
Faculty Members' Perception and Satisfaction Towards Using the Blackboard Learning Management System in Nursing Courses at Cairo University

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Abstract

Background: The perceptions of faculty members about technology integration are crucial to the effective implementation of the Blackboard virtual environment in the teaching and learning process. The aim of the study was to assess the perception and satisfaction of faculty members at Cairo University towards using the Blackboard Learning Management System in Nursing Courses. **Design:** A descriptive research design was utilized to fulfil the aim of this study. **Setting:** The study was conducted at the faculty of Nursing, Cairo University, Egypt. **Sample:** A purposive sample of 37 faculty members who teach nursing courses on the Blackboard platform were included in the study. **Tools:** Two tools were used to collect the data; the first is a structured questionnaire that includes the faculty members' demographic information, and the second is an electronic questionnaire that describes faculty perception in four sections: usefulness, enjoyment, satisfaction, and challenges. **Conclusion:** The study concluded that, faculty members had a positive attitude towards using the Blackboard Learning Management System. According to the most important factor in using the Blackboard in the teaching system for nursing courses at Cairo University, it was enjoyment 85.7%, followed by faculty benefit with 84.4%, and then satisfaction with Blackboard with 74.1%. Finally, faculty challenges to applying Blackboard were ranked as the least significant factor, with 72.9% able to apply Blackboard. **Recommendations:** The study recommended continuing to support a culture of online learning among faculty members by publishing an electronic guide or videos on the university's website on how to use Blackboard. The authors of this study also recommended that it be repeated with a large sample size and in a variety of situations to generalize the results.

Keywords: Blackboard learning management system, perception, satisfaction, faculty members, nursing courses.

Introduction:

Learning management systems, like Blackboard (Bb), are at the cutting edge of technological advancements because they enable higher educational institutions (HEIs) to integrate technology into conventional lecture-based courses, provide resources for distant learners, and implement blended learning (Cele and Cilliers, 2015). The Bb is a collaborative e-learning platform that lets both lecturers and students produce, use, and share digital information (Kim and Do, 2016).

The Bb system was designed to assist and support both professors and students in interacting in virtual courses and learning using online electronic resources as a form of integration for the activities and content covered in face-to-face classes on campus (Uziak, Oladiran, Lorencowicz, and Becker, 2018). Faculty can use the Blackboard platform to develop and administer course materials, use publisher content, communicate with students, and assess performance.

Course documents, a syllabus, hyperlinks, and a grade center are among the elements available to instructors and students. Furthermore, it promotes communication through announcements, conversations, virtual classrooms, and email (Al-mashaqba and Al-Khawaldeh, 2016). It is crucial to introduce online learning in the nursing curriculum because it allows students to learn at their own time as well as in their own environment. Blackboard allows learners to be self-directed and provides them with access to the internet and the required resources for their educational requirements. Blackboard also provides the student with access to a range of learning tools and materials, including text, audio, and video, as well as e-mail, online discussions, and evaluations. In fact, it is a useful tool for improving the quality of teaching and learning and is also a new technique of education delivery that employs electronic forms of information and increases the learner's knowledge and abilities (Noour and Hubbard, 2015).

Course content, a calendar, learning modules, assessments, assignments, a grading center, and the media library are all part of the learning content.

Faculty members can use the course material feature to publish tutorials, experiments, examinations, quizzes, and videos. They can also list due dates for posting announcements on the calendar (Nkonki and Ntlabathi, 2016). The learning modules allow students to take online courses, while the assessment function allows them to take online exams and receive results. Also, students can submit their coursework using the assignment tool. Students' grades are posted in the grade center feature. Finally, the media library feature allows users to share videos or other types of content (Castro and Tumibay, 2020).

Faculty members' perceptions refer to a range of opinions, attitudes, interpretations, approaches, or expectations that are related to their status within the organization. While their competency levels directly influence the use of technology for teaching and learning processes (Grobged, Teichman-Weinberg et al., 2016). In the same context, Alghamdi and Bayaga (2016) stated that faculty members' perceptions of technology integration play a crucial role in the effective implementation of the Bb virtual environment within the learning and teaching process. Therefore, faculty members should make the most effective use of the modern technology available and transfer what they need to learn to future generations of scholars to deal with the challenges of 21st-century education.

Significance of the study

The rapid spread of the severe acute respiratory syndrome coronavirus led to the WHO declaring it a pandemic on March 13, 2020, after it met epidemiological requirements and affected more than 100,000 people in 120 countries worldwide. The most important public health advice currently is to stay home and stay safe inside. In a global approach, the globe has become confronted with an unprecedented public health emergency, with nurses, as usual, on the front lines. The challenges are greater, and nurses have the skills and experience to provide the nursing care required in the different clinical scenarios that occur (Jackson, Bradbury-Jones, Baptiste, Gelling, Morin, Neville, and Smith, 2020).

The impact of the coronavirus pandemic is not limited to the medical field; a considerable portion of nursing activities are affected. The attendance of nursing students in health care centers in Egypt and other countries has been suspended. Schools and universities are closing at an alarming rate worldwide. More than 1.570 million pupils in 191 countries are

affected. It was essential for those in authority to determine how nurses' education would continue in the future, and multiple educational solutions were deployed, all based on distance or online learning (Ramos-Morcillo, Leal-Costa, Moral-García and Ruzafa-Martínez, 2020).

Educational activities in Egypt were interrupted because of the ongoing COVID-19 epidemic, and students were forced to transfer from traditional learning to an exclusively internet context. Cairo University (CU) adopted Bb LMS for the first semester of the academic year 2019/2020. The goal was to enhance access to academic programs, improve teaching quality, and continue the educational process during the emergency conditions imposed on Egypt and the rest of the world by the corona pandemic. By using LMS to deliver online learning, higher educational institutions (HEIs) can extend their educational reach to regions where traditional HE spaces, or resources are unavailable. The Learning Management System (LMS) can enable management and control of educational resources in distance and blended learning programs (Al-Asfour, A., Ndemanu, Borboa, Joseph, Spake, Yazdanparast, and Santori, 2014).

