THE IMPACT OF

Using E-Courses At The Level Of

KNOWLEDGE ACQUISITION

And The Trend Towards E-learning

For The Students Of

The Faculty Of Physical Education In Damietta

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Research problem and Its importance

Since the e-courses comprise many usages to facilitate the process of teaching and learning, and since these usages range from simple technological means to more complex or advanced ones to allow the opportunity of education for students anywhere, at any time, according to their own abilities and their speed in education, thus we can achieve the principle that a student can learn how to learn [12: 153-167].

Both Mohammad Mostafa (1995) and Mahdi Salem (2002) see that the use of computers in education helps to create an active

educational environment whereby a learner becomes a positive participant . In addition to the need of Faculty members` conviction with using educational technologies , and the formation of positive attitudes towards its uses in the teaching process , as the use of educational technology in university teaching leads to improve teaching and increase its effectiveness . [9: 62] [10: 161] .

Both Porstorf and Lowe (2006) indicate to the importance of developing the attitudes towards e-learning which has become the commonest method of education in universities and various educational institutions as it presents curricula and different educational programs. It is also important to recognise the learners' perceptions and their convictions for this type of education and its effectiveness. [13 : 46]

Through the above, it is emerged the urgent need to identify the impact of using electronic courses at the level of knowledge acquisition and the trend towards e-learning for the students of Damietta Faculty of Physical Education to let lecturers do their utmost.

Research objectives:

The research aims:

1- Identifying the impact of using both traditional method and e-course on the level of knowledge acquisition for the control group and the two experimental groups.

2- Identifying the differences among each of the control group and the two experimental groups on the level of knowledge acquisition.

3- Identifying the differences of improvement percentage among the control group and the experimental groups on the level of knowledge acquisition.

4- Identifying the differences in the trend towards e-learning among the control group and the two experimental groups.

Hypotheses:

1- There are statistical indicative differences between the averages of pre and post - measurements for the control group and the two experimental groups at the level of knowledge acquisition in favor of the post measurement.

2- There are statistical indicative differences between the averages of post measurements of the control group and the two experimental groups in the level of knowledge acquisition .

3- There are differences in the percentage of improvement between the control group and the two experimental groups at the level of knowledge acquisition.

4- There are statistical indicative differences in the trend towards e-learning between the control group and the two experimental groups.

Research Procedures

Research Methodology:

Both researchers have used the experimental method with experimental design for three groups: one of them is control and the other two are experimental.

Society and research sample:

The society of research has been selected from the first-year-students from Faculty of Physical Education in Damietta-Mansoura University for the academic year 2011– 2012(first semester).Their number has been(63) students .The students have been divided into (15)for the survey and (48) students for basic study.The students have been divided into three groups,(16) students for each :the Control group who has been taught through traditional manner (lecture), the first experimental group who has been taught only through the electronic course and the second experimental group who has been taught through a combination of a lecture style and an electronic course.

Homogeneity of the sample:

The researcher conducted homogeneity among the members of the research sample (Table 1) in the variables of age, IQ and the level of academic achievement (the score of Secondary Education Certificate).

Table (1)

Arithmetic Average , standard deviation, mediator and torsion coefficient for members of the research sample in variables (academic achievement – IQ) (n 1= n 2= n3= 16)

Variables	Level Of knowledge Acquisition	Standard deviation	Mediator	Torsion coefficient
Level Of knowledge Acquisition /score	259.33	38.95	249	0.16
IQ / percentage	36.8	3.50	35.4	1.2

It is clear from table (1) that all coefficients of torsion for members of the research sample in variables of age , academic achievement and IQ all range between (0.16: 1.46) and are located between (± 3), which indicates to the homogeneity of the members of research sample.

Sample equivalence :

The researcher conducted the equivalence   by dividing the research sample into three equal groups randomly so that one of them was controller and the others were experimental (16 students for each group), then the equivalence was conducted between them according to measurements illustrated in Table (2)

Table (2):

Indicative differences between the control group and the two experimental groups (Age - academic achievement – IQ)   (n1 = n2 = n3 =16)

Variable	Groups	Degrees of freedom	Sum of squares	Squares average	"F" Value
Age	Between groups	2	0.24	0.118	0.193
	Inside groups	45	27.46	0.61	
	Total	47	27.70		
Level Of knowledge Acquisition	Between groups	2	231.30	115.64	0.078
	Inside groups	45	67081.38	1490.70	
	Total	47	67312.67		
IQ	Between groups	2	12.67	6.33	0.66
	Inside groups	45	690.31	15.34	
	Total	47	702.98		

«F» tabular value at indication level (0.05) = 3.21

It is clear from table (2) that there is no statistical indicative differences in both age , academic achievement and IQ for the three groups as the calculated value of (F) is less than its tabulated value at the incorporeal level (0.05).

