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Comparison between Nontraditional and Traditional Learning on Students' Achievement and their Satisfaction

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ABSTRACT

As the use of e-learning is becoming more and more widespread in higher education it has become increasingly important to examine the effect of that teaching method on students' achievement. There is a considerable body of evidence to suggest that different teaching methods can have different degrees of success.

Objective: Investigate the students' achievements regarding e-learning and traditional learning. Assess students' satisfaction related to electronic learning.

Methods: The study was carried out on third level female nursing students affiliated to the Faculty of Nursing, King Khalid University, Abha City, Saudi Arabia. Data collected through: pre and post test to assess students' knowledge before and after an electronic lecture and a traditional face to face lecture in their course having related concepts and of the same level of difficulty and at the end of the blended course. Also, satisfaction assessment questionnaire was used to assess the students' satisfaction after having a lecture by electronic learning method.

Results: The study indicates that students obtained highly significant ($t= 4.992$, $P<0.001$) more marks in the post test of the lecture given by the traditional method than the lecture given by the electronic method with a mean difference 1.213 ± 1.535 marks.

Also Students were most satisfied with the clarity of concept followed by the down load time and on line help feature as well as accessibility of course instruction. Those who were satisfied with interaction with the instructor and amount of on line interaction came next.

Conclusions: The findings of the present research revealed that there is a highly statistical significant difference between the students' achievements in post test of E -lecture and traditional lecture. Students obtained more scores after the traditional lecture than the lecture given by the electronic style. Also, students were most satisfied with the clarity of concept topics, followed by down load time and on line help as well as accessibility of course instruction. A little less than half of the study group was satisfied with interaction with instructor followed by the amount of on line interaction.

KEY WORDS: Traditional lectures, e-Lectures, Flexible learning, Blended learning, Students' satisfaction.

INTRODUCTION

Computer-assisted learning (CAL) can be defined as any form of instruction that uses the computer to present information with ultimate goal to enhance student learning [(1)].

E-Learning is essentially the computer and network –enabled transfer of skills and knowledge. E-learning application and process include Web-based learning; computer based learning, virtual classroom opportunities and digital collaboration. Content is delivered via the internet, intra/extranet, audio or video tape, satellite, TV, and CD-ROM. It can be self-placed or instructor- led and includes media in the form of text, image, animation, streaming video and audio [(2)].

By 2006, 3.5 million students were participating in on-line learning at institutions of higher education in the United States [(3)]. According to the Sloan Foundation reports,[(4)] there has been an increase of around 12–14 percent per year on average in enrollments for fully online learning over the five years 2004–2009 in the US post-secondary system, compared with an average of approximately 2 per cent increase per all students in post-secondary education were taking fully online courses in 2008, and a report by Ambient Insight Research[(5)] suggests that in 2009, 44 per cent of post-secondary students in the USA were taking some or all of their courses online, and projected that this figure would rise to 81 percent by 2014. Thus it can be seen that e-learning is moving rapidly from the margins to being a predominant form of post-secondary education, at least in the USA.

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E-learning services have evolved since computers were first used in education. There is a trend to move towards blended learning services, where computer-based activities are integrated with practical or classroom-based situations [6].

Computer-based learning, sometimes abbreviated to CBL, refers to the use of computers as a key component of the educational environment. While this can refer to the use of computers in a classroom, the term more broadly refers to a structured environment in which computers are used for teaching purposes [7].

CBTs can be a good alternative to printed learning materials since rich media, including videos or animations, can easily be embedded to enhance the learning. Another advantage to CBTs is that they can be easily distributed to a wide audience at a relatively low cost once the initial development is completed [8].

Student satisfaction is an important part of the effort to successfully market higher education. This is especially true given the rapid increase in on-line course [9]. The dean of E. learning of King Khalid University in Saudi Arabia suggests that 30% of the course is given by e-learning.

Aim of the study:

1- Compare the e-learning and traditional learning regarding students' achievement.
2- Assess the students' satisfaction related to electronic learning.

Research questions:

1- Is the nontraditional teaching method more effective than the traditional one?
2- To what extent students are satisfied with E. learning?

Subject and methods:

The comparative study was the selected study design. The study was carried out on third level female nursing students affiliated to the Faculty of Nursing, King Khalid University, Abha city, Saudi Arabia. Data collected through:
1- A pre and post test to assess students' knowledge before and after an electronic lecture and a traditional lecture having related concepts and same level of difficulty.
2- A Satisfaction assessment questionnaire to assess the students' satisfaction after having a lecture given by electronic learning method.