Because HEI invest a substantial amount of money, resources, and time in online learning, the success of similar institutions in adaptive online education has pushed administrators to examine online possibilities as a means of increasing enrolment and revenue. As a result, HEIs that implement such technologies must ensure that their value is validated by evaluating users' satisfaction with LMS components, whether technical or supporting information delivery (Ellis, Ginns, and Piggott, 2009).

Faculty members at Cairo University offer a range of undergraduate education courses that include conventional learning, online learning (Bb system), and blended learning (mixed between both). However, various issues have prevented this technology from being fully utilized up to this point. Faculty members' attitudes toward the use of Bb in the classroom, whether favourable or negative, may have a significant impact on students' willingness to participate in the online learning environment. As a result, faculty members should be aware of the benefits as well as the obstacles of efficiently adopting the Bb system.

Theoretical Framework

The theoretical framework of the current study is based on the Technology Acceptance Model (TAM), which describes computer usage behaviour. According to TAM, perceived usefulness and perceived ease of use are important factors in revealing information system use (Davis, 1988). The following diagram depicts the theoretical framework of the study:

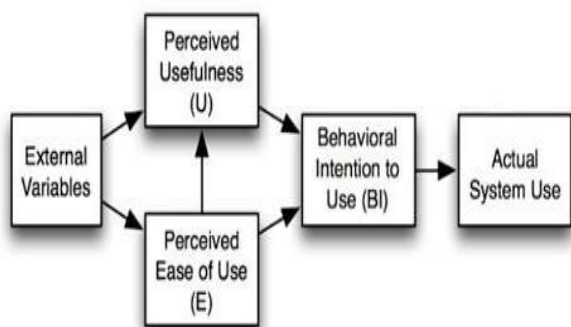


Fig. 1 Technology Acceptance Model

Aim of the Study:

The aim of the study was to assess the perception and satisfaction of faculty members at Cairo University towards using the Blackboard learning management system in nursing courses.

Subject and Methods

Research Questions

The following research questions are constructed to achieve the study's aim:

Q.1: what is the perception of faculty members in Cairo University towards using blackboard learning management system in nursing courses?

Q2: what is the satisfaction of faculty members in Cairo University towards using blackboard learning management system in nursing courses?

Research Design

The current study was utilized a quantitative descriptive design in nature to achieve the study's goal. A descriptive study is defined as a research method that describes the characteristics of the population or phenomenon studied. This methodology focuses more on the "what" of the research subject

than the "why" of the research subject (Vijayalakshmi and Sivapragasam, 2019).

Setting

The study was carried out at Cairo University Faculty of Nursing. The faculty was founded in the academic year 1964/1965 with the goal of preparing professional nurses with unique efficiency to work within the health team in various health sectors and educational institutions. The faculty awards a bachelor's degree in general nursing sciences after four years of academic study that includes both theoretical courses and practical/clinical hospital training. After successfully completing the four academic years of study, an internship year was added as a prerequisite for graduation beginning in the academic year 1971. Before graduating, students must also successfully complete this internship year. The faculty only recently, in 2001, began to accept students of both genders. There are nine academic departments in the faculty.

Sample

A purposive sample of 37 faculty members in the nursing faculty at Cairo University was utilised in this study. The faculty members who had already activated their Bb accounts answered and participated in an anonymous online survey aimed to extract their perceptions and satisfaction with the usage of Bb LMS in the teaching system.

Inclusion criteria

- A faculty member who taught a Nursing course on Bb during the academic year 2020/2021 and has an active Blackboard account.
- Use Blackboard for at least three months.

Data Collection Tool

Data was collected using the following two tools:

I- A structured electronic questionnaire: it was designed by the researchers after reviewing relevant national and international literature to assess faculty members' perceptions and satisfaction towards using Bb LMS in nursing courses. It consisted of seven questions on the faculty members' demographics (age, sex, academic degree, speciality, years of experience, and attending blackboard training sessions).

II- The Faculty Members' Perception Scale: it was created by Ibrahim, Mohamed, Aldhafeeri, and Alqdah (2018) and tested for validity and reliability. It is a five-point Likert scale, with 5 indicating strong

agreement and 1 indicating strong disagreement. The scale consists of four sections: perceived benefit (13 questions), perceived pleasure (7 questions), perceived satisfaction (9 questions), and perceived challenges (12 questions).

Scoring system

Each section was estimated on a continuum and classified into three levels. The total scores of perceived usefulness (65 marks) were categorized as: low level perception of usefulness towards using Bb (score < 32 marks), middle level perception (score ranged from 32-48), and high-level perception (score ranged from 49-65). Regarding the total scores of perceived enjoyments (35 marks), they were categorized as: low level perception of enjoyment towards using Bb (score < 18 marks); middle level perception (score ranged from 18-26); and high-level perception (score ranged from 27-35). Concerning the total scores of perceived satisfactions (45 marks), they were categorized as: low level perception of satisfaction towards using Bb (score < 22 marks), middle level of perception (score ranged from 22-33), and high level (score ranged from 34 - 45). In terms of the total score of perceived challenges (60 marks), they were categorized as: low level perception of challenges (score < 30 marks); middle level perception; (score ranged from 30 - 45) and middle level (score ranged from 46-60) referred to a high level.

The following calculation was used to calculate the percent of the total score for each item and the total perception scores for each section:

Summation of scores achieved by each faculty member x100

Total scores for each section of scale

Total perception scores converted into a percent and classified as follows:

- Low perception level= <50% of the total score.
- Middle perception level= 50% -75% of the total score.
- High perception level= more than 75% of the total score.

Face Validity

The study tools were reviewed by a group of five expert professors in the field of community health nursing. Each expert on the panel was asked to look over the tools for clarity, wording, format, and overall appearance. Certain items have been added, modified,

or omitted based on expert comments and recommendations.

Ethical considerations

Cairo University's Faculty of Nursing's Institutional Research Board approved the study. Explaining the study's objective and scope, as well as emphasising that participation was entirely voluntary, are all ethical considerations. To ensure anonymity and confidentiality, data coding was used. Furthermore, data will not be used in another study, and all information gathered will be used solely for the purposes of this research.

