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How Satisfied are Students with the Distance Education in the COVID-19 Period?

Abstract

Background: During the Coronavirus Disease 2019 (COVID-19) epidemic, educational institutions globally, including those in Türkiye, were shut down, transitioning to distance learning (DE).

Aim: This research was carried out to assess the satisfaction of university students with the DE they received during the COVID-19 pandemic.

Methods: The descriptive study involved 458 students from a state university. Data were collected using the "Distance Education Satisfaction Questionnaire" through Google Forms. The data was analyzed using descriptive tests in the SPSS 20 package program.

Results: The study's findings indicated that 76% of the participants were female, 34.1% were 2nd-year students, and 25.3% were enrolled in the nursing faculty. Among the participants, 60.3% owned a personal computer, while 98.5% had a smart mobile phone. Students were generally satisfied with the sub-dimensions of "instructor", "systems used in DE," "university/faculty management" and "digital content/teaching material" of DE. On the other hand, it was determined that they were not satisfied with the "student" and "assessment and evaluation" dimensions.

Conclusion: The research concluded that students were generally satisfied with distance learning, yet they did not find it as effective and efficient as traditional face-to-face education. To ensure the rapid and effective implementation and continuation of DE in future pandemics, it is recommended that all universities enhance their DE infrastructure.

Keywords: COVID-19 pandemic, distance education, satisfaction, student, nursing

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Introduction

The Coronavirus Disease 2019 (COVID-19), which rapidly spread to many countries across the world following its initial detection in Wuhan, China, is a highly contagious global health problem. Upon examination, the virus is named 'Coronavirus' due to its crown-like appearance, attributed to the protrusions on its surface. Coronaviruses can cause enteric, neurological, and respiratory diseases both in humans and animals. The COVID-19 outbreak has led to substantial fatalities worldwide and in Türkiye. The World Health Organization (WHO) has declared it a pandemic, emphasizing its status as a global emergency.[1,2]

Due to the significant contagiousness of COVID-19, remote education emerged as the optimal solution to preserve students' health during the pandemic. Consequently, during the COVID-19 pandemic period, educational institutions in the world and Türkiye were temporarily shut down to combat the disease, with efforts to continue education through online platforms from home.[3-5] In Turkiye, during the COVID-19 pandemic, 121 of 189 universities (64%) transitioned to distance education (DE) on March 23, 2020, followed by 41 universities (21.6%) on March 30, 2020, and another 25 (13.2%) on April 6, 2020.[3-7]

The transition to DE during the COVID-19 pandemic highlighted significant variations in readiness and infrastructure across universities and faculties around the world. Many faculty members often lacked the necessary skills and technological resources for effective distance teaching. Moreover, students encountered various obstacles in adapting to remote learning due to diverse socioeconomic backgrounds, limited access to computers or the internet, inadequate study environments at home, and low digital

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literacy levels. This issue was particularly acute in faculties such as medicine, dentistry, and nursing, where practical courses are essential. DE proved insufficient for replacing hands-on skills required in laboratories and clinical settings.[8-15] In Turkiye, the materials developed for applied courses in numerous faculties were inadequate, and a significant number of instructors were ill-equipped to impart practical skills via DE.

The challenges encountered in DE during the COVID-19 pandemic are thought to have impacted both the quality of education and student satisfaction. The findings of this research are expected to serve as a guide for implementing DE in new emergency situations, whether ongoing during the current pandemic or in future scenarios.

Aim of the study

This research was conducted to determine the satisfaction of university students with the DE they received during the COVID-19 pandemic.

Methods

Study Design

The descriptive study was conducted between September 2020 and October 2021.

Settings

The study's population comprised students enrolled at a state university in Eastern Turkiye (n=2.290). Utilizing the cluster sampling method, the sample size was established by including 20% of students from each faculty. Power analysis determined the research sample size as 608 participants. However, due to the exclusion of incompletely filled forms, the final sample size was reduced to 458 students. These students were recruited from 12 different faculties, including nursing, medicine, education, engineering, among others.

Data Collection Tools

A questionnaire form was prepared to determine the introductory characteristics of the students, and the "Distance Education Satisfaction Questionnaire" was used to collect the research data.

A Questionnaire Form

A questionnaire was prepared by the researchers in line with the relevant literature; comprising questions to determine the personal characteristics of students such as age, gender, class, faculty, internet access status.[6,8,9]

Distance Education Satisfaction Questionnaire

The questionnaire form was designed by the researchers based on the literature to gauge student satisfaction with the DE received during the COVID-19 period.[6,8,9] The questionnaire comprises 54 items that measure students' satisfaction with various aspects of DE. The questions are in 4-point Likert type (1=not at all satisfied, 2=not satisfied, 3=satisfied, and 4=very satisfied), with higher scores indicating greater satisfaction. The questionnaire is divided into six sub-dimensions: "Instructor," "Systems Used in Distance Education," "University/Faculty Management," "Digital Content/Teaching Material," "Student," and "Assessment and Evaluation."

