Doi: 10.30473/IDEJ.2022.65176.1118 **ISSN:** 2588-4476

Iranian Distance Education Journal

Vol. 4, No. 1, (New Series) Winter-Spring 2022 (P 72-82), Payame Noor University

Original Article

The Effectiveness of the Blended Learning Course on the Academic Performance of Seventh Grade students in the Field of Photography in the Art Lesson

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Received: 2020/06/22 **Accepted:** 2021/10/22

Abstract

The present study aims at investigating the effectiveness of the blended learnin course on the academic performance of seventh grade students in the field of photography in the art lesson. The research method is quasi experimental with post-test, pre-test and control group. The statistical population consists of all female students in the 7th grad secondary school in Gonabad city. The research sample was 58 participants selected through available sampling and assigned in two experimental and control groups. The experimental group was given instruction in blended learning system and the control group was under traditional teaching style. The pre-test of academic performance in the field of photography in the art lesson was performed on both experimental and control groups and after 12 instruction sessions in blended learning style to experimental group, the post-test of academic performance in the field of photography in the art course was administered among both groups. The results were analyzed using Covariance Analysis in SPSS software. The findings indicate that the academic performance of experimental group in familiarizing with photography and viewfinder and identifying the best photography angle, in understanding and identifying and working methods of analog and digital cameras, according to the point of emphasis in photography, The method of photography at different times and photography at night and lighting in photography, have been enhanced and there was a significant difference between academic performance of experimental and control groups in the field of photography with a higher achievement of experimental group.

Keywords

blended learning, academic performance, photography, secondary school students, gonabad, iran.

Introduction

Today's classrooms are full of students with diverse backgrounds where teachers are continuously challenged to improve instruction to meet the learning needs of students (Diallo & Maizonniaux, 2016). The intensification of technological globalization in the past three decades has raised the question of how teaching and learning practices can be enhanced using information and communication technologies (ICTs) in classrooms. Well-informed and carefully planned integration of ICTs has significant potential to help students and teachers become constructive producers of knowledge by mixing theory and practice. ICTs allow students to create a good learning environment and deliver a strong foundation for task-based and engaged learning (ashraf et al., 2021). In recent years, new changes and innovations in the curriculum of higher education in the world have provided enormous educational opportunities for learners so that they can benefit from face-to-face classrooms with online instructions and applying instruments such as

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blogging, virtual classes, discussion boards, and talking forums. This form of learning is known as blended learning (Ajam, 2015). Blended learning, which emerged and is embedded in institutions worldwide, is a concept that combines face-to-face and online instructional activities (Boelens et al., 2015). educational institutions uses blended learning to make teaching and learning enjoyable and achieve better learning outcomes. One characteristic of blended learning is its relevance to the interests and practices of contemporary learners. Modern learners, especially those accustomed to interactive technology, are often not comfortable with an information transmission approach based on lectures or other traditional learning methods (Garrison & Vaughan, 2008).

blended learning is a purposeful process of acquiring knowledge, skills and abilities in terms of integration of pupils' classroom and extracurricular educational activities based on implementation and mutual complementarity of traditional, electronic, distance and mobile learning technologies in the presence of pupils' self-control over the time, place, routes and pace of learning(Kovalenko, Marienko, Sukhikh, 2021). blended learning is a Learning activities that involve a systematic combination of co-present (face-to-face) interactions and technologically mediated interactions between students, teachers, and learning resources (Tahir and et al. 2022). blended learning reduces student and lecturer's classroom time and subsequently saves stafng costs (Poon, 2012). blended learning possess the transformative prospective, ofering institutions the opportunity to utilize technology, promotes a community of inquiry, and facilitates active and signifcant learning. Accordingly, fndings from Anthony et al. (2019) suggested that blended learning helps to redesign course programme which resulted in improvements in students learning outcomes, which included better grades, higher content knowledge, and improved understanding of course contents(Anthony Jnr, 2022).