Field Work

The study began from May 2021 till August 2021 through two phases:

Preparatory phase:

The researchers first duty reviews the relevant literature related to prepare tools for the study. Then official agreement was received from the Research Ethics Committee of the Faculty of Nursing at Cairo University (FON, CU). Formal permission was also received from the Dean of the FON, CU. This phase lasted from the beginning of May until the end of June 2021.

Implementation phase:

This stage began immediately after the end of the second semester of the academic year 2020/2021. The study was conducted on faculty who taught a nursing course on the Blackboard platform at FON, CU at the end of the second semester of the 2020-2021 academic year. The nursing course was taught in a blended format in the first semester, combining traditional lectures, tutorials, and laboratories with Bb, which was used for all elements of teaching, including the distribution of teaching materials and communication with students. Students also used it to submit all aspects of the ongoing assessment (aside from final assessments) (assignments, projects, quizzes, and midterm exams). (Apart from final examinations), (assignments, projects, quizzes, and midterm exams). In the second semester, the nursing course was presented in the same fashion as the first semester.

The researchers informed the faculty about the purpose of the study as well as their research ethical rights before the start of the study, the time taken to

fill out the questionnaire ranged between 10 and 15 minutes.

Data were collected from all the selected samples using a Google form (electronic questionnaire). The questionnaire was sent to 37 faculty members who met the criteria for participation. They were invited to complete the questionnaire. The researchers were sent the questionnaire link to faculty members via their e-mails.

Statistical Analysis

After the data gathering step was completed, the responses were translated into SPSS Statistics version 22 for additional statistical analysis. Furthermore, the mean, standard deviation (SD), and range were used to define quantitative variables (maximum and minimum). Percentages were used to describe qualitative factors. The Pearson correlation test was used to assess the data. A p-value of less than 0.05 was judged to be significant, while a p-value of less than 0.001 is considered highly significant.

Results

Table 1 shows that 94.6% of faculty members who replied to and completed the electronic questionnaire were female, and 73% of them were between the ages of 30 and 40, with a mean age of 37.36 ± 5.98 . In relation to academic degree, 64.8% of faculty members work as lecturers, and 29.7% of them were specialized in Community Health Nursing with, as well as 32.4% had 10 to less than 15 teaching years of experiences with mean score 10.27 ± 5.27 . Regarding the number of courses taught by faculty through Bb, 54% have taught more than two courses, and 76% have attended Bb training.

Table 2 shows that 94.6%, 91.9%, and 92% of faculty members believe Bb is an effective approach to run an e-learning course, provide the ability to send email to students, and apply their time management abilities. The table also showed that 81 %, 86.5 %, 81.1 %, 83.8 %, 81.1 %, 86.4 %, and 89.1 % of faculty members believe that Bb offers the required expertise to teach various e-courses, increases variety in advanced teaching approaches, helps the teachers to fulfil the learning demands of the students, gives students access to course resources, such as assignments, and encourages them to practice their teaching skills.

Table 2 also reveals that, 78.3 %, 78.3 %, and 78.4 % of faculty members believe that Bb promotes

teachers to enhance their teaching efficacy and offers learning opportunities for students to acquire knowledge and receive the same classroom information.

Figure 2 shows that 89.2% of faculty members had a high-level perception of usefulness regarding Bb use, while 8.1% and 2.7% were at a moderate and low level, respectively.

Table 3 shows the perception level of enjoyment among FON-CU faculty. An equal percent 91.9% of the faculty approved that Bb relies on computer-based interactions and supports innovation in the use of ICT. In addition, 89.1%, 86.4%, 81%, and 86.4% of them indicated that Bb enables trainers build technical computer abilities, inspires teachers to improve teaching skills, and enhances the effectiveness of teaching quality, respectively. The table also displays that 86.4% of the faculty members use Bb to help them monitor student utilization of courses, and that 81% of them consider Bb an interesting method for teaching and that 73% believe Bb gives a greater magnitude for lessons.

Figure 3 shows that 86.5% of the faculty members had a high level of enjoyment when using Bb, while 13.5% had a moderate level of enjoyment.

Table 4 illustrates the level of satisfaction among faculty members at FON-CU. According to the data analysis, 83.7% and 78.3% of the faculty approve that Bb does build confidence to facilitate learning and save time and effort for faculty members. Additionally, 75.6% and 70.2% of them provides them with much more satisfaction in the teaching process and motivates learners more than other types of learning.

The table also shows that 62.1% of faculty members believe that Bb improves student satisfaction in the teaching process, 67.5% believe that Bb saves students time and effort, 59.4% of them believe Bb is a simple e-learning system to use and 37.8% of them disagree that Bb hampers students' efforts to develop their learning skills. While 62.1% are either neutral or disagree that Bb hinders professors' efforts to improve their teaching skills.

As shown in **Figure 4**, 51.4% of the faculty members have a high level of satisfaction regarding the use of Bb, while 45.9% and 2.7% have a medium and low level, respectively. (Answering the second research question.)

Table 5 presents the perceived challenges among faculty at FON, CU. As displayed in this table (89.2% and 91.9%) of faculty members respectively approve that Bb needs specific training for teachers and students. Furthermore, 67.5%, 91.9%, 56.7%, and 51.3% of them agree that they do not have enough time to become expert users of Bb, that Bb requires administrative support, that it is an unfamiliar way for teachers to transmit information, and that it takes Bb a long time to answer student questions. As well as 56.7% of them agree that Bb lacks a learning environment, and more than a quarter.

Regarding the faculty members' total perception and satisfaction toward the Bb LMS use in nursing courses, **Figure 5** represents the rank of the four subscales of perception, where the most important factor for using Bb in the teaching system was enjoyment (85.7%), followed by perceived usefulness (84.4%), then perceived satisfaction (74.1%), while perceived challenges were 72.9%. (The 1st research question is answered).

Table 6 shows that there was a highly statistically significant negative correlation between faculty members' age and their perceived usefulness toward Bb use ($r = -.464^{**}$ & $P = .004$), also, there was a highly statistically significant negative correlation between faculty members' years of experience and their perceived usefulness toward Bb usage ($r = -.452^{**}$ & $P = .005$).

