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An Assessment on the Experiences of Distance Education of Students at Veterinary Faculty of Ankara University

Pınar AMBARCIOĞLU[1] Aytaç ÜNSAL ADACA[2,*]

[1]*Mustafa Kemal University, Faculty of Veterinary Medicine, Department of Biostatistics, 31030, Hatay, Türkiye*
[2]*Ankara University, Faculty of Veterinary Medicine, Department of Veterinary History and Deontology, 06110, Ankara, Türkiye*

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ABSTRACT This study aimed to evaluate the perspectives of Ankara University Faculty of Veterinary Medicine students towards distance education. Data were collected from 591 students with a 24-question survey. According to the data, many students often encountered various technological problems and barriers due to lack of infrastructure during the courses. On the other hand, students with comfortable living environments had a more optimistic view of distance education. Having prior experience in distance education had a positive effect on the class participation rate. The frequency of participation in the courses was higher and the frequency of asking questions to the lecturers was lower in first graders. First graders mostly disagreed with the view that distance education provides effective learning or stated that they were undecided. Third and fourth year students did not consider distance education as disadvantageous. While it was seen that many students prefer face-to-face education, the presence of a group of students who want to continue distance education was also noteworthy. In conclusion, physical, technological and temporal flexibility can be seen as one of the strengths of the distance education. The difficulty of accessing the course due to the lack of technological infrastructure is seen as a major disadvantage of this method. Although it has seen that students generally preferred face-to-face education, the existence of a group of students who wanted to continue distance education and reported that the method has some advantages is also remarkable. It can be considered that living in favorable conditions is positively related to students' ability to benefit from distance education.

Keywords:*Distance, Education, Students, Veterinary education.*

ÖZ

Ankara Üniversitesi Veteriner Fakültesi Öğrencilerinin Uzaktan Eğitim Deneyimleri Üzerine Bir Değerlendirme

Bu çalışma ile Ankara Üniversitesi Veteriner Fakültesi öğrencilerinin uzaktan eğitime karşı bakış açılarını değerlendirmek amaçlandı. Bu amaçla 24 soruluk anket formu ile 591 öğrenciden veri toplandı. Verilere göre birçok öğrencinin dersler sırasında altyapı eksikliği nedeniyle sıklıkla çeşitli teknolojik sorunlar ve engellerle karşılaştığı belirlendi. Öte yandan, rahat bir yaşam alanı olan öğrenciler, uzaktan eğitime karşı daha iyimser bir bakış açısına sahipti. Uzaktan eğitim deneyimine sahip olmak derse katılım oranını olumlu etkiledi. Birinci sınıflarda derslere katılım sıklığı daha yüksek, öğretim elemanlarına soru sorma sıklığı ise daha düşüktü. Birinci sınıf öğrencileri çoğunlukla uzaktan eğitimin etkili öğrenme sağladığı görüşüne katılmadı veya kararsız olduklarını belirtti. Üçüncü ve dördüncü sınıf öğrencileri uzaktan eğitimi dezavantajlı olarak değerlendirmedi. Birçok öğrencinin yüz yüze eğitimi tercih ettiği görülürken, uzaktan eğitime devam etmek isteyen bir öğrenci grubunun varlığı da belirlendi. Sonuç olarak, fiziksel, teknolojik ve zamansal esneklik uzaktan eğitimin güçlü yönlerinden biri olarak görülebilir. Teknolojik alt yapı eksikliğinden dolayı derslere katılımın zor olması bu yöntem için büyük bir dezavantaj olarak görülmektedir. Öğrencilerin genel olarak yüz yüze eğitimi tercih ettiği görülse de uzaktan eğitime devam etmek isteyen ve yöntemin bazı avantajlara sahip olduğunu bildiren bir grup öğrencinin varlığı da dikkat çekicidir. Uygun koşullarda yaşamanın öğrencilerin uzaktan eğitimden yararlanabilmesiyle pozitif ilişkili olduğu düşünülebilir.

Anahtar Kelimeler:*Eğitim, Uzaklık, Öğrenciler, Veterinerlik eğitimi.*

✉ *Corresponding author: aytacunsal@ankara.edu.tr

INTRODUCTION

Distance education (DE) is defined as a process that lecturer and the student are not in the same physical environment and education activities are continued with the help of technology. On the other hand, as a part of DE, online teaching (OT) is the process of transferring the knowledge from lecturers or sources to the students synchronously or asynchronously (Oncu and Cakir 2011). Besides, online learning (OL) is defined as access to learning experiences by means of online or technological sources (Moore et al. 2011). In the last decades, there has been an increase in the number of studies on DE, OT, OL and data related to definitions of the terms (Moore et al. 2011), curriculum changes (Sandhu and de Wolf 2020), student satisfaction (Harvey et al. 2017; Abbasi et al. 2020; Elshami et al. 2021; Kafes and Yıldırım 2021; Li et al. 2021), learning flow (Kim et al. 2021), problems related to technological infrastructure (Dost et al. 2020; Li et al. 2021; Parkes and Barrs 2021; Yeh and Tsai 2022), anxiety and stress factors (Rutkowska et al. 2021; Başağaoğlu Demirekin and Buyukcavus 2022), perspectives of lecturers and students (Abbasi et al. 2020; Di Giacomo and Di Paolo 2021).

In the field of health sciences, in addition to medicine (Dost et al. 2020; Ahmady et al. 2021), dentistry (Ertürk Avunduk and Delikan 2021; Gebril et al. 2021; Silva et al. 2021) and nursing (Kim et al. 2021), studies on distance or online teaching/learning experiences of veterinary students (Choudhary 2021; Koort and Åvall-Jääskeläinen 2021; Parkes and Barrs 2021; Mahdy and Sayed 2022) gained momentum. In Türkiye, studies on distance education in veterinary medicine started to come to the fore after the Covid-19 pandemic. In these studies, subjects such as students' coping with pandemic stress (Çelik et al. 2022), veterinary ethics in pandemic (Armutak 2021) and students' perspectives on distance education (Aslım et al. 2023) were published.In addition to these publications in the literature, the main purpose of this study is to reveal the perspectives of students on the distance education method, and distance learning experiences of students of Ankara University Faculty of Veterinary Medicine from the first to the fifth grades.

MATERIAL AND METHODS

Approval of the study was obtained from Ankara University Ethics Committee (Date: 11.10.2021 Decision No: 15/168).Keywords of the abstract of the study were chosen from "The Medical Subject Headings" (MeSH). Turkish keywords were selected from "Türkiye Bilim Terimleri (TBT) version 2.0". The selection of Turkish keywords was prepared by TBT not for the purpose of translating the words in the MeSH into Turkish, but to create a standard equivalent for these words (Türkiye Bilim Terimleri 2020). Since the keywords in the abstracts were chosen from the mentioned scientific platforms, it was necessary to use them without any changes.

Pilot Study

The pilot study was conducted between October 12 and October 15, 2021. The preliminary study was completed with a group of 30 randomly selected students from Ankara University Faculty of Veterinary Medicine (Fall Semester of the 2020-2021 Academic Year). Thanks to the pilot application, the ambiguities, question errors, and incomprehensible questions in the survey were updated and the survey (Table 1) was given its final form.

Data from the pilot study were not used in the power analysis. It was used only to check the applicability of the questionnaire, the comprehensibility of the questions, and whether the survey link works or not. Thanks to the pilot study, the mistakes in the questions and the questions that could not be understood were rearranged. At this stage, expert opinions were received on assessment and evaluation and data processing.

Design of the Study

The research has been designed as a cross-sectional study. The population of the research consists of 1494 students (258 first grade, 283 second grade, 255 third grade, 477 fourth grade, 221 fifth grade) who received distance education via online teaching model at Ankara University Faculty of Veterinary Medicine during the Covid-19 pandemic period. Sample of the study is 591 students. Since it was aimed to reach the entire population in the research, sample selection was not made. Being a student in distance education period at Ankara University Faculty of Veterinary Medicine is determined to be the only criterion for participating voluntarily in the research. The researcher who collected and analyzed the data from students is not in the institution to which the students are affiliated but in the academic staff of a different university. Considering the position of this author, it has aimed to avoid any interaction, conflict of interest, or bias between the students and the data collector. Two weeks after the questionnaire link was sent to all students, they were reminded by a reminder note to participate in the questionnaire in two weeks. At the same time, informed consent was given to the all participants. The study was terminated when all volunteers who agreed to participate in the study were reached. Research design does not require keeping the purpose of the study secret.

Data Collection Tool and Collection of Data

After a comprehensive literature review (Armstrong-Mensah et al. 2020; Can and Köroğlu 2020; Di Pietro et al. 2020; Gençoğlu and Çiftçi 2020) a questionnaire (survey) suitable for this study was created. A survey consisting of 24 questions (Table 1), which was created through Google Forms, and was finalized in the pilot study, was used as a data collection tool. All students studying at Ankara University's Faculty of Veterinary Medicine were invited to participate in the study by sending a survey participation link via their contact addresses (e-mail and phone). The data collection process took place between 18 October and 18 November 2021. Responses from students were stored anonymously in electronic media via Google Forms.

