

Students' Readiness for E-learning Application in Higher Education

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ABSTRACT

The main goal of this research was to investigate the readiness of art students in applying e-learning. This study adopted a survey research design. From three public Iranian Universities (Alzahra, Tarbiat Modares, and Tehran), 347 students were selected by multistage cluster sampling and via Morgan Table. Their readiness for E-learning application was assessed by a self-developed questionnaire. Data analysis was done by indexes of descriptive statistics and one sample t-test. Analysis of results found a significant relationship between the readiness of undergraduate students, graduate students, and post-graduate students to apply E-learning, but there was no significant relationship between students' readiness and gender, university, and subject. Results revealed that Art students were in a moderate level of readiness for applying E-learning.

Keywords: *e-learning Implementation, Students' Readiness, Art students*

INTRODUCTION

Access to high-quality and rich education is the main goal of any education system. One of the important objectives of higher education is to provide a quality education. Quality of higher education means to fulfil the expectations of individuals and society (Quality Centre of Tehran University, 2011). According to the results of research conducted in the field, e-learning training is a suitable strategy for improving the teaching-learning process quality (Golzari, Kiamanesh, Ghoorchian & Jafari, 2010). This type of education uses of the power of computer networks, Internet technologies, satellite and digital sciences.

E-Learning is not just a new tool. This method of teaching changes our experience and view of learning and is an impressive way of learning in higher education (Garrison & Anderson, 2005). In fact, e-learning is an educational system that provides access to higher education over the past, regarding quantity and quality, for volunteers (Seraji, 2013).

In e-learning, the teacher-centered has changed to a student-centered approach. It also provides great flexibility in teaching methodology, content management, a synchronous and asynchronous interaction between teachers and students, organizing and structure of courses, educational projects and finally student assessment. In this type of training, the teaching-learning process transcends the class boundaries. Therefore, the physical limits of education are overcome, and learning is possible any time anywhere (Okhovati, Sharifpoor Ghahestani, Islami Nejad, Hamzezadeh Marzooni, & Motamed Jahroomi, 2005).

In Iran, many universities present virtual courses alongside the traditional education, and many other universities are entering this field (Latifnejad Roudsari, Jafari, Hosseini & Esfalani, 2011). However, virtual learning in universities and art colleges of Iran and outside Iran is new, such that its establishment requires development and research. For successful e-learning implementation in art courses, it is necessary to identify

and evaluate the factors affecting successful implementation.

Therefore, a study of the factors influencing success with suitable and original drawing could prevent failure in implementing e-learning systems for art majors in Iran. Readiness is a powerful factor in successful e-learning implementation (Mosadegh, Kharazi, & Bazargan, 2011). Readiness of students, professors and technology, is the most significant readiness aspect in this context. Also, the attitude of the people, especially students, is a key factor determining e-learning success or failure (Hussein, 2010).

Hence, according to the role of specifications of learners in success or failure of E-learning courses, this investigation is going to assess the required skills of students of these majors firstly before implementing e-learning in universities of Iran for art majors. "E-readiness means the ability of organisations and capacity of education stakeholders (management, key personnel, teachers and students) to participate in an electronic environment." (Khan, 2005).

Asian Pacific Economic Cooperation and McConnell have defined electronic readiness as "The level of community readiness to participate in the networked world" (Darab & Montazer, 2010).

Several studies on e-learning readiness have been conducted in Iran and outside Iran. Those studies can be divided into three groups; some are looking to provide a useful model for e-learning readiness assessment (Mosadegh, Kharazi, & Bazargan, 2011). Some consider a certain pattern to study on readiness level of organizations or universities in all aspects (Ouma, Awuor & Kyambo, 2013; Rahimidoost & Razavi, 2012; Aydin & Tasci, 2005). A group of researchers consider a particular aspect of e-learning readiness (Okhovati, Sharifpoor Ghahestani, Islami Nejad, Hamzezadeh Marzooni, & Motamed Jahroomi, 2005; Nasiri, Ghanbari, Ardalan, & Karimi, 2014; Mahdiuon, Ghahramani, Farasatkah, & Abolghasemi, 2011); Sadik, 2007; Jariangprasert, 2007).

In many of these patterns, human resource readiness was considered. The four main components of human resources include learners (students), faculty, staff and planners (Darab & Montazer, 2010). Many studies have assessed student readiness (Akaslan & Law, 2011; Tubaishat & Lansari, 2011). In all of these studies, a variety of sizes and patterns were used to assess readiness, but it is impractical to obtain a consistent pattern to measure student readiness for e-learning.