Regarding the faculty members' enjoyment of Bb use, **table 6** also reveals a statistically significant negative correlation between faculty members' age, academic degree, and their perceived enjoyment of Bb use ($r = -.326^{*}$ & $P = .049$) and ($r = -.346^{*}$ & $P = .036$), respectively.

Table 7 shows a highly statistically significant correlations between three sub-levels of Bb use in teaching (usefulness and enjoyment, $r = .444^{**}$ & $P = .006$), (usefulness and satisfaction, $r = .526^{**}$ & $P = .001$), and (enjoyment and satisfaction, $r = .544^{**}$ & $P = 0.001$), but none between challenges and the other three sub-levels.

Table 1: Demographic characteristics of faculty members at FON-CU (n=37)

Items	n=37	
	No.	%
Age:		
less than 30	2	5.4
from 30 to less than 40	27	73
from 40 to less than 50	5	13.5
more than 50	3	8.1
X ± SD	37.36± 5.98	
Gender:		
Male	2	5.4
Female	35	94.6
Academic degree:		
Assistant Lecturer	8	21.7
Lecturer	24	64.8
Associate Professor	3	8.1
Professor	2	5.4
Specialty:		
Community Health Nursing	11	29.7
Critical and Emergency Nursing	1	2.7
Geriatric Nursing	3	8.1
Medical and Surgical Nursing	1	2.7
Nursing Administration	10	27.0
Maternal & New-born Health Nursing	9	24.3
Paediatric Nursing	2	5.4
Years of experience:		
less than 5	8	21.7
5 - less than 10	9	24.3
10 - less than 15	12	32.4
more than 15	8	21.6
X ± SD	10.27±5.27	
Number of Blackboard Teaching Courses:		
One Course	9	24.3
Two Courses	8	21.7
Three Courses	10	27
Four Courses or More	10	27
Have you attended blackboard training courses?		
Yes	28	75.7
No	9	24.3

Table 2: *Perceived Usefulness among Faculty Members at FON-CU (n=37)*

Statement	n=37									
	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
	No	%	No	%	No	%	No	%	No	%
1. Bb is an effective way to manage an e-learning course.	17	46.00	18	48.60	2	5.40				
2. Bb motivates instructors to increase their efficiency of teaching.	14	37.8	15	40.50	6	16.20	2	5.40		
3. Bb provides the necessary experience to teach various e-courses.	14	37.80	16	43.20	5	13.50	6	16.20	1	2.70
4. Bb enhances diversity in modern teaching methods.	19	51.40	13	35.10	3	8.10	1	2.70	1	2.70
5. Bb learning system allows the instructor to meet the students' learning needs.	11	29.70	19	51.40	3	8.10	3	8.10	1	2.70
6. Bb facilitates communication between instructors and their students.	11	29.70	20	54.10	2	5.40	4	10.80		
7. Bb motivates students to increase practice for their teaching process.	8	21.6	22	59.50	3	8.10	4	10.80		
8. Bb provides students with the opportunity to acquire knowledge.	11	29.70	18	48.60	4	10.80	3	8.10	1	2.70
9. Bb allows students opportunities to receive the same classroom information in the familiar environment of the internet.	10	27.00	19	51.40	3	8.10	4	10.80	1	2.7
10. Bb allows students with course materials (e.g., assignments, lecture notes & audio/visual aids).	16	43.20	16	43.20	2	5.40	2	5.40	1	2.70
11. Bb provides the ability to send email to individual students, to groups of students, or to all students.	15	40.50	19	51.40			2	5.40	1	2.70
12. Bb encourages students to use their time management wisely.	17	46.00	17	46.00	3	8.10				
13. Bb is an effective way to manage an e-learning course.	15	40.50	18	48.60	2	5.40	2	5.40		

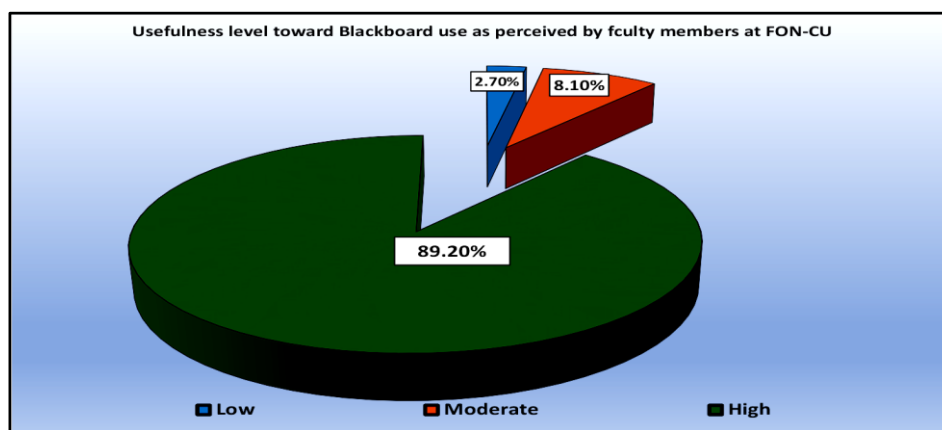


Figure 2: *Usefulness Level as Perceived by Faculty Members Towards Blackboard Using (N= 37)*

Table 3: *Perceived Enjoyment among Faculty Members at FON-CU (n=37)*

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Items	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
	No	%	No	%	No	%	No	%	No	%
14. Bb is an interesting method for teaching.	18	48.6	12	32.4	6	16.2	1	2.7		
15. Bb gives a greater magnitude for lessons.	16	43.3	11	29.7	7	18.9	2	5.4	1	2.7
16. Bb depends on computer-based interactions.	16	43.3	18	48.6	3	8.1				
17. Bb helps instructors to track student usage of courses.	10	27.0	22	59.4	5	13.5				
18. Bb encourages innovation in the application of information and communication technology.	18	48.6	16	43.3	2	5.4	1	2.7		
19. Bb helps instructors to develop their technical skills in the field of computers	19	51.3	14	37.8	4	10.8				
20. Bb encourages instructors to improve the teaching skills and effectiveness of the quality of education	20	54.0	12	32.4	5	13.5				

