Student Attitudes Regarding Conducting Applied Graphic Lesson through Distance Education due to the COVID-19 Epidemic

Emine Nur Yilmaz Arikan[1*]

Sema Yildirim[2]

[1,2]Graphic Design, Faculty of Fine Arts, Selcuk University, Turkey

Student Attitudes Regarding Conducting Applied Graphic Lesson through Distance Education due to the COVID-19 Epidemic

Emine Nur Yilmaz Arikan[1*], Sema Yildirim[2]

[1,2]Graphic Design, Faculty of Fine Arts, Selcuk University, Turkey

ABSTRACT

The COVID-19 virus, which started to appear in Wuhan, China and spread rapidly, has become an epidemic that threatens the whole world. During the epidemic, face-to-face education and training activities started to be carried out with the Distance Education (DE) method. However, various negativities may occur in the education-teaching activities carried out with DE. In this context, it is necessary to determine the negativities experienced in the applied lessons conducted through DE. Thus, new methods can be developed to minimize the negativities encountered. Therefore, in this study, the attitudes of students regarding applied courses conducted through DE were examined. In the study, a new Student Attitude Scale (SAS) was developed to determine student attitudes. The developed SAS was applied to 227 students who took the applied Graphic Pattern I course in the relevant departments of six universities and participated in the study voluntarily. According to the results, it was determined that the students exhibited a more positive attitude for the classroom learning environment. In addition, it was determined that the main problems faced by students in educational activities carried out through DE were technological disruptions. Findings revealed that students do not have enough of a technology-based DE method.

Keywords: Attitude, COVID-19,Distance Education, Epidemic, Pattern Course

1. INTRODUCTION

The epidemic, which was first seen in Wuhan, China in December 2019 and affected the whole world, still continues to affect life negatively (Mohan, BS & Vinod 2020). The biggest reason why this epidemic caused by the COVID-19 virus is more devastating than previous epidemics is that it is transmitted from person to person very quickly and easily (Koşaroğlu, Ş. M., Ünal, E. A., & Yalman 2020; Sönmez, 2020). Millions of people have died in the world because of this virus, which spreads easily through the upper respiratory tract. The World Health Organization (WHO) reported that as of April 1, 2022, 486,761,597 people were infected and 6,142,735 people died (World Health Organization, 2022).

Since the symptoms of the virus could not be determined clearly, many restrictions and prohibitions were introduced in all areas of life. Life came to a standstill due to this virus, which mutated and caused different destructions on people. By applying a long-term curfew, the spread and destruction of the virus was tried to be controlled. Within the scope of these prohibitions, all schools, theater-movies, cafes and restaurants, and numerous workplaces were closed and the period of working from home started. In April 2020, UNESCO reported that more than 1.5 billion students, representing 91.3% of students enrolled in 194 countries, and 24.9 million students in Turkey were affected by the COVID-19 outbreak (UNESCO, 2020). Since no clear symptoms could be observed in children exposed to the COVID-19 virus, and since they were carriers, restrictions at all levels of education continued. Within these restrictions, many face-to-face classes were canceled in educational institutions around the world to prevent the spread of COVID-19. On the other hand, Distance Education (DE) was implemented at all education levels not to disrupt education during the epidemic process and to ensure that future generations are equipped with knowledge. With this step, in 91% of higher education institutions worldwide, face-to-face education was replaced by the DE method or the transition process to the DE method in schools was started (Marinoni, G., Van't Land, H., & Jensen, 2020). Due to the COVID-19 epidemic that started to be seen in Turkey in March 2020, education and training activities started to be carried out with the DE method in line with the decision of the Ministry of Education. The Education Information Network was created by the Ministry of Education within the scope of the "Component of Provision and Management of Educational E-content" and a Distance Education Center was established using the infrastructure of EBA (Özbay, 2015). Higher education institutions also decided to conduct all theoretical and applied courses through DE as of the spring semester of the 2019-2020 academic year. DE, which was generally applied in theoretical courses before the epidemic, started to be conducted in applied courses after the epidemic. The compulsory transition from the traditional face-to-face education environment to DE due to COVID-19 affected the interaction and class participation between teacher and student. To carry out the educational

activities successfully, each individual involved in the process must be able to communicate effectively (Arı, R., & Deniz, 2008). Communication between students, parents, teachers and school management is quite important. On the other hand, it is known that the communication between teacher and student can be established mostly in the classroom environment, and face-to-face learning has a great effect on student success. Various behaviors and attitudes of the teacher, including both verbal expressions and non-verbal messages, are important in terms of lesson motivation. For this reason, it is a matter of curiosity whether the educational activities carried out through DE and similar methods can be as efficient as face-to-face education that human beings have experienced for thousands of years.

The effects of coursework by DE method on student motivation and success, which is carried out with the use of technological tools, is a subject that needs to be investigated. Various studies have been carried out in the literature investigating the effects of DE on learning. One of these studies is a research on students studying through DE at Dow University of Health Sciences, Karachi and Lahore, Medical and Dental College. This study showed that the students were satisfied with courses conducted through DE method (Mukhtar, K., Javed, K., Arooj, M., & Sethi, 2020). In a different study, the attitudes of undergraduate students towards conducting courses completely DE due to COVID-19 were investigated. 91.5% of the students (N=82) who participated in the research said that DE would not be the same as in-class learning. Three weeks after the implementation of this questionnaire, a follow-up questionnaire consisting of one question was administered and it was determined that 48.6% of the students were still concerned about DE (Unger, S. 2020). Another study examined the attitudes towards DE of some students from rural Indonesia who received their English undergraduate degrees. 20-minutes interviews were held with the students participating in the study via the Zoom application. According to the results obtained, it was determined that students tend to get bored while learning from home and prefer traditional learning activities (Male, H. 2020). In a similar study, the opinions of Turkish higher education students, who were required to take DE classes due to the COVID-19 epidemic, were taken regarding DE environments. The data in the study were analyzed using the independent t-test and one-way ANOVA test. According to the results, students stated that they would prefer the DE method if they were asked to choose between face-to-face education and DE (Arık, 2021). In a different study, teachers' opinions were taken to investigate the effects of the COVID-19 epidemic on the education process. The results of the study, which was carried out with the participation of teachers from 237 different branches, were evaluated with the content analysis technique. According to the results, it was determined that teachers have both positive and negative views on proficiency, DE, student adaptation and teacher-parent communication (Karakaya F, Adigüzel M., Üçüncü G., Çimen O., & Yilmaz, 2021). In another study, students' views were determined on art and design education through DE during the COVID-19 epidemic. As a result of the research, it was determined that conducting art and design education with the DE method is not suitable for most of the students (Caglayan, 2021). In another study, a survey was conducted at the Technical University of Cluj Napoca, Romania, on students' behavior and attitudes towards DE during the pandemic period. 78% of the 300 students who participated in the study stated that DE is beneficial. On the other hand, while students found DE stressful, they preferred the evaluation process to be done DE (Boca 2021).

