The Teacher's Attitude of Babol to Implement Technology in Education

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ABSTRACT

The present study aims to determine the effects of applying educational technology on the teachers' effectiveness in the view of faculty members of Islamic Azad University (Sari Branch).To do so, a descriptive survey method was employed. The population under study included all 176 faculty members of Islamic Azad University (Sari Branch) in the 2011-2012 academic year. A sample of 118 faculty members was selected randomly using Morgan and Krejsi Table. The instrument used to collect data was a researcher made questionnaire. The validity of the questionnaire was confirmed based on the opinions of the experts in the field. The reliability of the questionnaire was determined as r= 0.8417 using Cronbach Alpha. In addition, one-sample t-test was used to answer the research questions. The results of the study indicated that, according to the participants' views, the application of educational technology is effective in improving the efficiency of instruction. Because of the changes made in the educational system as the result of adoption of the new technology such as educational software and use of the Internet, traditional practices of knowledge transfer can no longer meet the learners' needs. As a result, teachers are required to use educational technologies in order to increase their knowledge, improve their teaching practices, grow students' talent, facilitate teaching-learning process, and increase efficiency of classrooms.

KEYWORDS: faculty members, educational technology, opinions, technology, teaching, application

1. INTRODUCTION

Educational technology, in general sense, is not something new and its history can as the history of education. However, educational technology, in its technical sense, has received attention for less than a century on the part of educational practitioners. During this period, different accounts have been made of the concept of the educational technology. The professionals in the field regard the educational technology as systematic process to solve problems that lead to the realization of educational objectives, especially goals pursued by the teaching-learning process [1]. Others consider this field as the application of educational materials and believe that the educational technology includes any material such as a piece of chalk or very simple teacher-made tools to sophisticated instruments used for the purpose education [2]. Some others regard the use of teaching methods and material development and planning as instances of educational technology. According to another view, educational technology is like a miracle that is able to solve educational problems arising from the lack of space, the great number of students, and teachers' inefficiency [3]. Educational technology refers to an organized plan for the establishment of a comprehensive system that provides benefits and new methods of human communication as well as audio-visual tools. It also organizes classrooms with teaching principles and techniques to improve learning outcomes [4].

During recent years, much attention was paid to taking advantage of the new technologies in classrooms. New technologies provide new opportunities for students' personal talents and interests and improve educational system in schools significantly [5]. During each historical period, the educational system has employed educational technologies and techniques specific to that time that were known to teachers and students and has tried to meet their needs. Educational technologies and methodologies for the World War II generation were generally auditory. Nevertheless, this generation while listening to the radio and each other's' speech enjoyed reading books. Today, students are born in an audio, visual, and movement world so teachers' attempt to educate them utilizing the past educational methods and media is in vain or it does not result in much gain [6]. Educational technology no longer means the employment of devices nor does it refer to educational software and materials. Besides, teacher-based systems are almost declining and student-centered systems are becoming more popular instead. Teaching materials are also changing day by day and textbooks are not the sole educational tool. Teachers' role has changed and they play the role of a guide or leader in classrooms and, in fact, teachers are conceived as educational managers [7].

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The results of different studies indicate that taking advantage of modern technologies such as computers and the internet makes students enable to learn more rapidly and efficiently and gain more satisfaction when they attend the classroom [8]. Educational technology can also improve the quantity and the quality of educational outcomes and facilitate the learning process [9]. As a result, to use modern technologies more efficiently in educational curricula and to implement active and student-centered techniques, process-based evaluation of teaching and learning activities, and promotion of continuous learning skills, we have to review and improve educational approaches and policies, to reorganize the content of educational materials, to develop human resources, to design efficient curricula, and to revolutionize cultural norms in order to make them consistent with modern technologies [10]. With regard to what has been mentioned above and given the important role of teaching in development of students' talents and the effects of use of technology in teaching by teachers on their effectiveness in the instruction process and on the discovery of students' potential abilities, the present study aims to determine the effects of application of educational technology on the improvement of teachers' educational efficiency in the view of the faculty members of Islamic Azad University (Sari Branch). Accordingly, a review of studies done previously in this field is presented as follows: Exxon and Erilmaz (2011) conducted a study to find out why mathematics teachers do not use educational technology and teaching materials in their classes. The results of the study indicated that the current educational system, teachers, students, and learning factors and processes are possible causes of why mathematics teachers in elementary school do not employ educational technology and materials in math classes [11].