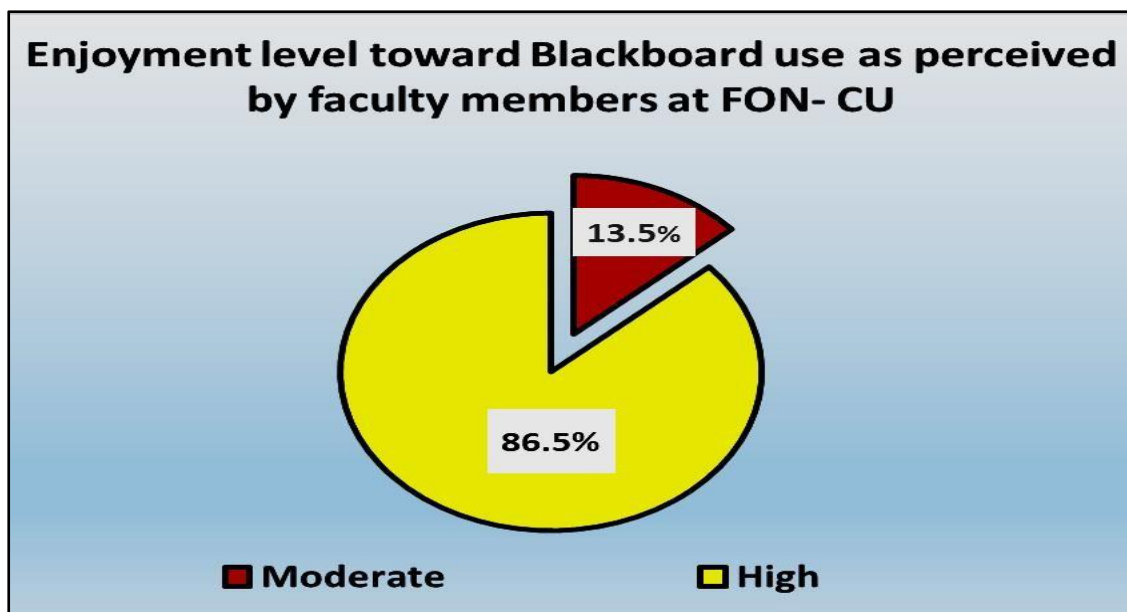


Figure 3: *Enjoyment Level as Perceived by Faculty Members Towards Blackboard Using (N= 37)*

Table 4: Perceived Satisfaction among Faculty Members at (FON) CU(n=37)

Items	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
	No	%	No	%	No	%	No	%	No	%
21. Bb is easy e-learning system to use.	9	24.3	13	35.1	13	35.1	1	2.7	1	2.7
22. Bb gives more satisfaction for the instructors in the teaching process.	9	24.3	19	51.3	5	13.5	3	8.1	1	2.7
23. Bb gives more satisfaction for students in the teaching process.	8	21.6	15	40.5	11	29.7	2	5.4	1	2.7
24. Bb builds self-confident to facilitate learning.	9	24.3	22	59.4	5	13.5			1	2.7
25. Bb saves time and effort for students.	10	27.0	15	40.5	11	29.7			1	2.7
26. Bb saves time and effort for faculty	11	29.7	18	48.6	6	16.2			2	5.4
27. Bb engages the learners more than other forms of learning.	9	24.3	17	45.9	8	21.6	2	5.4	1	2.7
28. Bb frustrates students to improve their learning skills	5	13.5	11	29.7	7	18.9	13	35.1	1	2.7
29. Bb frustrates instructors to improve their teaching skills.	4	10.8	10	27.0	10	27.0	11	29.7	2	5.4

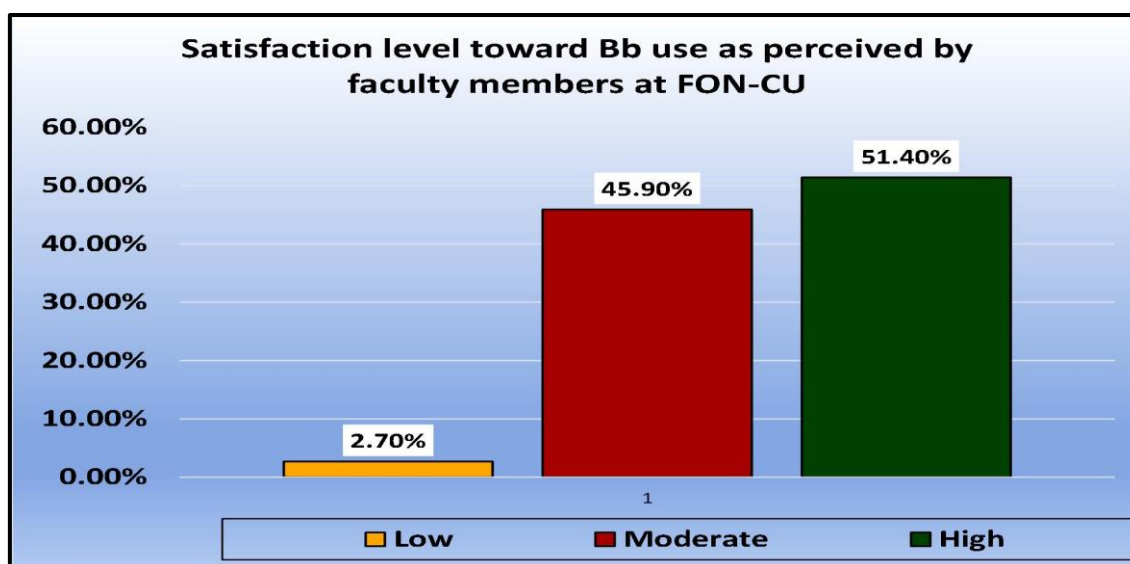


Figure 4: Satisfaction Level as Perceived by Faculty Members Towards Blackboard Using (N= 37)

Table 5: Perceived Challenges among Faculty Members at (FON) CU(n=37)