With the technological developments in recent years, the internet has influenced people and all areas of society. The internet is not only a form of communication, but also a tool that provides new forms of visualization. In today's information age, it is seen that the internet is the most basic element that shapes education. However, in DE, situations that negatively affect learning, such as experiencing internet connection problems, receiving questions from more than one student at the same time, or incomplete teacher-student interaction can be encountered. Since students are isolated in the DE method, they may face problems such as lack of motivation and discipline. The DE method requires a detailed lesson plan, teaching materials and technical skills. For this reason, it is necessary to suggest some methods to examine the effects of the compulsory and rapidly applied DE method in the education-teaching process and to make education more efficient during the COVID-19 epidemic process. Thus, the deficiencies or weaknesses of the DE method will be determined and the necessary contributions for a better education will be provided. For this reason, in this study, students' attitudes regarding conducting the applied Graphic Pattern I course through DE were investigated. The research consists of 227 students studying at six different universities and taking the Graphic Pattern I course. All students were included in the study on a voluntary basis. Within the scope of the study, a new Student Attitude Scale (SAS) was developed to determine the attitudes of the students for the Graphic Pattern I course, which is conducted through DE. Thanks to this scale, the effects of applied art courses conducted through DE on students' attitudes were examined. According to the results obtained, the positive and negative aspects of conducting applied art courses through DE were determined, and suggestions were made according to the results.

2. MATERIALS AND METHODS
2.1. Distance Education
Education is defined as the change in an individual's behavior in line with his/her own will. Education, which has been going on since the existence of humanity, is a common process that continues from birth to death.

Education starts in the family and continues in different environments and groups depending on the level of civilization. Education-teaching activities are commonly performed face-to-face in schools (Artut, 2004). In the historical process, the functioning of education started to be carried out by using many strategic methods and techniques depending on technological developments, cultural interactions and the needs of people (Kahraman, 2020). One of these methods, which is widely used with the developing technology, is education conducted through DE. DE is a planned and innovative education system that takes place in completely virtual environments where the teacher and student do not have to come together, regardless of space and time, and offers many learning activities to the users. With this system, it is possible for students at all levels of education to participate in education, starting from primary education. It is possible for students who cannot receive education and training, especially due to financial inadequacies or health problems, to continue their education with the DE method (Kahraman, 2020).

The DE method is applied in two ways in the education process. The first of the application methods is to conduct the courses offline. In this method, the course, subject and information are uploaded to the system by the relevant teacher. In this method, students can attend classes offline whenever they want. However, since there is no one-to-one interaction between teacher and student in this method, students cannot ask any questions or give opinions about the subjects they do not understand. In other words, there is no teacher-student interaction in this method. The other course method applied in the DE method is the online method. In this method, the teacher and the student can log in the system at the same time and study interactively. While the students are listening to the lesson, they can both find the opportunity to practice one-on-one with the teacher, and ask their questions and give opinions to the teacher instantly.

The meaning and importance of the DE method, which dates back to the 1700s as a concept and was first realized by letters, has increased in parallel with today's technological developments. The term DE first appeared in the University of Wisconsin catalog in 1892 (Verduin, J.R., & Thomas, 1994). When the development of DE is examined historically, it is seen that it was carried out through newspapers and letters in the 1870s, and through various printed materials between 1930-1950. With the development of technology, DE activities became widespread with various technological tools such as radio, television and video between 1950-1980 and through computers between 1980-1995. With the introduction of the internet into our lives, the web-based DE method has become widespread since 1995 (Özbay, 2015).

Although the first DE studies in Turkey came to the fore with the "teacher training report" presented by Dewey in 1924 and started to take shape as a concept in 1927 (Sağer, T., Eden, A., & Şallıel, 2014), it could not be implemented for a long time. The first DE application was carried out by letter in 1956 at Ankara University Faculty of Law, Institute of Banking and Commercial Law. In the Education Center by Letter, which was established by the Ministry of Education in 1961, preparatory courses were given to those who wanted to complete their education externally, and in 1974 the letter teaching model was put into practice (MEB, 2020). In 1968, with the development of technology, educational programs began to be broadcast by the Turkish Radio and Television Corporation. DE, which was generally performed by using communication tools such as letters and videos, started to be fully implemented in the Faculty of Open Education, which was opened within Anadolu University for the first time in 1982 (Demir, 2014). DE applications in Turkey have started to become widespread since 1990 with the contributions of Fırat University, Middle East Technical University and Sakarya University (Gürer, M.D., Tekinarslan, E., & Yavuzalp, 2016). In 1992, the Open Education High School was opened under the Ministry of Education, and in 1998 the Open Primary School was opened. Today, DE applications continue to be implemented by many universities, public institutions and organizations and many private sectors.

2.2. Pattern Lesson

A pattern exists with a line and gains integrity with the formation of one's own style by using line types. In addition, it includes a mental and spiritual process (Artut, 2004). Pattern Education (PE), which forms the basis of plastic arts, is an art education process that allows students studying in the field of art and design to strengthen their visual memory and transform their thoughts into an original art form. People who receive PE can not only reach aesthetic consciousness, but also express what they see with lines (Özdemir, S., & Bingöl, 2018). In addition, individuals who receive PE learn to observe, investigate, question, think creatively and holistically. The pattern course, which is given at Art and Design Faculties, The Faculties of Art, Design and Architecture, Faculties of Fine Arts and Education Faculties that offer PE, is a compulsory course that students in this field should take. Although the course hours and the name of the pattern course taught in the relevant departments vary according to the programs of the departments, the principles given within the scope of the course basically consist of design principles and elements. Students who take the pattern course are expected to acquire the following skills:

- Learning basic knowledge, skills and concepts,
- Developing visual and linear skills,
- Being able to examine visual examples and improving the level of aesthetic understanding,

- Having knowledge about pattern elements and basic equipment to be used,
- Reflecting the level of knowledge and skill in their work,
- Reflecting aesthetic elements,
- Associating the acquired knowledge and skills with other field courses,
- Understanding quick drawing techniques,
- Gaining identity, movement and spatial integrity to the figure,
- Being able to reflect the level of knowledge and skill in their work,
- Being able to develop skills in creating the representation and presentation stages of design,
- To be able to establish perspective, object and human relations in indoor and outdoor spaces.

