The Effect of the use of E-Learning Teaching Physiology in the Academic Achievement of Students of the Technical Medical Institute

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Abstract

Physiology is an important science that is taught at the Technical Medical Institute, where it is taught in most sections and branches, and to know the extent of the student's understanding and mental abilities by the use of modern technology, and learning may be an immediate or simultaneous learning in the classroom or outside. E-learning is characterized by ease and modification of information provided and increases the possibility of communication to exchange views, experiences and perspectives between students and teachers and overcome the problem of the number of students with narrow classrooms. It is also successful for the "traditional education" that exists at the institute, where it constitutes the collective presence of students and promotes joint work among them. The present research aims to identify the effect of using an e-learning by teaching physiology in the academic achievement of the students of the Technical Medical Institute. They were divided into two groups, the first experimental and the second by twenty students for each group, one of the experimental group that studied e-learning method and the second control, which studied by lecture method.

Keywords: *E-Learning, Achievement, Technical Medical Institute*

Introduction

Modern education advocates the use of various methods of learning processes, especially the philosophy of distance learning [1], which is consistent with the principles of e-learning, and that the strategy of e-learning is the application of technology in education as a method of self-learning [2]. The e-learning strategy is one of the modern strategies in education that integrates technology and technology in distance education [3]. The researcher noted that the method of teaching in the medical institute is based on traditional methods of conservation and indoctrination without technology or technology having a role in teaching [4]. Hence the researcher felt the problem of her research, and can be summarized in the following question: What is the effect of using e-learning by teaching physiology on the academic achievement of the students of the Technical Medical Institute?

Second: the importance of research

Many educators pointed to the need to train teaching staff on modern scientific techniques and methods and their various applications, which are expected to stimulate the thinking of learners for interaction and self - participation in the classroom, in addition to strengthening the social link between students. It should be noted that the use of an effective teaching method not only has an effect on raising the level of academic achievement of students but beyond that until this method becomes part of the preparation for the teaching staff. To this end, many educational institutions in the world have spent a lot of money and conducted many studies, pursuant to the principle of targeted education, which aims to regulate the thinking of students on the one hand and the introduction of technology in education on the other hand [5].

The importance of research can be summarized in the following:

Theoretical importance

A. The importance of keeping abreast of modern technological developments in the field of education,

especially university education, which prepares graduates to deal with the different work requirements in the field of technology and others."

B. Educational technology is one of the variables introduced in the field of education, which constituted important steps in the transfer of education from the traditional form to another more sophisticated form.

C. Still, most educational institutions are absent from the use of technology and deal with it, due to the lack of material allocations on the one hand and the lack of knowledge of ways of dealing and employment of this technology on the other.

Practical importance

A. It is expected that there will be an increase in achievement as a result of the use of a new and unconventional method of teaching based on the technology used and fluent students outside the classroom.

B. Highlighting a vital and important subject that did not receive attention and attention - according to the knowledge of the researcher.

C. "The research will come up with a set of conclusions, recommendations, and proposals that are expected to enrich the local library and open the door for other researchers in the same field."

Third: Research objectives

Current research seeks to identify:

The effect of the use of e-learning teaching physiology in the academic achievement of students of the Technical Medical Institute.

Fourth: Research hypothesis

The current research is based on the following hypothesis:

There are no statistically significant differences between the mean of the experimental group studied by the method of e-learning and the average of the control group studied by the lecture method in physiology in the post-test.

Fifth: Limits of research

The current search is defined by a set of limits:

1. Human field: First graders in the Technical Institute.

2. Temporal field: the academic year 2018-2019

3. Spatial Domain: Classrooms - Technical Medical Institute - Bab Al-Muazzam.

Types of E-Learning

A number of sources, including (Al-Allaq, 2004: 7), (Astetah and Sarhan, 2007: 270), (Kittaneh, 2009: 278), and (Al-Wadi, 2011: 338) agree that e-learning is divided into two main parts:

