



# Being a Student and Faculty Member in the Faculty of Medicine During Pandemic: An Evaluation of Distance Education

## Pandemide Tıp Fakültesinde Öğrenci ve Öğretim Üyesi Olmak: Bir Uzaktan Eğitim Değerlendirmesi

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### ABSTRACT

**Objective:** We aimed to reveal the opinions of students and faculty members about the educational process in the distance education provided in a medical school during the pandemic period, the problems they encounter and their relationship with digital literacy levels.

**Methods:** The design of the study is cross-sectional. An online survey including demographic information, positive and negative aspects of distance education, opinions about the process, and digital literacy scale was administered to 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> year medical students and faculty members. A p-value of <0.05 was considered significant in the data analysis.

**Results:** A total of 513 individuals (52.9%) responded to the questionnaires. The mean digital literacy score was 3.42±0.84 for students and 3.57±0.82 for faculty members. For faculty members, age (B=-0.041, t=-2.72 p=0.009) and having no previous distance education experience (B=-0.813, t=-2.32 p=0.025), and for students, female gender (B=-0.287, t=-3.65 p<0.001) and having no previous distance education experience (B=-0.343, t=-2.53 p=0.011).

**Conclusion:** Distance education, which gained speed with the pandemic, will continue to exist in education in the coming years. Although the digital literacy scores of students and faculty members in the medical faculty are above average, advanced digital literacy will enable better and accurate use of digital technologies and a more effective and efficient education.

### ÖZ

**Amaç:** Pandemi sürecinde bir tıp fakültesinde verilen uzaktan eğitimde öğrenci ve öğretim üyelerinin eğitim süreci ile ilgili düşüncelerini, karşılaştıkları problemleri ve dijital okuryazarlık düzeyleri ile ilişkisini ortaya koymayı amaçladık.

**Yöntemler:** Araştırmanın tasarımı kesitseldir. Tıp fakültesinde eğitim gören 1., 2., 3., 4., 5. sınıf tıp öğrencileri ile eğitim veren öğretim üyelerine demografik bilgiler, uzaktan eğitimin olumlu ve olumsuz yönleri, süreçle ilgili düşünceleri ve dijital okuryazarlık ölçeğini içeren çevrimiçi anket uygulanmıştır. Veri analizinde p<0,05 anlamlı kabul edilmiştir.

**Bulgular:** Anketlere 513 kişi (%52,9) yanıt vermiştir. Dijital okuryazarlık puanı ortalaması öğrencilerin 3,42±0,84 ve öğretim üyelerinin 3,57±0,82'dir. Öğretim üyeleri için yaş (B=-0,041, t=-2,72 p=0,009) ve daha önceden uzaktan eğitim tecrübesi olmamak (B=-0,813, t=-2,32 p=0,025) ve öğrencilerde ise kadın cinsiyet (B=-0,287, t=-3,65 p<0,001) ve önceden uzaktan eğitim tecrübesi olmamak (B=-0,343, t=-2,53 p=0,011) dijital okuryazarlık ölçek puanını negatif etkileyen değişkenler olarak saptanmıştır.

**Sonuç:** Pandemi ile birlikte hız kazanan uzaktan eğitimin önümüzdeki yıllarda da eğitim öğretimde varlığı devam edecektir. Her ne kadar tıp fakültesindeki öğrenciler ve öğretim üyelerinin dijital okuryazarlık puanları ortalamasının üstünde olsa da gelişmiş dijital okuryazarlık sayesinde dijital teknolojilerin daha iyi ve doğru kullanılması, eğitimin daha etkili ve verimli olması sağlanacaktır.