Additionally, various investigations have been done to identify specifications of successful virtual of learners (Dabbagh, 2007; Palloff, & Pratt, 2005, Piskurich, 2003; Rhode, 2004; Santy & Smith, 2007; Seraji & Yar Mohammadi, 2010; Singh, 2004; Tronsen, 2004; Watkins, 2004; Yukselturk & Bulut, 2007).

In the abovementioned studies, some features of successful virtual learning were mentioned. These features include working with computers and Internet skills, self-learning skills, spontaneity, problem-solving and critical thinking, time management skills, interest in learning, leadership skills, and ability to communicate with the group, self-assessment, questioning authority, debate skills, responsibility, skills to use online resources and learning strategies.

Seraji and Yar Mohammadi (2010) obtained a learner readiness assessment tool for entering e-learning courses in their investigation. Based on their findings, the learner applicants to e-learning courses must have five core competencies namely metacognitive skills, cognitive skills, self-navigation skills, communication skills and collaborative skills to work with computers and Internet access.

Assessing the readiness of art and non-art students to use virtual training has a similar pattern because this type of training requires skills that depend on the characteristics of e-learning, and not just a particular discipline, as a questionnaire is used to evaluate the different majors in a university.

Pingle (2011) observed no significant difference between the readiness of art students and business and science students on assessing the readiness of virtual training students. Maleki Marasht, Ghalai, and Mousavi (2012) investigated readiness level of students in different fields of study at Orumiyeh University to participate in e-learning. They used a questionnaire for this purpose.

No research has been done to identify skills and e-learning readiness assessment for art students in Iran. Outside Iran, only a few research studies on the subject exist.

The art education process is influenced by several variables, including students, faculty, field of education, teaching methods, educational resources, and growing art software trend. Art courses at the same position in an extensive collection of "art" are very diverse, but as creation is the main feature of "art", all the external manifestations of emotion are called as art. Majors related to art are called art majors.

The unique characteristics of art include being improvised and flexibility in determining the goals and directions, creativity and exploration, individual's vigilance and sensitivity to the phenomenon, being self-critical and self-seeking. These characteristics of an artist result in creating immortal artwork.

Artists interest from the fellowship of these habits all that may be filled with the imagery and attitudes, and enrich themselves with all the excellent habits of thinking and skilfulness to draw them by setting the rhythm (contact significant relationship). In the same rhythm is that the artist's work will be an original creation. As an artwork (problem solving) is generated using certain concepts (hypotheses) (creation), creation of the artwork itself is a reason to learn the concepts.

Artists make alive phantasm of a perception using the Visual Arts. In particular, art educators provide opportunities for artists to create an artistic work by observing or making contact with previous perceptions and what is now perceived. In other words, through the reconstruction of the outside world (outside integration), they change previous cognitive structures (inside Integration) (Sharafi, 2007). With this definition of art and the creation of art, it is claimed that in creating an artwork some features are emphasized that are similar to constructivism approach. Constructivism is in the field of learning and cognitive psychology. The main idea of constructivism is that learners make new knowledge based on previous training. This theory rests on the belief that the individuals construct knowledge. In other words, individuals interpret the new situation based on their previous experience and knowledge and finally form interaction with the new knowledge environment (Seif, 2005).

In today's new world, artistic ideas and creating artworks has accelerated more than in the past. Art tools and equipment and software, such as art software, music, painting, simulations, are presented to market at high speed, and artists use them. But unfortunately, transformation in teaching art is overdue in the art world. Transformation is needed due to the changes in the means and methods of artworks; art education could not quickly make changes in line with new technological developments. In art education, teachers expect students to create their artworks before they are taught how to use ideas. Most artists try to copy other's works. Mostly, teachers encourage students to do artworks, but they are rarely taught how to accomplish an artwork successfully (Gaudelius & Speirs, 2011). So, finding an educational system that provides attainment situation for art students to its original purpose (the creation of artistic ideas) would be necessary.

Besides that, the goals of the educational system have been changed compared to the past. The goal of education should be developing critical thinking and self-learning ability so that students become lifelong learners. It has now been transformed into a symbol of the Information Age (Garrison & Anderson, 2004). Given the satisfactory results of scientific research conducted on e-learning system in other countries, policymakers are encouraged to continue and extend this kind of education. Research on "Virtual Learning from Iowa State University students' perspective" by Wilhelm (2003) shows that most students have a positive experience of virtual classrooms. They expressed that they learned more things in virtual classes than in face to face classes. Also, some research has been done on the effective use of ICT in the arts (Ho, 2007; Nancy, 2003).