Kahreman, Yalsin and Yilmaz (2011) examined elementary school teachers' level of self-efficacy when they were taking advantage of educational technology. The needed data were collected by administrating a questionnaire to 43 elementary school teacher in Arzinkan. The findings of study indicated that high levels of the elementary school teachers' efficiency were associated with the use of educational technologies. In additions, the teachers believed that the application of technology and its benefits had been useful to them [12].

Eiyam, Degrer, and Menvis (2010) analyzed English primary school teachers' attitudes towards the use of educational technology in their classes. The findings of the study suggested that although the teachers agreed that the use educational technology has a positive effect on their experience, they needed more information on how to use such technology in their classrooms [13].

Horsen, Ezsinar, and Azdam (2009) examined teacher trainees' attitudes towards educational technology. Based on one of the most important result of this study, teacher trainees agreed with the positive effects of educational technology. Besides, it was noted that there were no significant gender differences in attitudes towards educational technology. Finally, the trainees with different fields of study believed in the positive effects of technology [14].

Kabadaei (2006) conducted a study among Turkish preschool and part-time teachers to examine their attitudes towards the use of technology in teaching. Based on the findings of the study, 75% of teachers showed positive attitudes toward the use of instructional technology in their classrooms [15].

The studies conducted in Iran are as follows: Zanguei (2011) examined teachers 'attitudes towards the use of modern educational technology in the teaching process. The results of the study demonstrated that teachers showed positive attitudes towards the use of new educational technologies in teaching process. In addition, the results of Chi-square test showed there was no statistically significant difference between sex and educational level of teachers and their attitudes towards the use of new technologies in the educational process. On the contrary, there was a significant difference between teachers' workplace, their experience, and their attitudes towards the application of new technologies in the instructional process [16].

Rostami (2000) studied the use of ICT by elementary and high school teachers. It was observed that most teachers used rarely (weekly) ICT instruments, indicating the low level of application of such technologies by teachers [17]. Based on what was mentioned above, it seems that the employment of educational technologies increases teachers and professors' efficiency in the instructional process and improves the productivity of the educational system. The question why some teachers and professors in the education and higher education system welcome the adoption of new technology in the classroom while others reject it is one of the most challenging issues that should be taken into account so that the classroom efficiency is improved and teaching and learning processes are facilitated along with the growth of students' talents and creativity through creating positive attitudes towards educational technology and development and application of new technologies such as educational software and the Internet. Accordingly, the present study tries to determine the effects of educational technology (instructional software and Internet) on teachers' efficacy in the instruction based on opinions of students and professors at Islamic Azad University (Sari Branch). As a result, the following questions are going to be answered in this study:

The main research question:
Does the application of the educational technology affect the efficiency of teachers' instruction from the perspective of the faculty members?

Special research questions:
1. Does the educational technology affect development of educational curricula from the perspective of the faculty members?
2. Does the educational technology affect the implementation of active and student-based methods from the perspective of the faculty members?
3. Does the educational technology affect the process-based evaluation of teaching and learning activities from the perspective of the faculty members?
4. Does the educational technology affect the development of continuous learning skills from the perspective of the faculty members?

METHODOLOGY

The present study is a practical study concerning the purpose it follows. However, with regard to the data collection method, it is a descriptive-survey study. The population under study included all 176 faculty members of Islamic Azad University of Sari Branch in the 2011-2012academicyear. Since the population size was relatively small, Morgan-Krejesi Table was employed to select 118 faculty members as the research sample through random sampling method. a researcher-made questionnaire was used in this study as the instrument to collect the required data. The questionnaire was developed using theoretical and library studies and reviewing different theses in the field of educational technology (e.g. educational software and the Internet). Given the variables manipulated in the study and the guidelines provided by the research advisor, 16 items were included in the questionnaire, each based on a five-item Likert scale (very high, high, neutral, low, and very low).The highest score (5) was assigned to *very high*, and the lowest score (1) was given to *very low*. Table 3 show the correspondence of variables with questionnaire items.

