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The Possibility of Achieving Quality in Teaching and Learning Methods using e-Learning

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Abstract: The research aims to identify the possibility of achieving quality in the methods of learning and teaching through the internet and to identify its impact on the student's achievement and attitudes towards e-Learning. In recent years, the interest of the educational and university institutions in the subject of Total Quality Management (TQM) has increased in the university activities in order to prepare students to interact with the scientific and technical development according to academic accreditation standards to contribute to the building of society. Using e-Learning. The students of the second grade, the computer systems department at the Technical Institute of Nassiriya, the Southern Technical University were selected for the purpose of conducting a pilot study for the academic years 2016-2017 through teaching the networks lesson. A random sample of 60 students was divided into four equal groups with a number of variables, a control group and three experimental groups. The results of the study were analyzed using appropriate statistical methods. The research found that the students of the first experimental group obtained the superiority and trends towards e-Learning among the students of the third and second experimental groups and the control, respectively. This suggests that e-Learning has contributed to increasing the quality of teaching methods.

Key words: e-Learning, quality, achievement, attitudes, experimental, appropriate, statistical methods

INTRODUCTION

Research problem: Networking is one of the basic lessons for second-graders in the computer systems departments of technical universities. The students need an extra opportunity outside the lecture to study the subject of networks and assimilation and this requires that the student to provide a brief and specific and understandable and to focus on the main points in the subject.

Additional information can be provided to the students through the internet and its various applications such as browsing through the research engines, e-mail and chat programs. Therefore, the researcher decided to experiment with the use of e-Learning on a sample of students in the second grade computer systems department at the Technical Institute of Nassiriya.

The study aims at developing the student's attitudes towards the use of e-Learning and recommending its use in teaching this subject and other subjects in the event of positive results that support the use process and according to the conditions and possibilities of our educational institutions.

Research importance: The importance of TQM has increased significantly in recent years as it has taken a wide range of scientific and research efforts in various fields and disciplines. The different institutions including the university institutions in various fields of work and production have studied and identified its vocabulary and details. Some employees in training courses for the purpose of identifying the quality management and how to achieve them.

These institutions in their various orientations and activities, especially, the educational and university institutions have taken care of the overall quality management and provided the necessary inputs. The research efforts were conducted and scientific studies were conducted for the development of TQM in all its facilities and allocated the necessary financial resources to develop these institutions according to the overall quality data and its management. Different work joints.

One of the latest developments in the educational process is e-Learning which has become widespread in educational institutions, especially, universities in most developed countries which proved the efficiency and quality of student performance and help and assistance which provides the teacher and the student at the same time and open the scientific and knowledge opportunities for the student to get more information outside the times lectures or regular lectures.

It has become e-Learning and its various applications and techniques of the basic things that can't be

dispensed with in the process of university education and its joints as a result of the great scientific development and the increasing volume of information and its ramifications, so that, the person is unable to know and absorb it without relying on some assistance during the teaching process and this is provided by e-Learning but the need for comprehensive quality requirements in teaching methods as part of their availability in the other essential elements of the learning process.

The internet is one of the most important means of e-Learning in its various applications and the rapid and successive developments that have taken place so far. And therefore, began to spread their use in a large and thoughtful in the educational process and in various fields and proved effective and quality in helping the student to provide additional information is endless countless scientific subject taught by the student as well as a great help to the teacher in his work and research is now conducted to identify the preference of various applications of the network internet between them and between them and other e-Learning methods.

Research goals: The aim of the research is to realize the possibility of achieving the total quality in the teaching methods using e-Learning through the internet and to know the effect of this on the student's achievement and their attitudes toward e-Learning.

Research limits: The research identifies the following:

- Students of the second grade department of computer systems at the technical institute of Nassiriya, Southern Technical University during the academic year (2016/2017)
- Six topics from the curriculum for networking during the second semester

Research assumes: There are no statistically significant differences at (0.05) between the average scores of students in the achievement test between the two groups:

- The control group and the first experimental group
- The control group and the second experimental group
- Control group and the third experimental group
- The first experimental group and the second experimental group
- The first experimental group and the third experimental group
- Second experimental group and third experimental group

There are no statistically significant differences at the level of (0.05) between the average score of students in the scale of trends towards e-Learning between the two groups:

- The control group and the first experimental group
- The control group and the second experimental group
- Control group and the third experimental group
- The first experimental group and the second experimental group
- The first experimental group and the third experimental group
- Second experimental group and third experimental group

Terminology

e-Learning: Kelli (2002) education is provided electronically through the internet or intranet network or through internal multimedia such as CDs or DVDs and others Kelli (2002).

The use of e-Learning through the internet represented by surfing the net or e-mail or chat programs through which the sample of the second-grade students of the computer systems department at the Technical Institute of Nassiriya can obtain additional information about the network subject studied in the usual lecture.