Therefore, e-learning and providing a model for the art majors through virtual learning will be a suitable solution to change educational practices in Iran. The principal aim of art e-learning is simply providing a new type of training or replacing traditional art academic education. However, we must realize that using this learning can fill gaps in arts education, and this type of training provides art amenities and facilities to university art education.

According to constructivist features of art, as previously described, the learner-centered approach was used for this research. In the learner-centered approach, the focus is on the learners' needs and interest and the use of communication and interactive tools (Seraji, 2011). This approach is rooted in the theory of constructivism. By emphasising the active role of learners in the learning process, constructivism considered

some principles necessary, such as social interaction and discussion; participation in activities of genuine learning, self-navigation in learning, and engagement, providing problematic situations in making the individual knowledge (Johnson, Patton, Bimber, Almeroth & Dwayne, 2004; Dwayne, 2006, cited in Nasaji, 2011). Paying attention to human infrastructure through e-learning system is very important in successful implementing of arts education. Identifying the infrastructure helps virtual education designers to make the right decisions about each element of education. The main research question of the current research was whether the skills of students are enough to make possible implementation of virtual art education. Another issue is whether the system can be applied to respond to which graduation levels, which fields of study and which gender.

Gender is one of the factors considered in effective adoption and use of e-learning systems; so researchers should consider it in developing and testing e-learning theories (Abadi, 2009). Knowledge of the relationship between gender, educational level, the field of study and degree of readiness, is effective in selecting art students to participate in e-learning and greater success of these groups. The study sought to answer the question as what is the readiness of art students to participate in e-learning. Review and response to the main issue are obtained through subquestions as follows:

1. Are the art students ready to participate in e-learning in aspects of collaborative communication skills, cognitive skills, and skills in working with computers and internet access, cognitive skills and leadership skills?
2. Is readiness of students to participate in e-learning different?
3. Is the readiness of art students different to take part in e-learning according to their education degree level?
4. Is the readiness of art students different to take part in e-learning according to their gender?

The current study is designed to assess the students' readiness of art students from AlZahra University, Tarbiyat Modares University, Academy of Art University and Tehran University, to participate in an e-learning system.

METHODOLOGY

This research is quantitative and based on a survey. Four universities of Iran with arts majors were selected. The population of this research included 8103 students of Alzahra University, Tarbiyat Modares University, Tehran University, and Honor University. The sample size was 347 people. Demographic specifications and descriptive statistics of variables of research are provided in Table 1. A questionnaire based on a five-point Likert scale was the instrument used in the investigation. It was previously used by Seraji and Yarmohammadi (2010). The instrument included five factors for readiness test of the learner to electronic courses. These factors include:

1. Communication and participatory skills,
2. Meta-cognitive skills,
3. Access level and skill to work with computer and the internet,
4. Cognitive skills, and
5. Self-direction.

Experts confirmed these five factors. Reliability of this questionnaire was confirmed by Masters of Arts degree and three experts in e-learning. The questionnaire consisted of 45 questions, with the whole five-point Likert scale including three types of questions. The first group is to determine demographic specifications of a statistical sample: gender, educational level, and university venue. The second group includes questions relate to major. The third group includes readiness level of students to take part in electronic learning categorized into five factors.

The first factor with five questions, second factor with five questions, third factor with eleven questions, fourth factor with six questions, fifth factor with five questions was measured. Cronbach alpha was used to determine the questionnaire validity. Results presented in Table 2 indicate the acceptable validity of the questionnaire.

Table 1. Demographic characteristics of the study sample

Gender	Frequency	Percentage
Male	112	32.28
Female	235	67.72

Table 2. Cronbach's alpha of e-learning readiness assessment in each factor of Research

Factors	Factor1	Factor2	Factor3	Factor4	Factor5	Total tools
reliability	.70	.71	.87	.79	.75	.9

In collecting data, after the number of students of each university was determined, the questionnaires were distributed among students. They were asked to answer the questionnaire. Their responses to the questionnaire were used as quantitative data. Descriptive statistics (frequency table, histogram, mean and standard deviation) and inferential statistics (one-sample *t*-test) were used. In this method, the frequency of responses to each of the questions was multiplied in the factor of interest (a lot = 5, 4 = high, 3 = average, low and very low = 2 = 1). Then a score was calculated for each question given the number of questions related to the research questions; the scores were added together, and then the mean and other statistical parameters were calculated. According to the results of the survey, research questions were addressed.