Table 3: Correspondence of variables with questionnaire items

No.	Variables	Number of items	Item number
1	Instructional design	4	1 to 4
2	Implementation of active and student-centered methods.	4	5 to 8
3	Process-based evaluationof teaching and learning activities	4	9 to 12
4	Development of continuous learning skills	4	13 to 16

The validity of the questionnaire was confirmed based on the opinions of the experts in the field which indicated that it had an acceptable level of face and content validity. To be assured of the reliability of the questionnaire it was administered in a pilot study to a small sized sample of 30 persons and its reliability was determined as r= 0.84 using Cronbach alpha. In addition, one-sample t-test was used to analyze the collected data. It should be noted that all analyses were performed by the use of SPSS Software at the significance level of $\alpha = 0.05$.

RESULTS OF THE STUDY

Based on the variables under study and the type of data collected in this study, the participants' demographic characteristics were analyzed by descriptive statistics using measures of frequency and percentage. Table 1 shows frequency distribution and percentage for variables such as gender, age, level of education, field of study, and working experience of the faculty members participated in the study.

Table 1: Frequency and percentage for participants' gender, age, level of education, field of study, and working experience

Variables	Gender			Level of Education				Academic ranking			
	Female	male	Total	M.A	PhD	No response	Total	Instructor	Assistant	Associate	Total
Frequency	49	69	380	78	39	1	118	83	30	5	118
Percentage	41.5	58.5	100	66.1	33.1	0.8	100	70.3	25.4	4.2	100

The results of descriptive statistics showed that the participants were 31 years old and higher and most of them were between 41 to 50 years old. In addition, an analysis of the participants' work experience suggested that 21% of the participants had a work experience of less than 5 years, 30%were between 6 to 10 years, 31% had an experience of 11 to 15 years, and 17% had a work experience of 16 years or more. On average, the majority of participants had a work experience from 11 to 15 years.

One-sample t-test was used to answer to the main and specific research questions. The results of inferential statistics dealing with research questions are presented in Table 2.

Table 2: Results of one-sample t-test

Research questions	No	Mean	SD	Theoretical mean	Mean differences	tm	df	tb	Sig.
Question 1	118	16.88	1.07	12	4.88	49.485	117	1.96	0.000
Question 2	118	16.98	1.99	12	4.98	27.182	117	1.96	0.000
Question 3	118	16.76	1.71	12	4.76	30.201	117	1.96	0.000
Question 4	118	17.07	1.69	12	5.08	32.609	117	1.96	0.000
Main question	118	67.69	4.29	48	19.69	49.873	117	1.96	0.000

The results of the t-test with regard to the first special question indicated that since the t value is greater than the critical t in the table at significance level of 0.000, it can be said that from the perspective of the faculty members, the use of educational technology affects instructional design as the sample mean (16.88) is greater than the value of the cut-off point (12). The results of the t-test concerning the second special question suggested that as the t value is greater than the critical t at significance level of 0.000, it can be argued that in the view of the faculty members, the application of educational technology affects the implementation of active and student-centered techniques because the sample mean (16.98) is greater than the value of the cut-off point (12). The results of data analysis concerning the third special questions suggested that as the t value is greater than the value of t in the critical table at significance level of 0.000, it can be argued that in the view of the faculty members, the application of educational technology can be effective in the process-based evaluation of teaching and learning activities since the sample mean (16.76) is greater than the value of the cut-off point (12).In addition, the results of the data analysis with regard to the fourth special question indicated that becausethe t value is greater than the critical t in the table at significance level of 0.000, it can be said that from the perspective of the faculty members, the use of educational technology affects the development of learning skills since the sample mean (17.07) is greater than the value of the cut-off point (12). Finally, the results of data analysis concerning the main research suggested that as the t value is greater than the value of t in the critical table at significance level of 0.000, it can be said that in the view of the faculty members, the application of educational technology can influence the efficiency of teachers' instruction because the sample mean (67.69) is greater than the value of the cut-off point (48).

