



www.ijtes.net

An Investigation of Pre-service Music Teachers' Attitudes towards Online Learning during the COVID-19 Pandemic

Özlem Kılınçer 
Nevşehir Hacı Bektaş Veli University, Turkey

To cite this article:

Kilincer, O. (2021). An investigation of pre-service music teachers' attitudes towards online learning during the COVID-19 pandemic. *International Journal of Technology in Education and Science (IJTES)*, 5(4), 587-600. <https://doi.org/10.46328/ijtes.304>

The International Journal of Technology in Education and Science (IJTES) is a peer-reviewed scholarly online journal. This article may be used for research, teaching, and private study purposes. Authors alone are responsible for the contents of their articles. The journal owns the copyright of the articles. The publisher shall not be liable for any loss, actions, claims, proceedings, demand, or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of the research material. All authors are requested to disclose any actual or potential conflict of interest including any financial, personal or other relationships with other people or organizations regarding the submitted work.



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.



International Journal of Technology in Education and Science (IJTES) is affiliated with
[International Society for Technology, Education, and Science \(ISTES\): www.istes.org](http://www.istes.org)

An Investigation of Pre-service Music Teachers' Attitudes towards Online Learning during the COVID-19 Pandemic

Özlem Kılınçer

Article Info

Article History

Received:

15 March 2021

Accepted:

05 September 2021

Keywords

Music teachers

Online learning

Attitude

Prospective teachers

COVID-19

Abstract

The aim of this research is to determine the pre-service music teachers' attitudes towards online learning during the COVID-19 pandemic. The study investigated the attitudes of music teacher candidates toward online learning and if they differed by the variables of gender, year of study and academic achievement. The "Online Learning Attitude Scale" was used to collect data for the study. The study was conducted with 164 pre-service music teachers studying at the education faculties of Aksaray University, Çanakkale 18 Mart University, and Necmettin Erbakan University in the 2020-2021 academic year. The independent groups t-test and one-way analysis of variance were used in the data analysis. Results from the study suggested that pre-service music teachers' attitudes regarding online learning in the COVID-19 pandemic were negative to moderate. In addition, the study indicated that the attitudes of music teacher candidates towards online learning differed by gender, year of study, and academic achievement variables during the COVID-19 pandemic.

Introduction

Educational institutions suddenly shifted from traditional learning to online education during the COVID-19 pandemic (Batmang et al., 2021; Scull et al., 2020; Xu, 2020). The new technological situation and disruptions that emerged with the effect of the pandemic situation (Ghazi-Saidi, 2020) have led to the aggravation of the learning-teaching tasks of music teachers and students, resulting in a rise in negative emotional characteristics. Many extra tasks that require time and patience of teachers and students have revealed many demands regarding their professional practices and competencies in this period. The affective characteristics of teachers and teacher candidates in the distance education process becomes an important factor in overcoming new problems (Batmang et al., 2021; Niemi & Kousa, 2020; Solomon et al., 2010).

Distance education during the pandemic in Turkey has become the new normal in higher education. However, some of both teachers and students had difficulties in accessing distance education for some reasons. Instructors at certain faculties were providing distance education to students before the COVID-19 pandemic. Therefore, best practices for distance education and exemplary teaching styles have been taken from previous experience. However, there have been problems in distance education applications in applied fields such as music and visual arts education (Kaleli, 2021; YÖK, 2020). The rapid spread of the virus that caused the COVID-19 pandemic, as

well as the ambiguity surrounding treatment options have caused feelings of fear, anxiety, and despair. It is still unclear whether face-to-face education will start in the 2021-2022 academic year, where and how music lessons will be implemented and how long the pandemic will last.

Pre-service teachers in Turkey must compete in a tough competition to get admission to a university. One of these young people's main objectives is to get into university, and the goals of the students who get into the university are to graduate with the necessary competencies and motivation in the department they enter and to meet academic and professional employment expectations in their fields. A teacher candidate is expected to have competence and high motivation in the subject area. In this respect, it can be argued that there is a linear relationship between the attitudes and the achievement of a better status in their professional fields of pre-service music teachers, who are at the center of art education and training activities (Arslantaş, 2021). It is an important issue for individuals to be aware of their own affective characteristics in learning and to develop affective strategies in this direction. Factors such as students' interest, perception, attitude, behavior and curiosity levels constitute the basic structures of affective awareness (Duman & Yakar, 2017; Kara, 2020). Affective reactions to learning, such as interest, attitude, expectation, curiosity, excitement, anxiety, academic self-concept, self-efficacy, and motivation can be identified as key affective characteristics of learners. The effective realization of e-learning depends not on how advanced the technology used is, but on the extent of positive attitudes people develop towards e-learning (Liaw et al., 2007). According to Gülbahar (2012), online learning is the implementation of teaching practices in electronic learning environments by providing information and interaction with multimedia platforms, without the limitation of time and space, via various field networks such as information and communication technologies and internet/intranet. Based on this concept, it is necessary to prioritize the affective dimension (Angelova, 2020) in pre-service music teachers' learning in the e-learning process.

