

UNDERGRADUATE NURSING STUDENTS' PERCEPTION AND USAGE OF E-LEARNING AND BLACKBOARD LEARNING SYSTEM

Mona Mohamed Megahed Elbasuony
Priya Gangadharan
Janula R.
Shylaja J.
Fatima Adam Gaber

Nursing Department, College of Applied Medical Sciences, King Khalid University, Kingdom of Saudi Arabia

Correspondence:

Mona Mohamed Megahed Elbasuony,
King Khalid University,
Kingdom of Saudi Arabia
Email: malbsuone@kku.edu.sa

Received: April 19, 2018; Accepted: May 10, 2018; Published: June 1, 2018

Citation: Mona Mohamed Megahed Elbasuony, Priya Gangadharan, Janula R., Shylaja J., Fatima Adam Gaber. Undergraduate nursing students' perception and usage of E-learning and blackboard learning system. Middle East Journal of Nursing 2018; 12(2): 3-13. DOI: 10.5742/MEJN.2018.93394

Abstract

Background: E-Learning is a computer based educational tool that can be delivered anytime and anywhere. It is rapidly increasing in nursing education and enables students to engage in exciting ways of learning through collaboration and serves to develop and implement technology that improves every aspect of education. Objective: to explore the undergraduate nursing students' perceived knowledge, attitude and usage of E-learning and Blackboard learning systems.

Methods: A descriptive study was conducted during the second semester, academic year 2016/2017, at Nursing Department, College of Applied Medical Sciences for Girls, Tehama, King Khalid University, Saudi Arabia. Convenient sample of 80 students were the study sample. Electronic questionnaire consisted of four parts: General basic information, 30 perceived knowledge questions on computer basics, e-learning and Blackboard, 15 perceived Attitude items towards E- Learning and Blackboard, and 27 items about students' usage of Computer, Blackboard & E-learning Systems, were used for data collection.

Results: Students' mean age was 20.8 and 66% of students were using a computer for educational purposes. The results show that 74% of students had average perceived knowledge about e-learning and Blackboard, 75% of students'

usage of e-learning and Blackboard features was unsatisfactory and 44% of the students had a neutral attitude towards Blackboard and E- Learning. There was a statistically significant correlation between perceived knowledge and attitude towards e-learning and Blackboard.

Conclusion: The study findings reflected that nursing students perceived substantial knowledge and attitude towards e-learning and Blackboard system that e-learning is highly valued by the students in their learning environment. Although, e-learning is widely accepted in institutions of Saudi Arabia, there is a need for the provision of appropriate training at different levels with experts regarding e-learning and Blackboard system.

Key words: E-Learning, Nursing Students, perception, Blackboard learning system

Introduction

The term "e-learning" has been thrown around quite a lot in recent years. In essence, e-learning is a computer based educational tool or system that enables you to learn anywhere and at any time. Today e-learning is mostly delivered though the internet, although in the past it was delivered using a blend of computer-based methods like CD-ROM. (1) Over the past decade the structure of higher educational institutions has changed, partly due to the introduction of technological initiatives.(2)

E-Learning is now facilitating a more flexible learning approach; contemporary institutional structures are less robust than in previous years.(3) The structure of today's universities must be 'changeable' in order to integrate distance learning courses, and those institutions that will not or cannot change their structure to incorporate this technology may be bypassed by other educational providers. (4)

E-Learning offers online instruction that can be delivered anytime and anywhere through a wide range of electronic learning solutions such as Web-based courseware, online discussion groups, live virtual classes, video and audio streaming, Web chat, online simulations, and virtual mentoring.(5)

Globally, e-learning has been introduced to nursing curricula in a number of Western countries including Australia, Canada, Greece, Ireland, New Zealand, United Kingdom and America. The use of e-learning is rapidly increasing in nursing education.(6) E-Learning engages nurses by building interest and motivation while providing opportunities for active participation and protecting organizational interests with documented training. However, optimal success comes from consistent engagement. The fast-evolving nature of the nursing role and the requirements of registration bodies requires continuing professional development and lifelong learning in all nurses.(7) E-learning uses technology and services to provide training or learning material including tutorials, simulations, case-based, and game-based, learning modules.(8)

With the widening of Saudi's internet services, online learning or web-based instruction became practical. Moreover, an increased demand for higher education and a considerable shortage of female faculty led the Ministry of Higher Education to explore online learning approaches. (9) There are different types of Web Based Learning systems including, Computer-Mediated Communication (CMC), Web Course Tools (WebCT) and Blackboard (Bb).(10)

The Blackboard Learning System enables instructors to create and manage course matter, employ publisher content, communicate with students, and evaluate performance. Blackboard can be accessed from the internet at anytime and anywhere. (11) It has many

features accessible to instructors and students including course documents, syllabus, hyperlinks and grade book. Moreover, it improves communication through announcements, discussions, virtual classroom and email. (12)

