

## Effect of Blended Learning Approach on Student Nurses' Attitudes and Academic Achievement

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### Abstract

Although various blended approaches that integrate online components into traditional classes continue to grow rapidly, they still remain at an early stage of development. Consequently, developers and deliverers of online learning need more understanding of how students perceive and react to elements of e-learning (since student perception and attitude is critical to motivation and learning) along with how to apply these approaches most effectively to enhance learning. **The Aim:** aim of the current study was to examine the effect of blended learning approach on student nurses' attitudes and academic achievement in Medical Surgical Nursing course compared to traditional teaching method modules. **Setting:** A The sample consisted of 62 female students their age range from 19 to 20 years at 5<sup>th</sup>, level recruited from 5<sup>th</sup>, level in faculty of nursing, King Khaled University **Tools:** 3 tools used to collect data for the study: 1. student attitude scale toward blended learning approach 2. A Constructed Motivational Scale. and The Achievement Test, they are developed by the researchers. **Results:** The study findings revealed that, the Study Group subjects (blended learning Group ) had higher Mean Of attitude Subscales And Total Scores, achievement test Scores, and Mean Of Motivational Subscales And Total Scores than Control Group (traditional), in addition, there were statistically significant differences were found between the two groups in relation to previously mentioned variables. Therefore, this study **recommended** an educational programs for academic staff for teaching using blended learning approach.

**Keywords:** E-learning, Online learning, traditional, Attitudes, Blended Learning, Academic Achievement.

### 1. Introduction

In the manufacturing sector today, human capital is still essential for most factories to carry out a variety of The field of education, as noticed recently, has been affected by both revolutions of technology and communications. Therefore, many technological advancements (TAs) and communication tools or channels (CTC) such as computers, internet, multimedia, virtual reality, or virtual classroom and so on, up to the e-learning as the most recent TA, has been introduced to the field of education in the recent years. Accordingly, TAs have been used by educators in teaching situations in both classroom sitting and in online teaching cases, in order to enhance learning process (Chen, & Jones, 2007; Hickey & Mercer, 2008; Stiffler, 2008).

Blended learning is described by Thorne (2003) as “a way of meeting the challenges of tailoring learning and development to the needs of individuals by integrating the innovative and technological advances offered by online learning with the interaction and participation offered in the best of traditional learning”. Blended learning environment integrates the advantages of e-learning method with some advantageous aspects of

traditional method, such as face-to-face interaction. Blended learning brings traditional physical classes with elements of virtual education together (Finn & Bucci, 2004).

The integration of e-learning environment and traditional learning environment may combine ideally the useful aspects of both methods. E-learning environments ensure the flexibility and efficacy which cannot be found in a classroom environment whereas face-to-face learning environment provides the social interaction which is required for learning. Designing an effective blended learning environment and to establish the equilibrium between face to face and e-learning environment. With this in mind, researchers have adopted an approach that involves blending those components of the face to face and e-learning methods, that consider the learning outcomes for the course and students' learning styles (Osguthorpe and Graham 2003).

As a result, blended learning according to the literature is more effective and efficient in delivering instruction to the target learners. This can be done through Programmed Instruction (PI) which is recently substituted with the well known technological advancement “Computer Assisted Instruction” (CAI) in which the instructional content is divided into small pieces of instruction in frames or dosages depending on the nature of the subject, in one hand, and on the human characteristics, and learning styles in the other hand (Nagel, 2009). Learners' interest and motivation can increase in blended learning (Burgon & Williams, 2003). Since there is a tendency in using e-learning in teaching/learning environment, it is interesting to see whether there is a basis for

the shift from traditional methods to more technological oriented approaches for better teaching/ learning environment. Therefore, the aim of the current study was to examine the effect of blended learning approach on student nurses' attitudes and academic achievement.

## 2. Aim Of The Study

Aim of the current study was to examine the effect of blended learning approach on student nurses' attitudes and academic achievement in Medical Surgical Nursing course.