Distance education, which is defined as one of the leading elements of educational technology and educational settings, is growing in importance, and many new models are entering the world of education. Educators emphasize that when distance education models are used appropriately and effectively, good communication and learning will take place and a lively and interesting learning environment will be created. Studies reveal that there are controversial findings about distance education-based education being more effective and learning more permanent (Alberti, 2020; Yıldız et al., 2004). However, achieving the expected benefit from distance education depends on using the appropriate model at an appropriate time and in an appropriate manner. The teacher bears the greatest duty in ensuring that students benefit from distance education in schools. As part of the task of planning, maintaining and evaluating education, the teacher is required to use distance education practices that will help them achieve their goals. As the implementer of the educational program and educational technology, the teacher must gain certain competencies in order to fulfill these duties. The most essential aspect of distance education is the trainer's readiness and the students' attitudes. If students do not find technology useful, they will not be open to distance education (Christensen et al., 2001; Morales et al., 2021; Niemi & Kousa, 2020).

It has become a need to use modern technological resources to solve problems with traditional technologies and

methods in the area of education (Demirer, Çintaş, Yıldız & Sünbül, 2011). We see that distance education applications which arose as a result of technological advancements contribute positively to the solution of quantity and quality issues in subject area education, provided they are designed and implemented in a rational way. Distance education technologies are frequently utilized to provide high-quality education to a larger number of people in less time. Distance education technologies significantly eliminate the space and time limitations that hinder the delivery of education services (Salajegheh et al., 2016; Souza et al., 2018). The crises encountered in the education sector show that most approaches applied so far to meet the increasing demand for education have not generated favorable outcomes, and a significant improvement in efficiency has not been achieved despite the increase in education expenses. It is believed that distance education technologies must have certain scientific foundations, in order to be implemented in learning-teaching activities when and where they are required, as well as to be functionally integrated with one another (Thompson & McDowell, 2019).

Distance education lowers costs while maintaining learning quality. For this reason, academicians are expected to be more facilitators, collaborators, mentors, trainers, directors, and study partners, offering alternatives and increased accountability for students' learning. Therefore, academicians should be able to innovate their pedagogical approaches and teaching materials in order to meet the course objectives (Armstrong-Mensah et al., 2020). Innovation is crucial to helping students embrace e-learning. Distance education systems necessitate technology such as computers, applications, and the Internet, as well as the necessary procedures to make online learning a reality. Flexible technologies such as smartphones can also be used in this process (Demosthenous, Panaoura & Eteokleous, 2020; Kaur, 2020).

The term "online learning" refers to a teaching and learning process in which the student and teacher are in separate locations. Computer technology is used by students to communicate with teachers and other students, as well as to access learning materials (Bradley, 2021; Kibici & Sarıkaya, 2021; Thompson & McDowell, 2019). Online learning technologies are based on designing, applying, evaluating and developing new teaching-learning models by bringing together human power and non-human power resources in a system integrity based on research data in the field of learning psychology and human communication in order to provide a more efficient teaching-learning activity. In this sense, they are utilized to complement each other by utilizing research data from the disciplines of learning psychology and communication sciences, thus increasing the efficiency in teaching-learning activities. It is important to determine the online competencies of pre-service music teachers and their attitudes towards this practice and the factors affecting them, and to make the necessary arrangements to increase the competencies of the students during the COVID-19 outbreak (Kaleli, 2020a; Kaleli, 2020b; Kibici & Sarıkaya, 2021; Koyuncuoğlu, 2021a; Thornton, 2020). Interruptions in learning endanger the educational careers of students, especially those at secondary and tertiary level. These circumstances have presented the education industry with several unexpected problems (Adarkwah, 2021). It is acknowledged that students' evaluations are an important factor in the advantages and value of online learning, and evaluating their attitudes is also an important factor in evaluating achievement. For this reason, most studies have focused only on students' perspectives (Schlenz et al, 2020).

Negative attitudes towards online learning can be attributed to a number of factors. The majority of the teachers believe that using online technology resources requires an extraordinary effort, partly without adequate

knowledge. As a result, they are wary about encountering resources. Teachers and educators avoid new roles other than those they are traditionally accustomed to (Barnett, 2018; Paudel, 2021). The introduction of new online technologies into the system requires new roles to be played apart from the old ones because habits are difficult to break, the required effort for the success of technical resources is not demonstrated, and these resources are not treated with enthusiasm. Teachers and educators are not very interested in new technology tools that compel them to abandon old and established practices (Paje et al., 2021). One of the causes for the negative perception of online technologies in distance education is the belief that teaching-learning processes will be mechanical. Online technology, according to people who hold this viewpoint, will have a negative impact on the socialization of individuals engaged in intensive educational activities. However, negative attitudes about online technologies emerge as a result of the incorrect and inadequate information in question (Kibici & Sarıkaya, 2021; Lin, 2021).