Tools of Collecting Data

1- Reference Survey.

2- High IQ test prepared by Mr. Khairi (2000). (Attachment 1)

3- Students' attitudes measurement towards e-learning (2007) prepared by NELC. (Attachment 2)

4- knowledge Test (2010) prepared by the present researchers. (Attachment 3)

5- E- Course (Introductory and His-

tory of Physical Education) by M. Gazar (2010). (Attachment 4)

Survey:

The researchers conducted the survey on a sample of (15) students from the same research society and outside the original sample of research in order to determine the scientific transactions related to the measurements used in the search.

Scientific transactions:

Consistency measurement:

The researchers have found the Consistency (test application and reapplying it) for each of the knowledge test and the measurement of the trend towards e-learning (15-day interval between the two applications) as follows

Table (3):

The Correlation coefficient between the first and second application for the test of knowledge acquisition and the Trend measurement towards E-learning *(N = 15)*

Test	1st application		2nd application		Correlation coefficient r	Alpha coefficient α
	Mean	SD	Mean	SD		
knowledge acquisition	17.94	6.29	18.19	6.68	0.88	0.94
Trend towards E-learning	57.86	5.26	57.26	6.35	0.83	0.90

"r" tabular value at indication level (0.05) = 0.43

Table (4):

The Correlation coefficient among the averages of the odd and even phrases For the test of knowledge acquisition and the Trend measurement towards E-learning *(N = 15)*

Test	odd phrases		even phrases		Correlation coefficient r	Alpha coefficient α
	Mean	SD	Mean	SD		
knowledge acquisition	7.93	3.92	8.07	4.15	0.93	0.86
Trend towards E-learning	29.67	3.92	25	3.66	0.92	0.93

"r" tabular value at indication level (0.05) = 0.43

Statistical treatments:

Statistical treatments have been dealt by using (SPSS) through the following statistical treatments: (Average - standard deviation - improvement percentage - Correlation coefficient – CronBach's Alpha coefficient - variance analysis - LSD - Z test).

Results and discussion:

Discussing the results of the first hypothesis.

Table (5):

Indicative differences between the pre- measurement and post- measurement for the control group and the two experimental groups at the level of knowledge acquisition *(n1= n2= n3= 16)*

Group	pre- measurement		post- measurement		Ranks Average	Sum of Ranks	«Z» value
	Mean	SD	Mean	SD			
control group	16.31	5.38	25.81	3.58	8	120	3.41*
1st experimental	16.81	5.47	29.56	3.92	8	120	3.41*
2nd experimental	16.62	4.72	32.69	4.45	8.5	136	3.52*

"Z" tabular value at indication level (0.05) = 2.13

It is clear from table (5) and that there are statistical indicative differences between both pre-measurement and post-measurement for the three groups at the level of knowledge acquisition in favor of the post measurement, as the values of calculated (Z) are larger than the tabulated value at the 0.05 level of indication.

The researchers attribute the progress of control group as a result of teaching the Scientific Course using traditional style (lecture style) which has contributed in increasing the level of knowledge acquisition among students. They also attribute the progress of the two experimental groups as a result of the effectiveness of Electronic Course and its impact as a result of the existence of pictures and video files and the flash inside its content, in addition to the communication between the learner and the teacher or among learners themselves through many ways such as a chat room, e-mail and forums, as well as the increase of achievement rates and students' motivation for academic achievement as a result of the use of the electronic course .