2.3. Dataset

The data set used in the research consists of students studying in the art education departments of different universities in the fall semester of the 2020-2021 academic year. A total of 227 students consisting of 19 participants from Antalya Akdeniz University, 12 from Isparta Suleyman Demirel University, 83 from Kütahya Dumlupınar University, 20 from Istanbul Medeniyet University, 43 from Konya Selçuk University and 50 from Burdur Mehmet Akif Ersoy University participated in the study. The university-based participation percentages of the students in the research are shown in Figure 1 with a pie chart.
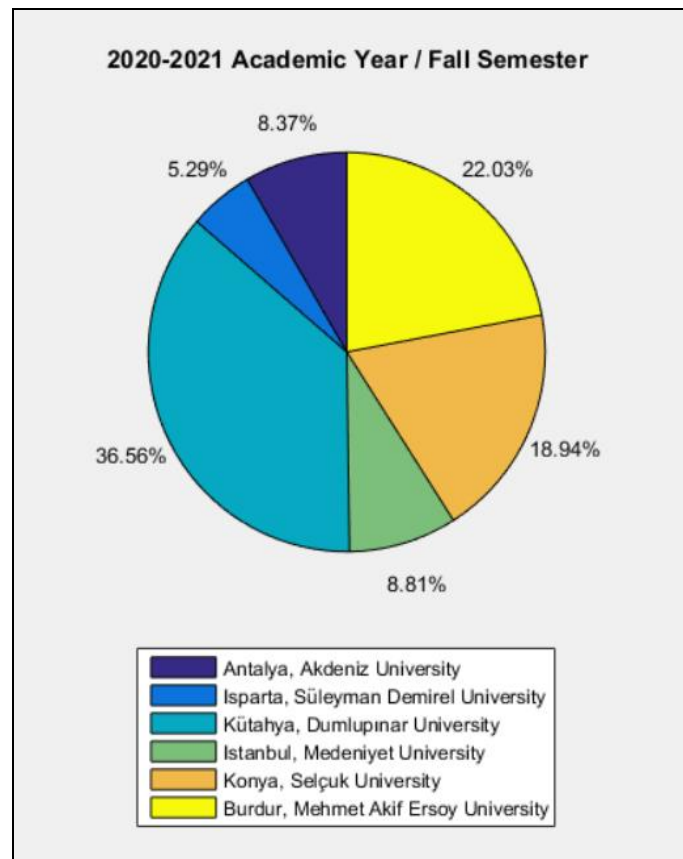

Fig.1:Display of the number of students participating in the study on a university basis with a pie chart.

When the demographic characteristics of the students participating in the study were examined, the mean age of the students was determined as 18. In addition, when the gender of the students participating in the study was examined, it was seen that 138 of them were female (60.8%) and 89 of them were male (29.2%). Looking at the gender of the participants, it is seen that female students participate more than male students.

The number of participation of the students in the study according to the high schools they graduated from is shown in the graph in Figure 2. As it is seen in Figure 2, most of the students (77.54%) who participated in the study consisted of students from Anatolian High School and Vocational High School. On the other hand, the percentage of students who graduated from both Anatolian High School and Anatolian Fine Arts High School among all participants was determined as 55.51%. Figure 3 shows the distribution of students participating in the study according to their nationalities. A total of 8 foreign students participated in the study, and 4 of them

were Azerbaijani students. On the other hand, 96.48% (219 students) of the students participating in the research were Turkish students.
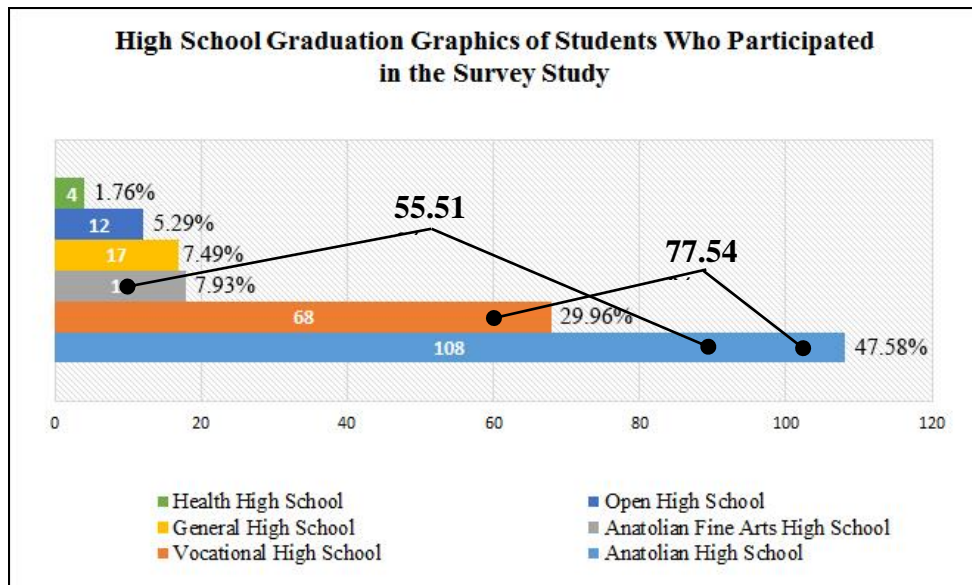
Fig.2:Graphical representation of the high school distribution of the students participating in the study.
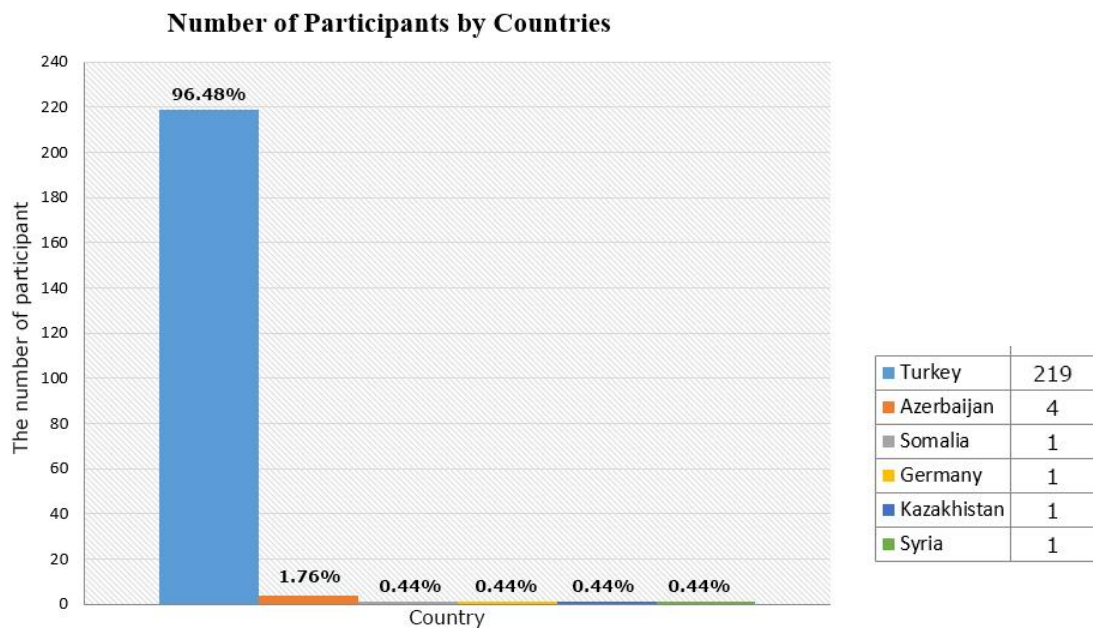
Fig.3:Graphical representation of the number of participants by country.