So far, researchers have looked into the attitudes and motivations of students towards online learning in various fields, particularly in this time period under the impact of COVID-19. However, it is seen that just a limited number of research in the field of music education have been conducted on this topic. It is expected that the pandemic will have a substantial impact on students' intentions and attitudes in adopting online learning, and more efforts should be made to clarify how students respond to the situation. Therefore, the online learning attitudes of university students in the field of music teaching were examined in terms of some variables. For this purpose, answers to the following questions were sought in the study.

- What is the level of online learning attitudes of the pre-service music teachers?
- Do the pre-service music teachers' online learning attitudes differ according to gender?
- Do the pre-service music teachers' online learning attitudes differ according to their grade levels?
- Do the pre-service music teachers' online learning attitudes differ according to their success?

Method

In line with the purpose of this study, in which the pre-service music teachers' attitudes towards online learning were determined, research process was carried out with a single survey method. The single survey method was used to describe the attitudes of music teacher candidates towards online learning. In order to apply the Online Learning Attitude Scale, permission was obtained from the dean's office and it was carried out during the COVID-19 process. The obtained data were undergone technical analyses, recorded digitally, subjected to statistical analysis with the relevant analysis techniques and interpreted by comparing with the relevant literature. Suggestions were made for the online learning process of pre-service music teachers.

Participants

The sample of the research consists of pre-service music teachers studying in the Music Teaching Departments in Education faculties of Çanakkale 18 Mart University, Aksaray University and Necmettin Erbakan University in 2020-2021 academic year. According to the data obtained from the Atlas Information Management System of YÖK (Council of Higher Education), the number and distribution of students in the relevant departments were

determined. In order to reach pre-service music teachers, necessary permissions were obtained from the faculty administration and the link of the survey's web page was shared with the students.

The purpose of the study was briefly mentioned on the survey web page and it was emphasized that participation in the study was on a voluntary basis. As a result, 164 pre-service music teachers participated in the study and the required sample size was met. Of the pre-service music teachers included in the study, 34.15% were male and 65.85% were female. 17.07% of them were in the first, 17.07% in the second, 31.71% in the third and 34.15% in the fourth year of study.

The mean age of the participants was 20.56 (Sd=1.91). It was determined that 14.02% of the music teacher candidates had a low, 53.05% of them had a moderate and 32.93% of them had a high achievement level. A large proportion of the students stated that they participated in distance education using mobile phones (31.71%) and laptop (40.85%). Demographic characteristics of the participants in the study are shown in Table 1.

Table 1. Demographic Characteristics of Pre-service Music Teachers

Variable		f	%
Gender	Male	108	65.85
	Female	56	34.15
Year of Study	1	28	17.07
	2	28	17.07
	3	52	31.71
	4	56	34.15
Perceived academic success	High	54	32.93
	Moderate	87	53.05
	Low	23	14.02
How do you access distance education applications?	Computer-mobile phone-tablet together	24	14.63
	Mobile phone	52	31.71
	Laptop	67	40.85
	Desktop computer	16	9.76
	Tablet	5	3.05

Measuring Tool

Survey method was used to obtain research data. Seven scales were included in the survey form. Studies in the literature were used to determine the scale items. Accordingly, items expressing online learning attitudes were taken from the study of Usta, Uysal and Okur (2012). The measurement tool used is a 5-point Likert type (1=I completely disagree, 2=I do not agree, 3=I neither agree nor disagree, 4=I agree, 5=I completely agree). The survey form also included questions to determine the socio-demographic characteristics of the participants.

Examining pre-service music teachers' attitudes towards online learning can, in many ways, helps

administrators and teachers better prepare for the future in terms of traditional and online learning. Explanatory Factor Analysis results showed that the scale had four factors consisting of 20 items. The 20-item online learning scale consists of four dimensions; general acceptance, self-awareness; perceived usefulness and application effectiveness in online learning.

As a result of the factor analyzes carried out to test the construct validity of the scale, it was determined that 20 items could be associated with 4 factors and explained 63.821% of the total variance of the scale. The Cronbach's alpha coefficient was 0.75 for the first, 0.84 for the second, 0.78 for the third, and 0.70 for the fourth factor, respectively. As a result of the reliability analysis, the internal consistency coefficient for the whole scale was 0.89. It was concluded that the scale was a valid and reliable tool to measure the pre-service music teachers' attitudes towards online learning.

Data Analysis

Before the statistical analyzes of the research, the existence of extreme values that disrupt the normal distribution in the data set was examined by calculating the Cook distance values. Cook distance values greater than 1 indicate that there are extreme values (Steven, 2002). It was found that there was no extreme value in the data set. In the next step, the normal distribution assumption was checked by calculating the skewness and kurtosis coefficients. The fact that the skewness and kurtosis coefficients are in the range of ± 1 indicates that the normal distribution assumption is met (Tabachnick & Fidell, 2007; Yurt & Sünbül, 2012). The obtained results showed the data that showed normal distribution. Therefore, independent sample t-test and Analysis of Variance techniques were used to analyse online learning attitude scores of pre-service music teachers. Analyzes were carried out using the SPSS 25.0 statistical package program.