A quality: Federal Quality Institute: the ability to perform the right work correctly from the first time with the ability to evaluate the work to see how to improve the performance (Adams, 1964).

Procedural definition: Quality is the availability of quality requirements known in the teaching methods of the subjects of the networks in question.

Achievement: Jado and Ali (2008) it is the outcome of what the student learn after the passage of a specific time can be measured by the degree obtained by the student in the achievement test and to see the success of the strategy that the teacher sets and plans to achieve its goals and the student's information translated into Jado and Ali (2008).

The result of what the students learned from the research sample of information in the networks subject after the completion of the research is estimated in the degrees obtained in the final achievement test which was prepared by the researcher.

Attitudes: Mahmoud (1994) a set of cognitive, emotional and behavioral components that relate to the individual's

response to a particular issue, subject or situation and how these responses are accepted and rejected (Mahmoud, 1994).

Student's attitudes towards the use of e-Learning in learning about acceptance and rejection as measured by their responses to the student's attitudes toward e-Learning prepared by Mahmoud (1994).

MATERIALS AND METHODS

Background: The issue of total quality management has emerged and has received a lot of attention in various fields. The institutions with their various specialties and interests are seeking to know the availability of the components of TQM because this indicates the quality of production, its efficiency and its consistency with international trends.

The issue of TQM has received wide attention from specialists in the field of education because educational institutions, like other institutions, need to adopt international standards in this direction and to recognize the efficiency of their educational systems in its various basic elements which improve the efficiency of students and graduates, lead to raising the scientific and educational level and make it a source of radiation in the community so that interact with and affect and be affected by.

Teaching methods are one of the basic elements in the educational process. This requires us to pay attention to them and develop them and to know the availability of the total quality requirements in them because their quality and efficiency lead to contributing to the efficiency of the educational process and contribute to achieving part of the total quality requirements in it.

Al-Husseini points out that e-Learning is not a substitute for conventional education which is not a secondary education but rather a new type and addition to what exists to cope with new situations with additional burdens. Integrated system of teaching and teaching Al-Husseini and Abdul Qawi.

The development of the computer and the emergence of the internet have put the world in front of a new revolution in education and opened up a wide range of new types of education such as open education, distance learning and e-Learning.

The aim of e-Learning is to try to compensate for the shortage of teaching staff and training in some sectors of education through the virtual classes and to help spread the technology in the community and give a broader concept of continuing education. Using different communication channels such as e-mail and virtual classroom.

According to Mabarik, e-Learning is based on student participation in education activities, creating an atmosphere of learning and a desire to follow it a part from authoritarian methods of education that create an atmosphere of aversion and alienation from it Mabarik and Haifa Bent Fahad.

The benefits of e-Learning are the ability to meet the needs of individual learners, so, that students learn at their own speed and provide the cost of training such as accommodation, travel, books, improved retention of information, timely access to information, fast updating of information in the network, standardization of content and information for all users and improved collaboration and interaction among students. The student's sense of embarrassment to his colleagues when he makes a mistake (Codone, 2001).

Titus (1998), shows that the internet is more exciting and interesting for students when integrated with the usual teaching methods. The course provides ease of use and challenges student's ability to research for subject titles and effective communication with students and others researchers Aaron (1998).

Damoense (2003) that many studies have indicated that the use of educational techniques including the internet to integrate with the normal teaching and learning process, may lead to effective learning outcomes for students.

Previous studies: A number of studies and research have been conducted to identify the efficiency and effectiveness of using each of the modern educational techniques in the educational process by knowing the impact on a number of related variables related to the level of scientific students.

Mabarik has designed a proposed model for the development of the standard lecture method in university education using e-Learning, taking advantage of the characteristics of the internet in providing additional information to students about the usual lecture.

Al-Autraji attempted to design sites for some subjects in Saudi Arabia and publish them on the internet to resemble a virtual high school for the purpose of benefiting students from this information and according to the subjects.

Designed Abdel Hamid a new multi-media educational model based on the methods of e-Learning to teach computer science and computer drawing and broadcast on the internet at King Abdul-Aziz University and noted that it develops experiences among students at different levels.

Al-Shnaq and Hassan a study aimed at evaluating the electronic learning subjects of the physics curriculum in the Jordanian secondary schools from the point of view of teachers and students by dividing the sample into five groups, the first used the internet, the second the CDs and the third the internet with the CDs and the fourth the teacher with the data viewer. The control group used the usual method teaching and noted that these techniques have positively affected student learning and the development of scientific thinking.

Al-Hasnawi conducted a study at the Technical Institute of Nassiriya in Iraq aimed at comparing g the effect of using some e-Learning techniques such as the internet in teaching the basics of electronic in the achievement of students and developing their scientific thinking by obtaining additional information about the subject studied. The usual lecture noted the superiority of students who used the internet in achievement and scientific thinking on students who did not use it.