Statistical Analysis

Descriptive statistics were shown as frequency and percentage for qualitative data. Pearson Chi-Square or Fisher's Exact Test was used considering the distribution of expected values to cells to compare the distributions of categorical variables between groups. All statistical analyses were performed using SPSS 14.1. The statistical significance level was considered as $p<0.05$.

RESULTS

Among the invited students, 601 of them accessed the Survey Form via the shared link. 98.3% (n=591) of the students agreed to participate in the study, and 1.7% (n=10) did not want to be included in the study and sent the form without answering the questions.Thus, the sample of the study consisted of 591 students: 55.8% female (n=330) and 44.2% male (n=261) (Table 1). In terms of the veterinary undergraduate program language,

85.1% (n=503) of the participants were in Turkish, and 14.9% (n=88) were in the English program. 34.9% were first grade (n=206), 15.9% were second grade (n=94), 23.4% were third grade (n=138), 20.3% were fourth grade (n=120) and 5.6% were fifth (last) grade (n=33) (Table 1).

In Table 2, the survey questions were associated with the place where students live during their university education. Accordingly, it was seen that the majority of those who reported the inadequacy of the comfort and technological standards of the environment they lived in were students living in dormitories or guesthouses, and those who reported that conditions are sufficient were mostly those who stayed in family/relative house (p<0.001). It was observed that the frequency of asking questions to the lecturers was lower (p=0.044) and the technological difficulties experienced during distance education were higher (p<0.001) among the students living in the dormitories. The students living at the family house were least likely to reported that they never/rarely participated in the courses (p=0.003). Those who stated that DE did not provide effective learning were the students living in the dormitories (p=0.021). Again, compared to DE, those who preferred face-to-face education were students living in dormitories at a slightly higher rate (p=0.003). The majority of those who stated that DE has disadvantages (p=0.030) but not advantages (p=0.032) consist of students living in dormitories. Hence, more than half of the students who stated that they did not want to continue DE after resuming face-to-face education were formed by the ones living in dormitories (p=0.004).

In Table 3, the comfort and technological standards of the environment in which the students live and the distribution of their answers to the questions were related. Accordingly, the frequency of participation in the courses and the frequency of asking questions were higher, and the frequency of technological problems were lower for the students who stated that the environment they lived in is comfortable and have high technological standards (p=0.004, p<0.001, and p<0.001, respectively). Therefore, these students mostly stated that DE provides effective learning, has advantages, does not have disadvantages, and prefer DE over face-to-face education (p<0.001, p<0.001, p<0.001, respectively). Similarly, the students in this group thought that DE is *definitely applicable* or *partially applicable* in practical courses (p=0.001). As a result, students who stated that the environment they lived in is comfortable and the technological standards are high, mostly stated that they wanted to continue DE after switching to face-to-face education again p<0.001).

Table 4 shows the relationship between whether DE provides effective learning and the other answers of the students. Accordingly, students who thought that DE did not provide effective learning stated that the comfort of the environment they lived in was inadequate, and the frequency of participation in the courses and asking questions was less (p<0.001, p=0.001, p<0.001, respectively). These students also stated that the effectiveness of the course duration was less, and they experienced more technological problems during the

courses (p<0.001). Based on these data, students who thought that DE did not provide effective learning mostly preferred face-to-face education and stated that it was not appropriate to use DE in practical courses (p<0.001). It was observed that almost all of these students thought that DE was not advantageous but disadvantageous (p<0.001, p<0.001, respectively). Similarly, students in this group reported negative opinions about the safety of remote exams (p<0.001). As a result, they mostly did not want to continue DE after switching to face-to-face education (p<0.001).

In Table 5, students' preferences between DE and face-to-face education were examined. Correspondingly, although face-to-face education is mostly preferred, it was seen that the rate of preference for DE was slightly higher (p<0.001) and the frequency of participation in distance courses was higher (p=0.036) for students whose environment was comfortable. It was observed that the students who preferred face-to-face education asked the lecturers fewer questions during the online courses (p<0.001). In addition, students who had technological problems during DE preferred face-to-face education (p<0.001). Accordingly, students who preferred face-to-face education mostly reported that DE did not provide effective learning and was disadvantageous (p<0.001 and p<0.001). In parallel, the group preferring face-to-face education reported that DE should not be used in applied courses, exams of the DE courses should be face-to-face, and online exams were not held securely (p<0.001, p=0.005 and p<0.001, respectively). Unsurprisingly, students who preferred face-to-face education stated that they did not or sometimes wanted to continue DE in the future (p<0.001).

In Table 6, the distribution of the answers given by the students to the survey is correlated with the grade they are enrolled in. According to Table 6, the frequency of participation in the courses is higher and the frequency of asking questions to the lecturers is lower in first graders (p<0.001 and p=0.008, respectively). Among all grades, first graders are less likely to attend courses due to technological glitches (p<0.001). First graders mostly disagree with the view that DE provides effective learning or state that they are undecided (p<0.001).

Accordingly, they mostly prefer the face-to-face education method, reporting that DE has advantages as well as disadvantages (p<0.001, p=0.001, p<0.001, respectively). On the other hand, third and fourth graders state that DE is not disadvantageous. Similarly, first graders view the use of DE in applied courses negatively, while third and fourth graders view it positively (p=0.018). It is mostly the first and third graders who want the exams of the DE courses to be online and the rate of undecided freshmen is quite high (p=0.002). Similarly, first-year students report that distance exams are not safe and consist the majority group among undecided participants (p<0.001). Parallel to these results, first graders mostly do not or sometimes want to continue DE, and fourth graders mostly want continue DE after resuming face-to-face education (p<0.001).

Table 7 showed the relationship between veterinary students' experience of DE prior to the COVID-19 pandemic and their answers to the survey questions. Accordingly, the frequency of asking questions during the courses of the students who received DE before the pandemic was higher than those who did not (p=0.005). In addition, students with DE experience stated that they encountered fewer technological difficulties during the courses compared to those who did not have DE experience (p=0.021). The majority of the students without DE experience stated that DE did not provide effective learning (p=0.005), and they preferred face-to-face education over DE (p=0.019). Accordingly, the students who thought that DE is disadvantageous were those who had no previous experience in DE (p<0.001). In addition, those who stated that DE should not be applied in applied courses or that it is partially applicable were also students who did not have prior DE experience (p=0.007).

Table 1: Frequency and percentage of all questions in the survey.

Questions	n (%)
Gender	
Female	330 (55.8)
Male	261 (44.2)
Which undergraduate program are you enrolled in veterinary school?	
Turkish undergraduate program	503 (85.1)
English undergraduate program	88 (14.9)
Grade	
1	206 (34.9)
2	94 (15.9)
3	138 (23.4)
4	120 (20.3)
5	33 (5.6)
Where do you currently live for your university education?	
Family / relative house	177 (29.9)
Student house	164 (27.7)
Dormitory/guesthouse etc.	250 (42.3)
Did you receive online/distance education before the Covid-19 pandemic?	
Yes	207 (35.0)
No	384 (65.0)
Do you think you have the technological knowledge required for distance education?	
Yes	389 (65.8)
No	38 (6.4)
Partially	164 (27.7)
What devices do you use in distance education?	
Personal computer	517 (87.5)
Personal phone	448 (75.8)
Personal tablet	81 (13.7)
Someone else's/public computer	94 (15.9)
Someone else's/public phone	17 (2.9)
Someone else's/public tablet	10 (1.7)
How would you evaluate the comfort and technological standards of your living environment in terms of following distance education?	
Very inadequate	32 (5.4)
Inadequate	88 (14.9)
Average	209 (35.4)
Adequate	178 (30.1)
Very adequate	84 (14.2)
How would you evaluate the frequency of your instant/online participation in the online course?	
Never	6 (1.0)
Rarely	40 (6.8)
Sometimes	95 (16.1)
Often	282 (47.7)
Always	168 (28.4)
How would you evaluate the frequency of asking questions to the lecturer during the online course?	
Never	107 (18.1)
Rarely	257 (43.5)
Sometimes	164 (27.7)
Often	41 (6.9)
Always	22 (3.7)
How would you evaluate the frequency of asking questions of the lecturer during the online course?	
Never	9 (1.5)
Rarely	148 (25.0)
Sometimes	301 (50.9)
Often	110 (18.6)
Always	23 (3.9)
What is your opinion on the effective use of the duration of the course given by distance education?	
Never	42 (7.1)
Rarely	93 (15.7)
Sometimes	160 (27.1)
Often	236 (39.9)
Always	60 (10.2)
Do you experience technological/technical problems (disconnection, system not working, storage problems, etc.) during distance education?	
Never	28 (4.7)
Rarely	100 (16.9)
Sometimes	227 (38.4)
Often	171 (28.9)
Always	65 (11.0)
Have any lecturers reported that they could not attend the distance education course due to technological/technical difficulties?	
Yes	344 (58.2)
No	247 (41.8)
Do you think distance education provides effective learning?	
Yes	121 (20.5)
No	327 (55.3)
Undecided	143 (24.2)
How often do you watch the recorded videos of a course you took with distance education?	
Never	54 (9.1)
1 time	222 (37.6)
2 times	176 (29.8)
3 times	79 (13.4)
4 times	11 (1.9)
5 times or more	49 (8.3)
When you compare distance education and face-to-face education methods, which one do you prefer?	
Face-to-face education method	408 (69.0)
Online learning method	112 (19.0)
Undecided	71 (12.0)
Do you think distance education has some advantages?	
Yes	403 (68.2)
No	121 (20.5)
Undecided	67 (11.3)
Do you think distance education has some disadvantages?	
Yes	515 (87.1)
No	44 (7.4)
Undecided	32 (5.4)
How would you evaluate the use of distance education in practical courses?	
Definitely applicable	41 (6.9)
Definitely not applicable	399 (67.5)
Partially applicable	141 (23.9)
Undecided	10 (1.7)
Which method do you think should be used for the assessment and evaluation of the course you take with distance education?	
Face-to-face assessment	81 (13.7)
Online assessment	468 (79.2)
Undecided	42 (7.1)
Which assessment method do you prefer in distance education?	
Open-ended questions exam	21 (3.6)
Multiple choice exam	312 (52.8)
Oral exam	2 (0.3)
Homework presentation	140 (23.7)
Hybrid assessment including a combination of one or more of the open-ended questions exam, multiple choice exam, oral exam, and homework presentation	116 (19.6)
Do you think that online/remote exams are held securely (students answer questions by being honest)?	
Yes	161 (27.2)
No	283 (47.9)
Partially	147 (24.9)
Would you like to continue distance education after switching to face-to-face education again?	
Yes	138 (23.4)
No	204 (34.5)
Sometimes	231 (39.1)
Undecided	18 (3.0)

