Teachers' Perceptions of Blackboard Collaborate's Effectiveness and Indicators of Quality

By

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Abstract

With the changing needs of society and technological advancements, online education has increased in popularity throughout higher education in recent years. For example, blackboard collaborate, a virtual classroom, is now being used widely in Saudi Arabia. Building learning communities has become increasingly important to improve the effectiveness of these learning environments. This study aimed to use the Community of Inquiry theoretical framework, which is composed of interrelated teaching presence, cognitive presence, and social presence, to determine the effectiveness of using Blackboard Collaborate. It adopted a descriptive study design and purposive sampling to select 200 participants who were faculty members at King Khalid University and Jazan University, Saudi Arabia. It was conducted during the academic year 2020-2021. An online survey with 36 items was administered to the selected faculty members, and their responses were recorded using a five-point Likert scale. The data analysis was carried out using SPSS software. In terms of the effectiveness of the Blackboard Collaborate, the study found that teaching presence was more important than cognitive and social presence. There was a strong relationship between teaching, cognitive and social presence. There was no significant gender difference observed in the faculty members' perception of cognitive and teaching presence.

Keywords: Blackboard Collaborate, Cognitive presence, teaching presence, Social presence, community of inquiry

1. Introduction

Blackboard Collaborate (BC), the synchronous virtual classroom software within the Blackboard, Learning Management System (LMS) was developed in 2010. It offers numerous

features to increase student interaction and participation, including two-way voice facilities; video camera feed for up to five cameras; instant classroom chat; an editable, interactive whiteboard; application sharing; file sharing; and participation features such as hand raising Blackboard, 2019. BC has been embraced by numerous universities as a part of the LMS because of its accessibility, universality, and ease of use. Lecturers perceive BC as a real-time virtual classroom, similar to the face-to-face classroom format in terms of student performance outcomes, although the two formats differ regarding the level of student engagement (Ertmer and Ottenbreit, 2010). The increased adoption of internet technology in daily life, such as social networking sites, encourages students to participate in online learning settings, where they can operate discussion forums, complete writing tasks, and receive feedback from teachers and peers. In order to support student-centered learning, which prioritizes students' interests, talents, and learning styles, there are increasing efforts to move the use of technology, notably Blackboard and Moodle, from communication tools to instructional activities.

1.1 The Community of Inquiry Framework

The Community of Inquiry (CoI) framework, which debuted in 2000 is a theoretical framework for the optimal design of online learning environment to support critical thinking. It proposes that a community of inquiry made up of professors and students, who are the main participants, who are the main participants, is where a good educational experience is embedded. This paradigm suggests that learning happens in a community as a result of the interaction between three key components: teaching presence, social presence, and cognitive presence. According to Swan, Garrison, and Richardson (2009), the CoI framework is a dynamic representation of key components that are essential for the growth of the community and the pursuit of inquiry in a learning environment.

1.1.1 Cognitive Presence

Masoumi and Lindstrom (2012) explain that cognitive presence develops through interaction between four phases of thinking inquiry: triggering events, exploration, integration, and resolution. In the e-learning context, a triggering event occurs when teachers pique students' curiosity regarding specific issues or problems, leading to further inquiry through questions Anderson, Rouke, Garrison and Archer (2001). Another effectiveness phase worthy of note is exploration, which occurs when teachers give students tasks to exchange information, discussion, and ideas through the BC as a group or individually. In the integration phase, teachers develop activities that encourage students to construct critical discourse and build their understanding of the reflections. Furthermore, during the resolution phase, teachers assign students tasks that allow them to try out and experience their newly learned ideas or concepts in a variety of educational settings (Garrison and Archer, 2007).