Items	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
	No	%	No	%	No	%	No	%	No	%
30. Bb system is harder to learn than expected	4	10.80	10	27.00	8	21.60	12	32.40	3	8.10
31. Bb requires special training for instructors.	13	35.10	20	54.10	4	10.80				
32. Bb requires special training for students.	13	35.10	21	56.80	3	8.10				
33. Bb utilization needs support from the college's administration.	14	37.80	20	54.10	3	8.10				
34. Bb is an unfamiliar way for instructors to transmit information.	7	18.90	14	37.80	7	18.90	7	18.90	2	5.40
35. Bb takes extra time to respond to students' questions	9	24.30	10	27.00	8	21.60	10	27.00		
36. Instructors are not motivated to use Bb	7	18.90	12	32.40	5	13.50	11	29.70	2	5.40
37. Instructors do not have enough time to be expert users of Blackboard.	9	24.30	16	43.20	4	10.80	6	16.20	2	5.40
38. Bb lacks the learning environment.	6	16.20	15	40.50	6	16.20	9	24.30	1	2.70
39. Bb lacks immediate feedback from instructors to students or vice versa.	6	16.20	10	27.00	4	10.80	16	43.20	1	2.70
40. Bb options may be restricted to particular operating systems.	2	5.40	10	27.00	15	40.50	8	21.60	2	5.40
41. Using the Bb system makes students anxious about their learning.	10	27.00	11	29.70	5	13.50	9	24.30	2	5.40

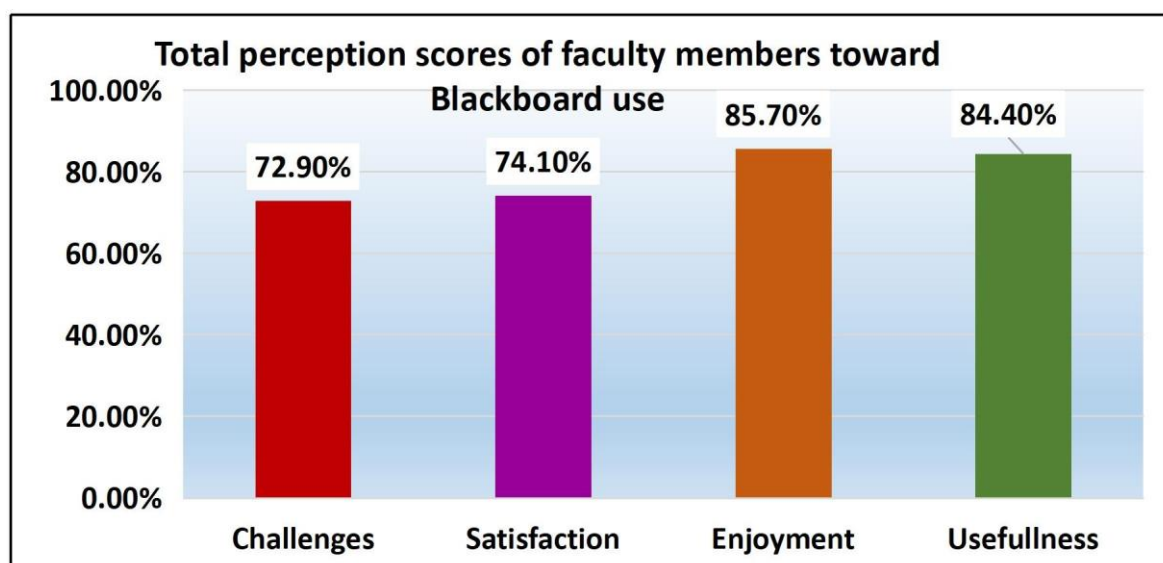
**Figure 5:** perception of Faculty Members Towards Using Blackboard LMS in Nursing Courses (N= 37)

Table 6: Correlation Between Faculty Members' Perceptions Towards Using Bb LMS and Their Personal Characteristics at FON-CU (N = 37).

Variables	Usefulness		Enjoyment		Satisfaction		Challenges	
	r	P	r	P	r	P	r	P
Sex	-.078	.646	-.094	.578	.211	.210	.194	.249
Age	-.464**	.004	-.326*	.049	-.318	.055	-.226	.178
Academic degree	-.195	.248	-.346*	.036	-.104	.542	-.285	.088
Department	-.031	.856	-.005	.976	.155	.358	.088	.604
Years of teaching experience	-.452**	.005	-.322	.052	-.080	.636	-.031	.854
Courses	-.241	.150	-.292	.080	.164	.331	-.049	.775
Attend	-.272	.104	.040	.815	-.043	.799	.171	.312

** . P value is highly significant at the level of ≤ 0.01

* . P value is significant at the level of ≤ 0.05

Table 7: Correlation between Subscales of Faculty Member Perception towards Using Bb LMS in Nursing Courses at FON-CU (n= 37)

Variable	Usefulness		Enjoyment		Satisfaction		Challenges	
	r	P	r	P	r	P	r	P
Usefulness								
Enjoyment	.444**	.006			.544**	0.001		
Satisfaction	.526**	.001	.544**	0.001				
Challenges	-.062	.715	-.075	0.965	-.144	0.395		

** Correlation is highly significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Discussion

Results of the current study showed that most faculty members were female, and nearly three-quarters of them were between the ages of 30 and 40, with a mean age of 37.36 ± 5.98 . Nearly two-thirds of faculty members work as lecturers, and one-third specialise in community health nursing, and nearly a third have 10 to fewer than 15 teaching years of experience with a mean score of 10.27 ± 5.27 . More than half of the faculty members have taught more than two courses, and more than three quarters of them have attended blackboard training courses.

These findings are supported by **Ibrahim, Mohamed, Aldhafeeri, and Alqadah (2019)**, who studied the perceptions of academic staff toward using Bb in the education system at Hafr Al-Batin

University on 174 faculty members from various colleges, reporting that almost two-thirds of the respondents were females, and half of them aged 40-49 years old, with a mean score of 39.5632 ± 6.62226 . As well as Elewa & Ebrahim (2021), who conducted their study on 203 faculty members from various institutions who were working at nursing faculties to assess their readiness for online teaching as well as the challenges and satisfaction they encountered throughout the COVID-19 epidemic and found that the highest percentage were females, more than one-third of them were between the ages of 40 and 50, and almost two-thirds of them had 10 to 15 years of experience. According to the researchers, the compatibility between the previous two studies and the current study could be attributed to the fact that nursing colleges were previously only for female students and have only recently begun to accept students of both sexes, so the number of female faculty members is currently the highest.