Table 2: Distribution of answers to living places.

		Where do you currently live for your university education?			p
		Family/ relative house	**Student house**	**Dormitory/ guesthouse etc.**	
How would you evaluate the comfort and technological standards of your living environment in terms of following online learning?	*Very inadequate / Inadequate*	18 (15.0)	18 (15.0)	84 (70.0)	**<0.001[1]**
	Average	56 (26.8)	48 (23.0)	105 (50.2)	
	Adequate/ Very adequate	103 (39.3)	98 (37.4)	61 (23.3)	
How would you evaluate the frequency of your instant/online participation in the online course?	*Never/ Rarely*	7 (15.2)	18 (39.1)	21 (45.7)	**0.003[1]**
	Sometimes	24 (25.3)	38 (40.0)	33 (34.7)	
	Often / Always	146 (32.4)	108 (24.0)	196 (43.6)	
How would you evaluate the frequency of asking questions to the lecturer during the online course?	*Never/ Rarely*	98 (26.9)	99 (27.2)	17 (45.9)	**0.044[1]**
	Sometimes	56 (34.1)	42 (25.6)	66 (40.2)	
	Often / Always	23 (36.5)	23 (36.5)	17 (27.0)	
How would you evaluate the frequency of asking questions of the lecturer during the online course?	*Never/ Rarely*	40 (25.5)	40 (25.5)	77 (49.0)	**0.026[1]**
	Sometimes	97 (32.2)	75 (24.9)	129 (42.9)	
	Often / Always	40 (30.1)	49 (36.8)	44 (33.1)	
What is your opinion on the effective use of the duration of the course given by distance education?	*Never/ Rarely*	49 (36.3)	34 (25.2)	52 (38.5)	0.233[1]
	Sometimes	38 (23.8)	49 (30.6)	73 (45.6)	
	Often / Always	90 (30.4)	81 (27.4)	125 (42.2)	
Do you experience technological/technical problems (disconnection, system not working, storage problems, etc.) during distance education?	*Never/ Rarely*	56 (43.8)	43 (33.6)	29 (22.7)	**<0.001[1]**
	Sometimes	67 (29.5)	65 (28.6)	95 (41.9)	
	Often / Always	54 (22.9)	56 (23.7)	126 (53.4)	
Have any lecturers reported that they could not attend the distance education course due to technological/technical difficulties?	*Yes*	102 (29.7)	109 (31.7)	133 (38.7)	**0.027[1]**
	No	75 (30.4)	55 (22.3)	117 (47.4)	
Do you think distance education provides effective learning?	*Yes*	39 (32.2)	41 (33.9)	41 (33.9)	**0.021[1]**
	No	88 (26.9)	81 (24.8)	158 (48.3)	
	Undecided	50 (35.0)	42 (29.4)	51 (35.7)	
How often do you watch the recorded videos of a course you took with distance education?	*Never*	18 (33.3)	17 (31.5)	19 (35.2)	0.166[2]
	1 time	58 (26.1)	55 (24.8)	109 (49.1)	
	2 times	56 (31.8)	49 (27.8)	71 (40.3)	
	3 times	25 (31.6)	20 (25.3)	34 (43.0)	
	4 times	5 (45.5)	2 (18.2)	4 (36.4)	
	5 times or more	15 (30.6)	21 (42.9)	13 (26.5)	
When you compare online learning and face-to-face education methods, which one do you prefer?	*Face-to-face education*	117 (28.7)	98 (24.0)	193 (47.3)	**0.003[1]**
	Online learning	37 (33.0)	43 (38.4)	32 (28.6)	
	Undecided	23 (32.4)	23 (32.4)	25 (35.2)	

Table 2 (continued): Distribution of answers to living places.

Do you think distance education has some advantages?	*Yes*	129 (32.0)	120 (29.8)	154 (38.2)	**0.032[1]**
	No	27 (22.3)	31 (25.6)	63 (52.1)	
	Undecided	21 (31.3)	13 (19.4)	33 (49.3)	
Do you think distance education has some disadvantages?	*Yes*	156 (30.3)	134 (26.0)	225 (43.7)	**0.030[1]**
	No	8 (18.2)	19 (43.2)	17 (38.6)	
	Undecided	13 (40.6)	11 (34.4)	8 (25.0)	
How would you evaluate the use of distance education in practical courses?	*Definitely applicable*	11 (26.8)	14 (34.1)	16 (39.0)	0.646[2]
	Definitely not applicable	117 (29.3)	104 (26.1)	178 (44.6)	
	Partially applicable	45 (31.9)	44 (31.2)	52 (36.9)	
	Undecided	4 (40.0)	2 (20.0)	4 (40.0)	
Which method do you think should be used for the assessment and evaluation of the course you take with distance education?	*Face-to-face assessment*	26 (32.1)	14 (17.3)	41 (50.6)	0.114[1]
	Online assessment	142 (30.3)	136 (29.1)	190 (40.6)	
	Undecided	9 (21.4)	14 (33.3)	19 (45.2)	
Which assessment method do you prefer in distance education?	*Open-ended questions exam*	2 (9.5)	4 (19.0)	15 (71.4)	**<0.001[2]**
	Multiple choice exam	97 (31.1)	68 (21.8)	147 (47.1)	
	Oral exam	1 (50.0)	1 (50.0)	-	
	Homework presentation	35 (25.0)	60 (42.9)	45 (32.1)	
	Hybrid assessment including a combination of one or more of the open-ended questions exam, multiple choice exam, oral exam, and homework presentation	42 (36.2)	31 (26.7)	43 (37.1)	
Do you think that online/remote exams are held securely (students answer questions by being honest)?	*Yes*	43 (26.7)	51 (31.7)	67 (41.6)	0.726[1]
	No	88 (31.1)	75 (26.5)	120 (42.4)	
	Undecided	46 (31.3)	38 (25.9)	63 (42.9)	
Would you like to continue distance education after switching to face-to-face education again?	*Yes*	49 (35.5)	46 (33.3)	43 (31.2)	**0.004[2]**
	No	51 (25.0)	45 (22.1)	108 (52.9)	
	Sometimes	71 (30.7)	70 (30.3)	80 (39.0)	
	Undecided	6 (33.3)	3 (16.7)	9 (50.0)	

[1]: Pearson Chi-Square

[2]: Fisher's Exact Test

Table 3: Distribution of answers to technological infrastructure and comfort.