Teaching Presence

The gatekeepers of classroom activities, whether in a face-to-face or online educational environment, are the teachers. In traditional or online learning contexts, communication with the instructor is essential. The success of online teaching and learning is becoming increasingly dependent on teaching presence. According to a prior study by Arbaugh, et.al..(2008), having a strong teaching presence during the planning and organizing of a course helps students address some of their questions or concerns before the course begins. An online or blended course requires both the student and the instructor to be committed to the procedure. The instructors must specifically state participation requirements in the course curriculum, such as initial post deadlines, necessary responses by particular dates, and a description of the required length of contribution to debates.

Al-Balushi and Al-Abdali (2015) claim that instructors can use a variety of CoI model-

related elements while developing course activities on Blackboard to enhance effective teaching presence. Blackboard offers a variety of publishing tools that allow instructors to create PowerPoint presentations and lesson plans, and share online links. Students can thus read, search for, and store content. Teachers can publish content on Blackboard to students that will pique their students' interest, improve their communication skills, and encourage them to engage in good dialogues (Al-Balushi and Al-Abdali, 2015). For example, teachers can use Blackboard to share scientific research, visual and audio resources, PDF files, websites, articles, and books that can help students form more well-rounded viewpoints.

1.1.3 Social Presence

Garrison and Anderson (2003) state that the degree of social presence between teachers and students affects how eager participants are to participate actively in the learning process. The extent to which one senses communicative engagement is referred to as social presence. According to the social presence theory, the varying capacities of media to transmit visual and linguistic clues explain why some media are better than others at creating the psychological impression that other people are physically there (e.g., physical distance, gaze, posture, facial expression, and voice intonation). For instance, email lacks the social presence of videoconferencing or phone calls. When it comes to building and maintaining interpersonal relationships, media with a larger social presence are more effective in relational communication. Dabbagh (2005) asserts that teachers can help students improve their social skills by utilizing a number of Blackboard features. Through synchronous and asynchronous tools, students can communicate and collaborate even if they are geographically separated. Additionally, discussion boards enable students to exchange files and maintain constant communication. Other Blackboard facilitates posting area and virtual chat, can support formal education and involve students in learning activities to help teachers accomplish the course's objectives. These Blackboard features can enhance students' learning experiences by promoting self-learning moderation and boosting communication skills.

Through BC, instruction can be provided asynchronously, with lecturers uploading course materials that students can view whenever they want. The use of BC tools such as blogs, wikis, and discussion boards helps students communicate with their peers and teachers whenever they want, which is this mode's greatest benefit. The synchronous mode is an alternative for online learning and allows for real-time interaction between students and teachers via live video streaming. By utilizing web-conferencing features like stereo sound teleconferences, real-time polling, quizzes, application sharing, messages exchange, playing of audio and video files, data transfer, smartboard, sharing web browsing, breakout rooms for small group discussion, and recording, enable a richer degree of synchronous interaction that resembles on-campus classrooms. Decreased isolation through participation in online social and learning communities, instant response from the teacher, and teacher nonverbal communication cues via video feed are all benefits of this mode. Connections with classmates and lecturers can be strengthened by the spontaneity of live discussion.

The disadvantages of this distribution method include a lack of scheduling flexibility; technical difficulties during live delivery, such as poor audio or video quality; and network issues. Such challenges detract from the learning activity for the students.

Using the Components of the Framework to Evaluate the Effectiveness of Blackboard-based Teaching

In recent years, teachers throughout Saudi Arabia's educational system have employed both blended learning and Blackboard. However, during the Covid-19 pandemic, Blackboard became the primary teaching method. Therefore, the authors chose to investigate the extent to

which Blackboard facilities teacher presence, cognitive presence, and social presence and thereby enables high quality of education, according to university faculty members. The two objectives of this study were to assess teaching, cognitive, and social presence as quality indicators of the efficacy of Blackboard instruction and to assess gender differences in perceptions of teaching, cognitive, and social presence

2. Methodology

2.1 Study Design

An exploratory study design was adopted to assess teacher's perception of the Blackboard's effectiveness and quality indicators. A questionnaire on teaching presence, cognitive presence, and social presence was used to assess the quality indicator.