These results are also consistent with **El Zawaidy (2014)**, who conducted a study on 360 faculty members at King Saud University (Riyadh), King Khalid University (Abha) and Taif University-College of Education using Bb in online learning in Saudi universities to identify obstacles facing faculty members in the use of the Bb and identify the perceptions of faculty members who have been trained to use the Bb in education, and found that half of the participants were assistant professors, which corresponds to the academic degree "lecturer" in Egypt, and nearly half of them had 10 to less than 15 years of teaching experience. This goes in the same line as **Ibrahim, Mohamed, Aldhafeeri, & Alqdah (2019)**, who reported that more than half of the participants were associate professors, and almost half of them had ten to fifteen years of teaching experience with a mean score of 9.5575 ± 6.44986 .

Regarding faculty members' perception of the usefulness toward using Bb, results of the current study showed that most faculty members believe Bb is an effective approach to run an e-learning course, provide the ability to send email to students, and apply their time management abilities. They believe that Bb offers the required expertise to teach various e-courses, increases variety in advanced teaching approaches, and helps the teachers fulfil the learning demands of the students; and it gives students access to course resources, such as assignments, and encourages them to practise their teaching skills. According to the findings, more than three-quarters of respondents believe that Bb promotes teachers' efficacy and offers learning opportunities for students to acquire knowledge and receive the same classroom information.

There is no doubt that these findings focused on faculty members' willingness to use Bb in the classroom. The findings are consistent with **Cheok, Wong, Ayub, and Mahmud (2017)**, who conducted a qualitative study on educators' perceptions of e-learning in Malaysian high schools and discovered that almost all of them valued web-based learning for making a difference in their teaching work, organizing their educational and learning materials, and saving time when overhauling or finding specific information. materials, and being simple to use.

These findings, on the other hand, differed from **Ibrahim, Mohamed, Aldhafeeri, & Alqdah (2019)**, who reported that Bb does not inspire them to improve their teaching skills or allow them to satisfy students' learning needs. The differences between the two studies, according to the researcher, may be due

to the faculty members' needs for the required preparation and experience in using Bb, the need for an Internet sign that hampers the teaching process and the limited rules that oblige them to develop their technological skills in creating electronic materials.

In the current study, it was observed that most of the faculty members had a high perception of usefulness regarding Bb use, while the minority had either a moderate or low level, respectively.

This result is consistent with **Cilliers & Niekerk (2017)**, who conducted a study to analyze the attitudes of nursing instructors at a traditional university in South Africa. They utilized an LMS and discovered that lecturers rated Bb as a very valuable tool for increasing teaching and learning.

Regarding the perception level of enjoyment among FON-CU faculty when using Bb, most faculty approved that Bb relies on computer-based interactions, supports innovation in the use of ICT, enables trainers to build technical computer abilities, inspires teachers to improve teaching skills, and enhances the effectiveness of teaching. The current study also showed that most of the faculty members use Bb to help them monitor student utilization of courses; nearly three quarters of them consider Bb an interesting method for teaching and believe Bb gives a greater magnitude for lessons.

It seems clear from these results that most faculty members enjoy using Bb. This finding was consistent with **Ibrahim et al. (2019)**, who found that the majority of faculty members who enjoy using Bb say it is an exciting form for teaching, relies on computer-based interactions, examines student course usage, fosters ICT innovation, and promotes technical skills in the field of computers, **Al Meajel and Sharadgah (2018)**, who conducted a study to analyze faculty members' barriers to adopting the Bb System in teaching, found that Bb doesn't always increase teaching skills, teaching efficiency, or provide a more significant volume of lessons. In like manner, **Christie and Jurado (2009)**, who conducted a study about the obstacles of innovation in online education at the University College of Boras, reported that a faculty member needs to be persuaded of the importance of LMS. The results differed from the previous research in that most participants were unfamiliar with the Bb environment and were used to utilizing traditional teaching techniques and were hesitant to utilize Bb.

As illustrated in the current study, most faculty members experienced a high level of enjoyment when using Bb, whereas a minority had a moderate level of enjoyment.

Many studies, including **Ibrahim, Mohamed, Aldhafeeri, and Alqdah (2019)**, **Stickney, Bento, Aggarwal, and Adlakha (2019)**, conducted a study on 171 faculty members from various institutions of higher education to learn about their experiences teaching online and examine factors that might affect their satisfaction. **Hampton, Culp-Roche, Hensley, Wilson, Otts, Thaxton-Wiggins, and Moser (2020)** examined the level of teaching self-efficacy and satisfaction of online nursing faculty in a study of 100 faculty from multiple schools of nursing who taught at least one online course in RN to BSN or graduate nursing programs. From the standpoint of the researcher, this could be related to the fact that instructors who received training, guidance, technical and administrative support on management systems enjoyed it more than those who did not.

Regarding the level of satisfaction among FON-CU faculty members towards the use of Bb, the current study showed that most faculty members agree that Bb builds trust to facilitate learning, and more than three-quarters agree that Bb saves them time, effort, and more satisfaction in this teaching process. In addition, more than two-thirds agree that Bb motivates them more than other types of learning. Nearly two-thirds of them believe that BB improves student satisfaction in the teaching process, saving them time and effort.

Results of the current study also illustrated that more than half of faculty members believe Bb is a simple e-learning system to use, and more than a third of them disagree that Bb hampers students' efforts to develop their learning skills. While approximately two thirds are either neutral or disagree that Bb hinders professors' efforts to improve their teaching skills. This result was consistent with **El Zawaidy (2014)**, who reported that most faculty members in the survey group regard the Bb system as a simple-to-use educational online system that saves time and effort for both students and faculty members. Furthermore, **Al-Zahrani (2015)** conducted a study on 104 instructors affiliated with Saudi Arabian institutions of higher learning to examine faculty satisfaction with online teaching and discovered that more than three-quarters of the instructors were highly satisfied with online education in terms of student-to-student engagement and instructor-to-student interaction.