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**Anahtar Sözcükler:** COVID-19, tıp eğitimi, dijital okuryazarlık ölçeği, çevrimiçi öğrenme, koronavirüs pandemisi

## Introduction

The Coronavirus disease-19 (COVID-19) outbreak that started in Wuhan, China rapidly turned into a worldwide pandemic in 2020 (1). The obligatory closure experienced in all areas of society has also affected educational institutions (2). In case of continuing face-to-face education, many countries had to take some measures in this area, since the spread of the virus might increase in young individuals, thus in the entire society (3). Schools were closed in more than 190 countries around the world in April, and more than 90% of the world's student population was affected (4). During this period, educators in all countries quickly found solutions to many challenges (5). The Council of Higher Education in Turkey interrupted education on March 16 due to the pandemic. One week later, it was restarted with distance and open education in digital environment in order not to interrupt the education and training (6,7).

Medical education has been affected by the pandemic all over the world with its practices, skills curriculum, and intensive theoretical content. Due to the nature of the disease, traditional training methods have been replaced by online live video conferencing modalities (3). COVID-19 has revealed an urgent need for many institutions to rapidly implement alternative training and assessment strategies (8).

During the pandemic period, distance education, which involves almost the whole of the education world with its advantages such as accessibility, reduction in costs, remote access, and student-centered learning, has brought some difficulties. Major difficulties in students and their educators include the lack of face-to-face communication, lack of online education experience, reduced course concentration, as well as lack of technological infrastructure, inability to provide practical training, technophobia, and time management (9,10). The three basic components of a feasible, efficient and effective distance education process are teacher, student, and the tools and equipment that provide access between the two (11). Another component that complements these components is digital literacy. Although the concept of digital literacy has many definitions, its basis is related to the use of digital technologies such as computers, tablets, smartphones, and smartboards. It includes various concepts such as being digitally literate, accessing accurate information using digital technologies, and at the same time, ability to use it safely, analyzing and synthesizing information, sharing, and communicating (12,13). Concepts such as digital competence and digital literacy have come to the fore more in this period (14).

In our country, the experiences of students and faculty members with the aspects of higher education in the pandemic such as technological infrastructure, communication skills, and digital literacy have been demonstrated by some studies (14). Our study

is different from other studies. We aimed to identify the thoughts and problems experienced at the beginning of distance education, which was rapidly integrated into medical education due to the pandemic, from the perspective of both students and faculty members. In this study, we aimed to determine the positive and negative aspects of distance education carried out in the medical faculty in terms of students and teaching faculty members and to reveal their relationship with the digital literacy level.

## Methods

The study was a cross-sectional study and was conducted in the medical faculty of a public university in İstanbul between 30 July and 30 August 2020. The universe of the study consisted of 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, and 5<sup>th</sup> year medical students and faculty members. The 6<sup>th</sup> year students of the faculty of medicine were not included in the study because they did not receive distance education and continued their internship at the hospital. The study included 181 first-year medical students, 165 second-year students, 141 third-year students, 215 fourth-year students, 121 fifth-year students, and 146 faculty members. The sample was not selected, and aiming to reach the whole universe (969), 513 individuals (52.9%) were reached. Three faculty members who stated that they did not provide distance education during the pandemic period were not included in the analysis.

The study data were collected with two separate questionnaires created for faculty members and students. The questionnaire prepared for faculty members consisted of 3 parts. The first part included questions about the socio-demographic characteristics of the participants (age, gender, unit, working years as a faculty member), the second part included questions about distance education (distance education experience, status of receiving training about distance education, status of providing distance education during the pandemic period, frequency of live online courses, devices used for distance education, positive and negative aspects of distance education) and 5-point Likert-type proposals about the distance education process, and the third part included the digital literacy scale (DLS). The student questionnaire also consisted of 3 parts, and unlike the faculty member questionnaire, it questioned the socio-demographic characteristics of age, gender, year of education during the pandemic period, residency during the pandemic period. Other parts of the questionnaire were prepared in the same way used in the faculty member's questionnaire. The data were collected through a web-based survey. The questionnaires were delivered to faculty members and students via chat applications.