Table 2 shows that mean value of pre-service music teachers' general acceptance was 3.25 ± 0.91 , self-awareness was 2.57 ± 1.22 , practicality was 3.60 ± 1.30 , the application effectiveness was 3.62 ± 0.93 , and finally total attitude towards online learning was 3.17 ± 0.96 . Thus, it is seen that the pre-service music teachers' self-awareness of online learning was low while the other dimensions and total attitudes were moderate.

Table 2. Descriptive Statistics on Pre-Service Music Teachers' Attitudes towards Online Learning

Attitude Towards Online Learning	N	Minimum	Maximum	\bar{X}	Sd
General Acceptance	164	1.57	5.00	3.25	0.91
Self-Awareness	164	1.00	5.00	2.57	1.22
Practicality	164	1.00	5.00	3.60	1.30
Application Effectiveness	164	1.50	5.00	3.62	0.93
Total Attitude Towards Online Learning	164	1.40	5.00	3.17	0.96

The t-test results regarding the participants' attitudes towards online learning by the gender variable are displayed in Table 3. As seen in Table 3, according to the results of the t-test performed, it was found that the practicality sub-dimension and total attitude towards online learning differed significantly by gender ($p < 0.05$).

This difference was in favor of male music teacher candidates when the mean scores of the groups were taken into account.

Table 3. Pre-Service Music Teachers' Attitudes towards Online Learning by Gender

Attitude Towards Online Learning	Gender	N	\bar{X}	Sd	t	p
General Acceptance	Female	108	3.17	0.90	1.603	.111
	Male	56	3.41	0.91		
Self-awareness	Female	108	2.45	1.22	1.676	.096
	Male	56	2.79	1.19		
Practicality	Female	108	3.40	1.31	2.892	.004
	Male	56	4.00	1.19		
Application Effectiveness	Female	108	3.67	0.87	.971	.333
	Male	56	3.52	1.04		
Total Attitude Towards Online Learning	Female	108	2.99	0.93	2.03	.041
	Male	56	3.43	0.99		

According to the t-test results as seen in Table 4, it was found that there was no significant difference in all dimensions of the attitudes towards online learning by individual instrument type ($p>0.05$).

Table 4. Analysis of Pre-Service Music Teachers' Attitudes towards Online Learning by Individual Instrument Types

Attitude Towards Online Learning		N	\bar{X}	Sd	t	p
General Acceptance	Turkish Music	48	3.43	0.94	1.59	0.11
	Western Music	116	3.18	0.89		
Self-awareness	Turkish Music	48	2.80	1.23	1.58	0.12
	Western Music	116	2.47	1.21		
Practicality	Turkish Music	48	3.86	1.26	1.79	0.08
	Western Music	116	3.55	1.29		
Application Effectiveness	Turkish Music	48	3.58	1.03	-0.29	0.77
	Western Music	116	3.63	0.89		
Total Attitude Towards Online Learning	Turkish Music	48	3.35	1.03	1.54	0.13
	Western Music	116	3.10	0.92		

Table 5 indicates that there is significant difference in online learning attitude score scores depending on class level ($p<0.05$). There is a significant difference in the mean score of innovation depending on class level ($p<0.05$). Attitude score averages of the fourth, three and second years prospective music teachers are significantly higher than that of the first year prospective teachers. Class level factor of prospective music teachers has a high level of impact on online learning attitude. Table 6 explains that there was a significant difference in online learning attitude scores depending on perceived academic achievement ($p<0.05$).

Table 5. ANOVA Results of Attitudes towards Online Learning According to Class Level

Attitude Towards Online Learning	Class Level	N	\bar{X}	Sd	F	p
General Acceptance	1	28	2.43	0.15	3.88	0.01
	2	28	3.07	0.23		
	3	52	3.11	0.76		
	4	56	3.41	1.01		
Self-awareness	1	28	1.78	0.09	4.50	0.00
	2	28	2.53	1.25		
	3	52	2.34	0.98		
	4	56	2.80	1.31		
Practicality	1	28	2.83	0.89	2.76	0.04
	2	28	3.97	0.53		
	3	52	3.53	1.19		
	4	56	3.76	1.38		
Application Effectiveness	1	28	2.38	0.40	6.57	0.00
	2	28	3.75	0.27		
	3	52	3.50	0.83		
	4	56	3.77	0.96		
Total Attitude Towards Online Learning	1	28	2.23	0.03	4.96	0.00
	2	28	3.30	0.48		
	3	52	2.96	0.82		
	4	56	3.35	1.03		

Table 6. ANOVA Results of Attitudes towards Online Learning According to Academic Achievement Level