		How would you evaluate the comfort and technological standards of your living environment in terms of following distance education?			**p**
		Very inadequate/ inadequate	**Average**	**Adequate/ Very adequate**	
How would you evaluate the frequency of your instant/online participation in the online course?	*Never/ Rarely*	10 (21.7)	17 (37.0)	19 (41.3)	**0.004[1]**
	Sometimes	29 (30.5)	40 (42.1)	26 (27.4)	
	Often / Always	81 (18.0)	152 (33.8)	217 (48.2)	
How would you evaluate the frequency of asking questions to the lecturer during the online course?	*Never/ Rarely*	84 (23.1)	143 (39.3)	137 (37.6)	**<0.001[1]**
	Sometimes	30 (18.3)	56 (34.1)	78 (47.6)	
	Often / Always	6 (9.5)	10 (15.9)	47 (74.6)	
How would you evaluate the frequency of asking questions of the lecturer during the online course?	*Never/ Rarely*	44 (28.0)	69 (43.9)	44 (28.0)	**<0.001[1]**
	Sometimes	61 (20.3)	102 (33.9)	138 (45.8)	
	Often / Always	15 (11.3)	38 (28.6)	80 (60.2)	
What is your opinion on the effective use of the duration of the course given by distance education?	*Never/ Rarely*	37 (27.4)	56 (41.5)	42 (31.1)	**<0.001[1]**
	Sometimes	41 (25.6)	64 (40.0)	55 (34.4)	
	Often / Always	42 (14.2)	89 (30.1)	165 (55.7)	
Do you experience technological/technical problems (disconnection, system not working, storage problems, etc.) during distance education?	*Never/ Rarely*	5 (3.9)	13 (10.2)	110 (85.9)	**<0.001[1]**
	Sometimes	22 (9.7)	93 (41.0)	112 (49.3)	
	Often / Always	93 (39.4)	103 (43.6)	40 (16.9)	
Have any lecturers reported that they could not attend the distance education course due to technological/ technical difficulties?	*Yes*	80 (23.3)	129 (37.5)	135 (39.2)	**0.009[1]**
	No	40 (16.2)	80 (32.4)	127 (51.4)	
Do you think distance education provides effective learning?	*Yes*	11 (9.1)	19 (15.7)	91 (75.2)	**<0.001[1]**
	No	94 (28.7)	127 (38.8)	106 (32.4)	
	Undecided	15 (10.5)	63 (44.1)	65 (45.5)	
How often do you watch the recorded videos of a course you took with distance education?	*Never*	20 (37.0)	12 (22.2)	22 (40.7)	**<0.001[2]**
	1 time	51 (23.0)	84 (37.8)	87 (39.2)	
	2 times	31 (17.6)	64 (36.4)	81 (46.0)	
	3 times	10 (12.7)	33 (41.8)	36 (45.6)	
	4 times	3 (27.3)	1 (9.1)	7 (63.6)	
	5 times or more	5 (10.2)	15 (30.6)	29 (59.2)	

Table 3 (continued): Distribution of answers to technological infrastructure and comfort.

When you compare distance education and face-to-face education methods, which one do you prefer?	*Face-to-face education method*	100 (24.5)	161 (39.5)	147 (36.0)	**<0.001[1]**
	Online learning method	8 (7.1)	20 (17.9)	84 (75.0)	
	Undecided	12 (16.9)	28 (39.4)	31 (43.7)	
Do you think distance education has some advantages?	*Yes*	63 (15.6)	130 (32.3)	210 (52.1)	**<0.001[1]**
	No	44 (36.4)	45 (37.2)	32 (26.4)	
	Undecided	13 (19.4)	34 (50.7)	20 (29.9)	
Do you think distance education has some disadvantages?	*Yes*	113 (21.9)	197 (38.3)	205 (39.8)	**<0.001[1]**
	No	4 (9.1)	6 (13.6)	34 (77.3)	
	Undecided	3 (9.4)	6 (18.8)	23 (71.9)	
How would you evaluate the use of distance education in practical courses?	*Definitely applicable*	8 (19.5)	5 (12.2)	28 (68.3)	**0.001[2]**
	Definitely not applicable	90 (22.6)	154 (38.6)	155 (38.8)	
	Partially applicable	21 (14.9)	43 (30.5)	77 (54.6)	
	Undecided	1 (10.0)	7 (70.0)	2 (20.0)	
Which method do you think should be used for the assessment and evaluation of the course you take with distance education?	*Face-to-face assessment*	17 (21.0)	37 (45.7)	27 (33.3)	**0.006[1]**
	Online assessment	98 (20.9)	149 (31.8)	221 (47.2)	
	Undecided	5 (11.9)	23 (54.8)	14 (33.3)	
Which assessment method do you prefer in distance education?	*Open-ended questions exam*	9 (42.9)	8 (38.1)	4 (19.0)	**0.003[2]**
	Multiple choice exam	63 (20.2)	97 (31.1)	152 (48.7)	
	Oral exam	-	-	2 (100.0)	
	Homework presentation	34 (24.3)	51 (36.4)	55 (39.3)	
	Hybrid assessment including a combination of one or more of the open-ended questions exam, multiple choice exam, oral exam, and homework presentation	14 (12.1)	53 (45.7)	49 (42.2)	
Do you think that online/remote exams are held securely (students answer questions by being honest)?	*Yes*	34 (21.1)	41 (25.5)	86 (53.4)	**<0.001[1]**
	No	61 (21.6)	110 (38.9)	112 (39.6)	
	Undecided	25 (17.0)	58 (39.5)	64 (43.5)	
Would you like to continue distance education after switching to face-to-face education again?	*Yes*	14 (10.1)	27 (19.6)	97 (70.3)	**<0.001[2]**
	No	67 (32.8)	83 (40.7)	54 (26.5)	
	Sometimes	34 (14.7)	91 (39.4)	106 (45.9)	
	Undecided	5 (27.8)	8 (44.4)	5 (27.8)	

[1]: Pearson Chi-Square

[2]: Fisher's Exact Test

Table 4: Distribution of answers to effectiveness of distance education.

		Do you think distance education provides effective learning?			p
		Yes	**No**	**Undecided**	
How would you evaluate the comfort and technological standards of your living environment in terms of following distance education?	*Very inadequate / Inadequate*	11 (9.2)	94 (78.3)	15 (12.5)	**<0.001[1]**
	Average	19 (9.1)	127 (60.8)	63 (30.1)	
	Adequate/ Very adequate	91 (34.7)	106 (40.5)	65 (24.8)	
How would you evaluate the frequency of your instant/online participation in the online course?	*Never/ Rarely*	3 (6.5)	34 (73.9)	9 (19.6)	**0.001[1]**
	Sometimes	9 (9.5)	63 (66.3)	23 (24.2)	
	Often / Always	109 (24.2)	230 (51.1)	111 (24.7)	
How would you evaluate the frequency of asking questions to the lecturer during the online course?	*Never/ Rarely*	36 (9.9)	249 (68.4)	79 (21.7)	**<0.001[1]**
	Sometimes	44 (26.8)	69 (42.1)	51 (31.1)	
	Often / Always	41 (65.1)	9 (14.3)	13 (20.6)	
How would you evaluate the frequency of asking questions of the lecturer during the online course?	*Never/ Rarely*	14 (8.9)	116 (73.9)	27 (17.2)	**<0.001[1]**
	Sometimes	51 (16.9)	165 (54.8)	85 (28.2)	
	Often / Always	56 (42.1)	46 (34.6)	31 (23.3)	
What is your opinion on the effective use of the duration of the course given by distance education?	*Never/ Rarely*	5 (3.7)	108 (80.0)	22 (16.3)	**<0.001[1]**
	Sometimes	12 (7.5)	106 (66.3)	42 (26.3)	
	Often / Always	104 (35.1)	113 (38.2)	79 (26.7)	
Do you experience technological/technical problems (disconnection, system not working, storage problems, etc.) during distance education?	*Never/ Rarely*	59 (46.1)	40 (31.3)	29 (22.7)	**<0.001[1]**
	Sometimes	44 (19.4)	116 (51.1)	67 (29.5)	
	Often / Always	18 (7.6)	171 (72.5)	47 (19.9)	
Have any lecturers reported that they could not attend the distance education course due to technological/technical difficulties?	*Yes*	51 (14.8)	208 (60.5)	85 (24.7)	**<0.001[1]**
	No	70 (28.3)	119 (48.2)	58 (23.5)	
How often do you watch the recorded videos of a course you took with distance education?	*Never*	7 (13.0)	41 (75.9)	6 (11.1)	**<0.001[2]**
	1 time	31 (14.0)	139 (62.6)	52 (23.4)	
	2 times	35 (19.9)	85 (48.3)	56 (31.8)	
	3 times	19 (24.1)	41 (51.9)	19 (24.1)	
	4 times	5 (45.5)	3 (27.3)	3 (27.3)	
	5 times or more	24 (49.0)	3 (36.7)	7 (14.3)	

Table 4 (continued): Distribution of answers to effectiveness of distance education.