The DLS used in the questionnaires was developed by Ng (12) in 2012. This 5-point Likert type scale consists of 17 questions aimed at revealing the technical, cognitive and social/emotional dimensions of digital literacy as well as attitudes of students and faculty members towards using information and communication

technologies for learning. The scale, which was adapted to Turkish by Üstündağ et al. (13) in 2017, is a 5-point Likert type scale consisting of 10 questions. As the score obtained from the scale increases, the level of digital literacy increases. The Cronbach's Alpha coefficient of the scale was found to be 0.86.

The approval for the study was obtained from the Clinical Research Ethics Committee of Göztepe Training and Research Hospital with the decision number of 2020/0504 and date of 24.06.2020.

### Statistical Analysis

The data were analyzed using SPSS 22.0 software. In the analysis, the chi-square test was used to examine the level of correlation between variables, as well as descriptive statistics (frequency, mean, standard deviation, minimum, maximum) were used. Student's t-test and One-Way ANOVA test were used to compare the mean scores of the DLS. In order to test the relationship between the dependent variable (digital literacy levels of students and faculty members) and some independent variables which might predict DL, such as age, gender, having distance education experience and being educated on the subject, a multivariate linear regression model was applied one by one and an entry

method was used in the model. A p-value <0.05 was considered as statistically significant.

### Results

The mean age of the students was 21.26±1.86 (18-29) years, and of whom, 42.4% (195) were male and 69.8% (321) stated that they lived in a metropolitan city during the pandemic period, 15.4% (71) in the province, 12.0% (55) in the district, and 2.8% (13) in the village. The mean age of the faculty members was 47.36±7.68 (35-69) years, and of whom, 46% (23) were male. According to the sciences they studied, 28% (14) were working in basic sciences, 44% (22) in internal sciences, and 28% (14) in surgical sciences (Table 1). The mean duration of employment as a faculty member was 10.88±9.91 (1-43) years.

Before the pandemic period, 9.1% (42) of the students and 12% (6) of the faculty members had had distance education experience. Of the faculty members, 44% (22) had received training on distance education. Of the students, 88.5% stated that they received live online lessons every day during the pandemic period, while 10% (5) of the faculty members provided live online lessons every day (Table 1).

**Table 1.** Distribution of participants by some characteristics and answers to distance education

		Student		Faculty member	
		n	%	n	%
Gender	Female	265	57.6	23	46.0
	Male	195	42.4	27	54.0
Department	Internal medicine departments	-	-	22	44.0
	Surgical sciences departments	-	-	14	28.0
	Basic medical sciences departments	-	-	14	28.0
Year	1 <sup>st</sup>	133	28.9	-	-
	2 <sup>nd</sup>	99	21.5	-	-
	3 <sup>rd</sup>	82	17.8	-	-
	4 <sup>th</sup>	89	19.3	-	-
	5 <sup>th</sup>	57	12.4	-	-
Frequency of live lessons	Everyday	407	88.5	5	10.0
	Every other day	27	5.9	13	26.0
	Once a week	15	3.3	19	38.0
	Once a month	11	2.4	13	26.0
Pre-pandemic distance education experience	Yes	42	9.1	6	12.0
	No	418	90.9	44	88.0
Frequency of receiving/providing lessons online	Every day	407	88.5	5	10.0
	Every other day	27	5.9	13	26.0
	Once a week	15	3.3	19	38.0
	Once a month	11	2.4	13	26.0
Tool used for distance education	Computer	345	75.0	50	100.0
	Smartphone	263	57.2	3	6.0
	Tablet	83	18.0	1	2.0

It was determined that the rate of evaluating distance education as flexible, easy to use, and accessible was higher among faculty members ( $p=0.028$   $\chi^2=4,856$ ,  $p=0.001$   $\chi^2=10,422$ ,  $p<0.001$   $\chi^2=18,394$ , respectively). Unlike the faculty members, 70.7% of the students evaluated the more comfortable student participation as a positive aspect ( $p=0.016$ ,  $\chi^2=5,848$ ) (Table 2).