Blended learning is one of the newest educational methods that have been developed in line with technology and science development with the aim of creating interactive environment between face-to-face and e-learning instructions (Ahmadi, et al., 2014). Blended learning not only increases educational achievement, but also is more cost-effective and flexible method than traditional educational methods (Naeemi Hosseini, et al., 2011). Blended learning is a new pattern in the learning system that by combining information and communication technologies of distance education system on the one hand and the characteristics of face-to-face educational system on the other hand, leads to the efficiency and effectiveness of education (Bani Hashemi et al., 2013). Another variable that has been investigated in this study is the student's academic performance in the arts. Students' academic performance in art is defined as practical skills, handicraft, and artistic products and works that students perform on the basis of the curriculum of culture and art. Art is one of the serious cultural categories of every society that have been described as the highest form of human spiritual activity by scientists. It is obvious that when this spiritual activity of human being is going to grow, it will have massive application in enriching the social culture. On the other hand, art plays an worthy and helpful role in the growth, prosperity, and flourishing of human being, recognition and understanding of the world around us in finding the people's deep feelings, familiarity with the customs, cultures, and beliefs of different nations in the world, creating an atmosphere of mutual understanding and solidarity among nations, and exchanging information and the like (Shafiei & Mohammad pour, 2004). Blended learning approach, due to the use of positive features of e-learning and face to face instructions and the use of multimedia technology in the distant education system, has the potential to be used in the field of teaching and learning arts lessons and the content of the art course is presented in a variety of formats to the students. In addition, familiarizing students with their artistic experiences, thoughts and visual principles, and aesthetics and its impact on the teaching process is essential (Karimi, 2008). In the National Curriculum of the Islamic Republic of Iran, about the importance and necessity of learning the lesson of culture and art, it is emphasized that culture and art are the most efficient features in education. The most important function of this field is the achievement of cultural

literacy and identity, creating enthusiasm and joy, understanding and expressing feelings and meanings, expressing existence in the language of art, developing senses, aesthetic taste, imagination power, creativity, appreciation of beauty and cultural heritage, and ultimately achieving cultural insight (National Curriculum, 2012). The domain area includes comprehending artistic ideas, procedures, and skills, artistic instruments, and cultural heritages in two practical (producing the works on the basis of alphabet and combing rules) and theoretical (comprehending the works value based on aesthetic, history and culture and art, and analyzing artistic works) arenas, decoding and encoding phenomena in the artistic form including two procedures of discovering the meaning (understanding and getting the work value) and creating the meaning (producing the work value). The overall orientation of this area is in organizing content and education, (artistic education), with an emphasis on achieving cultural insight (National Curriculum Document, 2012). Organizing activities in the framework of artistic education approaches causes the perception of the beauties of nature, the living environment and artistic cultural works, empowering senses, imagination, and thinking, the ability to understand the hidden and clear meanings and enriching the sensitive and emotional perception. Cultural and artistic education is conducted in the initial educational years indirectly and gradually, in line with the curriculum and art courses, it benefits from direct instruction (National Curriculum Document, 2012). Regarding to the major changes in textbooks, such as the Handbook of Art, which has been changed to the book of Culture and Art of the First Secondary School, the need for new teaching methods is felt in this lesson.