When you compare distance education and face-to-face education methods, which one do you prefer?	*Face-to-face education method*	14 (3.4)	306 (75.0)	88 (21.6)	**<0.001[1]**
	Online learning method	88 (78.6)	2 (1.8)	22 (19.6)	
	Undecided	19 (26.8)	19 (26.8)	33 (46.5)	
Do you think distance education has some advantages?	*Yes*	120 (29.8)	161 (40.0)	122 (30.3)	**<0.001[2]**
	No	-	114 (94.2)	7 (5.8)	
	Undecided	1 (1.5)	52 (77.6)	14 (20.9)	
Do you think distance education has some disadvantages?	*Yes*	60 (11.7)	321 (62.3)	134 (26.0)	**<0.001[2]**
	No	41 (93.2)	3 (6.8)	-	
	Undecided	20 (62.5)	3 (9.4)	9 (28.1)	
How would you evaluate the use of distance education in practical courses?	*Definitely applicable*	34 (82.9)	6 (14.6)	1 (2.4)	**<0.001[2]**
	Definitely not applicable	35 (8.8)	275 (68.9)	89 (22.3)	
	Partially applicable	47 (33.3)	43 (30.5)	51 (36.2)	
	Undecided	5 (50.0)	3 (30.0)	2 (20.0)	
Which method do you think should be used for the assessment and evaluation of the course you take with distance education?	*Face-to-face assessment*	12 (14.8)	50 (61.7)	19 (23.5)	0.172[1]
	Online assessment	105 (22.4)	252 (53.8)	111 (23.7)	
	Undecided	4 (9.5)	25 (59.5)	13 (31.0)	
Which assessment method do you prefer in distance education?	*Open-ended questions exam*	3 (14.3)	16 (76.2)	2 (9.5)	0.191[2]
	Multiple choice exam	73 (23.4)	166 (53.2)	73 (23.4)	
	Oral exam	1 (50.0)	-	1 (50.0)	
	Homework presentation	26 (18.6)	78 (55.7)	36 (25.7)	
	Hybrid assessment including a combination of one or more of the open-ended questions exam, multiple choice exam, oral exam, and homework presentation	18 (15.5)	67 (57.8)	31 (26.7)	
Do you think that online/remote exams are held securely (students answer questions by being honest)?	*Yes*	69 (42.9)	66 (41.0)	26 (16.1)	**<0.001[1]**
	No	25 (8.8)	197 (69.6)	61 (21.6)	
	Undecided	27 (18.4)	64 (43.5)	56 (38.1)	
Would you like to continue distance education after switching to face-to-face education again?	*Yes*	95 (68.8)	17 (12.3)	26 (18.8)	**<0.001[2]**
	No	5 (2.5)	175 (85.8)	24 (11.8)	
	Sometimes	20 (8.7)	123 (53.2)	88 (38.1)	
	Undecided	1 (5.6)	12 (66.7)	5 (27.8)	

[1]: Pearson Chi-Square, [2]: Fisher's Exact Test.

Table 5: Distribution of answers to the comparison of distance education and face-to-face education.

		When you compare distance education and face-to-face education methods, which one do you prefer?			p
		Face-to-face education	**Distance education**	**Undecided**	
How would you evaluate the comfort and technological standards of your living environment in terms of following distance education?	*Very inadequate / Inadequate*	100 (83.3)	8 (6.7)	12 (10.0)	**<0.001[1]**
	Average	161 (77.0)	20 (9.6)	28 (13.4)	
	Adequate/ Very adequate	147 (56.1)	84 (32.1)	31 (11.8)	
How would you evaluate the frequency of your instant/online participation in the online course?	*Never/ Rarely*	34 (73.9)	5 (10.9)	7 (15.2)	**0.036[1]**
	Sometimes	72 (75.8)	9 (9.5)	7 (15.2)	
	Often / Always	302 (67.1)	98 (21.8)	50 (11.1)	
How would you evaluate the frequency of asking questions to the lecturer during the online course?	*Never/ Rarely*	287 (78.8)	30 (8.2)	47 (12.9)	**<0.001[1]**
	Sometimes	103 (62.8)	44 (26.8)	17 (10.4)	
	Often / Always	18 (28.6)	38 (60.3)	7 (11.1)	
How would you evaluate the frequency of asking questions of the lecturer during the online course?	*Never/ Rarely*	130 (82.8)	11 (7.0)	16 (10.2)	**<0.001[1]**
	Sometimes	214 (71.1)	48 (15.9)	39 (13.0)	
	Often / Always	64 (48.1)	53 (39.8)	16 (12.0)	
What is your opinion on the effective use of the duration of the course given by distance education?	*Never/ Rarely*	118 (87.4)	5 (3.7)	12 (8.9)	**<0.001[1]**
	Sometimes	131 (81.9)	9 (5.6)	20 (12.5)	
	Often / Always	159 (53.7)	98 (33.1)	39 (13.2)	
Do you experience technological/technical problems (disconnection, system not working, storage problems, etc.) during distance education?	*Never/ Rarely*	61 (47.7)	56 (43.8)	11 (8.6)	**<0.001[1]**
	Sometimes	156 (68.7)	36 (15.9)	35 (15.4)	
	Often / Always	191 (80.9)	20 (8.5)	25 (10.6)	
Have any lecturers reported that they could not attend the distance education course due to technological/technical difficulties?	*Yes*	253 (73.5)	43 (12.5)	48 (14.0)	**<0.001[1]**
	No	155 (62.8)	69 (27.9)	23 (9.3)	
Do you think distance education provides effective learning?	*Yes*	14 (11.6)	88 (72.7)	19 (15.7)	**<0.001[1]**
	No	306 (93.6)	2 (0.6)	19 (5.8)	
	Undecided	88 (61.5)	22 (15.4)	33 (23.1)	
How often do you watch the recorded videos of a course you took with distance education?	*Never*	46 (85.2)	4 (7.4)	4 (7.4)	**<0.001[2]**
	1 time	171 (77.0)	21 (9.5)	30 (13.5)	
	2 times	118 (67.0)	37 (21.0)	21 (11.9)	
	3 times	46 (58.2)	24 (30.4)	9 (11.4)	
	4 times	6 (54.5)	4 (36.4)	1 (9.1)	
	5 times or more	21 (42.9)	22 (44.9)	1 (9.1)	

Table 5 (continued): Distribution of answers to the comparison of distance education and face-to-face education.

Do you think distance education has some advantages?	*Yes*	224 (55.6)	111 (27.5)	68 (16.9)	**<0.001[2]**
	No	119 (98.3)	-	2 (1.7)	
	Undecided	65 (97.0)	1 (1.5)	1 (1.5)	
Do you think distance education has some disadvantages?	*Yes*	396 (76.9)	54 (10.5)	65 (12.6)	**<0.001[2]**
	No	3 (6.8)	40 (90.9)	1 (2.3)	
	Undecided	9 (28.1)	18 (56.3)	5 (15.6)	
How would you evaluate the use of distance education in practical courses?	*Definitely applicable*	6 (14.6)	31 (75.6)	4 (9.8)	**<0.001[1]**
	Definitely not applicable	338 (84.7)	28 (7.0)	33 (8.3)	
	Partially applicable	62 (44.0)	49 (34.8)	30 (21.3)	
	Undecided	2 (20.0)	4 (40.0)	4 (40.0)	
Which method do you think should be used for the assessment and evaluation of the course you take with distance education?	*Face-to-face assessment*	67 (82.7)	7 (8.6)	7 (8.6)	**0.005[1]**
	Online assessment	312 (66.7)	101 (21.6)	55 (11.8)	
	Undecided	29 (69.0)	4 (9.5)	9 (21.4)	
Which assessment method do you prefer in distance education?	*Open-ended questions exam*	17 (81.0)	1 (4.8)	3 (14.39	0.391[2]
	Multiple choice exam	205 (65.7)	68 (21.8)	39 (12.5)	
	Oral exam	1 (50.0)	1 (50.0)	-	
	Homework presentation	99 (70.7)	24 (17.1)	17 (12.1)	
	Hybrid assessment including a combination of one or more of the open-ended questions exam, multiple choice exam, oral exam, and homework presentation	86 (74.1)	18 (15.5)	12 (10.3)	
Do you think that online/remote exams are held securely (students answer questions by being honest)?	*Yes*	75 (46.6)	64 (39.8)	22 (13.7)	**<0.001[1]**
	No	235 (83.0)	23 (8.1)	25 (8.8)	
	Undecided	98 (66.7)	25 (17.0)	24 (16.3)	
Would you like to continue distance education after switching to face-to-face education again?	*Yes*	24 (17.4)	90 (65.2)	24 (17.4)	**<0.001[2]**
	No	201 (98.5)	1 (0.5)	2 (1.0)	
	Sometimes	169 (73.2)	20 (8.7)	42 (18.29	
	Undecided	14 (77.8)	1 (5.6)	3 (16.7)	

[1]: Pearson Chi-Square

[2]: Fisher's Exact Test

Table 6: Distribution of answers to academic grades.