The graph showing how often the students in the study use social media is shown in Figure 4. When the graph is examined, it is seen that the rate of the students who never use social media is only 2.6%, and 97.4% of them use social media very often. These results show us that students have internet access and they do not experience internet problems very often during the DE method.

Fig.4:Graphical representation of the participants' social media usage times.

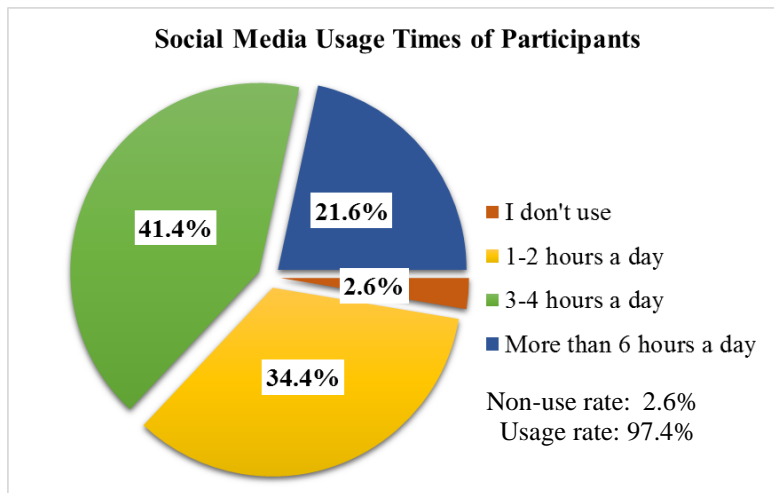In this study, the effects of the pattern course on students' attitudes were investigated, which is an applied course and conducted through DE due to the COVID-19 epidemic. Within the scope of the research, "Personal Information Form" and the newly developed "Student Attitude Scale (SAS)" were used to collect data and create data set. The questions in the Personal Information Form are given in Table 1. The questions in Table 1 include the personal information of the students, and whether they were caught in the COVID-19 epidemic and their losses.

Table 1:Personal Information Form.

Number	Questions
1	What is your nationality?
2	What is your gender?
3	Which high school did you graduate from?
4	Which university are you studying at?
5	In which department are you studying?
6	How often do you use social media?
7	Do you have problems with internet connection and speed in your area?
8	Have you been infected by the COVID-19 virus?
9	Does anyone in your immediate environment have COVID-19?
10	Have you lost any of your relatives due to COVID-19?

In the study, some of the questions, and SAS, which was prepared to determine the attitudes of the students about the conduct of the pattern course with DE, were prepared by making use of the study carried out by Kahraman (Kahraman, 2020) (Table 2). The questions prepared for the SAS formed are given in Table 2.

Table 2:SAS questions (Please mark only one of the options).

Number	Questions	Answers				
		1	2	3	4	5
1	I think that education has been negatively affected due to the epidemic.					
2	It is easy to use our university's DE method.					
3	I had a hard time finding materials for the applications in the Graphic Pattern I course during the epidemic process.					
4	I attended the Graphic Pattern I course regularly during the DE term.					
5	I had a hard time learning to use our university's DE method.					
6	Graphic Pattern I course was enjoyable with the DE method.					
7	When starting DE, I thought my success would decrease.					

8	I was able to complete my other applied courses with distance education.					
9	Distance education method in Graphic Pattern I course was more enjoyable than face-to-face education.					
10	I think the distance education process will fail.					
11	Distance education method was more efficient than face-to-face education in Graphic Pattern I course.					
12	I think the education we received with DE is insufficient.					
13	I can make the required drawings very easily in the Graphic Pattern I course.					
14	I found a model very easily for the Graphic Pattern I course since I was at home.					
15	I couldn't learn about ratio and proportion in Graphic Pattern I class.					
16	Enough examples were shown before starting to work in Graphic Pattern I course.					
17	I had difficulty in making the desired drawings in the Graphic Pattern I course.					
18	I learned to take measurements over the distance education system in the Graphic Pattern I course.					
19	I had a hard time finding the required model for the Graphic Pattern I course.					
20	I learned the dimensions of human anatomy in Graphic Pattern I course.					
21	I think that I could not use the ratio and proportion correctly in my drawings in Graphic Pattern I class.					
22	I can understand and apply the topics to my drawings in the Graphic Pattern I course.					
23	Before I started working in Graphic Pattern I course, I could not perceive the examples sufficiently due to distance education.					
24	I think that I transferred the things I saw in the Graphic Pattern I class onto paper without any mistakes.					

Before the preparation of the SAS, which is used to measure students' attitudes, a literature review was conducted on the measurement of attitudes, and theoretical approaches for attitudes were examined. The aspects such as direction, degree, intensity of the attitudes, the number of positive and negative questions, and the criteria in writing the sentences to be used in the attitude scales were carefully considered. After all the necessary checks were carried out so that the questions regarding the feelings, thoughts, opinions and attitudes of the students for the conduct of the pattern course through DE would not emphasize the same situation and not be repeated, a SAS pool was created. The questions in SAS pool were pre-examined by experts in their field to ensure the content validity of them. In this review, intelligibility, the representativeness of the measurement tool for the targeted subject scope, the content, the accuracy level of positive-negative sentence distinction and face validity were emphasized. The scale questions prepared in this context were given to Graphic Pattern I, painting and language experts, and they were asked to evaluate the draft scale. After the opinions and suggestions of these three experts, the questions in the draft form were revised and took their final form consisting of 24 questions. While 13 of the questions (questions 6, 8, 9, 11, 13, 14, 16, 18, 20, 22, 24) in the final SAS pool were composed of positive statements, 11 of them (1, 7, 10, 12)., 15, 17, 19, 21, 23. questions) consisted of negative statements.

In addition, students were asked to mark only one of the statements given in Table 2 for each of the questions in the SAS. The codes given to the answers that can be given in Table 2 and their explanations are given in Table 3.

Table 3: SAS answers to be given (Only one of the options should be marked).