As the negative aspect of distance education, 78% (39) of the faculty members stated difficulty in communicating ( $p<0.001$ ,  $\chi^2=14,186$ ). On the other hand, it was determined that the students mostly stated inadequate internet access and not having as many equipment/materials as in the school environment as the negative aspects of distance education ( $p=0.001$ ,  $\chi^2=10,921$ ,  $p<0.001$ ,  $\chi^2=15,050$ , respectively). Of the students, 61.7% (284) stated the stress and workload of working from home as another negative aspects of distance education (Table 2).

In the evaluations of students and faculty members regarding the whole distance education process, it was determined that 32.2% of the students evaluated distance education as sufficient for theoretical courses ( $p=0.009$ ,  $\chi^2=9,534$ ). It was determined that 30.2% of the students did not think that the pandemic period offered new opportunities in education ( $p=0.003$ ,  $\chi^2=11,314$ ) (Table 3).

The mean DLS score of the students participated in the study was  $3.42\pm 0.84$  (1-5), and it was  $3.57\pm 0.82$  (1.8-5) in faculty members ( $p>0.05$ ). It was determined that the students and faculty members with previous distance education experience

had a higher digital literacy score than those without experience ( $t=2.45$   $p=0.014$ ,  $t=2.22$   $p=0.031$ , respectively) (Table 4).

The correlation between the age of the faculty members, the time they worked as a faculty member, and their digital literacy score was analyzed and no significant correlation was found ( $r=-0.277$ ,  $p=0.052$ ,  $r=-0.067$   $p=0.642$ , respectively).

Multiple linear regression analysis was performed to find out factors affecting the digital literacy score. The model included the variables of age, gender, previous distance education experience, and receiving a training on distance education for the faculty members. Table 5 shows the results of the multiple linear regression multivariate analysis.

## Discussion

In this study, we aimed to determine the problems faced by students and faculty members as well as their digital literacy levels during the distance education process which started with the pandemic announcement. More than 90% of the students and faculty members did not have a previous experience with distance education before the pandemic. While distance education has some positive aspects such as being flexible and accessible, easy to use, and comfortable for students to participate in, difficulties in communication and not having enough equipment and materials compared to those provided in the school environment are evaluated as its negative aspects. Most of the participants stated that distance education was not as effective as face-to-

**Table 2.** Positive and negative aspects of distance education

Positive aspects	Student		Faculty member		P
	n	%	n	%	
Being flexible	192	41.7	29	58.0	<b>0.028</b>
High variety of resources	29	6.3	6	12.0	0.130
Ease of use	160	34.8	29	58.0	<b>0.001</b>
Ability to personalize student learning	75	16.3	5	10.0	0.244
Applicable variety of methods	57	12.4	11	22.0	0.058
Being accessible	169	36.7	34	68.0	<b>&lt;0.001</b>
Easy participation for the student	238	51.7	24	48.0	0.615
Comfortable participation for the student	325	70.7	27	54.0	<b>0.016</b>
<b>Negative aspects</b>					
Lack of knowledge/experience in distance education	178	38.7	18	36.0	0.710
Owned technological equipment, lack of infrastructure	122	26.5	8	16.0	0.105
Technological equipment owned by the faculty member/student, lack of infrastructure	176	38.3	27	54.0	<b>0.031</b>
Inadequate internet access	126	27.4	3	6.0	<b>0.001</b>
Inadequate internet access of the student/faculty member	106	23.0	24	48.0	<b>&lt;0.001</b>
Difficulty in communicating	230	50.0	39	78.0	<b>&lt;0.001</b>
Inadequate digital literacy	74	16.1	3	6.0	0.058
Inadequate digital literacy of the student/faculty member	84	18.3	5	10.0	0.144
Not having as many tools/materials as in the school environment	303	65.9	19	38.0	<b>&lt;0.001</b>

face education, giving practice-based lessons remotely was not enough, and that the lessons given in this process should be made up with face-to-face education. It was determined that while having previous distance education experience affected the level of digital literacy in both students and faculty members, gender in students and age in faculty members also affected digital literacy levels.