		Academic grades					p
		1	**2**	**3**	**4**	**5**	
How would you evaluate the comfort and technological standards of your living environment in terms of following distance education?	Very inadequate / Inadequate	49 (40.8)	14 (11.7)	32 (26.7)	20 (16.7)	5 (4.2)	0.191[1]
	Average	79 (37.8)	35 (16.7)	48 (23.0)	38 (18.2)	9 (4.3)	
	Adequate/ Very adequate	78 (29.8)	45 (17.2)	58 (22.1)	62 (23.7)	19 (7.3)	
How would you evaluate the frequency of your instant/online participation in the distance education course?	Never/ Rarely	9 (19.6)	8 (17.4)	12 (26.1)	7 (15.2)	10 (21.7)	**<0.001[2]**
	Sometimes	23 (24.2)	12 (12.6)	22 (23.2)	26 (27.4)	12 (12.6)	
	Often / Always	174 (38.7)	74 (16.4)	104 (23.1)	87 (19.3)	11 (2.4)	
How would you evaluate the frequency of asking questions to the lecturer during the distance course?	Never/ Rarely	136 (37.4)	60 (16.5)	83 (22.8)	67 (18.4)	18 (4.9)	**0.008[2]**
	Sometimes	62 (37.8)	21 (12.8)	34 (20.7)	36 (22.0)	11 (6.7)	
	Often / Always	8 (12.7)	13 (20.6)	21 (33.3)	17 (27.0)	4 (6.3)	
How would you evaluate the frequency of asking questions of the lecturer during the distance course?	Never/ Rarely	65 (41.1)	22 (14.0)	31 (19.7)	30 (19.1)	9 (5.7)	0.173[1]
	Sometimes	105 (34.9)	54 (17.9)	67 (22.3)	57 (18.9)	18 (6.0)	
	Often / Always	36 (27.1)	18 (13.5)	40 (30.1)	33 (24.8)	6 (4.5)	
What is your opinion on the effective use of the duration of the course given by distance education?	*Never/ Rarely*	46 (34.1)	17 (12.6)	32 (23.7)	29 (21.5)	11 (8.1)	0.245[1]
	Sometimes	64 (40.0)	28 (17.5)	31 (19.4)	26 (16.3)	11 (6.9)	
	Often / Always	96 (32.4)	49 (16.6)	75 (25.3)	65 (22.0)	11 (3.7)	
Do you experience technological/technical problems (disconnection, system not working, storage problems, etc.) during distance education?	*Never/ Rarely*	41 (32.0)	18 (14.1)	32 (25.0)	31 (24.2)	6 (4.7)	0.524[1]
	Sometimes	82 (36.1)	34 (15.0)	47 (20.7)	52 (22.9)	12 (5.3)	
	Often / Always	83 (35.2)	42 (17.8)	59 (25.0)	37 (15.7)	15 (6.4)	
Have any lecturers reported that they could not attend the distance education course due to technological/technical difficulties?	*Yes*	92 (26.7)	54 (15.7)	92 (26.7)	81 (23.5)	25 (7.3)	**<0.001[1]**
	No	114 (46.2)	40 (16.2)	46 (18.6)	39 (15.8)	8 (3.2)	
Do you think distance education provides effective learning?	*Yes*	22 (18.2)	28 (23.1)	32 (26.4)	36 (29.8)	3 (2.5)	**<0.001[1]**
	No	139 (42.5)	44 (13.5)	70 (21.4)	53 (16.2)	21 (6.4)	
	Undecided	45 (31.5)	22 (15.4)	36 (25.2)	31 (21.7)	9 (6.3)	
How often do you watch the recorded videos of a course you took with distance education?	*Never*	19 (35.2)	5 (9.3)	15 (27.8)	14 (25.9)	1 (1.9)	**0.041[2]**
	1 time	93 (41.9)	35 (15.8)	40 (18.0)	44 (19.8)	10 (4.5)	
	2 times	57 (32.4)	24 (13.6)	52 (29.5)	33 (18.8)	10 (5.7)	
	3 times	23 (29.1)	17 (21.5)	17 (21.5)	15 (19.0)	7 (8.9)	
	4 times	2 (18.2)	6 (54.5)	2 (18.2)	1 (9.1)	-	
	5 times or more	12 (24.5)	7 (14.3)	12 (24.5)	13 (26.5)	5 (10.2)	

Table 6 (continued): Distribution of answers to academic grades.

When you compare distance education and face-to-face education methods, which one do you prefer?	*Face-to-face education method*	167 (40.9)	62 (15.2)	87 (21.3)	70 (17.2)	22 (5.4)	**<0.001[2]**
	Distance education method	18 (16.1)	18 (16.1)	33 (29.5)	37 (33.0)	6 (5.4)	
	Undecided	21 (29.6)	14 (19.7)	18 (25.4)	113 (18.3)	5 (7.0)	
Do you think distance education has some advantages?	*Yes*	113 (28.0)	72 (17.9)	104 (25.8)	91 (22.6)	23 (5.7)	**0.001[2]**
	No	59 (48.8)	12 (9.9)	22 (18.2)	21 (17.4)	7 (5.8)	
	Undecided	34 (50.7)	10 (14.9)	12 (17.9)	8 (11.9)	3 (4.5)	
Do you think distance education has some disadvantages?	*Yes*	195 (37.9)	80 (15.5)	110 (21.4)	98 (19.0)	32 (6.2)	**<0.001[2]**
	No	6 (13.6)	6 (13.6)	15 (34.1)	16 (36.4)	1 (2.3)	
	Undecided	5 (15.6)	8 (25.0)	13 (40.6)	6 (18.8)	-	
How would you evaluate the use of distance education in applied courses?	*Definitely applicable*	7 (17.1)	6 (14.6)	11 (26.8)	16 (39.0)	1 (2.4)	**0.018[2]**
	Definitely not applicable	158 (39.6)	63 (15.8)	84 (21.1)	72 (18.0)	22 (5.5)	
	Partially applicable	36 (25.5)	24 (17.0)	40 (28.4)	31 (22.0)	10 (7.1)	
	Undecided	5 (50.0)	1 (10.0)	3 (30.0)	1 (10.0)	-	
Which method do you think should be used for the assessment and evaluation of the course you take with distance education?	*Face-to-face assessment*	31 (38.3)	8 (9.9)	11 (13.6)	20 (24.7)	11 (13.6)	**0.002[2]**
	Online assessment	156 (33.3)	81 (17.3)	120 (25.6)	94 (20.1)	17 (3.6)	
	Undecided	19 (45.2)	5 (11.9)	7 (16.7)	6 (14.3)	5 (11.9)	
Which assessment method do you prefer in distance education?	*Open-ended questions exam*	5 (23.8)	7 (33.3)	5 (23.8)	3 (14.3)	1 (4.8)	**0.001[2]**
	Multiple choice exam	123 (39.4)	51 (16.3)	73 (23.4)	58 (18.6)	7 (2.2)	
	Oral exam	-	-	-	-	2 (100.0)	
	Homework presentation	41 (29.3)	18 (12.9)	33 (23.6)	38 (27.1)	10 (7.1)	
	Hybrid assessment including a combination of one or more of the open-ended questions exam, multiple choice exam, oral exam, and homework presentation	37 (31.9)	18 (15.5)	27 (23.3)	21 (18.1)	13 (11.2)	
Do you think that online/remote exams are held securely (students answer questions by being honest)?	*Yes*	54 (33.5)	25 (15.5)	48 (29.8)	34 (21.1)	-	**<0.001[2]**
	No	89 (31.4)	44 (15.5)	59 (20.8)	62 (21.9)	29 (10.2)	
	Undecided	63 (42.9)	25 (17.0)	31 (21.1)	24 (16.3)	4 (2.7)	
Would you like to continue distance education after switching to face-to-face education again?	*Yes*	23 (16.7)	27 (19.6)	38 (27.5)	46 (33.3)	4 (2.9)	**<0.001[2]**
	No	84 (41.2)	28 (13.7)	41 (20.1)	39 (19.1)	12 (5.9)	
	Sometimes	93 (40.3)	35 (15.2)	57 (24.7)	31 (13.4)	15 (6.5)	
	Undecided	6 (33.3)	4 (22.2)	2 (11.1)	4 (22.2)	2 (11.1)	

[1]: Pearson Chi-Square, [2]: Fisher's Exact Test

Table 7: Distribution of answers to prior experience of distance education.