Answer#	Answer
1	I strongly agree
2	I agree
3	I am undecided
4	I disagree
5	I strongly disagree

The Personal Information Form and SAS were applied to students studying in art and design departments through the Google Form-2021 platform. Information and link access necessary for students to access these forms on the Google Form platform were first sent to faculty and department officials. Afterwards, the students were given informative and necessary information and asked to fill in the relevant forms on a voluntary basis. The research is limited to only first year students studying in the Graphics, Graphic Pattern and Visual Communication Departments of Fine Arts Faculties and Art and Design Faculties. Pattern, Graphic Pattern and PE courses, which are taught in these departments with different names but the same content, are under the name of Graphic Pattern I.

2.4. Statistical analysis

There are two basic concepts that should be considered when evaluating the results of a research. The first is validity and the other is reliability. Validity means that a test accurately measures the phenomenon without confusing it with other phenomena. Reliability, on the other hand, is a concept that reveals how consistent the questions in the questionnaires are with each other, how homogeneous they are in measuring the phenomenon, and their durability over time (Terzi, 2017). In other words, reliability is the consistency of the measurement process in different sample, time and spatial conditions. Obtaining very different results when a test is applied to the same people under similar conditions and at different times indicates that there are problems in the reliability of the measurement tool (test, questionnaire). Reliability directly affects the validity of a test. A valid test must be reliable. Construct validity indicates the degree or ability of the test to accurately measure the abstract concept, in the context of the behavior to be measured. Factor analysis is performed to examine the construct validity. Factor analysis is a multivariate statistic that aims to find a small number of unrelated and conceptually new significant variables (factors, dimensions) by bringing together p-variables related to each other. The purpose of factor analysis is to make the data set easier to explain by making it smaller (Terzi, 2019). Factor analysis shows the extent to which a measurement tool can measure an objective phenomenon and how accurately it can be measured (Büyüköztürk, Ş., Çakmak, E. K., Akgün, K. Ş., & Karadeniz, 2012).

The data preprocessing step and statistical analyzes in this study were performed in SPSS 26.0. The data in the study were first searched using frequencies, descriptive statistics and graphical visualizations. Then, the suitability of the data for factor analysis was examined by means of Kaiser-Meyer Olkin (KMO) and Barlett Sphericity (BS) tests.

3. EXPERIMENTAL RESULTS

In this study, the factor analysis method was used in the construct validity of the SAS which was created for the pattern course to be conducted through DE. A total of 24 questions which were subject to elimination qualitatively were prepared in 5-point Likert type scale. The score distributions of the positive and negative answers to the questions are given in Table 4. When Table 4 is examined, it is seen that positive statements are scored as 5-4-3-2-1 and negative statements as 1-2-3-4-5. The Kaiser-Meyer Olkin test (KMO), which is used for the suitability of the data for factor analysis, is a statistical method used to determine that the data and sample size are suitable and sufficient for the selected analysis. The Barlett Sphericity Test (BS) is another statistical method used to check whether the data come from a multivariate normal distribution.

Table 4:Score distribution of positive-negative answers to the questions.

Question Sentence	Likert Type	Score
Positive Sentences	I strongly agree	5 point
	I agree	4 point
	I am undecided	3 point
	I disagree	2 point
	I strongly disagree	1 point
Negative Sentences	I strongly agree	1 point
	I agree	2 point
	I am undecided	3 point
	I disagree	4 point

	I strongly disagree	5 point

The suitability of the data for factor analysis is determined when the KMO is greater than 0.6 and close to 1 and the BS is significant (Büyüköztürk, 2012). For this reason, before Exploratory Factor Analysis (EFA) was performed in the study, whether the data were suitable for factor analysis was determined by using KMO and BS tests. In the study, the KMO value was found to be 0.912. On the other hand, in the BS test, a value of 3490.33 was obtained for the x2 value and a value of 0.000 for the p-value. These values obtained for KMO and BS showed that factor analysis could be performed on the data available. However, in the analyzes, it was observed that the factor load of the 2nd, 3rd, 4th, 5th and 16th questions was below 0.30. As it is known, the factor load value is a coefficient that explains the relationship between the questions and the factors and it is expected to take a value greater than 0.30 (Büyüköztürk, 2012). Therefore, these five questions (2nd, 3rd, 4th, 5th and 16th questions) with a factor load below 0.30 were removed from the scale and the EFA was recalculated. After these five questions were removed, as a result of the operations for the remaining 19 questions, the KMO sample fit coefficient was 0.919, the BS test was found as 2853.772 for x2 value, and 0.001 for the p-value. When the component matrix of the recalculated scale was examined, it was observed that it was gathered under a single factor as in the first analysis. This single factor explains 47.732% of the total variance. Factor loads under a single factor vary between 0.553 and 0.795. Table 5 shows the loads of the new SAS questions consisting of 19 questions in this single factor structure and the information on the variance rate they explain. In addition, the α coefficient, which is a measure of internal consistency and developed by Cronbach, was used to determine the level of reliability in the Likert type attitude scale (Tavşancıl, 2005). The Cronbach-Alpha internal consistency coefficient of the last SAS whose factor analysis was performed was calculated as 0.938.

Table 5:Factor loads of pattern course DE-SAS and variance rate they explain.

Question#	Explanation	Factor load
1	I think that education has been negatively affected due to the epidemic.	0.690
6	Graphic Pattern I course was enjoyable with the DE method.	0.763
7	When starting DE, I thought my success would decrease.	0.570
8	I was able to complete my other applied courses with distance education.	0.553
9	Distance education method in Graphic Pattern I course was more enjoyable than face-to-face education.	0.694
10	I think the distance education process will fail.	0.773
11	Distance education method was more efficient than face-to-face education in Graphic Pattern I course.	0.728
12	I think the education we received with DE is insufficient.	0.795
13	I can make the required drawings very easily in the Graphic Pattern I course.	0.754
14	I found a model very easily for the Graphic Pattern I course since I was at home.	0.621
15	I couldn't learn about ratio and proportion in Graphic Pattern I class.	0.617
17	I had difficulty in making the desired drawings in the Graphic Pattern I course.	0.704
18	I learned to take measurements over the distance education system in the Graphic Pattern I course.	0.687
19	I had a hard time finding the required model for the Graphic Pattern I course	0.645
20	I learned the dimensions of human anatomy in Graphic Pattern I course.	0.576
21	I think that I could not use the ratio and proportion correctly in my drawings in Graphic Pattern I class.	0.678
22	I can understand and apply the topics to my drawings in the Graphic Pattern I course.	0.713
23	Before I started working in Graphic Pattern I course, I could not perceive the examples sufficiently due to distance education.	0.779
24	I think that I transferred the things I saw in the Graphic Pattern I class onto paper without any mistakes.	0.717
Variance (%)		47.732

The research questions and hypotheses used to measure the attitudes of the students for the applied pattern course given by the DE method during the COVID-19 epidemic period are given in Table 6. The table shows the hypotheses sought for the three research questions.

