Investigating the Effective Factors on Tendency toward Virtual Education among the Students of Payame Noor University in Kashan and Aran-Va-Bidgol County in 2017

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Abstract

Aims: Understanding students' attitudes and perceptions toward virtual education is important in successful development of e-learning in higher education. The purpose of this research is to investigate the tendency towards virtual education among students of Payame Noor University. **Materials and Methods:** This cross-sectional study was conducted in 2017 with the objective to find out perception of students about effective factors on their tendency towards virtual education. By applying Cochran formula for finite populations, sample size was calculated 92 students. Data were collected by a reliable and valid virtual education tendency questionnaire. Data was analyzed using SPSS software. **Results:** The results showed that the majority of respondents were in the age range of 20–29 years old and 53% of them were females. The majority of students (67%) believed that reducing visual communication was effective on the tendency toward virtual education. A lower percentage (30%), believed that the increase in students' academic level wasn't an effective factor in trend toward virtual education. overall 57% of students disagreed with the effect of reduction of costs on tendency towards virtual education. **Conclusion:** Most of the students stated that their tendency towards virtual education was due to the increase in their scientific level, it is suggested that the university authorities strengthen scientific foundations of the university. If so, more students are expected to enter virtual universities.

Keywords: Computer-based education, Internet-based education, virtual education, web-based education

Introduction

Higher education in Iran has faced several challenges such as increasing demand for education and deficiency of current plans to meet these growing needs. The existence of mass youth who wants university degrees and lack of space for different educational levels has caused many problems. It seems that an efficient virtual education system can overcome the mentioned complexities.[1,2]

Virtual education as a new approach has emerged in the field of learning.[3] The virtual education was first introduced in the UK, but Americans performed it for the first time. In many countries in the world, virtual education has been developed and implemented for many years, but the real development of this type of training occurred while the Internet globally spread.[4]

The term "virtual education" encompasses a variety of electronic delivery media such as web-based multimedia,

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virtual classrooms, videoconferencing, and so on for the rapid transformation of information.[5,6] Virtual education has been discussed and implemented as the main solution to reduce the costs of education and students in advanced societies.[7] It presents a variety of opportunities for supporting education in the higher education system in developing countries such as Iran.[5]

The findings of the studies on the challenges of virtual universities confirm that the shortage of desirable software and hardware infrastructures, restriction in bandwidth, the costs of access to Internet, organizational and sociocultural obstacles, and low speed of Internet are among the main barriers of the development of virtual education.[8-14]

Despite these challenges, the virtual education system with the use of facilities of virtual world can increase productivity, decrease costs, and provide opportunities for life-long learning and some other advantages.[1,5,6] It not only allows the students to have access to online course materials without dependence on time and place but also provides a reopportunity for those who do not have access to conventional education.[2,3,15,16]

Students are one of the fundamental components of the education cycle.[17,18] Therefore, understanding students' attitudes and perceptions toward virtual education is important in the successful development of e-learning in higher education. It would help decision-makers in related fields in a better understanding of the systems requirements and potentials.[5,6]

Although virtual learning is seen as a desirable phenomenon and tendency toward it has rapidly increased,[5,19] there are still few researches in this area. The findings of Fini's study showed that the students had a positive attitude toward e-learning.[6] In studies conducted by Selim[20] and Macpherson *et al*.,[21] tendency toward virtual education depended on providing technical support and guidance. According to Katz's study, he found that students' psychological attitudes facilitate the effective use of learning approaches.[22]

To the best of the authors' knowledge, no similar study has conducted on this topic in Iran. Therefore, as students are one of the fundamental components of education cycle, learner motivation is one of the key factors affecting student performance and learning, particularly online learning success.[17] The present study sought to investigate the effective factors on the tendency toward virtual education from the perspective of students of Payame Noor University in Kashan and Aran-va-Bidgol cities in Iran so that policy-makers of the university could benefit from the results.

MATERIALS AND METHODS

This descriptive, cross-sectional study was conducted in 2017, with the objective to find out the perception of students about effective factors on their tendency toward virtual education. The research population in this study was 341 students at the Payame Noor University of Kashan and Aran-va-Bidgol. By applying the Cochran formula for finite populations, sample size was calculated 92 students. There were no inclusion and exclusion criteria for the research's participants. Considering the facilities and capabilities available to eliminate any sample error, finally 100 people were selected by the simple random sampling method.

Data were collected using a questionnaire in two parts: four demographic questions and 12 items for measuring the effective factors on tendency toward virtual education. For measuring the effective factors on tendency toward virtual education, a researcher-made questionnaire was used.