There have been different studies about blended learning including Akgunduz and Akinoglu's (2016) study indicating that blended learning has affected the rise of student self-regulation skills. The results of Pinto-liorente and his colleague's (2017) study show that blended learning has been effective in improving understanding of second-language students' grammar. Rowey and Jordan's (2004) research showed that in blended learning, the feeling of presence in learners is much stronger than virtual and traditional education. In their research, Asgover and his colleagues (2015) found that the student's power of recalling content of syllabus courses in blended learning was higher than traditional-course students. Kwak and the colleagues (2015) in their study on blended learning found that short-term blended learning courses did not have impact on the learner's academic performance; while the implementation of long-term blended learning courses over the entire semester has a positive effect on students' academic performance. The results of Olympiou and Zacharia (2012) showed that the conceptual understanding of students in blended learning courses is significantly higher than traditional and presence courses. Bridges and colleagues (2014) in their research found that the implementation of blended learning in comparison with in-person courses, leads to the improvement of students' learning. By investigating in the related resources and studies, the researcher found that there are few studies done about the efficacy of blended learning on educational improvement of students' art lesson. Thus the doing related study on this issue is necessary and in this regard, the present study has been done with the aim of investigating the effectiveness of blended learning on the students' educational achievement in art courses.

Art, creativity, and technology have an unbreakable link with each other and by examining the history of the art in Iran it becomes clear that Iranian art has had a rich history in terms of creative artists and architects and one of the missions of the Book of Culture and Art is the return of the creative spirit of adolescents to this country. Regarding the importance of the art course for fostering the aesthetic spirit in students and the emergence of new technologies in education and learning, the researcher attempts to answer to the following research question: "Does blended learning affect the academic performance of seventh grade students in the field of photography in the art course?

Research Method

The present study is a quasi-experimental design with a pretest, post-test, and control group. The statistical population of the present study included seventh grade female students in the art course who were studying in Gonabad city in the academic year of 1400-1401. Considering that the research method was quasi-experimental, in the first stage, the researcher selected two classrooms as sample members using available sampling method, and in the next stage, from these two classes, one class was randomly selected as the control group and class Others were designated as the experimental group. The criteria for entering the study was the first female student of the 7th grade secondary school and the criteria for leaving the study was the absence of more than two sessions in the classroom and reluctance to continue the collaboration in the study. The blended learning approach was conducted on the experimental group for two months but the control group received the usual training and eventually, the experimental and control groups were compared with each other. Data collection was done through the implementation of the blended learning and the distribution and gathering of information by assessing the academic performance of students in the field of photography in the art course. Collected data in the implementation of blended learning and distribution and collecting information have been assessed through analyzing academic performance of students in the field of photography in the art course. The academic performance of the students includes the score obtained by the students in the field of practical skills in the field of photography, lighting, photography methods in the day and night, landscape and identifying the best photography angle that students performed on the basis of the curriculum of art and culture syllabus. Students in both control and experimental groups prepared them and experienced teachers in art gave scores to students' works in both groups in pre and post tests. The procedure was that the researcher, choosing three experienced teachers in the field of culture and art, asked them to rate the performance of students in the field of photography in the art lesson. Teachers then individually scored students' artwork before and after the blended learning instruction to the experimental and control groups and the mean score of three teachers for each student was considered as the main score in the pre-test and post-test.

In blended learning in distance education system, the lessons of Art and Culture were instructed to experimental group in integrative method in a computer lab by DATA, using content products in the field of photography related to the lesson of Art and Culture. The specialized blog was designed for the field of photography in the art lesson and the contents of each lesson in the blog were placed in a multimedia file, students in using specialized instructional materials were trained, the researcher encouraged the students in experimental group to use specialized blog content to learn and teach lessons in the field of photography in the art lesson, and in the specialized blogs, materials were presented in the form of PowerPoint, tutorial blog, educational videos, illustrations, and specialized text. One of the other actions was putting a sample of lesson exercises in the field of photography related to art lesson in the specialized blog. After completing the blended learning training course, students' academic performance in the experimental and control group was scored by experienced teachers of the arts. Descriptive statistics such as mean and standard deviation were used to analyze the descriptive information and the covariance analysis was used to test the hypotheses. The reason for using the covariance test is that in this statistical test, posttest means are compared after modifying the pre-test scores in the experimental and control groups.

In this research, the following four hypotheses were tested:

1- The use of blended learning course affects academic performance of students in familiarizing with photography and viewfinder and identifying the best photography angle in the art of photography.