EFA was used to test the construct validity of the pattern course DE-SAS, and Cronbach's Alpha analysis was used to calculate the internal consistency reliability coefficient. In addition, the arithmetic mean and standard

deviation values were also looked at to present the view of the scores obtained for the pattern course DE-SAS. The arithmetic mean value, which is considered between 1 and 5, was analyzed and interpreted over five different value ranges, as seen in Figure 5.

Table 6:Research questions and hypotheses.

| Number	Research question	Number	Hypothesis explanation
1	What are the attitudes of the students in the study group for conducting the applied pattern course with the Distance Education System during the COVID-19 epidemic process?	1	Attitudes of the students for conducting pattern course with DE differ significantly according to gender.
2	Does the exposure of the students in the study group to the disease affect their attitudes for conducting the pattern course with the Distance Education System?	2	There is a significant relationship between students' having COVID-19 and their attitudes towards learning the pattern course with DE.
		3	There is a significant relationship between the students' relatives having COVID-19 and their attitudes for learning the pattern course with DE.
		4	There is a significant relationship between the students' loss of a relative due to COVID-19 and their attitudes for learning the pattern course with DE.
3	Do the digital habits affect the attitudes of the students in the study group for conducting the pattern course with the Distance Education System?	5	There is a significant relationship between the frequency of students' social media use and their attitudes for learning the pattern course with DE.
		6	There is a significant relationship between students' internet interruption and speed problems and their attitudes for learning the pattern course with DE.
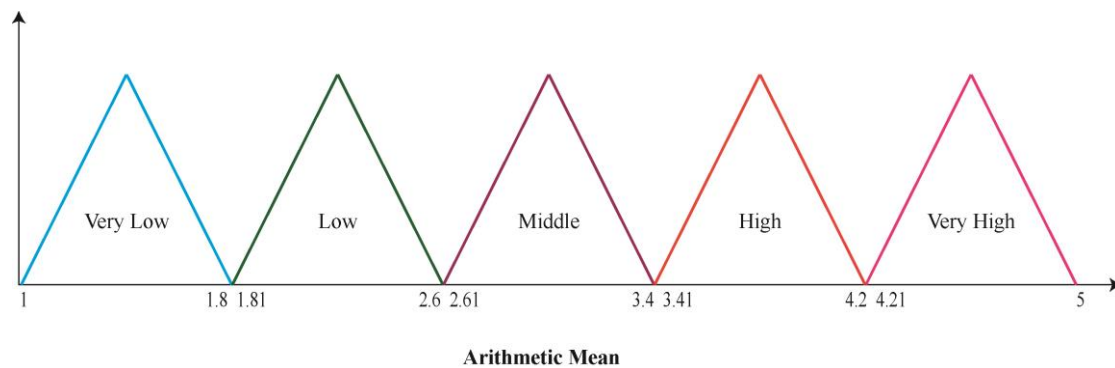
Arithmetic Mean
Fig.5:Value ranges of the arithmetic mean.

If the arithmetic mean value obtained is between 1-1.8, it is accepted as "very low", between 1.81-2.60 "low", between 2.61-3.4 "middle", between 3.41-4.2 "high" and finally between 4.21-5 as "very high". In addition, in the comparisons to be made according to the type of independent variables considered within the scope of the research, the parametric t-test and ANOVA Test were preferred due to the normal distribution of the data. The error rate considered at the analysis point was accepted as 0.05. When the data in Table 7 are examined, it is seen that the arithmetic mean of the scores the students got from the Graphic Pattern I course DE-SAS is $\bar{X}$=2.74. This value is between 2.61 and 3.4 and represents the middle level. That is, the students' Graphic Pattern I course DE-SAS is at medium level.

Table 7:Students' Graphic Pattern I course DE-SAS level.

Scale	N	$\bar{X}$	SS
Attitude For Graphic Pattern I course DE	227	2.74	0.86

According to Table 8, the mean scores of female students from the attitude scale for Graphic Pattern I course DE is $\bar{X}$=2.64, and the average of the scores of the male students is $\bar{X}$=2.88. A statistically significant difference was observed between female students and male students for Graphic Pattern I course DE-SAS (t (225) =-1.974; p<0.05). It was determined that male students' attitudes for Graphic Pattern I course DE-SAS were more positive than female students.

Table 8:Independent t-Test results by gender variable.

Gender	N	$\overline{X}$	SS	SD	t	p
Female	138	2.64	0.84	225	-1.974	0.049*
Male	89	2.88	0.89			

p>0.00

When Table 9 is examined, it is seen that the mean scores of the students who had COVID-19 disease in Graphic Pattern I course DE-SAS was $\overline{X}$=2.75, and the mean scores of the students who did not have was $\overline{X}$=2.74. For Graphic Pattern I course DE-SAS, there was no statistically significant difference between students who had COVID-19 and those who did not (t (225) =0.014; p>0.05).

Table 9:Independent t-test results by state variable of having COVID-19.

Having COVID-19	N	$\overline{X}$	SS	SD	t	p
Positive	27	2.75	1.02	225	0.014	0.989
Negative	200	2.74	0.84			

According to Table 10, the attitude scale mean scores of the students for Graphic Pattern I course DE who had an acquaintance with COVID-19 in their immediate environment was $\overline{X}$=2.83, and the mean scores of the students who did not have was $\overline{X}$=2.6. There was no statistically significant difference between the Graphic Pattern I course DE-SAS of the students who had an acquaintance with COVID-19 in their immediate environment and the students who did not (t (225) =1.902; p>0.05).

Table 10:Independent t-test results by state variable of having COVID-19 in immediate environment.

Having COVID-19 in immediate environment	N	$\overline{X}$	SS	SD	t	p
Positive	135	2.83	0.91	225	1.902	0.058
Negative	92	2.60	0.78			

In Table 11, the attitude scale mean scores of the students for the Graphic Pattern I course DE, who lost an acquaintance due to COVID-19 in their immediate surroundings, was $\overline{X}$=3.08, and the mean scores of the students who did not was $\overline{X}$=2.68. When the statistical evaluations are examined in the Graphic Pattern I course DE-SAS, it is seen that there was a significant difference between the students who lost an acquaintance in the immediate environment and the students who did not (t (225) =2.431; p>0.05). According to the results, it was determined that the students who lost an acquaintance due to COVID-19 in their immediate environment had a positive approach to the conduct of the lessons with the DE method.