On the other hand, **Ibrahim, Mohamed, Aldhafeeri, & Alqdah (2019)** found that most Hafr Al-Batin University faculty members believe that Bb is a difficult e-learning system to use and that it does not save time or effort for faculty members. Furthermore, more than two thirds of them believe that Bb does not provide greater student happiness in the classroom. According to more than half of the participants, Bb frustrates students trying to improve their learning skills, according to 51.2 percent. From the researchers' point of view, the differences between the two studies may be due to a lack of technical skills and inadequate training of faculty members' and students.

Regarding faculty members' level of satisfaction toward Bb use, the results showed that more than half of the faculty members had a high level of satisfaction about the use of Bb, less than half had a moderate level, and the minority had a low level.

The current study is partially like the study of **Al-Zahrani (2015)**, who found that instructors' satisfaction with e-learning is largely neutral. In the same context, **Alenezi (2012)** reported that the faculty members' perceived satisfaction with e-learning was relatively high too, as reported by **Elewa & Ebrahim (2021)**, who reported that the highest percentage of respondents expressed moderate satisfaction. In a similar manner, **Gorain and Pal (2021)** conducted a study and found that respondents were moderately satisfied with online education.

In relation to perceived challenges encountered by faculty members at FON-CU when using Bb, the present study illustrated that most faculty members agree that Bb needs specific training for teachers and students. More than two thirds agree that they do not have enough time to become expert users of Bb. Furthermore, a majority of faculty members agree that Bb requires administrative support, and it is an unfamiliar way for teachers to transmit information. As well, more than half of them agree that Bb lacks a learning environment, and it takes a long time to answer student questions.

In this regard, **Al-Zwaidi (2014)**, who conducted a study on the use of Bb in distance courses in Saudi universities, discovered 360 teachers at King Saud University (Riyadh), King Khalid University (Abha), and Taif University-College of Education. Most of the faculty consider the Bb system to be easy to use and that the challenges faced by faculty differ across universities. According to the researchers' point of view, the gap can be attributed to a lack of technical

skills and inadequate training since faculty members who find it difficult to cope with Bb and deem it an ineffectual system lack technical skills and training.

Regarding faculty's total perception and satisfaction with Bb LMS in nursing courses, the ranking of the four subscales of perception, where the most important factor was perceived enjoyment of Bb use in the teaching system, followed by perceived usefulness, and then satisfaction, while the perceived challenges with use of Bb was rated as the least important factor. (This figure answers the research question.)

Previous results of the current study differed in part from that of **Ibrahim, Muhammad, Al-Dhafiri, and Al-Qadah (2019)**, which indicated that the most specific values for faculty members to use Bb included benefit and pleasure, respectively, and the third most important factor was the perceived challenges, while satisfaction came at the bottom of the list.

The results of the present study showed that there is a highly statistically significant negative correlation between faculty members' age and their perceived usefulness toward Bb use. This means that the older the faculty member is, the less they perceive Bb as being useful, and vice versa. This finding is logical. Younger generations may be more confident in their use of technology and possess the necessary abilities to do so effectively. This finding was inconsistent with that reported by **Al Nuaibi, Madrashi, and Ismail (2015)**, who conducted a survey of 257 faculty members to evaluate the use of Bb by faculty in colleges of applied sciences in Oman. They reported that while younger generations may be comfortable with technology in general, they may be inexperienced with Bb and thus lack the specific skills required to use them effectively.

Furthermore, there was a highly statistically significant negative correlation between faculty members' years of experience and their perceived usefulness toward Bb usage. This means that faculty members with fewer than ten years of experience had a more positive perception than those with more than ten years of expertise. In this regard, **Alghamdi and Bayaga (2016)**, who carried out a study on 222 faculty members in six universities to establish the relationships between faculty members' use and their attitudes towards LMS, they found that the younger generation is more likely to have a positive attitude toward using LMS in learning programs than the

older generation, which has a higher number of negative attitudes.

Additionally, there was a statistically significant negative correlation between faculty members' age, academic degree, and their perceived enjoyment of Bb use. This means that when qualifications improve, the perceived usefulness score decreases. This is reasonable because they had greater technological competence and skills, and the lecturers perceived Bb to be more useful. This result contradicted **Al-Ghamdi and Bija's (2016)** findings, which revealed that the younger generation was more likely to have a positive attitude towards the use of LMS in their teaching activities than the older generation, which had more negative attitudes. By contrast, **Ibrahim, Mohamed, Aldhafeeri, and Alqadah (2019)** found positive, significant differences between faculty members' perceptions of enjoyment toward Bb using their years of teaching experience, with those with greater teaching experience having stronger perceptions of pleasure compared to those with less than 10 years of teaching experience.

Based upon this study's findings, there are highly statistically significant correlations between three sub-levels of Bb use in teaching (usefulness and enjoyment, usefulness and satisfaction, and enjoyment and satisfaction), but no correlations between challenges and the other three sub-levels.

Limitations of the study

Due to Cairo University's unique use of the Blackboard platform, this study only included one university, and because the target group was limited to academic members at FON-CU, the generalizability of the research findings is limited.

Conclusion

The current study concluded that faculty members had a positive perception of using the Blackboard Learning Management System. According to the most important factor in using Blackboard in the teaching system for nursing courses at Cairo University, it was enjoyment, followed by faculty usefulness, and then satisfaction with Blackboard. Finally, faculty challenges to applying Blackboard were ranked as the least significant factor.

Recommendations

The following suggestions are made in light of the findings of this study:

- Continue to support a culture of online learning among faculty members' by posting an electronic guide or videos on the university's website on how to use Blackboard.
- Improving network connection efficiency to increase faculty members' use of the blackboard system and increase their technical abilities.
- Offering rewards such as recognition and certificates of appreciation to encourage faculty members to improve their productivity and performance.
- The authors of this study also recommend repeating this study with a large sample size and in diverse situations for generalization of results.

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Interest Conflicts

There are no conflicts of interest declared by the authors.

Author Contributions

The first author performed data analysis and wrote the manuscript. The 2nd and 3rd authors performed data collection, supervised, and reviewed the manuscript.

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