2.2 Study Setting & Participants

This study was conducted in the academic year 2020–2021. It was carried out in two public universities in Saudi Arabia's Asir region that used Blackboard instruction during the Covid-19 outbreak. The 200 participants, who were selected using purposive sampling, were faculty members working in the college of Applied Medical Science, Arts & Science at King Khalid University and Jazan University. All the participants were given an explanation of the purpose of the study and the questionnaire and were requested to respond to the survey after filling in the informed consent form. The researcher explained that confidentiality and anonymity would be preserved and that the collected data would be used for research purposes only. Faculty members who gave consent to participate were then asked to complete an online survey through a Google form. A stipulated period was provided for the participants to complete the questionnaire.

2.3 Instrument

This study was conducted with an online survey consisting of 36 items assessing three components, namely, cognitive presence (8 questions), teaching presence (11 questions), and social presence (17 questions) in relation to BC. Each item consisted of a statement with a five-point Likert scale, i.e., strongly disagree, disagree, true sometimes, agree, strongly agree.

2.4 Data Collection and Analysis

The data were collected using an online survey consisting of close-ended statements determining faculty members' perception of Blackboard's effectiveness. Participants were asked to rate their agreement with the statements on a 5-point Likert scale.

The collected information was coded and entered into the SPSS software version 20. To determine the reliability and validity of the data, the Cronbach's alpha reliability test and factor analysis with varimax rotation were used. A Spearman's rank correlation was used to find the relationship between the components of teachers' perceptions of Blackboard's in terms of cognitive, teaching, and social presence. Furthermore, a linear regression analysis was used to determine which component was the most important mong the respondents. The gender difference in the faculty members' perception of Blackboard's effectiveness was observed using an independent t-test.

3. Results

Table 1 shows that the overall Cronbach's alpha coefficient for the instrument's reliability and validity is 0.928, indicating that the concept of the instrument can be rated as "excellent" (George and Mallery, 2003). Furthermore, Table 1 shows the Cronbach's alpha

coefficient for each component of the instrument. While conducting factor analysis with varimax rotation, the total variance explained the sum of squared loadings as 72.465%. In addition, factor analysis extracted three components, which jointly explained 72.465% of the variance in the teacher's perceptions of blackboard effectiveness.

Table 1: Reliability and validity of the instrument

Perception of the Presence (α=0.928)	Factor loading
Cognitive Presence (α=0.859)	
Online learning helps teachers to create students' curiosity through the blackboard.	.673
Online learning provides teachers and students with opportunities to exchange information through blackboards.	.794
Online Learning gives teachers the tool of supporting or contradictory ideas through a blackboard.	.730
Teachers can motivate students' backgrounds by brainstorming ideas on the blackboard.	.757
Teachers can create critical discourse to construct meaning through the blackboard with students.	.690
Online discussion can help students answer questions raised in the course activities on the blackboard.	.711
In the process of online learning, blackboard offers teachers the tools for solving any educational problems.	.804
Online learning offers teachers tools that can motivate students to apply the techniques and knowledge that they learn from using blackboard in this course to other courses.	.649
Teaching Presence (α=0.922)	
I can deliver important course topics through blackboard.	.738
I can deliver course goals through blackboard.	.809
I can provide clear instructions on how to participate in course learning activities.	.675
I can clearly communicate important due dates/time frames for learning activities.	.763
I can give the students lessons through blackboard.	.679
I can evaluate the students' performance through assigned projects on the blackboard.	.719
I can evaluate the students' performance through assignments and tests on the blackboard.	.812
I can regularly comment on my students' work on the blackboard.	.826
I can facilitate the students' discussion through blackboard.	.803
I am an expert on my subject.	.619
I can share with students' resources and my knowledge through blackboard.	.828
Social Presence (α=0.849)	
The teacher can form distinct impressions of some course participants.	.855
In blackboard courses, the teacher can use humor, self-disclosure, and emoticons.	.708
In blackboard courses, the teacher can share personal stories and experiences.	.734
Blackboard allows students options for addressing their instructors.	.650