RESULT

Demographic factors of the respondents

The first section of the questionnaire included questions about demographic characteristics of respondents. A total of 347 art students participated in this study; the number of female students involved in the study was more than the number of males (67.72% female (235), and 32.28% male). Education level is another demographic variable of investigation with 198 people (57.1%) studying in bachelor grade, 133 studying in M.A. grade (38.33%), 16 people in Ph.D grade (4.71%).

The first research question: are the art students ready to participate in e-learning in collaborative communication skills, cognitive skills, skills for working with computers and Internet access, cognitive skills, self-direction skills?

Questionnaire responses were analyzed about these skills. Student readiness for e-learning is rated in a range from one (low) to five (very high). Quantitative spectrum could be changed to quality spectrum in four levels as High Readiness Level (4.2-5), average fitness level (3.4-4.2), lack of preparation (2.6-3.4), lack of readiness is a very high degree (1-2.6) to have criteria for judgment. According to the considered scores (1 to 5) to measure, the boundary between the readiness and unpreparedness of students for electronic learning is a score of 3.4. Because by dividing the number of intervals on the scale number, a distance of .80 is achieved. Using descriptive statistics, each of these factors was evaluated, and factors mean, and the standard deviation was calculated. According to the averages obtained on the five factors in comparison with the classification, given preparedness, readiness and its level are determined.

Communication and collaboration skills needed for electronic learning are the first factors. This factor was evaluated with five questions and with an average of 4.3 represents an average preparedness regarding

"communication and collaborative skills" for e-learning of students. Meta-cognitive skills are the second factor, evaluated with five questions. "Metacognitive skills," with an average of 4.3 indicates readiness to receive meta-cognitive skills regarding e-learning skills in students. The third factor examined is the availability and skills with computers and the Internet with eleven questions. The average of "The availability and skill to work with computers and the Internet" is 3.63 represents the average readiness in the availability and skill to work with computers and the Internet for electronic learning in students.

Cognitive skills (fourth factor), were examined by six questions. "Cognitive skills," with an average of 3.66 indicates average readiness regarding cognitive skills for e-learning in students.

The fifth factor was examined as self-leading with five questions. The mean of "self-leading" is 3.6 and it represents the average readiness regarding self-leading to receive e-learning in students.

According to the descriptive data as well as concerning the classification of e-learning readiness of art students to participate in e-learning, with an average of 3.54 is above average level.

Question Two: Is the readiness to participate in e-learning of students of various majors different?

ANOVA parametric test was used to answer question 2 of this research. According to the results in Table 3, as the sig value is 0.29, there is no significant difference in student readiness for e-learning between the courses of study. As seen in the table, there is no significant difference in average of readiness of students of different majors. Thus, according to the results of this test, it is claimed that readiness of students, regarding their major, does not differ significantly.

Table 3. Results of Analysis of Variance to Investigate the differences in students' readiness based on their major

Major	Mean	Test amount	Sig
Print	103.50		
Textile Design	103.60		
Repair	105.62		
Painting	108.80		
Music	109.40		
Design Scene	109.66		
Photography	110.07		
Performing arts and cinema	110.41	1.16	0.29
Sculpture	113.33		
Moving Pictures	113.50		
Islamic art	113.50		
Video communications	113.62		
Handicrafts	114.09		
Architecture	116.03		
Industrial Design	116.36		
Art research	117.00		
Carpet	119.05		

Question 3: Is the readiness of art students different to participate in e-learning according to their educational degree?

Table 4 gives the results of ANOVA analysis to investigate the differences in students' readiness based on educational degree

Table 4. Results of ANOVA to investigate the differences in students' readiness based on educational degree

Education level	Mean	Test amount	Sig
Bachelor	111.49	5.89	0.01
Master	115.53		
Ph.D.	125.94		

ANOVA test and Scheffe's test were used to test the hypothesis. According to results as displayed in Table 4, as the p value is 0.01, there is a significant difference between educational levels in the readiness level of students. According to results of Scheffe's test and comparing mean of three educational levels, there is a significant difference among students of three educational levels of bachelor, master and Ph.D to participate in electronic learning. According to the results, readiness level of Ph.D students (mean 125.94) is more than students of Master (mean 113.53) and students of bachelor (mean 111.49).

Question 4: Is the art students' readiness different to participate in e-learning according to their gender?