Approximately 90% of the students and faculty members participated in the study did not have distance education experience before the pandemic period. Due to the sudden transition to distance education instead of face-to-face education with the pandemic, those who do not have experience are likely to face more problems in this process. Similarly, a study on the

barriers to online learning found that students who previously received online courses faced less problems compared to those who did not (15).

It was determined that the faculty members' evaluation of the positive aspects of distance education as flexible (58%), easy to use (58%), and accessible (68%) was highly positive compared to the students. In a qualitative study conducted on students and faculty members of medical and dental faculties, online learning was a flexible and accessible learning/teaching resource and facilitated some of the administrative work of faculty members, according to the participants (10). Two-thirds (70.7%) of the students stated that the distance education was more comfortable, which was the positive aspect compared to

**Table 3.** Opinions about the distance education process

		Disagree		Neutral		Agree		P
		n	%	n	%	n	%	
I think the distance education process is well-planned.	<b>Student</b>	82	17.8	102	22.2	276	60.0	0.346
	<b>Faculty member</b>	6	12.0	15	30.0	29	58.0	
I have difficulty while following/teaching the lessons due to the distance education system.	<b>Student</b>	176	38.3	70	15.2	214	46.5	<b>0.001</b>
	<b>Faculty member</b>	32	64.0	8	16.0	10	20.0	
I think the distance education lessons are as effective as face-to-face education.	<b>Student</b>	295	64.1	86	18.7	79	17.2	0.825
	<b>Faculty member</b>	34	68.0	9	18.0	7	14.0	
I think the distance education should continue with face-to-face education even after the pandemic process is over.	<b>Student</b>	252	54.8	73	15.9	135	29.3	0.181
	<b>Faculty member</b>	23	46.0	13	26.0	14	28.0	
I think it is sufficient to provide theoretical lessons remotely.	<b>Student</b>	215	46.7	97	21.1	148	32.2	<b>0.009</b>
	<b>Faculty member</b>	23	46.0	19	38.0	8	16.0	
I think it is not enough to provide practical lessons remotely.	<b>Student</b>	25	5.4	21	4.6	414	90.0	0.060
	<b>Faculty member</b>	7	14.0	2	4.0	41	82.0	
I think it would be beneficial to make up face-to-face training for the lessons and practices provided in this period.	<b>Student</b>	63	13.7	73	15.9	324	70.4	0.626
	<b>Faculty member</b>	5	10.0	10	20.0	35	70.0	
I am worried about my personal information falling into the hands of third parties.	<b>Student</b>	170	37.0	125	27.2	165	35.9	0.191
	<b>Faculty member</b>	12	24.0	16	32.0	22	44.0	
I think not having face-to-face education with faculty members/students will create problems/deficiencies in future trainings.	<b>Student</b>	56	12.2	98	21.3	306	66.5	0.391
	<b>Faculty member</b>	4	8.0	8	16.0	38	76.0	
I think the pandemic period offers new opportunities in education.	<b>Student</b>	139	30.2	137	29.8	184	40.0	<b>0.003</b>
	<b>Faculty member</b>	5	10.0	24	48.0	21	42.0	
I think the use of distance education increases my motivation for lessons.	<b>Student</b>	293	63.7	100	21.7	67	14.6	0.167
	<b>Faculty member</b>	30	60.0	16	32.0	4	8.0	
I think it is easier to follow/teach with distance education than with traditional methods.	<b>Student</b>	218	47.4	90	19.6	152	33.0	<b>0.049</b>
	<b>Faculty member</b>	15	30.0	15	30.0	20	40.0	