METHODOLOGY

Third year nursing students were selected for the study. Two lectures from their curriculum having related concepts and same level of difficulty were selected for the study and they are the last lectures in their blended syllabus. One of them was given by the traditional style and the other was given by the electronic one.

1-Condition of the lecture given by the traditional style:

The study was organized in four phases:
1. ***Pre-test***: To verify that students are novices. Students were asked to complete a pre-test knowledge instrument. It included six open -ended questions asking students to provide a well-supported answer in a few sentences.
2. ***Study*****:** Students were taught with traditional face to face method in a classroom. During the lecture, Power Point slides were used to present textual information, graphics, and a few animations.
3. ***Review*****:** Immediately after the lecture, students were given seven review questions to answer. They were also asked to freely pose their own questions and discuss them with the researchers.
After discussing and providing satisfactory answers to all of the questions, students took the post-test.
4. ***Post-test*****:** To record students' level of learning. The same six items questionnaire of the pre test was used.

2-condition of the lecture given by the electronic method:

The study of the e-lecture was also organized in four phases:
1. ***Pre-test*****:** Six open-ended questions related to the objectives of the lecture.
The pre-test questionnaire was administered to the students and they were instructed to provide answer in few sentences.
2. ***Study*****:** One week before the scheduled classroom meeting, students were instructed to view the e-lecture at home, and at the e-learning lab. as many times as they wished, in order to be well prepared for their post-test examination. They were given seven review questions as before and they were asked to answer.
3. ***Review*****:** Students met the researchers in classroom and presented their answers to the seven review questions. They also posed their own questions to the researchers. After complete answers were given, they took the post-test.
4. ***Post-test*****:** post-test instrument included the same six open-ended questions of pre test were given to them.
After finishing the on line course content; the satisfaction assessment sheets which derived and modified from DELES scale were distributed and they were asked to answer. It was containing six items about: their satisfaction regarding on

line interaction, amount of on line interaction, the accessibility of instructor to answer questions, the clarity of lecture topic, and satisfaction with online help features as well as down load time for the content pages.

Field work;

The study started at the second semester of 1432H- March 2011Geogorian through one month.

Administrative design:

An agreement to conduct the study obtained from the administrator of king Khalid University.

Statistical design:

Descriptive and analytic statistics including the mean and standard deviation and the paired t-test and Chi square were the tests of significance used for statistical analysis.

RESULTS

All third level nursing students (n=40) were enrolled in the present research. They were taught a health promotion lecture by the electronic teaching method. Their pretest marks ranged from zero to 3 while their marks obtained in the post test ranged from 3 - 7.5; the mean difference of marks is 3.988 ± 0.843 marks. They were taught also a lecture on Primary health care given by the traditional face to face teaching method using power point slides to present textual information, graphics, and a few animations were also used. Their marks obtained in the pretest ranged from 0.5- 3 and in the post test their marks ranged from 4.5 – 8.5 with a mean difference of 4.263 ± 1.143 marks. The differences are highly significant where t= 29.901 and 23.576 respectively.

It was observed that students obtained highly significant (t= 4.992) more marks in the post test of the lecture taught by the traditional method than the lecture taught by the electronic method with a mean difference of 1.213 ± 1.535 marks. Table I: shows that more students (62.5%) succeeded in the post test of the lecture taught by the traditional method compared to 32.5% for the lecture taught by the electronic method. The difference is highly significant where $X^2 = 7.218$ and p<0. 001

Student satisfaction with e-learning:

Students were most satisfied by the clarity of concept (75%) followed by the down load time (55%) and on line help (47.5%) as well as accessibility of course instruction (47.5%). Those who were satisfied with interaction with instructor and amount of on line interaction form 45% and 42.5% respectively. Dissatisfaction was more regarding on line help feature (47.5%), download time (37.5%) and amount of on line interaction (32.5%). More students were neither satisfied nor dissatisfied regarding interaction with instructor (45%), accessibility of course instruction (42.5%), amount of online interaction (25%), and to a lesser extent clarity of concept topic (12.5%). The differences are highly significant where $X^2_{10} = 51.585$. Table II

Table I: Distribution of nursing Students according to their success in post test

Success	Post test				Test of significance	P value
	Electronic teaching method No.%		Traditional teaching method No. %			
Succeeded*	13	32.5	25	62.5	X^2 7.218	P<0. 001
Failed	27	67.5	15	37.5		
Total	40	100	40	100		

*score 60% or more

Table II: Distribution of nursing students according to their satisfaction regarding e-learning