On the blackboard, the teacher can ask his/her students questions related to the topic.	.750
In blackboard courses, the teacher provides frequent feedback.	.692
In blackboard courses, the teacher can express appreciation.	.605
The teacher can clearly communicate his/her quality expectations.	.707
The teacher should encourage learners to share experiences, examples, ideas, and feelings.	.658
In blackboard, the teacher should make active engagement a significant part of the course grade.	.675
The teacher should communicate his/her course in a purposeful, trusting environment.	.827
On the blackboard, the teacher should allow the students to greet their colleagues.	.783
On the blackboard, the teacher should address students by name.	.706
On the blackboard, the teacher can reflect on the course openly.	.599
On the blackboard, the teacher should allow the sharing of personal information among the students.	.668
The teacher should use inclusive pronouns like "we" and "us".	.753
The teacher should include collaborative learning activities in his/her course structure.	.737

Table 2: Percentage of respondents towards the teacher's perceptions of blackboard effectiveness

Components	Strongly disagree	Disagree	True sometimes	Agree	Strongly agree
Cognitive Presence	-	7.1%	19.5%	60.9%	12.5%
Teaching Presence	-	0.8%	6.3%	57.7%	35.2%
Social Presence	-	-	4.7%	73.4%	21.9%
Overall Presence	-	-	10.2%	72.6%	17.2%

Table 3: Descriptive Statistics for the teacher's perceptions of blackboard effectiveness

Variables	Mean	SD
Cognitive Presence	3.79	0.749
Teaching Presence	4.27	0.611
Social Presence	4.17	0.488
Overall Presence	4.07	0.520

Concerning three components of the Backboard's effectiveness, 73.4% of the participants agreed that Blackboard enabled a cognitive presence. More than 90% of them agreed that it facilitated a teaching presence and a social presence. Importantly, 89.8% of the faculty members agreed that Blackboard was effective overall (Table 2). Table 3 shows the means and standard deviations (SDs) of the teachers' perceptions of Blackboard's effectiveness. Among the three components, the mean value of teaching presence (4.27) was high. The overall presence had a mean value of 4.07.

Table 4: Correlation between the components of teacher's perceptions of blackboard effectiveness

Variables	Cognitive Presence	Teaching Presence	Social Presence
Teaching Presence	0.428*		

Social Presence	0.285*	0.601*	
Overall Presence	0.650*	0.674*	0.641*

Note: *Significant at the 0.001 level (2-tailed)

Table 4 illustrates the Spearman rank correlation between the components of teachers' perceptions of Blackboard's effectiveness and overall presence. A strong positive relationship was observed between the teaching presence and overall presence. Further, a weak positive relationship was found between cognitive and social presence.

Table 5: Influence of the components of teachers' perceptions of blackboard effectiveness on the overall presence

R	R^2	Adjusted R^2	F
0.826	0.682	0.674	88.568*
	Beta	**T**	**Sig.**
Constant	0.378	1.561	0.121
Cognitive Presence (CP)	0.288	7.136	0.000
Teaching Presence (TP)	0.227	3.890	0.000
Social Presence (SP)	0.391	5.896	0.000

Note: *Significant at the 0.001 level

Table 5 shows that the regression model was significant ($p<0.05$), and the three components showed 82.6% of the total variation in overall presence among faculty members. A strong and positive relationship was also observed between the three components and overall presence (R = 0.682). The 't' value of all three components, such as cognitive, teaching, and social presence, are significant ($p<0.05$). This finding indicates that all three components are significant predictors of overall presence among faculty members. Based on the standardized coefficient, the most significant predictor was 'social presence'.