## 3. Significant of the study:

The research aims to examine the effect of the Blended E-Learning approach on the university students' attitudes toward Medical Surgical Nursing course at king Khaled University Faculty of nursing. It also measures the effect of the same factor (BELE) on the students' academic achievement toward it. Moreover, It is anticipated this study will contribute in a significant manner to the body of knowledge related to increased learner motivation through teaching by Blended E-Learning approach.

## 4. Research Hypotheses

- 1- The mean attitude scale scores of post test of students who are studying Medical Surgical Nursing course by a blended learning approach will be higher than Control Group (traditional teaching Group).
- 2-The mean academic achievement scores of students who are studying Medical Surgical Nursing course by a blended learning approach will be higher than those who are studying Medical Surgical Nursing course by a traditional method.
- 3-The mean motivational scale scores of post- test of students who are studying Medical Surgical Nursing course by a blended learning approach will be higher than Control Group (traditional teaching Group).

## 5. Subjects and Methods

### Design:

A quasi-experimental research design was utilized in this study.

### Study Settings

The study was conducted at king Khaled University Faculty of nursing in Abha city .

### Subjects:

The sample consisted of 62 female students their age range from 19 to 20 years at 5<sup>th</sup>. level enrolled in the course(Medical Surgical Nursing) at king Khaled University Faculty of Nursing in Abha city. The sample was divided into two study groups; the two groups were randomly assigned to be treated differently as a control group (traditional face-to-face teaching approach) and experimental group (blended e-learning environment). The students were orally told that they would be participating in this experimental research and that they have the right to withdraw from the experiment if they feel uncomfortable with it. All students were willing to participate in the study.

### Tools:

Three research instruments were developed by the researchers:

1. **A Constructed Attitude Scale:** used to assess attitudes of students towards blended learning approach, it consists of (50) items, *it is divided into 6 sections:*
  - section1.** importance of blended learning for the educational process (*11 items*)
  - Section2.** Necessity of blended learning application in all courses(*3 items*).
  - Section3.**Role of blended learning in increasing the degree of interaction between teacher and students(*4 items*).
  - Section4.** the attitudes of students towards positives of blended learning(*11 items*).
  - Section5.** the attitudes of students towards negatives of blended learning(*7 items*) .
  - Section6.** the general attitudes towards blended learning(*14 items*) .

### Scoring system:

Each statement has a response degree based on a 5-point Likert scale, ranging from 1 (Strongly disagree)to 5 (Strongly agree).

### Total score of the scale:250

**Attitudes Scale Validity:** Based on the review of the literature regarding students' attitudes toward e-learning, the researchers have designed and developed their own (62) item attitudes scale. The scale was given to some specialists in the field of Medical Surgical Nursing and Educational Psychology to be reviewed and evaluated for internal validity. The reviewers suggested that some of the scale's items should be re-written or eliminated in order for the scale to be reduced in terms of number of items. Accordingly, the researchers agreed with the reviewers' suggestions to modify, and eliminate some items. As a result, the scale ended up with a(50) item attitudes instrument.

**Attitudes Scale Reliability:** A statistical Alpha Cronbach calculation was done The finding showed a higher level of reliability of 0.870, which is acceptable by the researchers.

2. **A Constructed Motivational Scale:** used to assess motivation of students towards blended learning approach, it consists of (56) items, **it is divided into 6 sections:**

**Section1.** Learners awareness of their abilities while learning in a way of blended learning (**14 items**) .

**Section2.** perception of the value of learning by blended learning approach (**10 items**).

**Section3.** perception of the content of units of Medical Surgical Nursing **course** (**8 items**).

**Section4.** perception of teacher-students relationship during teaching by blended learning approach (**6 items**).

**Section5.** perception of the relationship with colleagues during teaching by blended learning approach (**5 items**) .

**Section6.** perception of the importance of teaching Medical Surgical Nursing **course** by blended learning approach (**14 items**) .