1. Asynchronous e-learning: "This is the kind of education that does not require learners and teachers to be online at the same time, but requires the use of correspondence and communication techniques between learners and teachers such as e-mail or other networks, where information is exchanged at different times and not in At the same time, where the teacher prepares the course material, and then published on the Internet, and students according to the time that suits them to follow this article, and therefore can be counted asynchronous e-learning is the most common and used as a result of flexible use and employment "Among the most important tools are:

1. E-mail: is a program for the exchange of messages and documents using the computer through the Internet.

2. Textile Web: It is an information system that displays different information on the pages.

3. Discussion Groups: is one of the tools of communication via the Internet.

4. CDs: These are discs in which curricula or educational materials are prepared (Zaytoun, 2005, 60).

2. Simultaneous e-learning: is the opposite of the first type, that requires the presence of teachers and learners at the same time in front of computers in order to hold discussions and direct dialogues about the educational material, and this is done through the custom conversation or through the virtual classroom,

meaning that this type of education requires Live and direct interaction between learners with each other, and the delivery of cognitive material immediately, and where this is done through the Web and other modern programs, the most important tools are the following:

1. Conversation: The possibility of talking via the Internet with users at another time.

2. Audio Conferences: is an electronic technology based on the Internet.

3. Video Conferences: Conferences through which communication between individuals separated by a distance through a high-capacity television network.

4. Whiteboard: It is a blackboard similar to the traditional blackboard. (Mohsen, 2004)

Benefits of E-Learning

E-learning is a set of benefits for educational institutions with its members:

1. Individual's learners gain the ability to deal with modern technology, which is reflected positively on academic achievement and the lives of learners.

2. E-learning is characterized by the ease of modification of information and data releases through which it is also characterized by the easy transfer of parameters to individuals regardless of the space between them.

3. E-learning is facing some educational problems such as lack of experience and competence of some teachers in addition to the shortage of teachers (Astina and Sarhan, 2007: 288).

4. E-learning reduces the cost of travel to and from educational institutions.

5. Works to exceed the limits of space and time in education (Paulsen, 2009, 1)

6. The possibility of diversifying educational services because of the diversity of the means used.

7. The possibility of teaching and training a large number of students in different places and wide (Tulaiti, 2012: 178).

Research Methodology and Experimental Design:

The researcher relied on the use of the experimental method in the research, to suit the objectives of the research, where this approach seeks to use two methods in education and comparison between them, so the research may be from the first two experimental groups and the second control. Design of a randomized pre - and post-selection randomized control group.

Research community

The research community was chosen intentionally (intentional) and they are the first-grade students in the Technical Medical Institute for the academic year 2018-2019 and the number (30), students

The research sample

The research sample consisted of two divisions (A and B). The experimental and control group were randomly selected by lottery. The experimental group (Division B) was studied by the e-learning method, while the control group (Division A) was studied in the traditional way (lecture). The following illustrates the properties of the two groups:

Table 1. Shows the individual sample according to the two research groups

Group	Class	Future variable	Total No
Experimental	A	E-Learning	15
Control	B	Lecture	15

The equivalence of the two research groups:

In order to achieve parity between the two research groups, the researcher conducted parity between the two groups in a number of variables that they believe could affect the results of the research. Physiology consists of (40) questions.

1. Equal age

To ensure that the experimental and control groups were equal in the estimated life span in months, the

researcher used the T test for two independent samples. The results are as shown in the following table:

Table (2) Parity between the two groups in the chronological age

Total	Number	Arithmetic mean	standard deviation	Value T		Significance level	Judgment
				Calculated	Tabular		
Experimental	15	218.70	1.80	0.308	2.02	0.05	Is a function
Control	15	218.90	2.26				

It is noted from the previous table that the experimental and control groups were equal in chronological age by the calculated value which was lower than the tabular.