Bb enables students to engage in exciting ways of learning through collaboration and serves to develop and implement technology that improves every aspect of education. This reformed education system is a biggest challenge in nursing education. (13) The Blackboard system is regarded as a kind of e-learning. It is an online application to manage teaching and learning processes. It was designed to help and support both teachers and students to interact in the virtual classes and to learn using the electronic materials online as a kind of integration for the given activities and material face to face on campus classes. (14)

For the past few years integrated and reformed curriculum has been applied in the College of Applied Medical Science for Females, Tehama branch, King Khalid University with different innovative instructional methods to facilitate students' learning in the era of new trends in nursing education. Therefore, Bb as a learning system was an important inclusion in the reformed curriculum. Bb training has been given to the students and faculty at the beginning of the academic session. Also, students were frequently instructed to visit the Bb system as study materials are uploaded in the system. This study aimed to explore the undergraduate nursing students' perceived knowledge, attitude and usage of E-learning and Blackboard learning system.

Subject and Method

Research design: Descriptive study design was conducted during second semester, academic year 2016/2017.

Study setting: The Study was conducted at Nursing Department, College of Applied Medical Sciences for Girls, Tehama, King Khalid University, Saudi Arabia.

Study subjects: The total number of students in the nursing program was 232. By using convenient sampling technique, 80 students were selected from different study levels (level one to level eight) who were willing to participate in this study.

Tools of data collection: The tool for assessing perception and usage has been developed in English and it was translated into Arabic language by the researchers. The prepared tool has been validated by the experts in the same field. The tool for measuring attitude was adopted for the study, which was developed by Liaw, Huang & Chen.

The Electronic questionnaire consists of the following parts:

Part 1: It consists of General basic information about the students such as age, study level, GPA, computer courses taken, personal computer facility, internet facility at home, purpose of computer usage, social network community account, usage of web services or mobile applications for learning.

Part 2: It contains 30 questions, regarding perceived knowledge on computer basics, e-learning and Blackboard. It has three sections and each section consists of 10 questions.

Scoring: Right and wrong answers are scored one and zero respectively. The total score ranges from 0-30. Total scores were classified as follows, poor ranged from 0-9, Average ranged from 10-19 and Good ranged from 20-30.

Part 3: This part measures the perceived Attitude towards E- Learning and Blackboard which was created by Liaw, Huang & Chen 2007 (15), and used for this research. It includes 15 statements with a 5 points Likert scale from “strongly disagree” to “strongly agree. It was represented under four subsections such as E-learning as a self-paced learning environment (6 items), E-learning as an effective learning environment (3 items), E- learning as a multimedia environment (3 items), and teachers as an instructor – learning environment (3 items). The total score ranges from 15 - 75. Total scores were classified as follows, Negative attitude 15 – 35, Neutral attitude 36 – 55, Positive attitude 56 - 75.

Part 4: This part displays students' usage of Computer, Blackboard & E-learning Systems. It consists of 27 items grouped into 2 subsections, and these items were measured on a 6 point scale. The subsections are: usage of Blackboard & E learning tools which contain 7 items ranging from every day, few times a week, few times a month, once a month, never and don't know. Use of Computer and Social media contains 20 items ranging from Excellent, Very good, good, fair, poor, Don't know. Scores were classified to determine level of students' practices as follows; less than 60% indicates unsatisfactory practice and 60% or more indicates satisfactory practice.

Data collection procedure:

Data collection was done by using Google form (Electronic questionnaire) from all the selected samples. Each student was instructed to give the response individually.

Ethical consideration:

- Official permission with written letter clarifying purpose of the study was obtained from the college research ethical committee to conduct the field work of the study.
- The researchers explained the aim of the study to all participants included in the study and assured them about maintaining anonymity and confidentiality of the data.

Statistical method for analysis:

The present study data were grouped and analyzed using Microsoft excel. The descriptive statistics were applied and expressed in the form of frequencies, percentages and mean. The relation between the study variables such as perceived knowledge, attitude and usage were analyzed using correlation test (r). An association between demographic variables and study variables were assessed using (χ^2) chi square test. The level of significance was considered at $p < 0.05$. The analyzed findings are presented in tables and figures (next page).

Results

Table 1: Demographic Characteristics of the students (n= 80)

S. No	Items	Mean Value	
1.	Age in Years	20.8	
2.	Grade Performance Average (GPA)	2.96	
S. No	Items	Number of Students	Percentage %
3.	Computer Training course Taken		
	Yes	42	53
	No	38	47
4.	Personal computer facility (desktop or Laptop)		
	Yes	74	93
	No	6	7
5.	Internet facility at home		
	Yes	75	94
	No	5	6
6.	Duration of Computer usage		
	< 3 years	21	26
	3 – 5 years	28	35
	5 – 10 years	14	18
	> 10 years	17	21
7.	Student Academic level		
	Level 1	19	24
	Level 2	4	5
	Level 3	3	4
	Level 4	23	29
	Level 5	6	7
	Level 6	13	16
	Level 7	9	11
	Level 8	3	4

This table shows that the majority (29%) of study subjects belong to level 4 and most (24%) of the students belong to age group 21 years. More than half of the students (53%) were already taking computer courses. Almost an equal number of students have personal computer and internet facility 93%, 94% respectively. Also 35% of the students have been using a computer for 3-5 years.