Attitude Towards Online Learning	Academic Achievement	N	\bar{X}	Sd	F	p
General Acceptance	High	54	3.71	0.96	18.393	.000
	Moderate	87	3.17	0.79		
	Low	23	2.49	0.58		
Self-awareness	1.0	54	2.99	1.37	7.993	.000
	2.0	87	2.49	1.14		
	3.0	23	1.85	0.62		
Practicality	1.0	54	3.98	1.08	5.070	.007
	2.0	87	3.52	1.37		
	3.0	23	3.01	1.29		
Application Effectiveness	1.0	54	4.01	0.91	16.819	.000
	2.0	87	3.59	0.81		
	3.0	23	2.78	0.89		
Total Attitude Towards Online Learning	1.0	54	3.59	1.01	14.231	.000
	2.0	87	3.10	0.86		
	3.0	23	2.43	0.65		

The mean attitude scores of the music prospective teachers with medium and high academic achievement perception are significantly higher than the average score of the prospective teachers with low academic achievement. The perception of academic achievement has an influential effect on online learning attitude scores.

Results and Discussion

In this study, which examined the pre-service music teachers' attitudes towards online learning during the COVID-19 pandemic, it was found that the participants' self-awareness in online learning was low, while their other attitudes towards online learning were moderate. The participants' affective characteristics and attitudes towards online learning activities carried out during the COVID-19 pandemic revealed negative effects. In particular, the inadequacy of students' adaptability and affective input characteristics to compulsory online activities during this period were also similar to the findings of the studies in the literature (Johnson et al., 2021; Kara, 2021; Kibici & Sarıkaya, 2021; Tümen Akyıldız, 2020). When the students were asked about the online education provided by educational institutions during the COVID-19 pandemic, they stated they found the education below expectations. They also responded negatively about the online exams and assessment during the pandemic (Schlenz et al., 2020). According to Robb et al. (2015), the success and performance of Web-based online learning technologies are closely related to the expectations, attitudes and satisfaction of users. In recent years, individuals' coping with an increasingly competitive, uncertain and complex world involving higher innovation and technology has affected people's attitudes and behaviors in many ways. These changes have some negative effects, especially in applied fields (Campos, 2014). According to Borotis and Poulmenakou (2004), online learning requires being ready for life and actions mentally, emotionally and physically. Readiness for online learning requires characteristics related to affective, cognitive and psychomotor features such as being motivated in online learning environment, having positive attitudes, adapting to learning environment and fulfilling the learning responsibilities in the processes (Hung, Chou, Chen & Own, 2010; Smith, 2005; Unger & Meiran, 2020). According to Reddy et al. (2020), the sudden transition from traditional teaching to online learning in the COVID-19 pandemic has created significant problems for both teachers and students. This situation affected the participation of many pre-service teachers in lessons and their performance in the learning activities and caused negative attitudes.

Another sub-problem addressed in the study was about the comparison of pre-service music teachers' attitudes towards online learning by gender. It was found that there were significant differences between the practicality sub-dimension of the online learning attitude scale and the total mean values by gender. In the study, the participants' attitudes towards online learning were higher and more positive than their female peers. These findings are similar to the research findings of Kara (2021), Koyuncuoğlu (2021), Luoto and Varella (2021), and Sieverding and Koch (2009). The readiness for new technologies put into practice in the conditions of COVID-19 was determinant. According to Chai et al. (2010), male university students show higher competencies in adapting technological applications to their subject areas. According to Luoto (2020), males' readiness for new internet and computer technologies is higher and shows more innovative features. This may be the reason why male pre-service music teachers exhibit positive attitudes towards online learning.

Another sub-problem answered in the research is the comparison of online learning attitudes of pre-service music teachers according to their year of study. The attitudes of pre-service music teachers towards online learning vary significantly by the year of study. The study discovered that the online learning attitudes of pre-service music teachers in later years were substantially greater than those of candidates in earlier years of study. According to Khalil (2020), students who experienced a new distance education experience following the COVID-19 crisis, especially those who enroll in programs at universities for the first time, experienced significant orientation problems. The fact that these students have never attended courses in their fields before (Alharthi, 2020) and that they have no interaction with instructors or fellow students has revealed a negative tendency in the online learning process on an affective and cognitive basis.

The last sub-problem to be answered in the research is to compare the online learning attitudes of pre-service music teachers in terms of their academic achievement levels. Research findings show significant differences in online learning attitudes of pre-service music teachers according to achievement levels. It was found in the study that pre-service music teachers with high and moderate achievement levels had higher online learning attitudes than their friends with low achievement levels. These findings are similar to the findings of studies conducted by Dorfman (2006), Doğru (2020), Kaleli (2021) and Koyuncuoğlu (2021b). Thus, the fact that students who perform better academically and have more studies have higher affective readiness and attitudes towards online learning than those with low achievement levels corroborates the finding of the literature.