This result is consistent with what has been confirmed by both Alaa Sadeq and Mahdi Salem that computer works to create an active educational environment, where students can collect information, knowledge and varied mental abilities easily and more clearly than traditional methods(5 : 17) (10 : 161)

The present study is also consistent with the results of studies carried out by Alnabawy Salama, Mohamed Zaghloul , Gupta and others (2004) which referred to the ability of e-learning to meet the students' individual and educational needs. In addition to the effectiveness of using computer programs in achieving knowledge Objectives as they organize information and knowledge in a good way which helps the learner to restore and retrieve the knowledge information again when he needs it. (2) (7:416) (14 : 491)

It is clear from the previous details that the results of the first hypothesis have already been discussed and which clearly states that "there are statistically indicative differences between the averages of pre and post measurements for the control group and the two experimental groups at the level of knowledge acquisition in favor of the post measurement."

Discussing the results of the second hypothesis

Table (6):

Indicative differences between the averages of post-measurements of the control group and the two experimental groups at the level of knowledge acquisition   (n 1 = n 2 = n 3 = 16)

groups	Freedom degrees	sum of squares	Average of squares	"F" value
Between groups	2	379.17	189.58	
Inside groups	45	719.81	15.99	11.85
Total	47	1098.98		

"F" tabular value at indication level (0.05) = 3.21

It is illustrated through Table (6) that there are statistically indicative differences between the level of knowledge acquisition of the three groups as the value of the calculated (F) is larger than its tabulated value in the incorporeal level (0.05)

Table (7):

The least incorporeal difference between the averages of pre and post measurements of the control group and the two experimental groups at the level of knowledge acquisition (n1= n2=n3= 16)

Groups	Average	SD	Difference Averages			LSD
			control group	1st experimental group	2nd experimental group	
control group	25.81	3.58	------	3.75*	6.87*	
1st experimental group	29.56	3.92	------	------	3.13*	4.53
2nd experimental group	32.69	4.45	------	------	------	

* indication at incorporeal level (0.05)

It is clear from Table (7) that there are statistical indicative differences between both of the control group and the first experimental group at the level of knowledge acquisition in favor of the first experimental group as the difference among the averages is larger than the value of LSD at the incorporeal level (0.05).

It is also clear that there are statistically indicative differences between both the control group and the second experimental group at the level of knowledge acquisition in favor of the second experimental group as the difference between the averages is larger than the LSD value at the incorporeal level (0.05).

There are also statistically indicative differences between both of the first experimental group and the second experimental group at the level of the knowledge acquisition in favor of the second experimental group as the dif-ference among the averages is larger than the LSD value at the incorporeal level (0.05).

The researchers attribute these results to the efficiency that characterizes the electronic course due to the use of various multimedia in design as well as the availability of multiple means of communication between the learner and the teacher as well as among all the learners themselves (chat room - Forums - e-mail), as well as the availability of various methods of assessment and the diversity of educational activities. Additionally , the use of electronic course increases achievement rates as a result of the increase of students' motivation towards the academic achievement in general.

This is consistent with what has been mentioned by Nabil Mohammed (2011) , Hanan khalil (2008), Moham-mad Zain Elddin (2006), Gupta (2004) and others that students consider e-

learning as an additional positive means for traditional methods of education. Furthermore, students' motivation towards e-learning leads to increase the rates of knowledge acquisition because the environment of electronic course is characterized by flexibility. In addition to the use of Electronic Course helps in increasing the level of knowledge acquisition because of the high quality of its design, the use of different style of presentation, the interaction with the scientific content and with the teacher and the participants in the learning process and also the possibility of displaying the programmed educational material many times without feeling bored or embarrassed. (11 : 16) (3 : 132) (8 : 68) (14 : 492)

It is clear from the previous details that the results of the second hypothesis have already been discussed and which states that "there are statistically indicative differences between3 the averages of the post-measurements of the control group and the two experimental groups at the level of knowledge acquisition".

Discussing the results of the third hypothesis

Table (8):

Improvement Percentage for the control group and the two experimental groups at the level of knowledge acquisition   (n 1 = n 2 = n 3 = 16)

Group	Before	After	Difference	Improvement Percentage
control group	16.31	25.81	9.50	37%
1st experimental group	16.81	29.56	12.75	43%
2nd experimental group	16.63	32.69	16.06	49%

From table (8), it is apparent that there are differences in the improvement percentages between the control group and the first experimental group at the level of knowledge acquisition in favor of the first experimental group. It is also clear that there are differences in the improvement percentages between both of the group control and the second experimental group at the level of knowledge acquisition in favor of the second experimental group, and there are also differences in the improvement percentages between both the first experimental group and the second experimental group at the level of knowledge acquisition in favor of the second experimental group.