Al-Hasnawi and others conducted a study at the Technical Institute of Nassiriya in Iraq aimed at finding out the effect of using the internet in learning electronic subject in the collection and trends of students by obtaining additional information about the subject studied in the lecture. He noted the superiority of the students who used the internet in achievement and the development of trends towards its use in education to students who did't use it.

Procedures

Research design: The design of equivalent groups with a post-test consisting of a control group and three experimental groups was chosen as an appropriate experimental design to validate the hypothesis of the research.

Community: students in the second grade-computer systems department at the technical institute of Nassiriya at the Southern Technical University for the academic year 2016-2017 were identified as an appropriate society to be researched.

Research sample: The selection of (60) students randomly from the research community to be the sample of the research. They were divided into four groups of equal number and equal in a number of variables that researcher think affect the integrity of experimental design for research.

Requirements

Determination of scientific study subject: The subject of the study was determined and prepared by six subjects from the curriculum of networks for the second grade to be taught to the students of the four groups in the usual way during the lecture by the teacher.

Determination of teaching objectives: The goals of teaching the networks subject were determined according to the general objectives of the subject and the formulation of these goals in the form of specific teaching objectives that can be observed and measured. These objectives were presented to a number of specialists to indicate their validity and were modified according to their observations and were adopted as objectives for teaching networks subject according to the content of the scientific subject.

Preparation of teaching plans: Six teaching plans were prepared for the study subjects in the usual way for the four groups according to the teaching objectives that were prepared. They were presented to a number of specialists and were amended according to their observations and are ready for finalization on the research sample.

Research tools

Measure student's attitudes toward e-Learning: The researcher has built a scale that aims at measuring the student's attitudes towards e-Learning according to the steps adopted in building the standards of this kind. The objective of the scale was determined and the behavioral goals were determined.

The 30 item scale which can be answered clearly by the students was presented to a number of specialists and based on the Cooper equation to calculate the degree of agreement between the arbitrators and 80% for this purpose.

The statistical analysis of the scale was applied to a sample of 15 students from the non-research sample. The coefficients of the discrimination and the degree of consistency of the paragraphs were obtained with the total scale score using the appropriate statistical methods. All the paragraphs were found to be distinct and consistent. The exploratory sample after two weeks of the first application of the scale and according to the coefficient of stability using Pearson correlation coefficient was (0.82) and according to coefficient Kronbach-alpha equation was (0.90). Thus, the scale is fixed and ready to be applied to the research sample in its final form.

Achievement test: The researcher used the final achievement test for the purpose of measuring the

information acquired by the students after completing the teaching process which is a multiple choice type consisting of (18) questions in light of the goals that were identified. And to extract the validity of the test presented to a number of specialists to indicate their observations and has been modified some of the paragraphs according to those observations using the Cooper equation and the proportion of the agreement that was referred to previously.

The statistical analysis of the test was applied to the same survey sample from the non-research sample in which the trend scale was applied. The discrimination and difficulty factors and the effectiveness of the wrong substitutes were extracted using the appropriate statistical methods. All the paragraphs were distinguished and their coefficient of difficulty was appropriate. Therefore, the test was considered true and the method of re-application was used on the same survey sample two weeks after the first application of the test and according to the coefficient of stability using Pearson correlation coefficient (0.83) and Kronbach-alpha equation (0.91). Thus, the test became stable and ready to be applied to the research sample in its final form.

- Students of the second experimental group were studying the subject during the regular lecture as well as the use of e-mail through the internet to communicate with the teacher
- Students of the third experimental group were studying the subject during the regular lecture as well as the use of chat programs (Messenger) online to communicate with the teacher

Where students of the three groups receive additional information and explanation and answer their questions and inquiries in order to enhance their learning of the subject they studied in the regular lecture. After the research was completed, the final achievement test was conducted for the students of the four groups simultaneously and at the same time re-applied the measure of student's attitudes towards e-Learning to the students of the four groups simultaneously. The results were analyzed using appropriate statistical methods.

Statistical means: The researcher used the statistical program (SPSS) to analyze the results of the research and conduct the process of parity and find the significance of statistical differences among the students of the four groups.