To test whether readiness for e-learning differs by gender, the independent samples t -parametric tests were used. Table 5 gives the result of independent samples t -test for mean difference by gender.

Table 5. Results of Independent Samples t -Test of Mean Differences Among Students' Readiness Based on Gender

Gender	Mean	Test amount	Sig
Male	112.28	1.06	0.288
Female	114.31		

According to results of Table 5, the p -value obtained is 0.28, suggesting that there is no significant difference between the readiness of male and female students for e-learning.

DISCUSSION

E-learning studies have shown that the main elements of success in e-learning are as followed: access to computers and the Internet, search skills, classification and data analysis, effective use of the tools, familiarity with communication methods, planning skills and learning methods (Rhode, 2004; Pallof & Pratt, 2003; Watkins, Leigh, & Triner, 2004; Seraji, 2010)

Analyzing results of studying readiness level of art students to participate in e-learning courses indicate that readiness mean of students studied in 5 factors as 3.54 out of 5 hence indicating the average readiness of art students to participate in e-learning. In this section, we will present the details of student readiness according to the five different factors; Communicative and Collaborative Skills, Meta-cognitive skills, Technology availability and skills, Cognitive skills, and Self-directed learning.

The first factor is communicative and collaborative skills. This factor with a mean of 3.4 indicates average readiness. Abilities of art students must be improved in using tools before implementing the e-learning system because weak interaction is one of the significant problems in e-learning. Collaborative and interactional capability of e-learning and internet must be considered significantly to implement e-learning systems. According to Garrison, participation, engagement and dialogue are essential in the e-learning curriculum. In this type of learning, "authority-based interaction patterns" are replaced by "group-interaction based patterns." Therefore, in this study, the readiness of students for interaction and group discussion was assessed (Kamaliyan & Fazal, 2009).

Regarding the metacognitive skills; the mean of this factor is 3.4 indicating average readiness in metacognitive skills in art students. One of the main problems of education (especially e-learning) is that students must learn how to learn, how to remember and how to solve problems (Belmont, 1998). Cognitive and metacognitive strategies are the most powerful influence on learning. A significant relationship exists between learning method and educational progress in university (Meece, Bluemenfeld & Hoyle, 1998; Yang, 2005).

Shih, Ingebritsen, Pleasants, Flickinger and Brown (1998) investigated the importance of the relationship between advances in the online education fields, motivation and cognitive and metacognitive strategies. According to their results, people who use metacognitive strategies are more successful than people who use these strategies less. Metacognition is the learner's ability to understand the cognitive capabilities and application of these capabilities to learning. It is critical for remote learners because they do learning assignments individually. Since the relationship between use of cognitive and metacognitive strategies with students' progress in virtual education is significant, teaching these strategies before starting e-learning can improve student performance significantly. Metacognitive skill refers to knowledge and awareness about one's cognitive strengths and weaknesses and trying to fix or improve them. Therefore, study skills such as planning and goal setting, forecasting and determining the exact time of study, self-control and monitoring progress and self-regulation can be considered as metacognitive skills in learning.

Technology availability and skills represent the average total 3.63 (average readiness) in student' readiness in skills of working with computers and Internet access. In the virtual learning environment, students need access to educational content, do learning activities, participate in synchronous and asynchronous discussions and need tools and computer software and should also have access to these tools, and have the skills to work with them.

Chan, Jones, Eileen, and Richard (2006) in their investigation found that students with high keyboard skill can perform technology-based learning activities better than other students. Babin, Tricot, and Mariné (2009) observed that students with essential knowledge and skills in tools and internet software had more efficiency than other groups in virtual learning courses (Seraji, 2013).

Cognitive skills with the total mean of 3.66 represent average readiness and the ability of art students in cognitive skills. They relate to methods that increase interpretation, understanding, and information acquisition abilities. Cognitive skills strengthen thinking process and "are helpful to achieve goals such as comprehension and memorization" (Schleifer & Dull, 2009). Cognitive strategies include rehearsal, elaboration, and organizational strategies, and are widely accepted as important cognitive strategies for facilitating the encoding, storage and retrieval processes (Pintrich, 2003).

To make better use of the e-learning resources, learners must identify their learning needs and information and classify, analyze and interpret data to use accessible data in e-learning resources to improve their knowledge and skills. So e-learning participants should benefit from scientific thinking skills and application of the scientific method to classify information and analysis, and then by interpreting data, provide new solutions to problems (Huang, 2010). Hence, problem-solving skill and critical thinking power are considered as required skills for readiness for e-learning.