**Table 4.** Distribution of digital literacy scores by some characteristics of participants

		Mean ± (SD)	p
Duty	Student	3.42±0.84	0.242
	Faculty member	3.57±0.82	
Gender/student	Male	3.59±0.85	<b>&lt;0.001</b>
	Female	3.30±0.82	
Gender/faculty member	Male	3.67±0.82	0.442
	Female	3.49±0.82	
Working unit/faculty member	Basic sciences	3.80±0.69	<b>0.005</b>
	Internal sciences	3.16±0.74	
	Surgical sciences	3.98±0.79	
Distance education experience/student	Yes	3.73±0.88	<b>0.014</b>
	No	3.39±0.83	
Distance education experience/faculty member	Yes	4.25±0.66	<b>0.031</b>
	No	3.48±0.80	
Receiving training on providing distance education in faculty members	Yes	3.67±0.81	0.466
	No	3.50±0.83	

SD: Standard deviation

the faculty members. In another study conducted on university students, online education was considered comfortable (67.7%), similar to that in this study (15). The fact that the vast majority of university students attend training in their own homes and in their rooms near their families, which are more comfortable environments, instead of the ongoing education life with friends or in the dormitory away from their families alone may be a factor in this evaluation. In addition, the fact that the time they spend coming to the university for education due to reasons such as transportation and traffic is added to their personal time is also a possible factor in this result.

Difficulty in communication was the negative aspect of distance education, which was stated more by the faculty members than the students. Difficulties in communicating face to face, which are more on the agenda with distance education, have been emphasized in many studies (9,15,16). A study including 1,056 students showed that the major obstacle to online learning was the lack of communication and there was

a strong correlation between the effectiveness of learning and communication (15). Communication is one of the keys that can pave the way for effective, intriguing, in-depth learning and evidence-based rational learning in long and intense medical education. Integrating the educational skills of faculty members, such as creating a positive educational environment, creating assessment tools based on interactive teaching methods, coaching, knowledge, and competence, effective communication and preparing presentations, and using audio-visual training tools into the distance education system may help overcome communication problems that may occur in distance education.

Of the students, 65.9% stated that they could not have as many tools and materials as in the school environment as a higher rate of negativity than the faculty members. Although the distance education started for students with the pandemic announcement, most of the faculty members continued to work at the hospital and to provide distance education from the faculty. Additionally, the students' lack of access to materials such as models used in laboratory and practical courses, deprivation of bedside training might lead to learning difficulties. On the other hand, two-thirds of the faculty members stated that they had difficulties in adapting their medical education practices to distance education. The benefit of using different virtual learning platforms and simulation applications in practical training has been shown in various studies as a solution to these problems (17,18). Of the faculty members, 82% cannot perform measurement-evaluation suitable for distance education. Written and oral assessments have been replaced by online exams and homework. At this point, providing educational measurement assessments for faculty members, which include new skills and techniques for distance education evaluations, may help to close the gap for this issue (19).

According to 61.7% of the students, working from home caused stress and extra workload. In the process of developing online education to replace the bedside training of the fourth-year, fifth-year, and sixth-year medical students at the University of Auckland, difficulties of working from home for students and faculty members were attributed to having other people at home as well as having their children at home due to the closed schools (20).

In our study, about half of the students stated that it was easier to follow the lesson with traditional methods. A similar

**Table 5.** Factors affecting digital literacy score of participants

Variables	B	p	95% CI
<b>Faculty member gender (r: female)</b>	-0.278	0.250	-0.758-0.203
<b>Faculty member age</b>	-0.041	<b>0.009</b>	-0.072-0.011
<b>Faculty member distance education experience (r: no)</b>	-0.813	<b>0.025</b>	-1.519-0.108
<b>Receiving training on distance education</b>	0.036	0.873	-0.418-0.491
<b>Student gender (r: female)</b>	-0.287	<b>&lt;0.001</b>	-0.442-0.133
<b>Student age</b>	-0.004	0.858	-0.045-0.037
<b>Student distance education experience (r: no)</b>	-0.343	<b>0.011</b>	-0.608-0.077

CI: Confidence interval

result was found in another study conducted in a faculty of medicine. Half of the students stated that they had difficulties while following the lesson with distance education and that traditional education was better (16). Additionally, another study reported that students who had not previously received distance education thought that they would learn worse with distance education (15). Most of the students in our study had no previous distance education experience. This may cause them to approach distance education with prejudice. The fact that physician candidates in the first three years and the fourth-year and fifth-year medical students studying in hospital clinics are distanced from practical courses, which gradually increase every year, can be considered as the reasons for preferring traditional education. The fact that the vast majority of students did not find practical training to be provided remotely enough also supported this.