Conclusion

The pre-service music teachers' attitudes towards online learning in the COVID-19 pandemic are an important situation that should be emphasized. However, the study found that pre-service music teachers' attitudes towards online learning were negative. In particular, it was found that female pre-service music teachers who are in earlier years of study and have a low level of academic achievement have very negative online learning attitudes. As a result, the decrease in pre-service music teachers' perceptions of online learning, as well as their fears that education would be performed as distance education from now on, might lead to negative attitudes towards distance education. However, rather than being viewed as a single approach utilized in music education, distance education should be viewed as a method that supports formal education, reinforces lifelong learning, and provides equal opportunities.

Based on these findings, "distance education technology" courses should be included in the programs of institutions that educate music teachers. These courses should involve the utilization of online learning technology resources and teaching-learning activities that will improve student participation and motivation. As a result of online learning applications, pre-service music teachers will acquire knowledge and skills that will enable them to approach the activities positively. With these studies, pre-service music teachers will be taught practically how to utilize the field of music and online learning to obtain more beneficial outcomes, and as a consequence, it will be assured that they gain positive attitudes towards these new approaches. Finally, a school culture and management strategy that supports the learning process and relationships between music faculty members and students is essential for online learning. Longitudinal studies can also be conducted to investigate

the relationship between pre-service music teachers' attitudes towards online learning and their performance in practice areas.

References

- Adarkwah M. A. (2021). A Strategic Approach to Onsite Learning in the Era of SARS-Cov-2. *Computer Science*, 2(4), 258. <https://doi.org/10.1007/s42979-021-00664-y>
- Alharthi, M. (2020). Students' Attitudes toward the Use of Technology in Online Courses. *International Journal of Technology in Education (IJTE)*, 3(1), 14-23.
- Armstrong-Mensah, E., Ramsey-White, K., Yankey, B. & Self-Brown, S. (2020) COVID-19 and Distance Learning: Effects on Georgia State University School of Public Health Students. *Front. Public Health*, 8, 576227. doi: 10.3389/fpubh.2020.576227
- Angelova, M. (2020). Students' Attitudes to the Online University Course of Management in the Context of COVID-19. *International Journal of Technology in Education and Science (IJTES)*, 4(4), 283-292.
- Arslantas, S. (2021). An Investigation of Preservice Teachers' Academic Self-Efficacy and Academic Motivation. *International Journal of Modern Education Studies*, 5(1), 146-167.
- Barnett, D.E. (2018). Online Adjunct Faculty: A Quantitative Examination of the Predictive Relationship between Leadership and Job Satisfaction. *International Journal of Research in Education and Science (IJRES)*, 4(1), 226-236. DOI:10.21890/ijres.383159
- Batmang, B., Sultan, M., Azis, A., & Gunawan, F. (2021). Perceptions of Pre-Service Teachers on Online Learning during the COVID-19 Pandemic. *International Journal of Education in Mathematics, Science, and Technology (IJEMST)*, 9(3), 449-461. <https://doi.org/10.46328/ijemst.1595>
- Borotis, S. & Poulymenakou, A. (2004). E-learning readiness components: Key issues to consider before adopting e-learning interventions. *Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education*, 1622-1629.
- Campos, L. R. (2014). *Design thinking in education: a case study following one school district's approach to innovation for the 21st century*. Doctoral Dissertation. The University of San Francisco, USA.
- Chai, C. S., Koh, J. H. L., ve Tsai, C.-C. (2010). Facilitating preservice teachers' development of technological, pedagogical, and content knowledge (TPACK). *Educational Technology & Society*, 13(4), 63–73.
- Demirer, V., Çintaş Yıldız, D. & Sünbül, A.M. (2011). The Relationship between Primary School Students' Computer/Internet Usage and Reading Habits: Sample of Konya. *Elementary Education Online*, 10(3), 1028-1036.
- Demosthenous, G., Panaoura, A., & Eteokleous, N. (2020). The Use of Collaborative Assignment in Online Learning Environments: The Case of Higher Education. *International Journal of Technology in Education and Science (IJTES)*, 4(2), 108-117.
- Ghazi-Saidi, L., Criffield, A., Kracl, C. L., McKelvey, M., Obasi, S. N., & Vu, P. (2020). Moving from Face-to-Face to Remote Instruction in a Higher Education Institution during a Pandemic: Multiple Case Studies. *International Journal of Technology in Education and Science (IJTES)*, 4(4), 370-383.
- Gülbahar, Y. (2012). *E-Öğrenme*. Ankara: Pegem Akademi Yayınları.