Table 2: Base Line Information about Computer and E learning (n= 80)

S. No	Items	Number of Students	Percentage %
1.	Purpose of Computer Usage		
	Education	53	66
	Entertainment	9	11
	Communication	8	10
	All	16	20
2.	Social Network Member		
	Facebook	14	18
	Twitter	54	67
	You tube	48	60
	Instagram	62	77
	Linkendin	2	3
	Flickr	1	1
	Pin Interest	2	3
	Tumlr	0	0
	Bebo	2	3
	MySpace	1	1
	Google Plus	27	34
3.	Web services used for learning		
	Facebook	2	3
	Wikipedia	37	46
	YouTube	65	81
	Google app	29	36
	Whats app	49	61
	Search Engine	30	37
Google Translate	56	70	

This table infers that the majority (66%) were using a computer for educational purpose and 77% of the study subjects were in Instagram social network and the web services usage for learning especially; 81% were accessing You Tube.

Figure 1: This chart shows that the majority (69) of students were accessing Lectures, and subsequently test (63) and third majority (57) were availing course messages while very few students (7) were using a discussion forum.

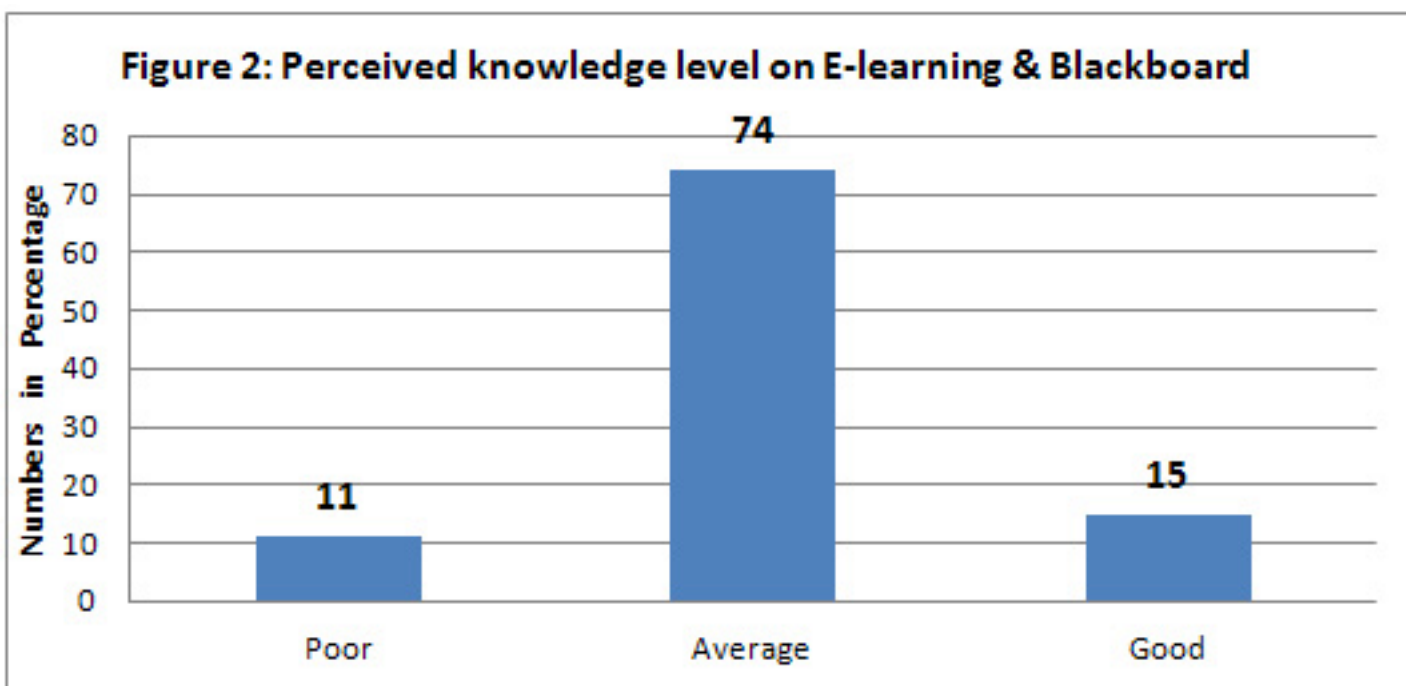
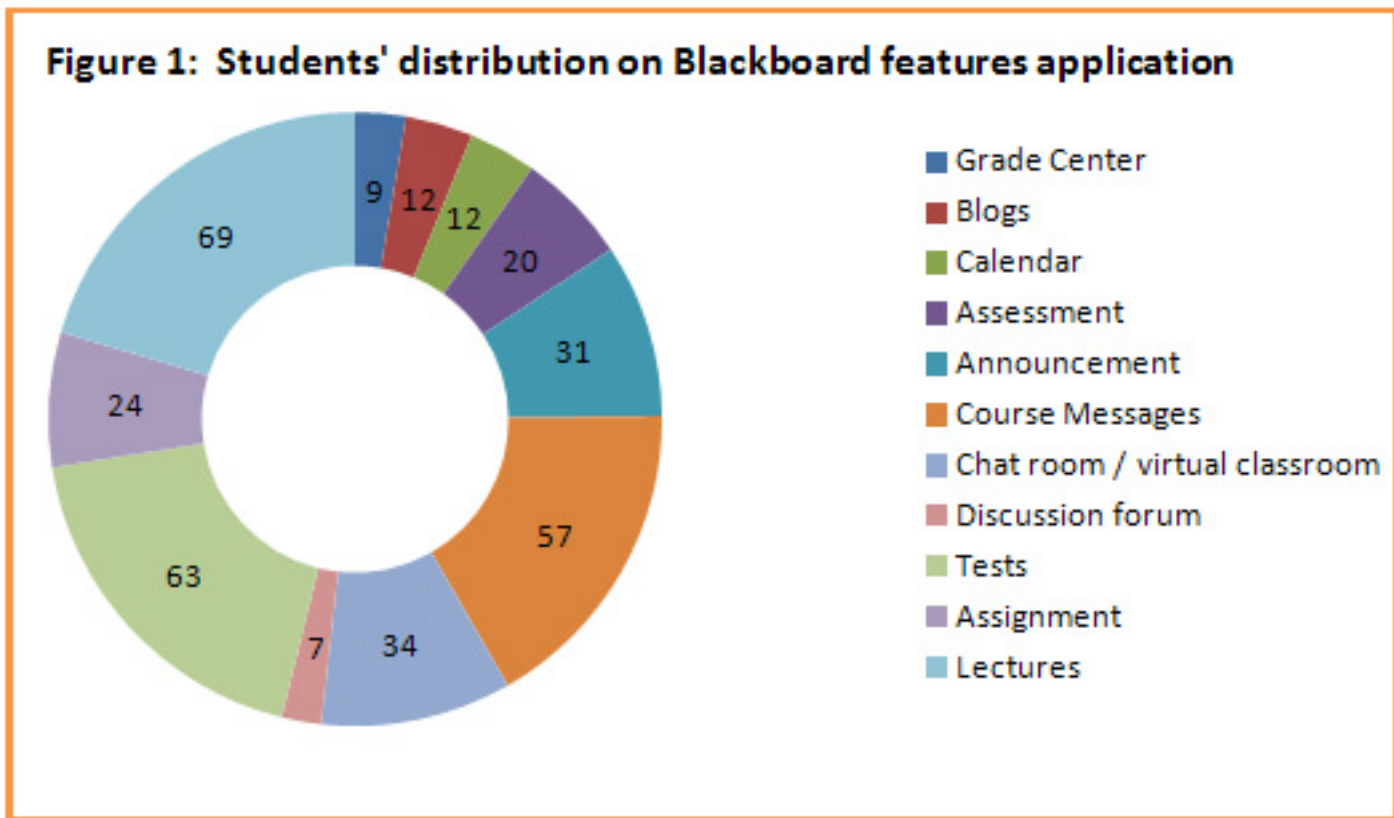


Figure 2: This diagram depicts that the majority (74%) of students had average perceived knowledge about e-learning and Blackboard and only 11% had poor knowledge.

Figure 3: This picture indicates that the majority of students (72%) had average perceived knowledge on E-Learning and 64% had average level on basic computer and also 40 % had a good level on Blackboard applications.