According to the options marked by the participants, the total score value of the item in each sub-dimension was divided by the number of items in the sub-dimension, and the arithmetic average was obtained. For each sub-dimension, the lowest score is 1, and the highest score is 4. Scores of 2.5 and below are interpreted as indicating dissatisfaction.

The "Instructor" sub-dimension, comprising twelve items, assesses students' satisfaction with the instructor-student relationship and instructor competence in DE carried out during the COVID-19 process.

The "Systems Used in Distance Education" sub-dimension, consisting of ten items, assesses students' satisfaction with the operation of the distance courses and the effectiveness of the Course Information System (CIS) during the COVID-19 process.

The "University/Faculty Management" sub-dimension, consisting of six items, assesses students' satisfaction with the institution's preparedness and infrastructure for DE implemented during the pandemic.

The "Digital Content/Teaching Material" sub-dimension, composed of six items, assesses students' satisfaction with the education methods and digital resources utilized in DE.

The "Student" sub-dimension, comprising thirteen items, assesses students' satisfaction with the compatibility with DE and its effects on learning.

The "Assessment and Evaluation" sub-dimension, encompassing seven items, assesses students' satisfaction with the methods of measurement and evaluation in the DE process.

Data Collection

The survey, comprising all questions, was digitized using Google Forms. The link to this online survey was distributed to students via email, messaging, and various social media platforms, including WhatsApp. Completing the online form typically required approximately 10 to 15 minutes.

Data Analysis

The data were analyzed using descriptive tests in the SPSS 20 package program (IBM, Chicago, USA). These included calculations of percentage, arithmetic mean, standard deviation, and range (minimum-maximum), to assess individual characteristics and levels of educational satisfaction.

Ethical Considerations

This study was approved by the Ethics Committee of Atatürk University (Approval Number: 336, Date: 26.06.2020), and written permissions were obtained from the deans' offices of each faculty to conduct the study. Surveys collected from Google Forms were secured using stringent data privacy and security measures, and access to the data by third parties was prevented.

Results

The study results indicated that 76% of the students were female, with 34.1% being second-year students and 25.3% enrolled in the nursing faculty. Approximately 60.3% possessed a personal computer, and 98.5% had a smart mobile phone. Around 55.5% of the students had an internet quota of 9.01 GB or more. 52.4% attended DE via their mobile phones, 55.7% attended DE through student information system and CIS. However, only 34.3% of the students reported being able to attend all their DE courses.

The evaluation of student satisfaction with DE revealed that participants were generally "satisfied" with the "Instructor" sub-dimension. They expressed the highest satisfaction with aspects such as "instructor introducing themselves before starting the lesson in the online environment," "instructor preparing a syllabus" and "instructor guiding students to appropriate resources." The item that the students showed the lowest satisfaction in the relevant dimension was the item "accessibility of the instructor" (Table 1).

Students generally reported satisfaction with the "Systems Used in DE" sub-dimension. Nevertheless, they expressed dissatisfaction with aspects such as "sound quality of the system in distance education," "connection quality of the system in distance education" and "intelligibility of distance education" (Table 2).

The results indicated that students were "satisfied" with all the items in the "University/Faculty Management" sub-dimension. They expressed the highest satisfaction with the "preparation of our faculty for DE" (Table 3).

The students expressed satisfaction with all the items of the "Digital Content/Instructional Material" sub-dimension. However, "digital content/teaching materials being instructive" received the lowest satisfaction among students (Table 4).

Table 1. Average scores of the "Instructor" sub-dimension

	$\bar{X}$ ±SD	Satisfaction status
Instructor introduces themselves before starting the lesson online	3.02±.67	Satisfied
The instructor observes whether the student uses learning resources effectively or not	2.61±.84	Satisfied
Instructor's preparation of syllabus	2.91±.78	Satisfied
Instructor's time to answer in-class questions	2.86±.77	Satisfied
Instructor guides students to appropriate resources	2.88±.79	Satisfied
Instructor's use of clearly stated criteria for performance evaluation	2.72±.81	Satisfied
Instructor's effective use of chat tools (synchronous and asynchronous)	2.79±.79	Satisfied
Technology use proficiency of the instructor	2.73±.78	Satisfied
Instructor's use of methods such as effective events, research, and simulation while designing the lessons	2.67±.81	Satisfied
Instructor provides prompt, constructive, and meaningful feedback to students through an individual channel such as email	2.61±.88	Satisfied
Attitudes of the instructor towards students	2.61±.84	Satisfied
Accessibility of the instructor	2.55±.87	Satisfied