Table 11:Independent t-Test Results by COVID-19 Death State Variable in the immediate environment.

COVID-19 Death in immediate environment	N	$\overline{X}$	SS	SD	t	p
Yes	32	3.08	1.18	225	2.431	0.016*
No	195	2.68	0.79			

p>0.05

Another analysis made in the study is the statistical evaluation between students who use social media and those who do not. In Table 12, the analysis results of the students who use and do not use social media are given. The attitude scale mean score of the students who did not use social media was $\overline{X}$=2.59, the mean score of the students who used it for 1-2 hours a day was $\overline{X}$=2.85, the mean score of the students who used it for 3-5 hours a day was $\overline{X}$=2.66, and the mean score of the students who used it for 6 hours or more was $\overline{X}$= It is 2.72. One-way analysis of variance was performed to determine whether there was a significant difference between these values. It was observed that there was no statistically significant difference between the students' attitude scale mean scores in terms of the frequency of using social media (F (3-223) =1.252; p>0.05).

Table 12:One-way analysis of variance results according to frequency of using social media.

Frequency of use	N	$\overline{X}$	SS	Source of variance	KT	SD	KO	F	p
I do not use	6	2.59	0.91	Between G.	1.600	3	0.533	1.252	0.287
1-2 hours a day	78	2.85	0.85	Within G.	168.380	223	0.755		
3-5 hours a day	94	2.66	0.85	Total	169.980	226			
6 hours and more	49	2.72	0.91						

The results of the analysis according to the answers of the students participating in the study about whether they have internet problems or not are given in Table 13. According to Graphic Pattern I course DE-SAS, the mean scores of the students who had internet problems was $\overline{X}=2.61$, and the mean scores of the students who did not have internet problems was $\overline{X}=2.85$. There is a significant difference between students who have internet problems and those who do not (t (225) =-2.152; p<0.05). Thus, it was determined that students who did not have internet problems had a more positive attitude for the conduct of Graphic Pattern I course with the DE method compared to students who had internet problems.

Table 13:Independent t-test results according to internet problem variable.

Internet Problem	N	$\overline{X}$	SS	SD	t	p
Yes	107	2.61	0.75	225	-2.152	0.032[*]
No	120	2.85	0.94			

According to some studies conducted before the COVID-19 outbreak, it was determined that various demographic characteristics of students (such as gender, age, study program and education level) had an impact on learning. The students' adaptation to learning through DE depends on their awareness level and their tendency towards information technologies. With this epidemic, students studying in higher education institutions had to face the DE method. With this study, students' attitudes for DE were investigated to prevent or minimize the effects of the COVID-19 epidemic and other future epidemics on applied art classes.

4. CONCLUSION AND SUGGESTIONS

In this study, students' attitudes were investigated for conducting the applied Graphic Pattern I course in higher education institutions with the DE method in an extraordinary and urgent way due to the COVID-19 epidemic. It is thought that this study will contribute to the context, input and process evaluation of applied courses in higher education institutions in the future. With a new study to be carried out in the future, the effects of the Graphic Design course conducted through DE and the Graphic Design course conducted face-to-face on the success of the students will be compared. Thus, the effects of both education systems on student achievement will be measured and evaluated clearly. In the DE method, there may be some negative situations such as insufficient technological infrastructure or deficiencies in student motivation. Therefore, according to the results obtained in this study, the DE method should be integrated into education gradually. In addition, planning the learning activities completely, determining the evaluation methods clearly and increasing the computer skills of teachers and students will contribute to the DE method.

This study was carried out with the voluntary participation of 227 students who took Graphic Pattern I course at six different universities. To collect data, a structured Personal Information Form and a new SAS developed in line with the opinions of graphic pattern, painting and language experts were used.

According to the results of the study, first of all, the attitudes of the students for the conduct of the pattern course through DE were investigated and it was determined that their attitudes were at a medium level. Thus, Hypothesis 1 under the first question of the research was confirmed. On the other hand, it was determined that there was a statistically significant difference between the attitudes of female students and male students for taking the pattern course with DE (t (225) =-1.974; p<0.05). This result showed that male students approached more positively than female students about conducting the pattern course through DE. As a result, it was seen that the gender of the students had an effect on the conduct of the pattern course through DE.

The second question of the research is about whether the student has contracted COVID-19, whether someone in his immediate environment has contracted or whether it has resulted in death. It was investigated whether there is a relationship between the students' contracting COVID-19 and their attitudes for learning the pattern course with DE. No significant relationship was found between the student's or any of his/her relatives' having COVID-19 and then recovered and their attitudes for conducting the pattern course with DE. In this case, the 2nd and 3rd Hypotheses were not formed. However, Hypothesis 4 was confirmed, as there was a statistically significant difference between the students' losing a relative due to COVID-19 and their attitudes for conducting the pattern course with DE (t (225) =2.431; p>0.05). As a result, it was determined that, for the conduct of the pattern course with the DE method, the attitudes of the students who lost their relatives due to COVID-19 in their immediate environment were more positive than the students who did not. This situation can be interpreted as the students prefer DE as an alternative method to avoid such negative situations.

With the last question taken into consideration while evaluating students' attitudes for DE, students' tendency and frequency of use for digital technologies were evaluated with reference to their habits of using social media. According to the results of the evaluation and analysis, no significant relationship was found between the students' habits of using social media and their attitudes for conducting DE in the pattern course, and Hypothesis 5 was rejected.

In addition, with this study, it was checked whether the students experienced problems such as internet access speed and interruption in the region they live in during the DE process. A significant difference was found between the students' internet problems and their attitudes for learning the pattern course with DE (t (225) =- 2.152; p<0.05) and Hypothesis 6 was confirmed. It was determined that the attitudes of the students who did not have internet problems were more positive than the students who had problems for conducting the pattern course with DE.

The results of the study showed that the fear and anxiety that the students faced during the COVID-19 epidemic affected their attitudes towards the teaching of the pattern course. As a result, it is thought that the students have a positive attitude for taking the applied pattern course with DE, with the fear and anxiety that the virus may infect them in the school environment and with the sense of protecting themselves against danger. On the other hand, any technical problem (such as low speed and outage) in the internet structure may negatively affect the attitudes of the students for taking the pattern course with DE. This study has shown that the technology usage habits of the students do not affect their attitudes for studying the pattern course with DE, but the personal problems they encounter, the fears and concerns they experience affect their attitudes.