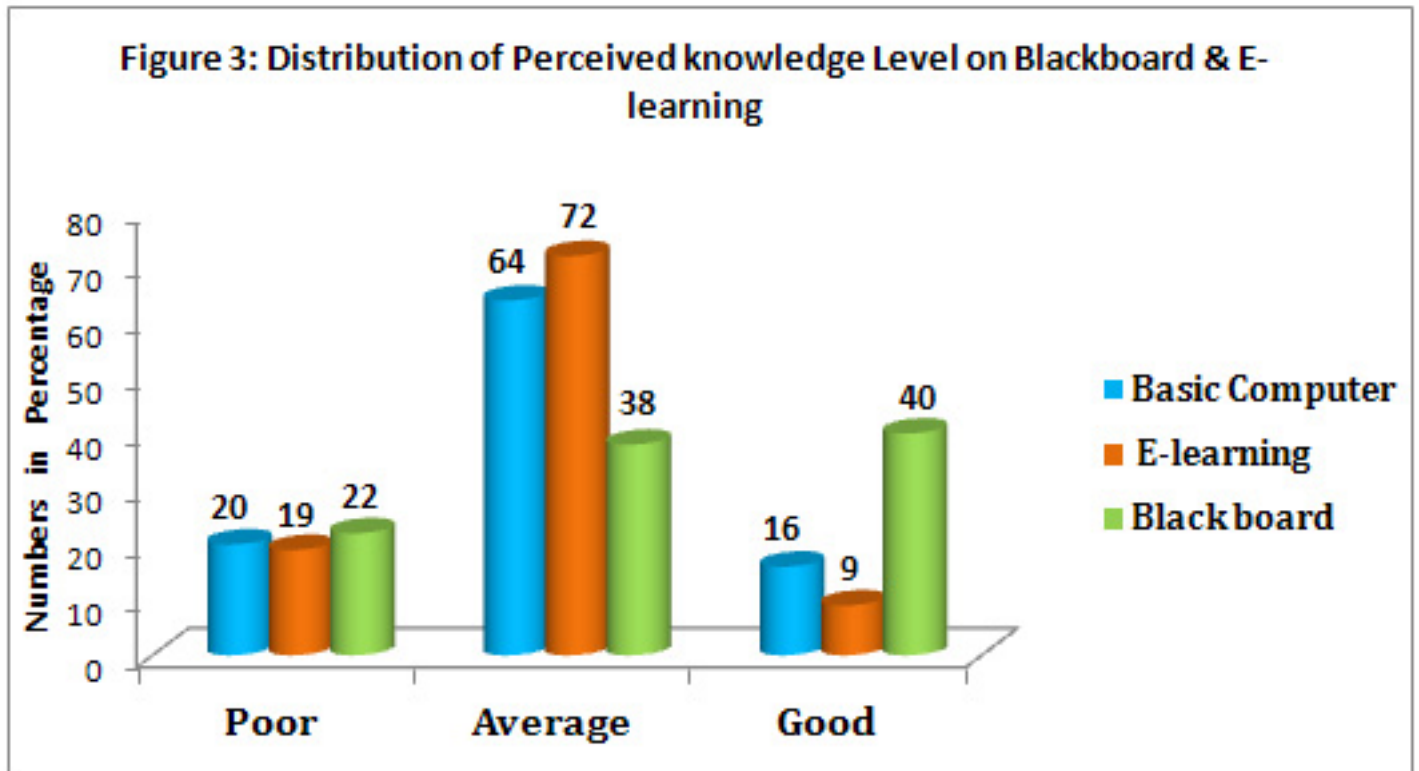


Figure 4: The majority of the students' usage on e-learning and Blackboard features were unsatisfactory level (75%) and the rest of the students' usage were satisfactory level (25%)