2- The use of blended learning course affects students' academic performance in understanding and identifying and working methods of analog and digital cameras.

3- The use of blended learning course affects students' academic performance according to

the point of emphasis in photography.

4- The use of blended learning course affects students' academic performance in the method of photography at different times and photography at night and lighting in photography.

Research Findings

Of the 58 participants, including the experimental group and the control group who were studying in two selected schools, all 58 subjects responded to the questionnaires.

Table 1 shows the descriptive statistical analysis of academic performance in the field of photography in control and experimental groups.

Table 1. Mean and Standard Deviation of academic performance in the field of photography of students in control and experimental groups

Groups	Experimental		Control	
academic performance variable	Mean	SD	Mean	SD
familiarizing with photography and viewfinder and identifying the best photography angle	18.24	0.87	16.79	1.49
in understanding and identifying and working methods of analog and digital cameras	18.34	0.97	16.96	1.61
according to the point of emphasis in photography	18.44	0.73	16.79	1.50
the method of photography at different times and photography at night and lighting in photography	18.44	0.73	16.79	1.49

As the table shows, the mean score of academic performance in the field of photography of students in the experimental group is greater than the control group.

Testing the first hypothesis:

The use of blended learning course affects academic performance of students in familiarizing with photography and viewfinder and identifying the best photography angle in the art of photography. To test the hypothesis, the covariance analysis method was used.

Table 2 indicates the results of covariance analysis of the impact of implementing blended learning course on the academic performance of students in familiarizing with photography and viewfinder and identifying the best photography angle in the art of photography.

Table 2. Dependent variable: Post-test

Sources of changes	Sum of squares	Degrees of freedom	Mean of squares	F	Sig.
Companion variable (pre-test scores)	52.90	1	52.90	93.38	.000
Group effect	19.39	1	19.39	34.23	.000
Error	31.16	55	.567		
Total corrected	114.48	57			

The results in the Table suggests that the effect of companion variable is meaningful at P=.000 and F=93.38. That is there is significant difference between pre-test and post-test scores. Also the result shows that the group effect is meaningful at (P=.000, and F=34.23), that is there is significant difference between experimental and control groups in terms of implementing blended learning course on student's academic performance in familiarizing with photography and viewfinder and identifying the best photography angle in the art of photography. The modified mean of experimental group is 18.10 that is significantly different with control group (16.93). It suggest that implementing blended learning course affects and increases academic performance

of experimental group in familiarizing with photography and viewfinder and identifying the best photography angle in the art of photography.

Testing the second hypothesis:
The use of blended learning course affects students' academic performance in understanding and identifying and working methods of analog and digital cameras. To test the hypothesis, the covariance analysis method was used.

Table 3 indicates the results of covariance analysis of the impact of using blended learning course on the academic performance of students in understanding and identifying and working methods of analog and digital cameras.

Table 3. Dependent variable: Post-test

Sources of changes	Sum of squares	Degrees of freedom	Mean of squares	F	Sig.
Companion variable (pre-test scores)	68.57	1	68.57	121.89	.000
Group effect	24.19	1	24.19	42.99	.000
Error	30.94	55	.563		
Total corrected	127.10	57			

As the results suggested, the effect of companion variable is meaningful at P=.000 and F=121.89. That is the difference between pre-test and post-test scores is significant. Also the result shows that the group effect is meaningful at (P=.000, and F=42.99), that is there is significant difference between experimental and control groups in terms of the impact of implementing blended learning course on student's academic performance in understanding and identifying and working methods of analog and digital cameras. The modified mean of experimental group is 18.30 that is higher than control group (17.00) significantly. It suggest that implementing blended learning course affects and increases academic performance of experimental group in understanding and identifying and working methods of analog and digital cameras.

Testing the third hypothesis:
The use of blended learning course affects students' academic performance according to the point of emphasis in photography. To test the third hypothesis, the covariance analysis was used.