		Did you receive online/distance education before the COVID-19 pandemic?		p
		Yes	**No**	
How would you evaluate the comfort and technological standards of your living environment in terms of following distance education?	*Very inadequate / Inadequate*	37 (30.8)	83 (69.2)	**0.047[1]**
	Average	64 (30.6)	145 (69.4)	
	Adequate/ Very adequate	106 (40.5)	156 (59.5)	
How would you evaluate the frequency of your instant/online participation in the distance education course?	*Never/ Rarely*	17 (37.0)	29 (63.0)	0.846[1]
	Sometimes	31 (32.6)	64 (67.4)	
	Often / Always	159 (35.3)	291 (64.7)	
How would you evaluate the frequency of asking questions to the lecturer during the distance course?	*Never/ Rarely*	112 (30.8)	252 (69.2)	**0.005[1]**
	Sometimes	63 (38.4)	101 (61.6)	
	Often / Always	32 (50.8)	31 (49.2)	
How would you evaluate the frequency of asking questions of the lecturer during the distance course?	*Never/ Rarely*	58 (36.9)	99 (63.1)	0.105[1]
	Sometimes	94 (31.2)	207 (68.8)	
	Often / Always	55 (41.4)	78 (58.6)	
What is your opinion on the effective use of the duration of the course given by distance education?	*Never/ Rarely*	48 (35.6)	87 (64.4)	0.609[1]
	Sometimes	51 (31.9)	109 (68.1)	
	Often / Always	108 (36.5)	188 (63.5)	
Do you experience technological/technical problems (disconnection, system not working, storage problems, etc.) during distance education?	*Never/ Rarely*	58 (45.3)	70 (54.7)	**0.021[1]**
	Sometimes	71 (31.3)	156 (68.7)	
	Often / Always	78 (33.1)	158 (66.9)	
Have any lecturers reported that they could not attend the distance education course due to technological/technical difficulties?	*Yes*	115 (33.4)	229 (66.6)	0.337[1]
	No	92 (37.2)	155 (62.8)	
Do you think distance education provides effective learning?	*Yes*	56 (46.3)	65 (53.7)	**0.005[1]**
	No	98 (30.0)	229 (70.0)	
	Undecided	53 (37.1)	90 (62.9)	
How often do you watch the recorded videos of a course you took with distance education?	*Never*	13 (24.1)	41 (75.9)	**<0.001[2]**
	1 time	67 (30.2)	155 (69.8)	
	2 times	66 (37.5)	110 (62.5)	
	3 times	25 (31.6)	54 (68.4)	
	4 times	8 (72.7)	3 (27.3)	
	5 times or more	28 (57.1)	21 (42.9)	

Table 7 (continued): Distribution of answers to prior experience of distance education.

When you compare distance education and face-to-face education methods, which one do you prefer?	*Face-to-face education method*	131 (32.1)	277 (67.9)	**0.019[1]**
	Distance education method	52 (46.4)	60 (53.6)	
	Undecided	24 (33.8)	47 (66.2)	
Do you think distance education has some advantages?	*Yes*	145 (36.0)	258 (64.0)	0.330[1]
	No	44 (36.4)	77 (63.6)	
	Undecided	18 (26.9)	49 (73.1)	
Do you think distance education has some disadvantages?	*Yes*	161 (31.3)	345 (68.7)	**<0.001[1]**
	No	27 (61.4)	17 (38.6)	
	Undecided	19 (59.4)	13 (40.6)	
How would you evaluate the use of distance education in applied courses?	*Definitely applicable*	24 (58.5)	17 (41.5)	**0.007[2]**
	Definitely not applicable	127 (31.8)	272 (68.2)	
	Partially applicable	53 (37.6)	88 (62.4)	
	Undecided	3 (30.0)	7 (70.0)	
Which method do you think should be used for the assessment and evaluation of the course you take with distance education?	*Face-to-face assessment*	34 (42.0)	47 (58.0)	0.240[1]
	Online assessment	156 (33.3)	312 (66.7)	
	Undecided	17 (40.5)	25 (59.5)	
Which assessment method do you prefer in distance education?	*Open-ended questions exam*	6 (28.6)	15 (71.4)	0.067[2]
	Multiple choice exam	98 (31.4)	214 (68.6)	
	Oral exam	2 (100.0)	-	
	Homework presentation	52 (37.1)	88 (62.9)	
	Hybrid assessment including a combination of one or more of the open-ended questions exam, multiple choice exam, oral exam, and homework presentation	49 (42.2)	67 (57.8)	
Do you think that online/remote exams are held securely (students answer questions by being honest)?	*Yes*	61 (37.9)	100 (62.1)	0.103[1]
	No	87 (30.7)	196 (69.3)	
	Undecided	59 (40.1)	88 (59.9)	
Would you like to continue distance education after switching to face-to-face education again?	*Yes*	65 (47.1)	73 (52.9)	**0.009[1]**
	No	64 (31.4)	140 (68.6)	
	Sometimes	73 (31.6)	158 (68.4)	
	Undecided	5 (27.8)	13 (72.2)	

[1]: Pearson Chi-Square

[2]: Fisher's Exact Test

DISCUSSION AND CONCLUSION

Distance education is a method that includes simultaneous education that prioritizes student-teacher interaction and a model that allows the students to access the educational material at any time and place independently of the educator and to review it as many times as they want (Tsai et al. 2021; Wagner et al. 2021). Compared to the traditional education method, DE is considered advantageous for accessing information whenever and wherever the students want. With distance education and online teaching/learning model, flexibility is provided to the lecturer and student regarding learning activities (Houlden and Veletsianos 2019; Dost et al. 2020; Veletsianos et al. 2021; Wagner et al. 2021). As mentioned in a study (Parkes and Barrs 2021), not needing the time allotted to travel to reach education, in other words, saving time, can be considered as another advantage of DE. In addition, for students whose preferred learning methods are different from each other, training can be done by listening, seeing, or repeating a lot in accordance with the personal learning technique (Choudhary 2021). Thanks to the online teaching and learning activities, communication and professional cooperation development among students are also observed in extracurricular processes such as preparing homework and doing research. There is evidence that online methods could also be a crucial tool in education post-pandemic, according to positive feedbacks from students and educators (Saadeh et al. 2021). However, according to Liu et al. (2021), lack of adequate teachers' feedback and less interaction among students are considered cons of DE. The results of a study (Parkes and Barrs 2021) also showed that students experience anxiety due to lack of interaction. It has been reported (Di Giacomo and Di Paolo 2021; Başağaoğlu Demirekin and Buyukcavus 2022) that anxiety developing due to the pandemic negatively affects the DE experiences of students. Dost et al. (2020) emphasized that online teaching methods should be included in traditional medicine education, supporting this view. In Tables 2 and 3, the deficiencies in the living environment, technological inadequacies and the lack of verbal interaction between student and teacher based on asking and answering questions are striking. On the other hand, according to Table 6, a group of participants (3rd and 4th grades) reported that they could continue distance education in the future due to some advantages. When all the pros and cons are evaluated, it can be predicted that if the strengths of DE model are preserved and its open aspects are improved, DE can be one of the routine education models applied in veterinary education in the future.

According to Table 1, 55.3% of students reported that distance education does not provide effective learning. However, students who want to benefit from online learning of distance education somehow in their education life constitute 62.5% of all participants (Table 1). There are evidences in the literature (Dost et al. 2020; Ahmady et al. 2021) that simulation-based methods are used for how distance education can be made more efficient. Based on the findings of the study and the relevant literature, it can be predicted that adding simulation methods to the distance education process can contribute to effective learning by attracting the attention of some students.

In this study, it can be said that the majority of students (69%) prefer face-to-face education (Table 1).

As seen in Table 5, face-to-face education and distance education were compared and a statistically significant difference was found between student answers in terms of practical courses.Similarly, Aslım et al. (2023) have reported that many students (77%) do not want to continue practical courses remotely, and many students have concerned that their professional development may be adversely affected as the practical lessons are not held face-to-face. When the data of these two studies are evaluated together, it can be said that veterinary students tend to prefer the traditional face-to-face education model.Nevertheless, in a study (Ahmady et al. 2021) investigating DE strategies in the field of medicine, it was reported that simulation-based teaching and technology-based teaching are frequently preferred techniques among online methods during the pandemic period. In another study (Dost et al. 2020), the potential of virtual consultations to take place more frequently in medical education was mentioned. As a solution proposal, it is suggested that in the future, simulation-based teaching and OSCEs for evaluation may be preferred in veterinary training as well as in medical education to improve and assess both clinical and communication skills, whether online or face-to-face education.

In Table 4, the frequency of asking questions of students to the teacher and/or the teacher to the students was asked and it was associated with in-class communication and interpersonal communication. A study (Di Giacomo and Di Paolo 2021) revealed that one of the main concerns of academics is the lack of interaction which can be experienced during the online model. According to Mehall (2020), students' interactions with each other and with the institution often affect their education. Based on this data, it can be argued that interpersonal interaction in online education can an essential behavior both for students and academics.