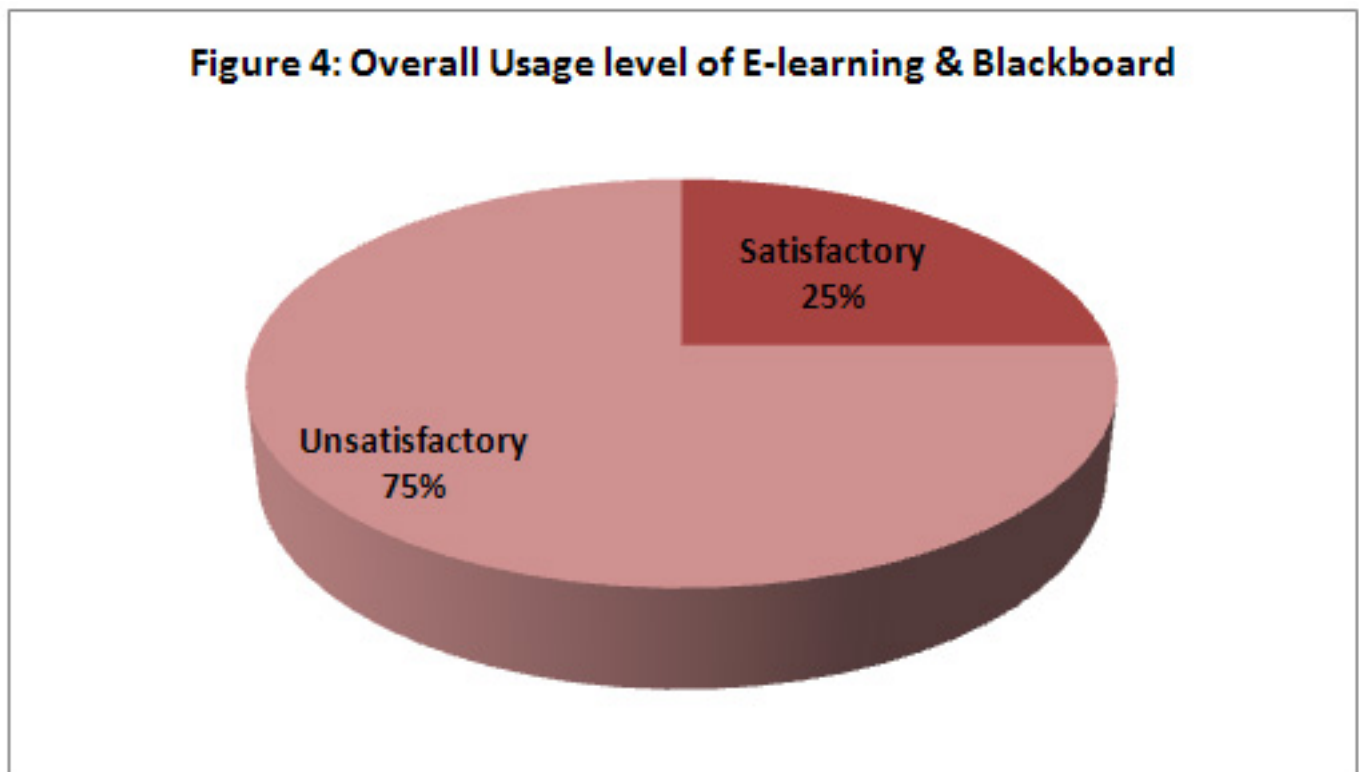


Figure 5: This diagram implies that the majority (44%) of the students had a neutral attitude and only 22% had a negative attitude towards Blackboard and E- Learning.

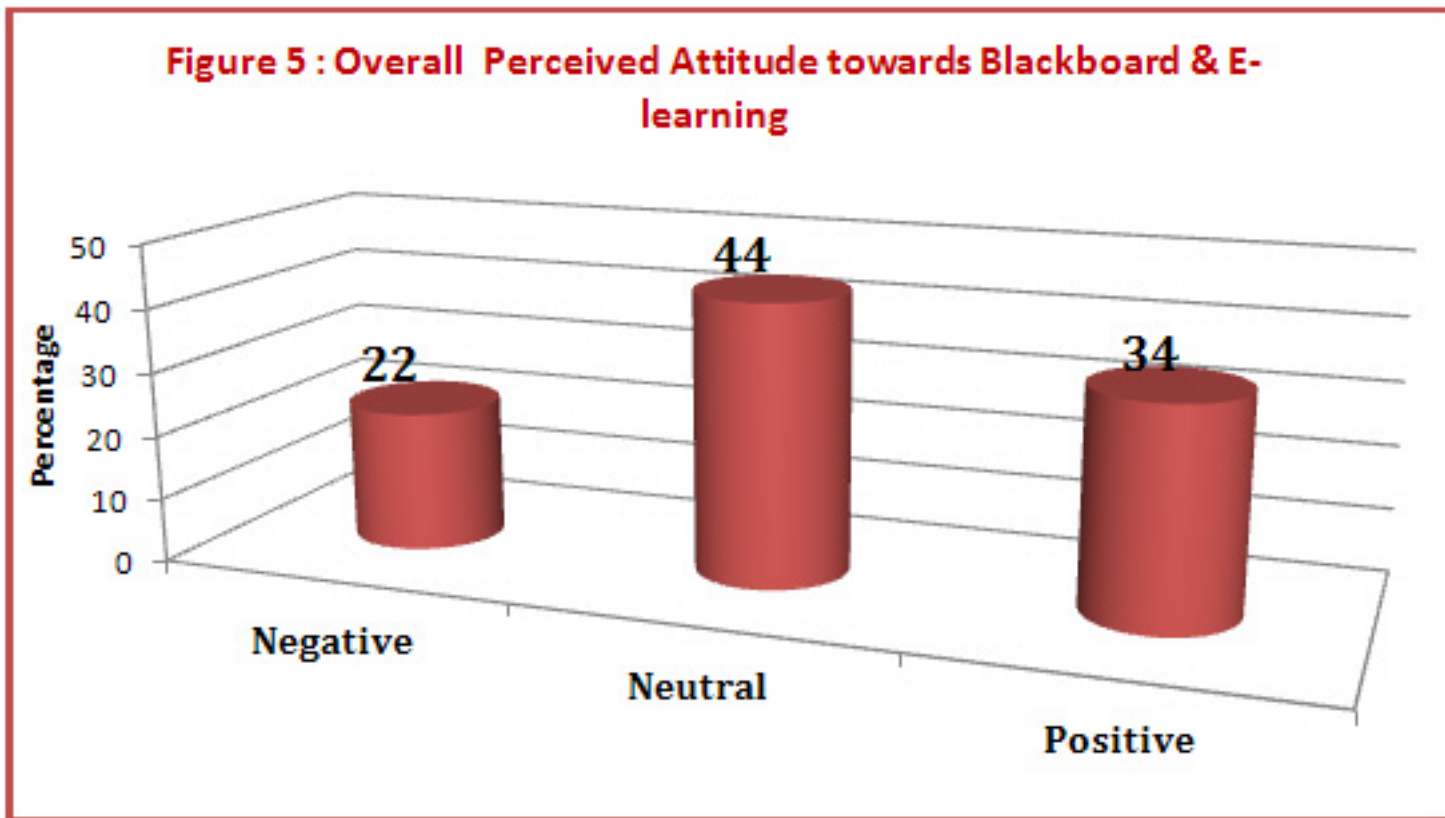


Figure 6: This figure shows that 38% of the students perceived had a noticeably high level of positive attitude towards multimedia instruction learning environment and 47% had a neutral attitude and only 20% rated a negative attitude on self-paced learning environment.