**Scoring system:**

Each degree based on a 5-point Likert scale, ranging from 1 (Strongly disagree)to statement has a response 5 (Strongly agree).

**Total score of the scale:325**

**Scale Validity**

The researchers have designed and developed (65) item motivational scale, then the scale was given to some specialists in the field of Medical Surgical Nursing and Educational Psychology to be reviewed and evaluated for internal validity. After that some of the scale's items re-written and some eliminated based on reviewers suggestion. then researchers modified, and eliminated some items. As a result, the scale ended up with a(56) items.

**Scale Reliability:** A statistical Alpha Cronbach calculation was done The finding showed a higher level of reliability of 0.890, which is acceptable by the researchers.

3. **And The Achievement Test:**

**Achievement Test Validity:** A (50) multiple choice items achievement test was given to the specialists in the field of Educational Psychology and Medical Surgical Nursing to be professionally reviewed. Based on the reviewers' feedback and comments, the researchers made needed clarifications and eliminate some items. So, the researchers end up with a forty item achievement test.

**Achievement Test Reliability:** A statistical Alpha Cronbach calculation was done. The finding showed a higher level of reliability of 0.791.

**Scoring system:**

Each question has 4 choices and only one is the correct, each correct answer take one score, therefore, the total score of the test 40.

**Study Period:**

Data collection started from 10-10 1433 continued for 3 months.

**procedure:**

- Once permission was granted to proceed with the proposed study, the investigators initiated data collection.

Two types of treatment approaches were involved in this research, traditional and blended online approaches .

**The Control Group (Traditional Teaching Setting):** The size of this group was (31 )female students. Those students were in a traditional lecture setting, which is a two meeting face-to-face session. The students scheduled to meet with the instructor twice a week. The students in this type of lecture were taught orally and visually by listening, seeing and interacting with the instructor over the content material presented through a PowerPoint presentation in classroom settings. In addition, they have received the instructional content in handouts posted on the Blackboard System.

**The Experimental Group (blended learning Approach):** The students in this group also meet twice a week. Students in this group, (31) female students, were instructed through a blended E- learning approach in which they had a chance to read their handouts before class.

All students in both approaches had to take the achievement test in the beginning of the course, which means that they had taken the test before they even get started studying the content of the course. They also had to respond to the attitudes and motivational scale before studying the course content. In the end of the course, both groups of students took the achievement post test and responded to the post attitudes and motivational scale.

## 6. Statistical analysis

Results were statistically analyzed using statistical software package(SPSS). Quantitative variables were presented in the form of mean (x) and standard deviation (SD) Whereas, the Student t-test which is a test of significance used for comparison between two groups having quantitative variables. The level of significance will be taken as  $P < 0.05$ .

## 7. Results

Table 1) shows that there were no statistically significant differences between the two groups in relation to Mean Of attitude Subscales And Total Scores At Pre -Test.

Figure1) describes that Study Group subjects (blended learning Group ) had higher Mean Of attitude Subscales And Total Scores than Control Group (traditional teaching Group ) At Post-Test.

Table 2) shows that there were no statistically significant differences between the two groups in relation to achievement test Scores At Pre -Test.

Table 3) describes that Study Group subjects (blended learning Group ) had higher Mean Of achievement test Scores than Control Group (traditional teaching Group ) At Post-Test.