RESULTS AND DISCUSSION

Review results

Achievement: From the observation of Table 1, we find that: there were statistically significant differences at 0.05 between the average scores of students in the achievement test between the two groups:

- The control group and the first experimental group for the first experimental group
- Control group and the second experimental group favor for the second experimental group
- Control group and the third experimental group favor for the third experimental group
- First experimental group and second experimental group favor for the first experimental group
- The first experimental group and the third experimental group favor for the first experimental group
- The second experimental group and the third experimental group favor for the third experimental group

Trends towards e-Learning: From the observation of Table 2, we find that: there were statistically significant

Table 1: Achievement results presentation

Hypothesis	Groups	Arithmetic average	SD	t-values
1	Control	70.133	10.613	5.261
	1st experimental	84.533	6.641	
2	Control	70.133	10.613	1.203
	2nd experimental	74.40	8.739	
3	Control	70.133	10.613	2.749
	3rd experimental	79.066	6.786	
4	1st experimental	84.533	6.641	3.579
	2nd experimental	74.40	8.739	
5	1st experimental	84.533	6.641	2.232
	3rd experimental	79.066	6.786	
6	2nd experimental	74.40	8.739	1.635
	3rd experimental	79.066	6.786	

Table 2: Trend results presentation

Hypothesis	Groups	Arithmetic average	SD	t-values
1	Control	68.40	7.896	6.929
	1st experimental	86.133	6.009	
2	Control	68.40	7.896	2.498
	2nd experimental	74.933	6.360	
3	Control	68.40	7.896	4.712
	3rd experimental	80.20	5.647	
4	1st experimental	86.133	6.009	5.229
	2nd experimental	74.933	6.360	
5	1st experimental	86.133	6.009	2.790
	3rd experimental	80.20	5.647	
6	2nd experimental	74.933	6.360	2.401
	3rd experimental	80.20	5.647	

differences at the level of (0.05) between the average score of students in the trend scale towards e-Learning between the two groups:

- The control group and the first experimental group favor for the first experimental group
- Control group and the second experimental group favor for the second experimental group
- Control group and the third experimental group favor for the third experimental group
- First experimental group and second experimental group favor for the first experimental group
- The first experimental group and the third experimental group favor for the first experimental group
- The second experimental group and the third experimental group favor for the third experimental group

The use of e-Learning has helped to achieve quality in the teaching methods as it was efficient and effective in this area through the use of students of various internet applications which is one of the most important and the most important means of e-learning, thus can work to achieve the quality requirements in higher education institutions in educational process through the use of e-Learning to achieve quality in teaching methods.

The superiority of the students of the experimental groups who used e-Learning in achievement clearly indicates that e-Learning has contributed to the positive results of students and helped them effectively and efficiently in their study and learning of the network subject. This may be due to the fact that e-Learning has given students in the experimental groups an additional opportunity and reinforcement in an interesting, fun and clear manner characterized by quality and efficiency of learning not available to the students of the control group which led to the consolidation of the scientific information they studied more than it is in the control group.

Because of the possibility of the large internet in the presentation of the study subject in a variety of different ways and different colors, sound and movement and the possibility of using images and illustrations and illustrations, graphic and mathematical calculations and the possibility of effective communication with the teacher article through chat programs, e-mail.

The use of e-Learning to achieve quality in teaching methods has achieved the goal of its use where students have helped to a great extent in the consolidation of scientific information on the subject.

CONCLUSION

- The use of e-Learning has contributed to quality in teaching methods
- The use of e-Learning has had a positive impact on student's achievement in networking
- The use of e-Learning has had a positive impact on the development of student's attitudes towards e-learning
- The use of web browsing has a positive impact on student's achievement and attitudes toward e-Learning than on chat and e-mail programs, respectively
- The use of e-Learning to integrate with teaching in the regular lecture is a useful and positive method of learning

IMPLEMENTATION

The study began with the application of the measure of student's attitudes toward e-Learning to the students of the four groups together. The results were analyzed and there were no statistically significant differences between the students of all groups. The students were then trained to learn and use the internet. And then began the process of teaching which lasted for six weeks where the researcher himself the process of teaching students of the four groups together and at the same time the usual way in the lecture as follows:

- Students of the control group study the course subject during the lecture in the usual way only
- Students of the first experimental group were studying the subject during the lecture in the usual way as well as the use of browsing to the internet and according to their desire

RECOMMENDATIONS

- The use of e-Learning to help students learn network subject for the second grade in the computer systems sections of the technical universities
- The use of e-Learning for the purpose of developing the attitudes of students in computer systems departments in the technical universities towards e-Learning
- To set up specialized courses at the Southern Technical University for teachers to demonstrate the importance of e-Learning, its quality, its effectiveness and training in the use of modern technologies in education
- Use e-Learning to integrate with education in the regular lecture

SUGGESTIONS

According to the results of the research suggests the researcher to conduct complementary research and development of this research including:

- A study of the effect of the use of e-Learning inverted in the teaching of networks
- A comparative study between the timing of the use of e-Learning in the teaching of networks
- Study the impact of using e-Learning in other dependent variables such as scientific thinking and motivation for learning and retention of information and the transfer of the impact of learning and the development of scientific concepts and others

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