Students' satisfaction	On line help feature No.%	Download time No.%	Interaction with instructor No.%	Amount of on line interaction No.%	Accessibility of course instruction No.%	Clarity of concept topics No.%
Satisfied	19 47.5	22 55	18 45	17 42.5	19 47.5	29 72.5
Neither satisfied nor dissatisfied	2 5	3 7.5	18 45	10 25	17 42.5	5 12.5
Dissatisfied	19 47.5	15 37.5	4 10	13 32.5	4 10	6 15
Total	40 100	40 100	40 100	40 100	40 100	40 100

$X^2_{10} = 51.585$, P<0.001

DISCUSSION

Although lecturing is frequently criticized as a passive mode of instruction, strongly based on the idea of "knowledge to be transmitted," it still constitutes a major mode of teaching. It is "a defining element of most university courses [10]. Nowadays, it serves as a means of instruction, digital and technology [11].

The present study revealed that there is a highly statistical significant difference between the traditional learning and the electronic learning regarding students' achievement in relation to quantitative results. It was obvious that students' scores after the traditional lecture were better than their scores after the electronic lecture. This may be due to the fact that electronic learning is unfamiliar for the students as E-learning is recently introduced as a blended course for the first time during the present scholastic year (2010-2011). This result is in consistent with Emerson and Taylor [12] who proved that quantitative data indicate that there is no significant difference in the learning outcomes of the two groups as measured by a post-test questionnaire, similar to questionnaires that an instructor would use to determine the students' level of understanding. There is a considerable body of evidence to suggest that different teaching delivery styles can have different degrees of success; as measured in terms of academic results [13].

Campbel etal [14] , on the other hand found. Students' evaluations were considerably more favourable in the group using Blackboard software; all measured dimensions of perceived teaching effectiveness yielded statistically significant increases, with substantial increases in perceptions of instructor rapport and grading. Collis and Moonen [15] revealed that the online collaborative environment was shown to promote significantly greater critical thinking among students.

Participating in online activities might have an impact on students' social experience at universities. This could be used as a strategy to improve retentions rates, because supportive peer networks are an aspect of student engagement [16].In 2007 Cooze and Barbour [17] stated that there has been a lack of longitudinal studies which might identify how students and academic staff change their beliefs and approaches to the effective uses of technology in learning and teaching.

In distance education, learning is developed through sharing ideas and thoughts and personal interactions between participants[18], Many factors, such as the infrastructure, quality of support systems, quality of content and assessment, and peer support networks, may influence the online learning experience [19].

Gilbert eta [20] listed other factors such as type of distance delivery method, reasons for enrolling in the course, and learning objectives. In fact, planning and designing distance education courses are a complex task that includes many factors. Johnson [21] revealed that, educators need to consider these factors to provide their students with effective learning environments.

The present work shows that only 47.5% of the studied group were satisfied with on line help feature this may be because E-learning was unfamiliar and students need more training as only one third of the course (4 lectures) was given by the electronic method. This finding indicates that students who were able to link course content with their personal experiences tend to be more satisfied in distance education. This result is inconsistent with the suggestion that online learning environments should be learner-centered and involve students' out-of-school knowledge and skills [22].

The present work revealed that 45% of the students were satisfied with the interaction with instructor this may be because students prefer to be face to face with instructor. This is in agreement with other studies [23, 24, 25, 26, 27, 28].

Sahin[29] showed that students who receive enough support from their instructor are expected to be more satisfied in online learning environments. In this study there was more than half of the students were satisfied with down load time.

Although distance education is a learner-centered instruction, Sahin[29], confirms that instructor support, such as timely help, useful feedback, or easy communication, is still a key factor for student satisfaction in distance learning. Thus, instructors of distance education should be accessible, provide prompt responses, and encourage their students through online learning activities. Active learning is the third strongest variable in predicting students' satisfaction. Chen and Guo[30]support this finding where, active learning fosters distance education learning environments. In the present study; 42.5% of the students were satisfied with the amount of online interaction.

Finally, authentic learning demonstrates a significant association with student satisfaction.

CONCLUSIONS

The findings of this study declare that there is a highly statistical significant difference between the students' achievements in post test of E .lecture and traditional lecture. The results were more satisfied after traditional lecture .Also the students were most satisfied with the clarity of concept online, followed by down load time and on line help as well as accessibility of course instruction. About half of the study group was satisfied with interaction with instructor and amount of on line interaction.

Recommendations:

1-Furthetr study should be including a large number of students for generalization.
2-Gradually engagement of E. learning (blended) for the students with early education.
3-Development of E -teaching to initiate the E- learning.
4-Promote the E. learning environment for students' satisfaction.
5- Further studies for factors affecting E. learning.

Limitation of the study:

Some restrictions due to new trend and unfamiliar method of learning for the students.

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