- Hung, M.L., Chou, C., Chen, C.H., & Own, Z.Y. (2010). Learner Readiness for Online Learning: Scale Development and Student Perceptions. *Computers & Education*, 55, 1080- 1090.
- Johnson, J. B., Reddy, P., Chand, R., & Naiker, M. (2021). Attitudes and awareness of regional Pacific Island students towards e-learning. *International Journal of Educational Technology in Higher Education*, 18(1), 13. <https://doi.org/10.1186/s41239-021-00248-z>
- Kaleli, Y. S. (2020a). The effect of computer-assisted instruction on piano education: An experimental study with pre-service music teachers. *International Journal of Technology in Education and Science (IJTES)*, 4(3), 235-246.
- Kaleli, Y. S. (2020b). Investigation of the Relationship between Pre-service Music Teachers' Attitudes towards Teaching Profession and their Self-efficacy Beliefs. *International Journal of Research in Education and Science (IJRES)*, 6(4), 580-587.
- Kaleli, Y. S. (2021). The effect of individualized online instruction on TPACK skills and achievement in piano lessons. *International Journal of Technology in Education (IJTE)*, 4(3), 399-412. <https://doi.org/10.46328/ijte.143>
- Kara, S. (2020). Prospective visual arts teachers' innovation skills and attitudes towards computer assisted instruction. *International Journal of Technology in Education and Science (IJTES)*, 4(2), 98-107.
- Kara, S. (2021). An investigation of Technological Pedagogical and Content Knowledge (TPACK) competencies of pre-service visual arts teachers. *International Journal of Technology in Education (IJTE)*, 4(3), 527-541. <https://doi.org/10.46328/ijte.184>
- Kaur, D. (2020). Post-Positivist Approach to Factors that Influence K-12 Teachers' Use of iPads and Chromebooks. *International Journal of Technology in Education and Science (IJTES)*, 4(1), 26-36.
- Khalil, R., Mansour, A. E., Fadda, W. A., Almisnid, K., Aldamegh, M., Al-Nafeesah, A., Alkhalifah, A., & Al-Wutayd, O. (2020). The sudden transition to synchronized online learning during the COVID-19 pandemic in Saudi Arabia: a qualitative study exploring medical students' perspectives. *BMC Medical Education*, 20, Article 285, <https://doi.org/10.1186/s12909-020-02208-z>
- Kibici, V. B. & Sarıkaya, M. (2021). Readiness levels of music teachers for online learning during the COVID-19 pandemic. *International Journal of Technology in Education (IJTE)*, 4(3), 501-515. <https://doi.org/10.46328/ijte.192>
- Koyuncuoğlu, Ö. (2021a). An Investigation of Graduate Students' Technological Pedagogical and Content Knowledge (TPACK). *International Journal of Education in Mathematics, Science and Technology (IJEMST)*, 9(3), 299-313
- Koyuncuoğlu, D. (2021b). An investigation of potential leadership and innovation skills of university students. *International Journal of Education in Mathematics, Science, and Technology (IJEMST)*, 9(1), 103-115. <https://doi.org/10.46328/ijemst.1374>
- Liaw, S. S., Huang, H. M. ve Chen, G. D. (2007). Surveying Instructor and Learner Attitudes Toward E-learning. *Computers & Education*, 49, 1066-1080.
- Lin T. J. (2021). Exploring the Differences in Taiwanese University Students' Online Learning Task Value, Goal Orientation, and Self-Efficacy Before and After the COVID-19 Outbreak. *The Asia-Pacific Education Researcher*, 1-13. Advance online publication. <https://doi.org/10.1007/s40299-021-00553-1>