According to the Equivalency Theorem, which was brought to the literature by Anderson (2003), the ability of students to perform high-level learning activities in the DE process is directly dependent on the interaction between the student-teacher-content trio (Miyazoe and Anderson 2010). In other words, it has been reported that communication among students or between teachers and students is an important factor in student satisfaction (Miyazoe and Anderson 2010; Eom and Ashill 2016; Elshami et al. 2021). It is clearly seen that there is a significant relationship between students' satisfaction levels and their course success (Elshami et al. 2021). The current study was not designed to reveal in detail the relationship and communication levels between students and teachers, but only gave information about asking questions, which is one of the elements of interpersonal communication. However, it can be said that further studies are needed to determine whether the student-teacher relationship affects the quality of distance education at a veterinary faculty in Türkiye.

According to Table 4, it has been shown that the frequency of asking questions by students and teachers is associated with effective learning. Based on the studies (Dixson 2015; Chan et al. 2021) it can be inferred that students' motivation directly affects learning. Moreover, it is claimed that the motivation of the lecturers depends on the interaction with the students (Li et al. 2021). It can be said that teachers' increasing in-class interaction can contribute positively to effective learning. Furthermore, in order to experience a beneficial learning process and overcome the students' hesitations, lecturers can be suggested to carry out activities that break the ice, refresh

the self-confidence and motivate the students at the beginning of the courses.

Aslım et al. (2023) have reported that the ability of accessing online material is an advantage. In our study, students had the chance to watch recorded lectures multiple times (Table 5). This is seen as an opportunity for each student to reach their learning capacity and is considered as flexible learning and temporal flexibility. In other words, students can watch their course recordings anywhere, anytime, and over and over with any device. This can be considered as an indication of the flexibility of online learning. On the other hand, the number of students who evaluated the comfort of their place of residence as average or below and, accordingly, the number of students with low frequency of attendance cannot be ignored. This situation can be considered as the disadvantages of online education.

According to the Table 1, students participated in online courses from different physical environments such as family/relative house, student house or dormitory/guesthouse, apart from school. The options of different learning environments reported in Table 1, are consistent with the statement of flexibility of DE reported by Turan et al. (2022). This can be considered an indication that distance education offers flexible learning options regardless of a specific location. Similarly, with reference to Table 1, students accessed the courses not only with personal phones, computers or tablets, but also with the electronic devices of others. There is evidence in the literature (Turan et al. 2022) showing that distance education is open to different options in terms of technology. Therefore, the data shown in Table 1 can be considered as an example of the technological flexibility of distance education.

When Table 2 and Table 3 are evaluated together, it is clearly revealed that students living in a comfortable area benefit more from DE. According to Table 2, students living in a comfortable environment preferred DE relatively higher than others. Moreover, it has been seen that the comfortable living environments in which the student attends the courses affects the frequency of asking questions in the lesson. It is known that ambient of the learning environments such as silence, adequate lighting, suitable furniture, learning devices, high-speed Internet and wireless connection are directly related to DE (Ng 2021). With reference to both literature and results of the current study, it can be argued that students with optimum environmental conditions have the potential to benefit more from distance education than others.

One of the most important conditions for students to see DE as an effective learning method are that the technological infrastructure is sufficient and the places where they attend the courses are comfortable (Table 4). There are various studies in the literature (Abbasi et al. 2020; Elshami et al. 2021; Parkes and Barrs 2021; Yeh and Tsai 2022) reporting that a significant portion of students' experience technological problems in online teaching. It has been reported in some studies (Abbasi et al. 2020; Elshami et al. 2021; Yeh and Tsai 2022) that technical problems break the motivation of students, negatively affect them, or cause them to experience dissatisfaction. O'Doherty et al. (2018) showed that physical and technological infrastructure problems, like poor internet connection, are noted among the substantial obstacles for DE. In order to solve these problems, optimizing the exam phase or the resources to be used in the course for students who will attend the course from places with insufficient internet access might be beneficial (Li et al. 2021). On the other hand, Abbasi et al. (2020) reported that students' satisfaction with DE is higher in developed countries. It is clearly seen that the data in the findings of the study and the literature are compatible with each other and establish a mutual relationship between distance education and environmental factors. It is thought that economically disadvantaged students may be more motivated if universities or governments support students in need in reaching both the optimum environmental conditions mentioned by Ng (2021) and technological tools.

There are many studies (Abbasi et al. 2020; Ahmed et al. 2020; Choudhary 2021; Ertürk Avunduk and Delikan 2021; Mehta et al. 2021) in the literature reporting that the inadequacy of technological resources caused by socioeconomic features negatively affects the effectiveness of distance education. Table 2 and Table 3 may provide some evidence that the ambience and technological infrastructure of the living place have an impact on the effectiveness of distance education. Indeed, students with a sufficient and efficient internet connection and easy access to technological devices such as personal phones, computers, and tablets, which are used as DE tools, can attend the courses given by DE more easily. However, financially incompetent students or those residing in places with weak internet infrastructure may cause negative attitudes towards DE. Students who participated in this study and had technological infrastructure problems may also have encountered problems such as disconnection during the lesson, microphone or camera not working, insufficient internet quota, and inability to access lecture recordings or other resource materials. The fact that students living in dormitories, in other words, students who usually share the same room and technological infrastructure with more than one person, have some problems attending classes may have prepared the ground for these students to consider DE as disadvantageous. It is not surprising that students in this group tend not to prefer DE in the future. It is thought that for each student to benefit from the distance education, to balance income inequality, in other words, to ensure justice in education, educational institutions should provide access to the appropriate technological infrastructure at a minimum level. Therefore, it can be said that if the aforementioned conditions of the students are improved, the students can get the maximum benefit by getting one step closer to the learning outcomes and objectives of the course.

In this study, almost half of the students (47.9%) reported that online exams were not conducted honestly (Table 1). Similarly, in the literature (Hunt and Anderson 2022), a case of dishonest academic conduct has been reported for remotely conducted objective structured clinical examinations (OSCEs), which aim acquisition and measurement of clinical skills. In this context, it is believed that it would be beneficial to make constructive criticisms to the students about their academic honesty not only during online education, but throughout their entire education life, and to instill this doctrine within the hidden curriculum. In addition of this view, further research is needed to measure and improve students' academic honesty.

Within the scope of this study, during DE, it is seen that the frequency of the first graders asking questions is less than the other grades (Table 6). One of the most important success criteria of distance education is classroom interaction (Flottemesch 2000), and it can be more

effective than individual student participation in learning satisfaction (Fulford and Zhang 1993). For this reason, the fact that some students tend to ask fewer questions should not be considered a problem as long as it does not disrupt the interaction dynamic in the classroom. However, it may be considered normal that students tend to ask fewer questions and hesitate to actively participate in courses. In addition, it is thought that this hesitation may have occurred because first grade students who have just started university encounter a different teaching style, DE, in a different educational institution than high school. In addition, as a negative outcome of the social distance rule during the pandemic, the limited communication/interaction of the students in the classroom with each other and with the lecturers may have caused them to exhibit shy attitudes and not have the courage to ask questions.

It is clearly seen that some students (Abbasi et al. 2020, Aslım et el. 2023) do not prefer DE especially in practical courses. However, in this study, it is considered a surprising result that third and fourth graders do not see DE as disadvantageous (Table 6). As a matter of fact, practical courses on clinical veterinary medicine gain weight in the third and fourth grades of veterinary faculties in Turkish. Therefore, in line with the mentioned literature, it was expected in our study that students in third and fourth grades would not prefer DE due to their inability to practice.

As seen in Table 7, it was determined that students without DE experience did not or sometimes wanted to continue DE after switching to face-to-face education (p=0.009). In addition, among those who were undecided about continuing DE in the future, the rate of students who have no previous DE experience was quite high (72.2%). It has seen that having experience in DE positively affects students' participation in the course (Table 7). Although some of the first-year students had both online and face-to-face education experience in the previous periods, they only received distance education in their university education due to the pandemic. This may have affected the answers of first-year students to some of the survey questions. This situation can be considered as a limitation of the study. However, according to a study conducted with medical students (Al-Balas et al. 2020), students with previous distance education experience were significantly more satisfied with DE than others. Secondly, the blended method, in which both traditional and distance education are planned jointly, could be used as a suitable method in the future. When the aforementioned literature and the results of this study are combined, it can be argued that providing distance education in addition to traditional education may be accepted by future's veterinary students.

In conclusion, flexibility is one of the strengths of DE. Although it has seen that students generally preferred face-to-face education, the existence of a group of students who wanted to continue distance education and reported that the method has some advantages is also remarkable. The difficulty of accessing the course due to the lack of technological infrastructure is seen as a major disadvantage. It can be considered that living in favorable conditions is positively related to students' ability to benefit from distance education.

CONFLICTS OF INTEREST

The authors report no conflicts of interest.

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AUTHOR CONTRIBUTIONS

Idea / Concept: PA
Supervision / Consultancy: PA, AÜA
Data Collection and / or Processing: PA, AÜA
Analysis and / or Interpretation: PA, AÜA
Writing the Article: PA
Critical Review: PA

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