Researchers attribute this result to the use of e-courses which have clearly contributed in increasing the level of knowledge acquisition among the students of the two experimental groups, especially the second experimental group that combined between e-course and lecture style.

And this is consistent with the find-

ings of the study conducted by Gupta et al (2004) that 79% of the students prefer to use e-learning as a catalyst or something extra beside traditional lectures while 7% of students prefer e-learning to traditional lectures. It is indicated that students have high levels of perceptions for the importance of e-learning and their ability to use modern technology is improved . This leads to the increase of the students' preferences to integrating e-learning with traditional education in the education process. (14 : 491)

What is discussed above refers to the results of the third hypothesis, which states that "there are differences in the improvement percentages between the control group and the two experimental groups at the level of knowledge acquisition."

Discussing the results of the fourth hypothesis

Table (9):

Indicative differences between the control group and the experimental groups Towards e-learning   (n 1 = n 2 = n 3 = 16)

Group	Freedom degrees	sum of squares	Average of squares	"F" value
Between groups	2	324.67	162.33	
inside groups	45	1849.32	41.10	3.95
Total	47	2173.98		

«F» tabular value at indication level (0.05) = 3.21

It is clear from Table (9) that there are statistically indicative differences in the trend towards e-learning of the three groups as the value of the calculated (F) is larger than its tabulated value at the incorporeal level (0.05).

Table (10):

The least incorporeal difference between the averages of the post-measurements of the Control group and the two experimental groups In the trend towards e-learning   (n1= n 2= n3=16)

Groups	Average	SD	Difference Averages			LSD
			control group	1st experimental group	2nd experimental group	
control group	53.81	8.07	------	5.75*	5.25*	
1st experimental group	59.56	4.24	------	------	0.50	4.27
2nd experimental group	59.06	6.34	------	------	------	

It is clear from table (10) that there are statistically indicative differences in the trend towards e-learning among the control group and the first and second experimental groups . It is indicated that the difference among the averages is larger than the LSD value at the incorporeal level (0.05). However, there are no statistically indicative differences between each of the first experimental group and the second one as the difference between the averages is less than the value of LSD in the incorporeal level (0.05).

The researchers attribute this result to the high quality of e-course design and its different display style including various multimedia elements such as (pictures - Videos- flashes), as well as the possibility of displaying the content several times at any time, in addition to effectiveness that characterizes the E-courses as they use modern technological means, as well as the possibility of

interaction which is available between the learner and the learning material.

And this result is consistent with the findings of Gupta and others (2004) that there are increased rates of students` attitudes and their positive comments on the e-learning from7.2% to32.7%. (14: 492)

This comes close to the results of studies carried out by Kassem Al-Shanak, Hassan Domi (2010) Zakaria Lal (2010) which proved that the use of electronic courses and educational software programs have a positive effect on students' attitudes towards e-learning. (6 : 262) (4 : 215)

What have already been discussed above shows the results of the fourth hypothesis, which states that "there are statistically indicative differences in the trend towards e-learning between the control group and the two experimental groups."

Conclusions

The researchers have reached the following conclusions:

1- the increase of the level of knowledge acquisition among students in the control group as a result of the use of the method followed in teaching (lecture style).

2- the Increase of the level of knowledge acquisition among students in the two experimental groups as a result of the use of electronic courses in teaching.

3- the excellence of the second experimental group upon the other two groups (the control group and the first experimental group) in the level of knowledge acquisition as a result of the integration between the traditional method (lecture style) and e-courses.

4- There are differences in the improvement percentage in the level of knowledge acquisition among the three groups in favor of the second experimental group.

5- There are differences in the trend towards e-learning among the three groups in the favor of the two experimental groups..

6- There are no differences in the trend towards e-learning between the two experimental groups.

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In light of the outcome of the research results, the researchers recommended the following:

1- the need to combine between the traditional methods and e-courses in the educational process in the faculties of Physical Education.

2 - the need of paying attention to the design and production of e-courses under the supervision of specialists in the field of sports and programming or through cooperation with the National Center for e-learning of the Supreme Council of Universities.

3- Conducting further researches and studies about the use of e-courses in the different fields of sports and physical education.

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