Table 2. Average scores of the "Systems Used in DE" sub-dimension

	$\bar{X}$ ±SD	Satisfaction Status
The ability of CIS to respond to the need	2.65±.79	Satisfied
CIS's menus	2.78±.75	Satisfied
CIS data security	2.81±.75	Satisfied
CIS ease of use	2.88±.79	Satisfied
CIS has a free infrastructure	3.15±.75	Satisfied
The sound quality of the system in DE	2.50±.84	**Not satisfied**
Image quality of the system in DE	2.51±.84	Satisfied
Accessibility of the system in DE	2.62±.87	Satisfied
Connection quality of the system in DE	2.27±.88	**Not satisfied**
Understandability of DE	2.40±.92	**Not satisfied**

Participants expressed dissatisfaction with the majority of the items in the "Student" sub-dimension. The items that students were least satisfied with in this sub-dimension were "DE being more effective than traditional education" and "DE making learning permanent" (Table 5).

Students expressed dissatisfaction with most aspects of the "Assessment and Evaluation" sub-dimension. The lowest satisfaction in this sub-dimension is "equitable measurement and evaluation in DE" (Table 6).

Discussion

The COVID-19 epidemic, which has had a global impact, has underscored the importance of prioritizing epidemic education within emergency action plans after an infectious disease outbreak. This research revealed that almost half of the students participated in DE via their mobile phones, with only a small fraction not participating at all. Karadağ and Yücel[8] found that 64% of the students participated in DE via computers and tables, 32% through their smartphones, and 23% were unable to participate in DE. For effective participation in DE during

Table 3. Average scores of the "University/Faculty Management" sub-dimension

	$\bar{X}$ ±SD	Satisfaction Status
University's preparation for DE	2.66±.81	Satisfied
Preparation of the faculty for DE	2.72±.81	Satisfied
Preparation of the department for DE	2.65±.86	Satisfied
Providing information about DE by the university	2.69±.84	Satisfied
Providing information about DE by the faculty	2.67±.83	Satisfied
Providing information about DE by the department	2.68±.83	Satisfied

Table 4. Average scores of the "Digital Content/Teaching Material" sub-dimension

	$\bar{X}$ ±SD	Satisfaction status
Consistency of digital content/teaching materials	2.67±.76	Satisfied
The originality of content/teaching materials	2.71±.73	Satisfied
Instructive digital content/teaching materials	2.62±.80	Satisfied
Overlap of digital content/content/teaching for the course	2.82±.73	Satisfied
Compliance of digital content/content/teaching with text, spelling and grammar, rules	2.83±.69	Satisfied

the COVID-19 pandemic, students require technological resources and reliable internet connections.[10] The low number of students unable to participate in DE in this study is encouraging. However, considering that these studies were collected online, it is likely that the results represent just the tip of the iceberg. Students lacking internet access or necessary devices such as computers, tablets, or smartphones could not be included in this study, indicating a potential underrepresentation of those facing digital access barriers.

Table 5. Average scores of the "Student" sub-dimension

	$\bar{X}$ ±SD	Satisfaction Status
DE ensures that learning is permanent	1.96±.95	**Not satisfied**
DE enables students to learn at their own pace	2.16±.98	**Not satisfied**
DE makes students more active in terms of teaching practices	2.00±.91	**Not satisfied**
The content of courses in DE is sufficient for learning	2.15±.94	**Not satisfied**
DE provides a good learning opportunity for the students	2.10±.97	**Not satisfied**
DE is more effective than traditional education	1.90±.96	**Not satisfied**
DE is suitable for me	2.04±1.00	**Not satisfied**
DE is a suitable alternative for the training I need.	2.18±1.00	**Not satisfied**
Conducting DE by the course content	2.57±.87	Satisfied
Supporting courses with up-to-date information in DE	2.69±.86	Satisfied
In DE, the instructors show the necessary attention to the lessons	2.70±.89	Satisfied
In DE, instructors have technological competencies	2.63±.87	Satisfied
Efficient passing of DE	2.15±.97	**Not satisfied**

Table 6. Average scores of the "Assessment and Evaluation" sub-dimension

	$\bar{X}$ ± SD	Satisfaction Status
Reliability of measurements and evaluations made in DE	2.47±.88	**Not satisfied**
Validity of measurements and evaluations made in DE	2.47±.88	**Not satisfied**
Scientific quality of measurement and evaluation in DE	2.55±.85	Satisfied
The teaching of measurement and evaluation in DE	2.37±.90	**Not satisfied**
Appropriateness of measurements and evaluations made in DE for the purpose	2.56±.85	Satisfied
Feedback on measurement and evaluation in DE	2.46±.86	**Not satisfied**
Conducting fair measurement and evaluation in DE	1.97±.86	**Not satisfied**