DISCUSSION AND INTERPRETATION

The analysis of the data concerning the first special question indicates that according to views of the faculty members, the application of educational technology affects the instructional design which is in line with the findings observed byZanguei (2011), Rostami (2010), Exxon and Erilmaz (2011), Kahreman, Yalsin and Yilmaz (2011), Eiyam, Degrer, and Menvis (2010), Horsen, Ezsinar, and Azdam (2009), and Kabadaei (2006) [16, 17, 11, 12, 13, 14, 15]. The employment of educational technology affects significantly the quality of instruction, teaching methods, teachers' instructional design, and, subsequently affects the quality of students' activities and their rate of learning. Such effects make the traditional modes of education be performed more efficiently. The use of technology in the instruction process by teachers makes them to increase their information and their students' knowledge. Through such technologies, teachers are able to develop effectively lifelong learning patterns needed for daily life and work within a rich informational environment. The findings related to thesecond specific question suggest that from the perspective of faculty members, the use of educational technology will influence the implementation of active and student-centered methods which is consistent with findings noted by Zanguei (2011), Rostami (2010), Exxon and Erilmaz (2011), Kahreman, Yalsin and Yilmaz (2011), Eiyam, Degrer, and Menvis (2010), Horsen, Ezsinar, and Azdam (2009)[16, 17.11, 12, 13, 14]. The employment of educational technology in instruction process will provide decision making and selection opportunities for learners. It also provides the learners with necessary information so that they can interpret such information, make closer relationships with educational content, individualize the learning process, and facilitate and generalize the learning process.

The results of data analysis to answer the third special research question indicate that in the participants' view, the use of educational technology can affect process-based evaluation of teaching and learning activities. This finding is consistent with the results of previous studies (Zanguei, 2011; Rostami, 2010; Exxon and Erilmaz, 2011; Kahreman, Yalsin and Yilmaz, 2011; Eiyam, Degrer, and Menvis, 2010; Horsen, Ezsinar, and Azdam, 2009; and Kabadaei, 2006)[16, 17, 11, 12, 13, 14, 15]. In addition, the application of educational technologies not only deepens, facilitates, and accelerates the learning-teaching process but also paves the way for teachers to appropriately evaluate students' ingenuity, creativity, innovation, perception, understanding, and their rate of learning. The findings concerning the fourth question suggest that the participants in the present study believed the use of educational technology is effective in the development of continuous learning skills [16, 17, 11, 12, 13, and 14]. Unlike the past, these days the main objective of the teaching-learning process is not to accumulate large

amounts of knowledge in students' minds by the force of educational technologies, but rather the main goal is to focus on common and integrative goals such as awakening the sense of curiosity in students, activating their learning, the growth of their creativity and thinking skills, the full development of learners' interests, attitudes, and values,the acquisition of life skills and lifelong learning, and improvement of their study habits and self-direction skills.Accordingly, the teaching-learning process is used in the developed countries as a powerful tool to create qualitative changes in people's social and economic life and to serve the interests of the society. Generally, the results of data analysis performed to answer the special research questions suggest that, based on the participants' view; the use of educational technology affects positively teachers' effectiveness in education which is in line with the findings of Zanguei (2011), Rostami (2010), Exxon and Erilmaz (2011), Kahreman, Yalsin and Yilmaz (2011), Eiyam, Degrer, and Menvis (2010), Horsen, Ezsinar, and Azdam (2009) [16, 11, 12, 13, 14, 15]. Because of the changes made in the educational system elements as the result of adoption of the information and communication technology, traditional modes of knowledge transfer can no longer meet the learners' needs in the today's society. As a result, it is needed that the main elements of the educational system be exposed to the changes in the field of education in line with today's world developments. Besides, officials in the educational system can enhance teachers 'awareness about the benefits of using new educational technologies and how to employ such technologies with regard to the nature of different courses in order to develop continuous learning skills by assigning specific funds for the development of technology in schools and teacher training centers and through holding regular in-services courses, and providing appropriate facilities. By doing so, teachers are able to benefit from such developments to increase their knowledge and efficiency and adopt such technologies into classrooms and educational environments, to use them for instructional design, to improve the efficiency of their teaching practice, perform better evaluations, and change their role from an information source into the facilitator of the learning process.

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