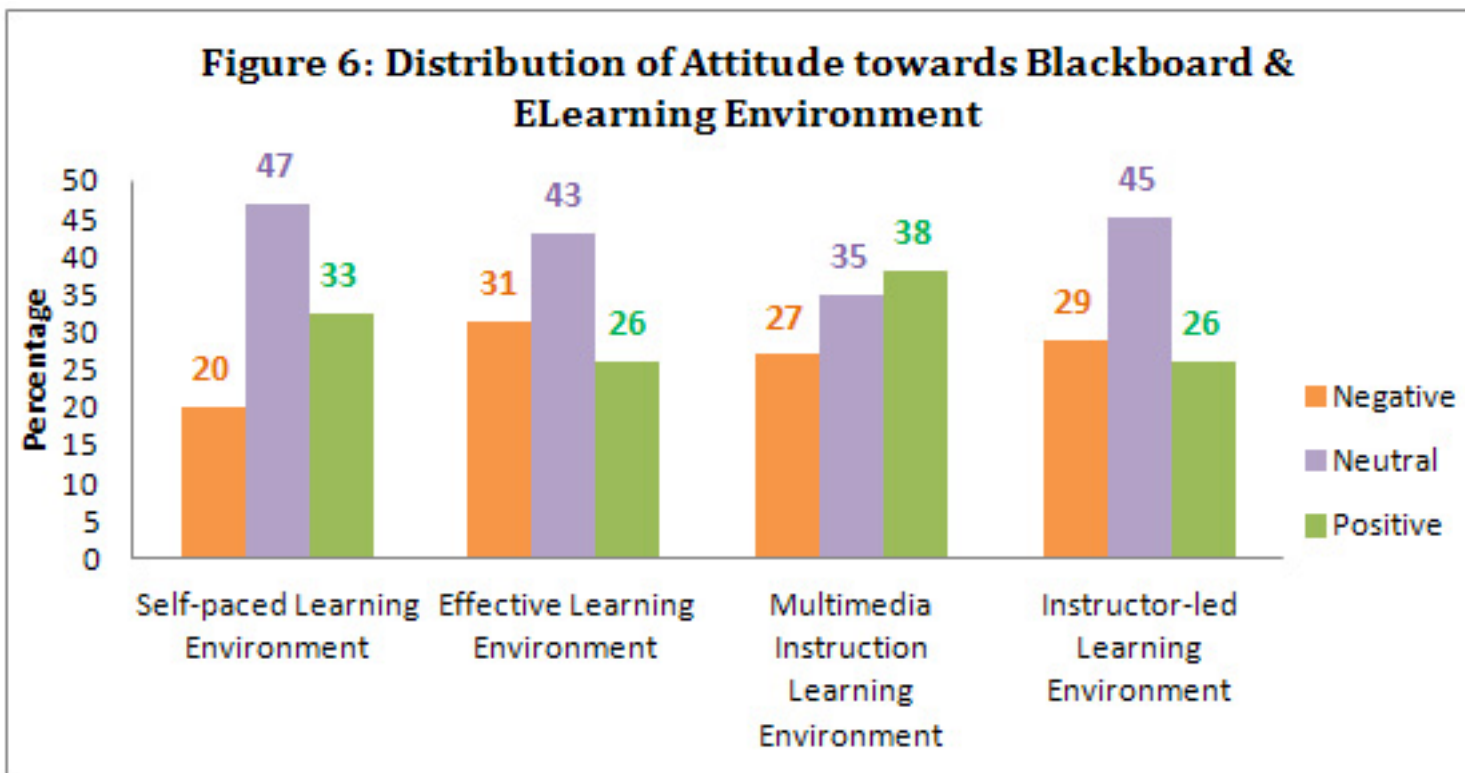


Table 3: Correlation between students perceived knowledge, attitude and usage

Correlation	Perceived Knowledge	Usage	Perceived Attitude
Perceived Knowledge			
Usage	0.0394 0.7265		
Perceived Attitude	0.3702 0.0006*	-0.0831 0.4607	

Cell contents: Pearson correlation *Significant at 0.05 level P- Value

This matrix depicts that the correlation between perceived knowledge and attitude towards e-learning and Blackboard was statistically significant.