The research revealed that while students were generally satisfied with the "Instructor" sub-dimension of DE, they expressed less satisfaction with the "accessibility of the instructors". Other studies evaluating student perspectives on DE in Turkiye during the COVID-19 period found that students experienced difficulties in communicating with instructors and receiving feedback.[8,13-15] Chen et al[16] and Nenko et al,[17] observed that academics, accustomed to traditional teaching methods and not adapting to current technological demands, struggled with the use of information technologies and communication with students. These results suggest that a significant number of the academic staff is not adept in using technology and communicating with students during the pandemic, and universities should make the necessary improvements in this regard.

The findings indicate that students are not satisfied with the infrastructure and the quality of connection and voice in DE. Similar research examining student experiences with DE during the pandemic revealed that issues with infrastructure, internet, and technology led to disruptions in their education.[8,15,18-20] These challenges highlight the need for organized training to enhance students' online learning orientation, and the establishment of systems that will provide technical support to students when necessary.

Students were satisfied with the management of the University/Faculty/Department and their preparation for DE. During the COVID-19 period, the rapid digital transition of students all over the world was ensured, and 4.254 different courses were presented to more than 25.000 students by 2.681 faculty members through DE.[21-23]

One of the critical aspects of DE is the instructiveness of the course content. However, our research revealed that students found the digital content/teaching materials insufficiently instructive. Literature review indicates that the e-learning materials and video sessions used in DE have positive effects on the learning experiences of the students. Particularly the students studying in applied fields such as medicine, nursing, and dentistry, faculties think that e-learning materials are not sufficient for gaining clinical skills.[8,19,24-30] While instructors

at universities have significant experience in creating face-to-face instruction, developing and delivering online educational materials is a relatively new challenge for many faculty members. Therefore, universities need to offer support to faculty members in this area. Necessary studies should be carried out to develop effective digital content and teaching materials, especially for students studying in applied disciplines.

Students generally perceive DE as less effective than traditional education. In a study by Schlenz et al,[31] 36.8% of students preferred in-person learning instead of online learning. Similar studies have shown that students find DE less efficient compared to formal education. Additionaly, it is reported to be less comprehensible and to increase homeworks and responsibilities.[8,15,24-30] To address these issues, it would be beneficial for universities to re-evaluate their DE practices and standards, and develop methods tailored to the specific needs of each field.

Students were not satisfied with the assessment and evaluation methods used in DE. Students think that there is no equitable measurement and evaluation in DE. For a healthy measurement and evaluation, it is necessary to use technology-supported measurement and evaluation systems, to monitor the digital footprints created by the students during the education, and to evaluate the ethical principles.[18]

On the other side of the equation, the technical challenges that students experience during online examinations need to be addressed. Suliman et al[19] found that almost all students experience technical difficulties in taking online examinations, leading to constant worry about failure. We propose that educational authorities establish standards for online assessment and evaluation, eliminate technical problems, and encourage universities to establish online examination centers.[32]

Implications and Limitations

The study has some limitations, notably that the data were collected exclusively from a single university and solely through online means. This approach excluded students without internet access from participating, thereby limiting the generalizability of the results to only those who could participate. However, the fact that the research data were collected during active DE and from 12 different faculties can be stated as the strengths of the research.

Conclusion

The research revealed that a majority of the students did not have a personal computer and participated in DE via their mobile phones. Students expressed dissatisfaction with both the accessibility of instructors and the infrastructure supporting the DE system. Furthermore, the students did not find DE as effective and efficient as face-to-face education and were not satisfied with the measurement and evaluation methods employed.

To address these issues, it's essential to first analyze the challenges by both students and instructors in the DE process during the pandemic period. Based on this analysis, targeted support and training programs should be planned to meet their specific needs.

Universities must enhance their DE infrastructure, digital content, and assessment systems to effectively and promptly sustain DE during future pandemics. Effective digital content, teaching materials and DE strategies should be developed especially for students studying in applied fields such as medicine, nursing, and dentistry faculties.

To enhance the competencies of instructors in DE, it is recommended to provide training on subjects such as distance teaching methods, blended education models, technology integration in education, measurement, assessment techniques in online settings, development of educational video content, virtual reality applications, providing effective feedback, and understanding digital footprint. Additionally, universities should carry out the necessary infrastructure work to ensure uninterrupted internet access during disasters and pandemic periods.

Ethics Committee Approval: This study was approved by Ethics Committee of Atatürk University (Approval No: 336, Date: 26.06.2020).

Informed Consent: Written informed consent was obtained from the students who agreed to take part in the study.

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