The result of the analysis is reported in Table 4.

Table 4. Dependent Variable: Post-Test

Sources of changes	Sum of squares	Degrees of freedom	Mean of squares	F	Sig.
Companion variable (pre-test scores)	45.37	1	45.37	76.63	.000
Group effect	25.48	1	25.48	43.04	.000
Error	32.56	55	.592		
Total corrected	117.65	57			

As it is shown in the Table, the effect of companion variable is meaningful at P=.000 and F=76.63. It means there is significant difference between pre-test and post-test scores. Also it suggests that the group effect is meaningful at (P=.000, and F=43.04), which means there is significant difference between experimental and control groups in terms of the effect of implementing blended learning course on student's academic according to the point of emphasis in photography. Modified mean of experimental group is (18.29) that is significantly higher than control group

(16.94). it means implementing blended learning course affects and increases academic performance of experimental group course.

Testing the forth hypothesis:

The use of blended learning course affects students' academic performance in the method of photography at different times and photography at night and lighting in photography.

Table 5 indicates the results of Covariance Analysis of the effect of blended learning course impact on academic performance of students in the method of photography at different times and photography at night and lighting in photography.

Table 5. Dependent Variable: Post-Test

Sources of changes	Sum of squares	Degrees of freedom	Mean of squares	F	Sig.
Companion variable (pre-test scores)	45.37	1	45.37	76.63	.000
Group effect	25.48	1	25.48	43.04	.000
Error	32.56	55	.592		
Total corrected	117.65	57			

As it is suggested in the Table, the effect of companion variable is meaningful at P=.000 and F=76.63. That is the difference between pre test and post test scores is significant. The group effect is meaningful also (P=.000, and F=25.48), i.e. there is difference between experimental and control groups in terms of implementing blended learning-based teaching, student's academic performance, using blended learning approach in the method of photography at different times and photography at night and lighting in photography. Modified mean of experimental group (18.29) is higher than control group (16.94) significantly that means implementing blended learning course increases academic performance of experimental group in the method of photography at different times and photography at night and lighting in photography.

Discussion and Conclusion

The findings of the first hypothesis of this study showed that the use of blended learning course is effective on the students' academic performance in familiarizing with photography and viewfinder and identifying the best photography angle in the art of photography. The finding of this study is in line with the findings of Kundu et al, (2021). Their research findings showed that blended learning ambiance increases students' academic achievement levels in elementary classrooms when teachers were supported with necessary policies and proficiencies. students who were given courses in blended learning environment were able to recall lesson contents more than students who participated in face to face and traditional instructions. The results of the second hypothesis showed that the use blended learning course was effective in students' educational performance in understanding and identifying and working methods of analog and digital cameras. The results of this study are in consistent with Kwak and his colleagues (2015). Kwak's research showed that the implementation of blended training courses during the semester and for the whole textbook has a positive effect on the academic performance of the students. The results of the third hypothesis showed that using the blended learning course affects students' academic performance according to the point of emphasis in photography. The results of this study are consistent with the research of Shishigu et al., (2022). The results of the fourth hypothesis indicated that using the blended learning course affects students' academic performance in the method of photography at different times and photography at night and lighting in photography. The findings of the present study are in line with the research by Olympiou and Zacharia (2012). In their study, they found that students who participated in blended learning courses better understand the light range and color than students who have attended solely in face-to-face course

or e-learning environment.

The results of this research are similar to Abdollahzadeh's (2012) research findings. They have studied on the teaching arts and crafts skills in an electronic way using information and communication technology. They found that information and communication technology has a significant capacity to train skills related to the field of handicrafts and its application in this field significantly increases the ability to expand these skills.