Discussion

The present study examined the Nursing students' perception and usage of E-learning and Blackboard learning system in their academic performance. Structured electronic questionnaire was used for data collection.

In the recent scenario most of the educational institutions are using advanced technologies to upgrade the knowledge of students. As the technology develops, the students are using their personal computers to update their knowledge and skills. The present study revealed that most of the students had prior knowledge about the use of computers. The use of computer skills are essential to have successful e-learning.(16) It is evident from the present study, the students were using their personal computers with internet access for learning. Roblyer (2003) (17) said that personal computers will provide a richer learning environment where the learner can be more actively involved in his or her own learning.

Ramirez (2003) (18) carried out a study about the impact of Internet on reading practices of College students in the National University of Mexico. The findings of the current study also revealed that there was a growing interest in digital reading. 94% of the study participants had an internet facility in their home and the majority of students were using the computers for their education purpose.

Vishranti Raut (2016) (19) stated that use of social media has been swiftly increasing during the last few years. It is not only being used for entertainment purpose but also there is heavy rise in the use of social media for education by the students. The respondents of the current study also stated that they were more interested in social media. It was more apparent that from the last decades social medias is helping to enhance knowledge.

YouTube video tutorials are considered highly effective tools in learning skills. (20) It was believed that YouTube is an effective tool in teaching computer skills and in cognitive achievement. (21) So the computer and internet are helping the students gain additional knowledge apart from their traditional learning. The present study also revealed that the students were using You Tube and other

kinds of social networks such as Facebook, Twitter and Instagram with high interest.

Talal (2016) (14) said that the Blackboard system is regarded as a kind of e-learning. It is an online application to manage teaching and learning processes. It was designed to help and support both teachers and students to interact in the virtual classes and to learn using the electronic materials online. The findings of the present study revealed that the Blackboard system was used by the students to send and receive course messages, to take lectures made by the teachers, to have assignments for evaluation. A few students were using other applications of Blackboard system like announcement, Blogs, calendar, grade center and discussion forum also.

Perception level of E-learning & Blackboard

When discussing the Overall Perception level of E learning & Blackboard, the study reported that the vast number of participants had average perception in using E learning & Blackboard system. This finding supports the previous research done by Marilynne Coopasami (2017) (22) where the participants were not technologically ready to fulfill e-Learning requirements. So it was more apparent that the students need further assistance to use Blackboard and e-learning systems. As the University is giving sufficient significance to the Blackboard system the students had a good perception about the Blackboard system more than basic computer and e learning.

Level of usage towards E-learning & Blackboard

Based on a huge growth and challenge facing e-learning systems, using Blackboard as an online learning system is persisting among universities especially in Saudi Arabia.(23) So this study was also interested to know the usage level of e-learning and Blackboard system, and the results showed 25% of students only having satisfactory usage level of e-learning and Blackboard system. As it indicated the students need additional motivation to use e-learning systems.

Attitude towards E- learning & Blackboard

Visalam et al. (2015) (24) concluded with high confidence that university students are willing to accept many courses

via online mode. The findings of the present study showed that 34% of participants have a positive attitude towards e-learning and Blackboard. The present study assessed the student's attitude towards the following components: self-paced learning environment, effective learning environment, and instructor-led learning environment. Among the above said components the students had a good attitude towards multimedia instruction more than the others. Jesus Izquierdo et al.(25) examined the university learners' attitude towards multimedia instruction and stated that where there is combination of illustrations, diagrams, charts, maps, and photos, or dynamic graphics such as animation and video in learning tasks, there the students will get provoked to advance their language.

Correlation between Attitude, Usage and Perception of E - learning & Blackboard:

E-learning is widely accepted in higher education institutions. Achimugu et al. (2010) (26) suggested that the positive attitudes and the willingness of students will enhance them to engage in e-learning courses and suggest that there is a great potential for e-learning initiatives. The findings of the present study also stated that the perception is having a positive correlation with attitude of students towards E - learning and Blackboard.

Limitations

- This study included only female students. So gender differences cannot be identified.
- It is important to note that the findings presented in this article are based on a study from only one institution with limited number of participants, especially among nursing students.

Recommendations

- The authors of this study recommend to conduct this study with large group of students and with other disciplines or other universities.
- The study can be conducted in campus after enhancing sufficient technical support with adequate internet access.
- The study findings can be compared with other disciplines or other universities.
- More training programmes can be conducted by experts to improve usability of Blackboard and e-learning system among students.

Conclusion

The study results suggest that the nursing students perceived substantial knowledge and attitude towards e-learning and Blackboard system. It reveals that e-learning is highly valued by the students in their learning environment. Though, e-learning is widely accepted in institutions of Saudi Arabia, there is a need for the provision of appropriate training at different levels with experts regarding e-learning and the Blackboard system. Furthermore the study strongly recommends to apply E-

learning and Blackboard system along with traditional methods of teaching.

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