access the internet. The satisfaction levels of teacher candidates using computers for distance education were found to be higher than teacher candidates using mobile phones. Based on these findings, it can be said that using computers in distance education applications provides learners with more satisfaction. This situation reveals that the computer can provide students with easier access to educational materials and a more effective learning experience thanks to its large screen, useful interface and rich functionality (Davis, 2018). However, considering students' learning preferences and device usage habits, it is important to offer different device options in distance education and to provide flexibility in accordance with student needs. It was determined that the satisfaction levels of teacher candidates according to the frequency of internet use in daily life were statistically significant. It was observed that teacher candidate with medium and high Internet usage frequency had higher satisfaction levels than those with low Internet usage frequency. It can be stated that teacher candidate with more internet usage experience have higher distance education satisfaction levels. This result emphasises the positive effect of the Internet on the distance education process and shows that students' active use of the Internet can make their distance education experiences more satisfying.

It was seen that there was a statistically significant difference between distance education satisfaction levels according to the level of teacher candidate' information technology usage skills. It was seen that individuals with advanced and intermediate information technology usage skills had higher satisfaction levels than novice level. It can be said that as their skill level in using information

technologies increases, their level of distance education increases. Similarly, Tschetter (2014) concluded that the skills of using information technologies affect satisfaction in distance education.

The relationship between distance education satisfaction of teacher candidate according to their level of information technology usage skills was analysed. Accordingly, it was observed that the distance education satisfaction levels of teacher candidate with advanced and intermediate level information technology usage skills were statistically significantly higher than those with novice level information technology usage skills. It was observed that as the teacher candidate ' skill levels in using information technologies increased, their distance education experiences also increased and became more satisfying. It can be considered that the ability to use information technologies effectively has a positive relationship with distance education satisfaction level (Lee & Brown, 2021). It can be said that teacher candidate who have the ability to use information technologies complete the distance education process with more satisfaction. Teacher candidate who can use information technologies effectively have advantages such as using online platforms more effectively, using digital tools in interaction with students, and presenting course materials more effectively.

It was determined that the distance education satisfaction levels of teacher candidate who had the ability to create new things in digital environment were statistically significantly higher than those who considered themselves insufficient. This was compared to the distance education satisfaction levels of those who considered themselves fully competent and moderately competent. This result shows that the ability to create new things in digital environment has a significant effect on distance education satisfaction. Teacher candidate need to improve their digital skills in order to have a more successful and satisfying learning experience in the distance education process (Elmalı & Kuzu, 2020). It can be said that the development of digital skills of prospective teachers will contribute to a more successful and satisfying learning experience in the distance education proces

It was found that there was a significant relationship between distance education satisfaction levels of teacher candidate according to their competences in solving digital technical problems. In the study, it was determined that the distance education satisfaction levels of teacher candidate who have the ability to solve digital technical problems are statistically higher than the satisfaction levels of those who see themselves as inadequate compared to those who see themselves as fully competent and moderately competent. These results show that the competence of solving digital technical problems can positively affect the distance education experience and teacher candidate experience higher satisfaction.

The high satisfaction level results obtained in this study emphasise that distance education has an important place among modern education methods. The positive evaluations of teacher candidate show that distance education has the potential to continue as an important part of education systems in the future. However, further research and evaluation in this field is important to increase the effectiveness of distance education and to support student achievement.

Recommendations

- The results of the research can provide important guidance for educational institutions and teaching programmes in the context of the increasing popularity and importance of the distance education process.
- It can contribute to the shaping of future educational policies by determining the measures and improvements to be taken to increase teacher candidate' satisfaction with distance education and to improve the quality of education.
- Developing teacher candidate' digital skills can ensure their success and satisfactory learning experience in the distance education process. Therefore, more research should be conducted on digital skills development and strategies should be developed to support teacher candidate' digital skills.

Limitations

- This research is limited to pre-service teachers studying at Muş Alparslan University Faculty of Education.
- The research is limited to the collection of data with a scale.
- The research is limited to the answers given by the participants.

Acknowledgments

The participants were read the necessary protocols regarding the data collection process. The participants voluntarily agreed to participate in the study without any pressure or coercion and completed the data collection tool.

Data Availability

The datasets generated during and/or analyzed during the current study are available from the corresponding author upon reasonable request.

Conflict of interest

None

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