Most of the studies on the conduct of lessons through DE during the COVID-19 pandemic have focused on the attitudes of students or teachers for the DE method. However, the effects of conducting the applied courses with the DE method on the students, which are carried out with the traditional method, have not been investigated. As mentioned in the previous sections, the DE method is a method that was already used before the COVID-19 outbreak. In this context, especially theoretical lectures are carried out through DE. Due to the COVID-19 epidemic, applied courses also started to be conducted with the DE method. However, it is quite important to investigate the attitudes of the students in the conduct of applied courses through DE, for a more efficient and effective teaching of applied courses. For this reason, with this study, students' attitudes in the application of the Graphic Pattern I course, which is carried out by means of DE, were investigated. In this way, it will be possible to develop new methods and techniques to minimize the deficiencies in the functioning of the applied courses conducted through DE.

With this study, it was determined that following art and design education with the DE model is not suitable for students. Therefore, additional measures should be taken to teach applied courses to students by DE. According to the results of the study, it is thought that the suggestions given below will increase the effectiveness and efficiency of education through DE.

- Computer and technical infrastructure should be provided and supported.
- Expert assistance should be provided to students who do not have technological knowledge.
- New methods and activities should be developed to increase interaction and cooperation between teacher-student and student-student.
- Platforms should be developed to increase students' participation in the course and express themselves.
- Methods should be developed to get feedback from students.

REFERENCES

1. Arı, R., & Deniz, M.E. 2008. Sınıf Yönetimi. Maya Akademi.
2. Arık, S. 2021. "Distance Education Learning Environments during COVID-19 Pandemic from Student Perspectives: A Study in Turkish Higher Education." Journal of Pedagogical Research 5(2): 103–18.
3. Artut, K. 2004. Anı Yayıncılık Sanat Eğitimi Kuramları ve Yöntemleri.
4. Boca, G.D. 2021. "Factors Influencing Students' Behavior and Attitude towards Online Education during COVID-19." Sustainability (Switzerland) 13(13).
5. Büyüköztürk, Ş., Çakmak, E. K., Akgün, K. Ş., & Karadeniz, Ş. 2012. "Bilimsel Araştırma Yöntemleri." Enstitüsü Dergisi, Pegem Akademi Yayıncılık 18(2): 195–207.
6. Büyüköztürk, Ş. 2012. Pegem Akademi Sosyal Bilimler Için Veri Analizi El Kitabı.
7. Caglayan, E. 2021. "Art and Design Education in the Times of the Coronavirus (Covid-19) Pandemic in Turkey." International Education Studies 14(11): 43.
8. Demir, E. 2014. "Uzaktan Eğitime Genel Bir Bakış." (c): 1–43.
9. Gürer, M.D., Tekinarslan, E., & Yavuzalp, N. 2016. "Opinions of Instructors Who Give Lectures Online about Distance Education." Turkish Online Journal of Qualitative Inquiry 7(1): 47.
10. Kahraman, M.E. 2020. "COVID-19 Salgınının Uygulamalı Derslere Etkisi ve Bu Derslerin Uzaktan Eğitimle Yürütülmesi: Temel Tasarım Dersi Örneği." İMÜ Sanat Tasarım ve Mimarlık Fakültesi Dergisi 6(1): 44–56.
11. Karakaya F, Adigüzel M., Üçüncü G., Çimen O., & Yilmaz, M. 2021. "Teachers' Views towards the Effects of Covid-19 Pandemic in the Education Process in Turkey." Participatory Educational Research 8(2): 17–30.

12. Koşaroğlu, Ş. M., Ünal, E. A., & Yalman, İ. N. 2020. "Covid-19 Salgınının Tüketicilerin Talep Yapısı Üzerindeki Etkileri." 4(2): 479–504.
13. Male, H., & et. al. 2020. "Attitude of Undergraduate Student's towards Online Learning during COVID-19 Pandemic." PalArch's Journal of Archaeology of Egypt/ Egyptology 17(4): 1628–37.
14. Marinoni, G., & et. al. 2020. IAU Global Survey Report The Impact of Covid-19 on Higher Education around the World.
15. MEB. 2020. "History." Turkish Ministry of National Education. https://aol.meb.gov.tr/www/okulumuz/icerik/1 (April 4, 2022).
16. Mohan, BS & Vinod, N. 2020. "COVID-19: An Insight into SARS-CoV2 Pandemic Originated at Wuhan City in Hubei Province of China." Journal of Infectious Diseases and Epidemiology 6(4).
17. Mukhtar, K., Javed, K., Arooj, M., & Sethi, A. 2020. "Advantages, Limitations and Recommendations for Online Learning during Covid-19 Pandemic Era." Pakistan Journal of Medical Sciences 36(COVID19-S4): S27–31.
18. Özbay, Ö. 2015. "Dünyada ve Türkiye'de Uzaktan Eğitimin Güncel Durumu." The Journal of International Educational Sciences 2(5): 376–376.
19. Özdemir, S., & Bingöl, M. 2018. "Kültürel Mirasın Korunması ve Yaşatılması." In III. Uluslararası Akdeniz Sanat Sempozyumu, , 403.
20. Sağer, T., Eden, A., & Şallıel, O. 2014. "Distance Learning in Music Education and Orchestral Applications." Inonu University Journal of Art and Design 4(9): 69–79.
21. Sönmez, R. V. 2020. "Covıd-19 Kaygısının İş Gören Performansı ve Motivasyonu Üzerine Etkisi: Hizmet Sektöründe Bir Araştırma." Avrasya Sosyal ve Ekonomi Araştırmaları Dergisi (12): 155–75.
22. Tavşancıl, E. 2005. "Tutumların Ölçülmesi ve SPSS Ile Veri Analizi." In Ankara: Nobel Yayınları,.
23. Terzi, Y.. 2017. Ondokuz Mayıs Üniversitesi Fen-Edebiyat Fakültesi İstatistik Bölümü Güvenilirlik Analizi.
24. Terzi, Y. 2019. Ondokuz Mayıs Üniversitesi Fen-Edebiyat Fakültesi İstatistik Bölümü Anket, Güvenilirlik-Geçerlilik Analizi.
25. UNESCO. 2020. "Education: From Disruption to Recovery." United Nations Educational Scientific and Cultural Organization [UNESCO]. https://en.unesco.org/covid19/educationresponse (April 4, 2022).
26. Unger, S., & William R.M. 2020. "Student Attitudes Towards Online Education during the COVID-19 Viral Outbreak of 2020: Distance Learning in a Time of Social Distance." International Journal of Technology in Education and Science 4(4): 256–66.
27. Verduin, J.R., & Thomas, A.C. 1994. Çeviren: İlknur Maviş. Eskişehir: Kibele Sanat Merkezi Uzaktan Eğitim: Etkin Uygulama Esasları.
28. World Health Organization. 2022. "WHO Coronavirus (COVID-19) Dashboard. WHO Coronavirus (COVID-19) Dashboard With Vaccination Data." Who: 1–5. https://covid19.who.int/ (April 4, 2022).