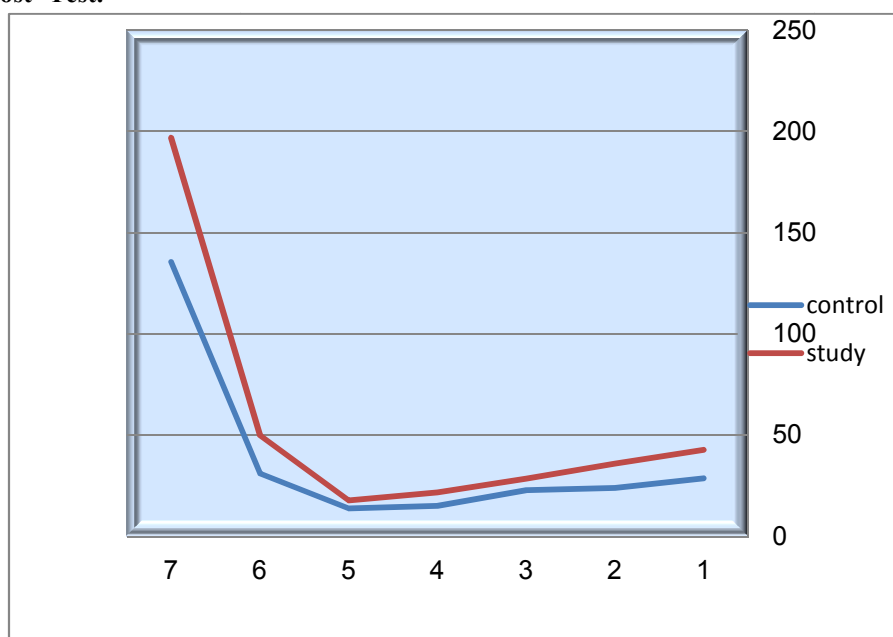
Table 4) points to no statistically significant differences between the two groups as regards Motivational subscales and total scores At Pre-Test.

Figure2) illustrates that Study Group subjects (blended learning Group ) had higher Mean Of Motivational Subscales And Total Scores than Control Group (traditional teaching Group ) At Post-Test.

**Table 1) Mean Of attitude Subscales And Total Scores Among Students In The Study And Control Groups At Pre -Test.**

Item	study		control		t -p values
	x-	+SD	x-	+SD	
1. importance of blended learning for the educational process.	27.67	10.72	28.06	10.72	.15 N.S
2. Necessity of blended learning application in all course.	23.95	8.73	22.09	8.07	.38 N.S
3.Role of blended learning in increasing the degree of interaction between teacher and students	22.91	10.48	21.09	10.14	.83 N.S
4. the attitudes of students towards positives of blended learning.	15.20	7.13	16.26	7.01	.55 N.S
5. the attitudes of students towards negatives of blended learning.	13.78	9.31	14.18	10.33	.73 N.S
6. the general attitudes towards blended learning.	31.10	11.40	31.30	11.44	.95 N.S
<b>Total(250)</b>	134.7	57.50	132.9	57.26	.68 N.S

**Figure 1) Mean Of attitude Subscales And Total Scores Among Students In The Study And Control Groups At Post -Test.**



N.S = Not significant

Numbers from 1 to 6 mean attitude Subscales and 7 means Total Scores.