- Luoto S. (2019). An updated theoretical framework for human sexual selection: from ecology, genetics, and life history to extended phenotypes. *Adapt. Hum. Behav. Physiology*, 5, 48–102.
- Luoto, S., & Varella, M. (2021). Pandemic Leadership: Sex Differences and Their Evolutionary-Developmental Origins. *Frontiers in Psychology*, 12, 633862. <https://doi.org/10.3389/fpsyg.2021.633862>
- Morales, M. P. E., Mercado, F. M., Palisoc, C. P., Palomar, B. C., Avilla, R. A., Sarmiento, C. P., Butron, B. R., & Ayuste, T. O. D. (2021). Teacher Professional Development Program (TPDP) for Teacher Quality in STEAM Education. *International Journal of Research in Education and Science (IJRES)*, 7(1), 188-206. <https://doi.org/10.46328/ijres.1439>
- Niemi, H. M., & Kousa, P. (2020). A Case Study of Students' and Teachers' Perceptions in a Finnish High School during the COVID Pandemic. *International Journal of Technology in Education and Science (IJTES)*, 4(4), 352-369.
- Paje, Y. M., Rogayan, D. V., & Dantic, M. J. P. (2021). Teachers' Utilization of Computer-Based Technology in Science Instruction. *International Journal of Technology in Education and Science (IJTES)*, 5(3), 427-446. <https://doi.org/10.46328/ijtes.261>
- Paudel, P. (2021). Online Education: Benefits, Challenges and Strategies During and After COVID-19 in Higher Education. *International Journal on Studies in Education (IJonSE)*, 3(2), 70-85.
- Reddy, P., Chaudhary, K., Sharma, B., & Chand, R. (2021). The two perfect scorers for technology acceptance. *Education and Information Technologies*, 26(2), 1505-1526.
- Robb, A., White, C., Cordar, A., Wendling, A., Lampotang, S., & Lok, B. (2015). A comparison of speaking up behavior during conflict with real and virtual humans. *Computers in Human Behavior*, 52, 12-21.
- Salajegheh A., Jahangiri A., Dolan-Evans E., Pakneshan S. (2016). A combination of traditional learning and e-learning can be more effective on radiological interpretation skills in medical students: a pre- and post-intervention study. *BMC Med. Educ.*, 16, 46. [10.1186/s12909-016-0569-5](https://doi.org/10.1186/s12909-016-0569-5)
- Schlenz, M.A., Michel, K., Wegner, K., Schmidt, A., Rehmann, P. & Wostmann, B. (2020). Undergraduate dental students' perspective on the implementation of digital dentistry in the preclinical curriculum: a questionnaire survey. *BMC Oral Health*, 20, 78. [doi: 10.1186/s12903-020-01071-0](https://doi.org/10.1186/s12903-020-01071-0).
- Scull, J., Phillips, M., Sharma, U., & Garnier, K. (2020). Innovations in teacher education at the time of COVID19: an Australian perspective. *Journal of Education for Teaching*, 46(4), 497-506.
- Sieverding, M. & Koch, S.c. (2009). Self-Evaluation of computer competence: How gender matters. *Computers & Education*, 52(3), 696-701
- Smith, P.J. (2005). Learning Preferences and Readiness for Online Learning. *An International Journal of Experimental Educational Psychology*, 25(1), 3-12.
- Solomon, P., Baptiste, S., Hall, P., Luke, R., Orchard, C., Rukholm E., et al. (2010). Students' perceptions of interprofessional learning through facilitated online learning modules. *Acad. J. Med. Teach.*, 32, 384–391. [10.3109/0142159X.2010.495760](https://doi.org/10.3109/0142159X.2010.495760)
- Souza, C., Mattos, L. B., Stein, A. T., Rosário, P., & Magalhães, C. R. (2018). Face-to-Face and Distance Education Modalities in the Training of Healthcare Professionals: A Quasi-Experimental Study. *Frontiers in psychology*, 9, 1557. <https://doi.org/10.3389/fpsyg.2018.01557>
- Stevens, J. (2002). *Applied multivariate statistics for social sciences* (4th edition ed.). Mahwah NJ: Lawrence Erlbaum Associates Inc.

- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.) Boston: Allyn and Bacon.
- Thompson, V. L. & McDowell, Y. L. (2019). A case study comparing student experiences and success in an undergraduate course offered through online, blended, and face-to-face instruction. *International Journal of Education in Mathematics, Science and Technology (IJEMST)*, 7(2), 116-136.
- Thornton, L. (2020). Music Education at a distance. *Journal of Music Teacher Education*, 29(3), 3–6
- Thompson, V. L. & McDowell, Y. L. (2019). A case study comparing student experiences and success in an undergraduate course offered through online, blended, and face-to-face instruction. *International Journal of Education in Mathematics, Science and Technology (IJEMST)*, 7(2), 116-136.
- Tümen Akyıldız, S. (2020). College Students' Views on the Pandemic Distance Education: A Focus Group Discussion. *International Journal of Technology in Education and Science (IJTES)*, 4(4), 322-334.
- Unger, S., & Meiran, W. R. (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 (IJTES)*, 4(4), 256-266.
- Usta, İ., Uysal, Ö. & Okur, M.R. (2012). Online learning attitude scale: development, validity and reliability. *The Journal of International Social Research*. 9(43), 1-12
- Xu, L. (2017). Teacher–researcher role conflict and burnout among Chinese university teachers: A job demand-resources model perspective. *Stud. High. Educ.*, 44, 903–919.
- Yakar, A. & Duman, B . (2017). Duyuşsal Farkındalığa Dayalı Öğretimin Akademik Başarı ve Öğretmenlik Mesleğine Yönelik Tutumlar Üzerine Etkisi. *Eğitim Kuram ve Uygulama Araştırmaları Dergisi*, 3(3), 30-47 <https://dergipark.org.tr/tr/pub/ekuat/issue/31101/337393>
- Yıldız, R., Sünbül, A.M., Koç, M. & Halis, İ. (2004). *Öğretim teknolojileri ve materyal geliştirme kitabı*. Ankara: Nobel-Atlas Yayınevi.
- YÖK-Yükseköğretim Kurulu. (2020). COVID- 19 Bilgilendirme. Pandemi Günlerinde Türk Yükseköğretimi. 1 April, 2021, From this web <https://COVID19.yok.gov.tr/Sayfalar-/HaberDuyuru-/pandemi-gunlerinde-turk-yuksekogretimi.aspx>
- Yurt, E. & Sünbül, A. M. (2012). Effect of modeling-based activities developed using virtual environments and concrete objects on spatial thinking and mental rotation skills. *Educational Sciences: Theory and Practice*, 12(3), 1975 - 1992.

Author Information

Özlem Kılınçer

 <https://orcid.org/0000-0001-8108-4282>

Nevşehir Hacı Bektaş Veli University

Education Faculty

Department of Fine Arts Education

Program of Music Education

Turkey

Contact e-mail: ozlemkilincer@gmail.com