Self-directed learning, with the total mean of 3.6 represents average readiness and the ability of art students in self-directedness. Self-directedness is defined as skills collection that persons use to identify their learning needs, accept responsibility for the learning process, followed by their intrinsic motivation.

Chu and Tsai (2009) investigated ten important factors of adult success in the Virtual Learning

Environment. Based on their results, self-directedness skill is the most important success factor in virtual courses. In this environment students need independence in decision making, and skills in writing, production, modification, collaboration, search, data collection, storage and monitoring.

As e-learning environment involves self-study, and access to various sources, a variety of selections, and time of the study, and multi-media format, self-directedness is essential. Students who have enough self-motivation and responsibility for learning are needed in this learning system (Seraji, 2013).

Birch (2001) claims that self-directedness is one of the specifications of successful learners. So about the first question, results revealed that Art students have a moderate level of readiness for applying e-learning. In similar research, the Students E-readiness in many Universities in Iran had a good level such as Zanjan Medical Science (Mousavi, Maleki, Faghihzadeh, Ojaghloo & Noroozi, 2016), Isfahan University (Changi, Haghani, & Nowroozi, 2013). In some studies, the level of readiness for applying e-learning was found moderate (Maleki Marasht, Ghalai, & Mousavi, 2012; Okhovati, Sharifpoor Ghahestani, Islami Nejad, Hamzadeh Marzooni & Motamed Jahroomi, 2015). About the third and fourth questions, there is not a significant difference between fields of study, gender, and readiness level. Results are consistent with Soydal, Ünal, and Alir (2011), and Maleki Marasht et al. (2012), but are contrary to results of Pingle (2011). Hence, a coordinated plan could be used to implement electronic learning in various fields of study.

As for the third research question, the preparedness of Ph.D students is more than the e-learning readiness of graduate and undergraduate students. The readiness of Ph.D students is more due to nature of their lessons that is more research-based and requires scientific methods more. Besides that, they show greater use of computers and the Internet for implementing projects. The significant difference is promising in some cases. That means, if the university students are encouraged to carry out research projects, they are motivated to search information broadly, and their skill required for participating in e-learning is increased. Lack of significant difference among academic disciplines and schools of art shows uniform policy for investing in e-learning training for all majors of art.

In a study conducted to assess the student's attitudes and knowledge on e-learning in Mashhad University of Medical Sciences, a similar outcome was obtained for the lack of significant difference between the field of study and attitude between required knowledge and field of study.

The lack of significant differences in the areas of art and e-learning, despite considerable differences like art majors, shows the ignorance and lack of awareness in schools of art to e-learning. Inadequate skills result from the low formal art education system (in both universities and vocational institutions in Iran). Despite changes in the field of art and plans implemented, the Iranian educational system has failed to meet the student needs and the teaching method in the arts is still traditional teaching (Sarsangi, 2014).

Low level of students' skills on computer and the Internet are due to the following: Lack or inadequacy of information technology courses in the curriculum of arts, lack of electronic courses in art schools, little facilities and computers and Internet usage, and lack of academic staff knowledge and skills on e-learning, and Internet skills.

RECOMMENDATIONS

As the findings of this study show, the readiness of art students to participate in e-learning is relatively moderate, but improvement and the preparation of students in many ways is essential to implement an e-learning system.

One of the appropriate approaches to success in implementing this system includes familiarizing students with the concept of e-learning and the advantages and disadvantages of this type of learning before they enter the e-learning system.

Many students entering e-learning know little of the requirements to get into this area. There is a significant relationship between the uses of cognitive and metacognitive strategies and students' progress in virtual learning. Teaching these strategies, from the start, of course, can influence student performance. The promotion of written verbal skills is an example of it. Cooperative learning and group assignments will provide

another way to enhance collaborative learning interaction skills of students.

Introduction to e-Learning courses and other courses, Introduction to the Internet and computer skills courses for art students to participate in e-learning development skills are required. The readiness of art students as one of the important factors in implementing e-learning has been assessed in this investigation.

Other factors and readiness of faculty members of art school are the basis for future investigations. More recent research can identify issues such as the need to study art students' learning styles and adapt them to the characteristics of the electronic learning environment, to guarantee successful e-learning implementation among them. Also, identifying the strengths and weaknesses of art education at universities in Iran and matching these with the strengths and weaknesses of virtual art education will lead to better understanding of threats and opportunities in implementing e-learning for art education in universities.

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