**Table 2) Mean achievement test scores among students in the study and control groups at pre-test.**

Item	Blended		Traditional		t -p values
	x-	+SD	x-	+SD	
	7.60	2.32	7.39	2.12	.95

**Table 3) Mean achievement test scores among students in the study and control groups at post-test.**

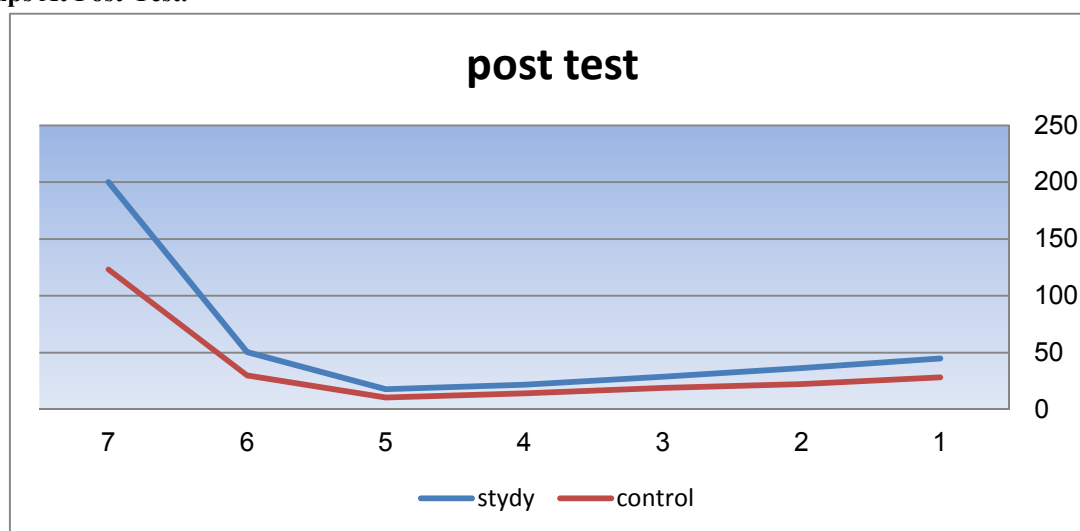
Item	Blended		Traditional		t -p values
	x-	+SD	x-	+SD	
	34.79	5.74	26.80	5.01	7.50***

**Table 4) Mean Of Motivational Subscales And Total Scores Among Students In The Study And Control Groups At Pre-Test.**

Item	study		control		t -p values
	x-	+SD	x-	+SD	
1. Learners awareness of their abilities while learning in a way of blended learning.	27.12	10.85	28.10	10.82	.77 n.s
2. perception of the value of learning by blended learning approach.	22.11	8.05	20.09	7.90	.94 n.s
3. perception of the content of units of Medical Surgical Nursing course .	16.75	6.62	18.70	6.92	.92 n.s
4. perception of teacher-students relationship during teaching by blended learning approach.	13.93	5.05	12.09	4.95	.24 n.s
5. perception of the relationship with colleagues during teaching by blended learning approach.	9.51	4.10	10.50	4.50	.69 n.s
6. perception of the importance of teaching Medical Surgical Nursing course by blended learning approach .	28.73	11.25	28.20	11.01	.68 n.s
Total(325)	118.15	45.82	117.68	46.10	.56 n.s

n.s = Indicate no statistical significance.

**Figure 2) Mean Of Motivational Subscales And Total Scores Among Students In The Study And Control Groups At Post-Test.**



Numbers from 1 to 6 mean motivational Subscales and 7 means Total Scores.

## 8. Discussion

The rapid growth in the use of learning technologies, particularly the use of the web based technologies and communications have offered educators with many more opportunities to investigate the most suitable

learning environments for their students' learning styles (Akkoyunlu, B., & Soylu, M. Y. 2008). The learning environments where instructional materials are transferred electronically or through the Internet or through course software with the help of computer technologies in teaching and learning environments and where the teacher and the learner are in different physical environments are known as e-learning (Dziuban, Hartman, & Moskal, 2004; Osguthorpe & Graham, 2003).

The purpose of the present study was to examine the effect of blended learning approach on student nurses' attitudes and academic achievement in Medical Surgical Nursing course.

The findings of this study will be discussed in light of the related literature and previous studies considering the study hypotheses.

Concerning the first hypothesis, which was stated that "The mean attitude scale scores of post test of students who are studying Medical Surgical Nursing course by a blended learning approach will be higher than Control Group (traditional teaching Group)."

as the study findings showed that, there were no statistically significant differences between the two groups in relation to Mean Of attitude Subscales And Total Scores At Pre -Test, whereas At Post-Test, the Study Group subjects (blended learning Group) had higher Mean Of attitude Subscales And Total Scores than Control Group (traditional teaching Group).