It consists of 12 items grouped into four dimensions, including cost reduction, individuals' evaluation of the costs of education as well as traffic and dormitory costs. Visual communication reduction refers to individuals' evaluation of the visual communications between students and somewhat between students and instructors. Poor security facilities rely on the access of unauthorized individuals to information and their consequences. Increasing the academic level of students refers to establish opportunities for students to promote their knowledge and skills.[23]

Each of the four dimensions contains three items. Items of the questionnaire are scored on a 5-point Likert scale on which 1 stands for "Completely disagree" and 5 stands for "Completely agree."

The reliability of the questionnaire was prepared through content surveys and consultation with the experienced professors and imitating the similar plans. The validity of the questionnaire was confirmed. Then, the samples were taken at 25 and 35 persons in two stages. With the two-half method and calculating the coefficient of homogeneity and the coefficient of Cronbach's alpha, the coefficient of Kuder–Richardson reached 71% in the second stage of Cronbach's alpha coefficient which was concluded that the reliability was acceptable. Considering the accuracy of ε = 0.07, the expected sample size was calculated for the sample with 95% confidence.

The descriptive analysis of the data of the questionnaire, including the frequency table and percentage, was calculated. The analysis was carried out using the SPSS software for Windows (version 16.0, SPSS Co, Chicago, ILL, USA).

RESULTS

The results of the study showed that the majority of respondents (41%) were in the age range of 20–29 years old. Fifty-three percent of them were females, and the rest were males. Nearly 70.7% of the participants were married and 29.3% were single. Seventy-seven percent of respondents had an undergraduate degree. About 89.3% of them were educated in human sciences. This study showed that the majority of students (67%) believed that reducing visual communication was effective on the tendency toward virtual education

Table 1: Distribution of individuals' answers to the four aspects affecting on the tendency toward virtual education

Aspects	Options				
	Totally agree, *n* (%)	Agree, *n* (%)	Partially agree, *n* (%)	Disagree, *n* (%)	Completely disagree, *n* (%)
Cost reduction	11 (11)	13 (13)	19 (19)	31 (31)	26 (26)
Visual communication reduction	9 (9)	10 (10)	14 (14)	36 (36)	31 (31)
Poor security facilities	6 (6)	12 (12)	16 (16)	21 (21)	45 (45)
Increasing the scientific level of students	32 (32)	23 (23)	15 (15)	18 (18)	12 (12)

[Table 1]. In contrast, a lower percentage (30%) believed that the increase in students' academic level was not an effective factor in trend toward virtual education [Table 1]. Forty-three percent of respondents declared that a reduction in the costs was an influential factor on their tendency toward virtual education [Table 1]. Overall 57% of students disagreed with the effect of reduction of costs on the tendency toward virtual education [Table 1].

DISCUSSION

The current study fulfilled to find out the extent of the four effective factors on tendency toward virtual education. The results showed that the majority of students believed that two dimensions, i.e., reduction of visual communication and increasing the scientific level of student impact on the tendency toward virtual education. Inconsistent with this study, Latifi *et al*. in their study found that the decline of interaction and impossibility of skills development have an impact on the lack of tendency to virtual education.[24] Fini declares that face-to-face and lively communication does not exist in virtual education. This can cause negative effects on academic progression and the development of students' communication skills. On the contrary, this is natural because the students in virtual situations can make mistakes without being judged. They can also do their homework over a longer period of time.[6]

A lower percentage of students believed that cost reduction impact on their tendency toward virtual education. The most important objective of distance education is making it possible to access the knowledge with lower levels costs.[25] Thus, this finding deserves further survey. Furthermore, a lower percentage of students believed that poor security facilities impact on their tendency toward virtual education. The findings of Yaquoobi's study on effective factors in the success of e-learning from the viewpoint of students showed that suitable contents, availability of information technology infrastructures, and using suitable software were the effective factors on the success of e-learning system.[5] These items indirectly refer to security facilities.

CONCLUSION

Given the fact that most of the students stated that their tendency toward virtual education was due to the increase in their scientific level, it is suggested that the university authorities strengthen the scientific foundations of the university. If so, more students are expected to enter virtual universities.

It should be noted that in this research, only the attitude of students considered one of the important factors, but policymaking and planning virtual education need surveying other factors such as infrastructure of the educational system, technical issue, and social culture that can be studied in future researches.

Conflicts of interest
There are no conflicts of interest.

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