2. Parity in the IQ test

To ensure that the experimental and control groups were equal in the IQ test, the researcher used the T-test for two independent samples." The results are as shown in the following table:

Table (3) parity between the two groups in the intelligence test

Total	Number	Arithmetic mean	standard deviation	Value T		Significance level	Judgment
				Calculated	Tabular		
Experimental	15	46.35	2.90	0.807	2.02	0.05	Is a function
Control	15	47.10	2.91				

It is noted from the previous table that the experimental and control groups were equal in the IQ test by the calculated value that was lower than the tabular

3. Parity in the preliminary achievement test

To ensure that the experimental and control groups were equal in the achievement test, the researcher used the T test for two independent samples. The results are as shown in the following table:

Table (4) parity between the two groups in the achievement test

Total	Number	Arithmetic mean	standard deviation	Value T		Significance level	Judgment
				Calculated	Tabular		
Experimental	15	23.30	1.03	0.388	2.02	0.05	Is a function
Control	15	23.15	1.38				

It is noted from the previous table that the experimental and control groups were equal in the pretest achievement test by the calculated value which was lower than the tabular

Search tool

Achievement test:

A test was constructed in physiology consisting of (40) questions with four alternatives, three false and one correct, including three levels (understanding, application, analysis).

Psychometric properties of the test

1. Sincerity test

The validity of the test was verified by the subject of a group of experts and arbitrators in the field of competence, the researcher relied on the criterion (80%) of the views of experts to accept the paragraph and according to this criterion did not drop any paragraph.

2. Stability test:

To verify the stability of the test, the researcher used the equation (Alfa Kronbach) for each of the test paragraphs, the researcher found that the value of the stability coefficient is (0.90), and (Odeh, 1998: 367) pointed out that the stability of the tests Standardized attainment (0.85) and above. Based on this criterion, the test was considered static.

Apply the final experiment

The experiment was applied to the two research groups, after the equivalence between them in a number of variables mentioned above, the researcher gave the same educational material to the two groups, and was applied (e-learning) on the experimental group, and the lecture method on the control group as follows:

A- Experimental group:

The experimental group studied the way of e-learning.

1. The researcher identified the subject of the lesson and divided the time of the lesson into an introduction, presentation and conclusion

2. Equipped equipment (such as data shop, calculators on the number of students, intelligent patient).

3. Presented the material on the screen and explained, and then asked the students to use the computer to search for answers to questions submitted to them by using the Internet speed requirement in obtaining the answer and accuracy in its formulation.

4. The researcher asked the students to be two groups in the form of two rings, ring A and ring B, to answer a question and the group that succeeds in answering the question is the winner

Control Group:

The teaching material was applied to the students by the method of lecture within the scheduled lesson and at the same times and places set for the experimental group.

Posttest tests

After completing the experiment, the researcher applied the post - achievement test to the experimental and control groups, with the help of two colleagues in the department.

Statistical means:

The researcher used the following statistical methods in data processing: -

1. Arithmetic mean

2. Standard deviation

3. Test (T) for two independent samples

Fourth Chapter/ Research results

The research hypothesis states:

There were no statistically significant differences between the mean of the experimental group studied by the e-learning method and the average of the control group studied by the lecture method in post-test physiology. To validate this hypothesis, the researcher applied the subsequent test to the experimental and control groups and used the T test for two independent samples. The results are as shown in the following table:

Table (5) Comparison between the experimental and control group in the post test

Total	Number	Arithmetic mean	standard deviation	Value T		Significance level	Judgment
				Calculated	Tabular		
Experimental	15	29.75	1.552	8.432	2.02	0.05	Is a function
Control	15	24.80	2.118				

It is clear from the previous table that the calculated T value was greater than the tabular T value.

The researcher attributes this result to the effect of the e-learning method in increasing students 'academic achievement, because this method has saved a lot of time and effort on the student in addition to the compatibility of this method with students' inclinations in information technology, and thus has helped them to overcome some of the achievement problems that They were suffering.

Conclusions

1. The impact of the method of e-learning on the achievement of the physiology of students of the Medical Institute

2. The members of the experimental group studied the method of e-learning on the members of the control group, which was studied by a lecture in the test of achievement of physiology.

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Conflict of Interest: None to declare.

Ethical Clearance: All experimental protocols were approved under the Institute of medical Technology and all experiments were carried out in accordance with approved guidelines.

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