This means that the attitudes of online students improved compared to the students in the face-to-face teaching approach. Such a result might be due to the interaction of the students in this group with the e-learning environment which affected their attitudes toward the E-learning environment. In this regard, it can be noted that the E-learning environment was an interactive learning environment which created a high degree of interaction between students, students and course content, and students and instructor. It seems that this type of environment created a better chance for students and instructor involvement which provide the social context needed for learning in its relation to the emotional domain of learning. This result was inconsistent with the results reached by Gagne and Shepherd (2001); Vamosi et al, (2004); Chen and Jones (2007), however, this result was consistent with the results of Al-Saai, A., Al-Kaabi, A., Al-Muftah, S., (2011),

The second hypothesis also was supported which was stated that "The mean academic achievement scores of students who are studying Medical Surgical Nursing course by a blended learning approach will be higher than those who are studying Medical Surgical Nursing course by a traditional method."

The results showed that there were no statistically significant differences between the two groups in relation to achievement test Scores At Pre -Test, but At Post-Test, the Study Group subjects (blended learning Group) had higher Mean Of achievement test Scores than Control Group (traditional teaching Group).

The result was consistent with some studies such as Ponzurick, France, & Logar (2000); Terry et al, (2001). In contrast, In a survey by Gagne and Shepherd (2001), a comparison between students responses of both traditional classroom setting and online sections in financial accounting course, it was found out that there were no differences in final grades on one hand. And there were no significant differences in overall evaluation of the course and instructor on the other hand. The latter point indicates that there were no significant differences in attitudes between both group modes.

Also, Grandzol (2004) conducted a study aiming at measuring students responses to blended learning compared to traditional classroom setting. The findings showed no significant differences between groups in performance.

Iverson, et al, (2005), in their study "E-learning takes the lead: an empirical investigation of learner differences in online and classroom delivery", in which they have compared between students performance in traditional classroom and online (Distance Learning) sessions in terms of effectiveness, found out that distance learning session is at least as effective as traditional classroom session.

Chen and Jones (2007) conducted a survey study in order to assess the course effectiveness of accounting class. The result indicated that no significant differences were found in achievement between traditional education students and online education students. However, some interesting differences between these two groups in terms of satisfaction were noted in favor of the traditional group students who showed positive attitudes toward traditional mode saying that they were more satisfied with the clarity of instruction than their peers in the online group. Regarding students' attitudes toward E-learning, online group students express their tendencies to take another accounting course in the same format. So, each group showed some support for their mode of instruction.

Moreover, the third hypothesis also was supported which was stated that "The mean motivational scale scores of post- test of students who are studying Medical Surgical Nursing course by a blended learning approach will be higher than Control Group (traditional teaching Group)". It was supported as the study results showed that there were no statistically significant differences between the two groups as regards Motivational subscales and total scores At Pre-Test. However At Post-Test, the Study Group subjects (blended learning Group) had higher Mean Of Motivational Subscales And Total Scores than Control Group (traditional teaching

## Group.

Supporting to these findings, Nagel (2009), referred to the United States Department of Education report which has mentioned that there is some evidence showing that blended learning is more effective than either face-to-face or online learning alone. Furthermore, the report stated that 11 empirical studies out of 51 were significantly positive toward online or blended learning, and only two studies were positively significant in favor of a traditional face-to-face classroom setting.

Moreover, The results of a study of DENNIS, M.,( 2007) showed that there was a discernable improvement in learner motivation for those using instructional techniques designed to improve learner motivation. The implication of this result is that attention to motivation by using combination of online and traditional approach will have a positive effect on learner motivation.

## 9. Conclusion

The Study Group subjects (blended learning Group ) had higher Mean Of attitude Subscales And Total Scores, achievement test Scores, and Mean Of Motivational Subscales And Total Scores than Control Group (traditional).

## 10. Recommendations

Based on the research findings, the following recommendations are made:

- 1- blended learning approach is a very important method in teaching environment.
- 2-Conduct future research studies dealing with the comparison between different types of instructional design of E-learning environments to deliver courses that are practically-oriented courses.
- 3-Further experimental research concerning the use of blended E-learning environments based on pedagogical and psychological principles is needed to be conducted in the future.
- 4-an educational programs for academic staff for teaching using blended learning approach.

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