Of the students and faculty members, 40% thought that the pandemic offered new opportunities in education. As a result, the use of technology in a fast and innovative way to continue learning in medical education has come to the fore. It is likely that there will be a transformative and exciting change in education as a result of the integration of new technologies in medical education (21).

With the distance education, it is important to use digital technologies in the educational life more effectively and correctly. At the digital literacy level, the prevalence and usage experience of technology are effective rather than age (12). In our study, there was no difference between the digital literacy scores of the students and faculty members. With the 21<sup>st</sup> century, the use of technology has become widespread in our country and all over the world, and more than 60% of the world population has internet access (22). The digital literacy scores of the students and faculty members with previous distance education experience were higher than those without experience. This shows the contribution of these individuals' familiarity with technology and their experiences to digital literacy (12). The added value of digital literacy to the personal development of individuals will return as an effective, fast, efficient, and easy educational process in the distance education. Plans should be made to increase the digital literacy of both students and faculty members for access to accurate and reliable information, analysis and synthesis of information, sharing and effective use of information, and practical training should be provided.

### Study Limitations

The strength of our study was that it was conducted in the period when the distance education process was just beginning and in a way to include both students and faculty members. However, the time interval to collect data was the period when education was interrupted. The students and faculty members were asked to respond to questions about the period of distance education before the interruption, and they may have had difficulty in remembering due to the period of approximately two months that passed. Due to the pandemic, data were collected electronically and there were difficulties in reaching students and

faculty members. The percentage of responding to web-based questionnaires was generally lower than other questionnaire methods such as mail and telephone, and may affect the sociodemographic characteristics of the participants. Those who answered web-based questionnaires were more interested in the subject, had time to answer the questionnaire, had a computer or a smartphone which they could use to answer e-surveys, and had internet access. Our results should be interpreted taking into consideration that those who did not have a computer or a smartphone and whose economic conditions were not favorable did not respond the questionnaire and that age, gender, and being a student might have an effect on digital literacy. Individuals must actively use digital technologies to respond to a web-based questionnaire. This suggested that the digital literacy scores of those who responded to the questionnaire were higher than those who did not. In addition, the study was a single center cross-sectional study. Each institution uses different educational systems and methods in the distance education process. The sociodemographic characteristics of the students and faculty members within the institutions may differ. For this reason, the results cannot be generalized to the whole education system and higher education institutions.

### Conclusion

The distance education process, which was introduced to continue education in the COVID-19 pandemic, affected medical faculties in different ways. For both students and faculty members, the courses in the distance education process were not as effective as in face-to-face education. In addition, during this period, most of the students and faculty members had difficulties in communicating, had problems with internet access, and could not have as many tools/materials as in the school environment. They stated that theoretical and practical trainings were not sufficiently provided remotely and that compensatory trainings should be provided after the pandemic. All these show that medical education can not continue with distance education, especially due to practical and bedside trainings. In the ongoing process, institutions should review their planning and accordingly organize their curriculum to eliminate the deficiencies and malfunctions in education. Digital literacy needs to be developed for a better, effective, and correct use of digital technologies.

### Ethics

**Ethics Committee Approval:** İstanbul Medeniyet University Göztepe Training and Research Hospital Clinical Research Ethics Committee (date: 12.08.2020/ number: 2020/0504).

**Peer-review:** Externally peer reviewed.

### Authorship Contributions

Concept: H.İ., I.M., Design: H.İ., Data Collection or Processing: H.İ., M.K., H.H.M., I.M., Analysis or Interpretation: H.İ., M.K., I.M., Literature Search: H.İ., M.K., H.H.M., Writing: H.İ., M.K., I.M.

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