In discussing the research findings one can claim that implementing blended learning method has a significant role in academic performance of students and its application in schools could cause enthusiasm and improvement in students' academic performance and it is better to use this approach in schools effectively. Victoryjoy and Doosan (2007) state that blended learning courses enable learners to obtain different, deeper and more knowledge compared to solely e-learning and in-person learning groups. The learners of the blended learning courses who enjoyed the experience of group and in-person interactions in learning showed better performance in group interactions and collective experiences compared to those who were deprived from face-to-face interaction with their teachers and classmates. Zolfaghari and his colleagues (2010) in the study done on the effectiveness of blended learning in teaching nursing and midwifery students in Medical University of Tehran found that blended learning, as a new mechanism that combines different learning and teaching techniques, causes more satisfaction in students and teachers and can enhance learning quality by creating flexibility in learning and taking advantage of both presence and e-learning environments. So the need of blended learning in schools is felt accordingly.

Regarding the importance of providing education through multimedia in distant education system, the need for education in accordance with the prerequisites of each student, establishing individual and group interactions through blended learning, and using other forms of symbolic representation requires that blended learning be taken into consideration so that students' learning can be more attractive and with high quality (Bersin, 2004). Blended learning is a link between traditional face-to-face learning and e-learning environments in a way that instruction takes place both in the classroom and electronically (Battye, et al., 2009), where online e-learning is considered as a natural development of traditional classroom. Blended learning instruction is a flexible approach to the design of the course that supports the combination of different times and places for learning and provides facilities and privileges of a distance education system without losing real face-to-face interactions.

Blended learning environment allows learners to deal with extensive engagement with teachers, classmates, other students, and educational materials and resources (Uibu, et al., 2008). These interactions do not take place solely through online devices and facilities such as virtual classes, online discussions, e-mail, e-books and electronic articles, but for live and extensive human interactions, group discussions in the classrooms, dual or multiple talks with teachers and students at schools, and other forms of face-to-face interactions are employed extensively in this system. Blended learning environment has made it possible for students to experience and learn continuously at any time and any place they like more effectively. Based on the characteristics of blended learning approach, it is necessary to have diversity in educational methods because teaching students through various online and in-person methods and devices according to individual differences and different learning styles is at the heart of attention. Therefore, the characteristics and privileges of the blended learning approach can lead to the deep and sustainable learning of students.

Due to advancement of science and technology, the use of new educational facilities and upgrading of teaching methods and to make synergy with progress and technology, there is a need for new educational methods in the distance education system and the use of blended learning contexts in schools. The lesson of art is a lesson with innumerable and uncountable creative ideas and works so that if we try to include every aspect of art in textbooks, it will be over a thousand

pages, which still does not give the right to the subject. But with the new educational tools including educational media, on-line instructions, telegrams, the Internet, blogs, and computer software, we can include these art lessons into the classrooms that in turn, it may result in creating motivation and enthusiasm of students to these art fields. In a world increasingly defined by visuality it is essential we improve our competence in this field by all possible means. Blended learning allows us to integrate visual learning e-strategies into different educational contexts and adapt them in ways that motivate learners. In the current era of technology, students are more likely to receive this kind of teaching and training because by means of a movie, they can travel to the depths of the history of Iranian-Islamic culture and art and enter the famous museums of the world at one moment. Blended learning is considered as one of the best methods of teaching that has the value and worth of learning in any place and any time that has been implemented and has made students progress. Therefore, it is suggested that the use of blended learning approach be at the top of the planning and implementation of the curriculum of Culture and Art lesson in the Ministry of Education so that students can have multiple and effective interactions with their teachers, educational resources and contents, and their classmates to provide effective and continuous learning opportunities.

One of the limitations of the current research is that this study is limited to 7th grade secondary school students, and there is likely to obtain different results in other contexts. Based on the findings of the present study, it is suggested that the participants of the high school education system attempt to include blended learning approach in teaching art lessons by holding courses and workshops to justify and encourage teachers and other stakeholders to use this approach in their programs and prepare specialized books for art lessons based on blended learning system for high school students so that they can use blended learning approach in their learning regularly.

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