Table 6: Gender-wise comparison of teachers' perceptions of blackboard effectiveness using an independent t-test

Components	Gender	Mean	SD	't' value	*p* value
Cognitive Presence	Male	3.78	0.762	0.266	0.836
	Female	3.81	0.732		
Teaching Presence	Male	4.25	0.634	0.685	0.849
	Female	4.33	0.566		
Social Presence	Male	4.13	0.457	1.390	0.019*
	Female	4.26	0.539		
Overall Presence	Male	4.05	0.460	0.710	0.007*
	Female	4.12	0.625		

*Significant at 0.05 level

Table 6 shows a significant gender difference in the faculty members' perceptions of social presence and overall presence (p<0.05). However, no significant gender difference was observed in the faculty members' perceptions of cognitive presence and teaching presence (p>0.05).

4. Discussion

The goal of the current study was to determine how teachers felt about the cognitive, instructional, and social presence of Blackboard. Of the teachers who were surveyed about

their opinions of the blackboard's usefulness, 73.4% concurred that it enabled a cognitive presence. More than 90% of them agreed that there was a social and teaching presence. Blackboard was perceived as generally effective by 89.8% of the respondents. This demonstrates the significance of teaching presence and social presence for professors in helping students comprehend the subject matter.

Regarding the effectiveness of Blackboard teaching, the highest mean score (4.27) was observed for teaching presence. This finding reflects how Blackboard provides a more convenient way for teachers to deliver course material, evaluate student's performance, and encourage group discussions among students. This discussion helps teachers evaluate how effectively the students have grasped the subject matter. The fact that teaching presence had the strongest relationship with the educational experience through Blackboard can be attributed to the fact that online students want teachers who are instructional leaders in their online classes (Garrison, 2007). Another study depicts the graduate-level student with a variety of personal and professional responsibilities Garrison, Anderson, and Archer 1999). It also found that the most essential component for blackboard instruction is the presence of the teacher. Teachers are critical in ensuring that Blackboard supports student-centered learning. Students appear to require the instructor's presence in terms of organization, communication, feedback, and support, but the formation of the teaching presence and the attempted relationships associated with according to the results. Teacher presence (i.e., personality qualities and dispositions) may have minimal bearing on how active a teacher is in the classroom. According to Garrison and Cleveland-Innes ,2005), a strong teaching presence on course design and structure also assisted students in getting some of their questions or concerns at the beginning of the course answered. An online or blended course requires both the student and the instructor to be committed to the procedure. The study found that social presence is crucial to the effectiveness of online instruction. In order to promote community building inside the course, instructors might purposely design social spaces in their online environments. As a result, the efficacy of online teaching and learning is increasingly dependent on teaching presence.

A significant association was found in this study between the teaching presence and the overall presence. This finding is confirmed by earlier research by Sheridan and Kelly ,2010) that explains how teachers initiate and shape activities or learning problems that turn into triggering events, playing a key and crucial role in triggering events. The focus is kept on the educational outcomes since it also helps to avoid any distractions from these occasions. Additionally, this study found that social presence performed better than cognitive and instructional presence. This finding is in line with a previous study by another researcher, who stated that an "absence of social presence leads to an inability to express disagreements, share viewpoints, explore differences, and accept support and confirmation from peers and teacher". In a prior research, Gurley (2018) discovered that comfort in online discussion was the most significant factor connected with variance in the respondents' cognitive presence and that social presence as well as creating a pleasant setting for talks were critical for the development of cognitive presence. Additionally, the study found no difference in the perceptions of social presence or the efficacy of Blackboard teaching between male and female faculty members. However, there was a significant difference in the perceptions of the cognitive presence and teaching efficacy. The current study discovered a gender difference in online course communication patterns, which was confirmed by previous study conducted by Law, Geng and Li ,2019). Additionally, the previous study discovered that females developed greater social networks and interacted with others on a higher level than males, which was advantageous in online courses and likely to benefit female students more than males. However, the findings showed that males participated more actively in face-to-face classroom interaction than females, males were better at adapting to online debates braced by teachers.

5. Conclusion

Many university courses in Saudi Arabia are now delivered primarily through Blackboard. While these classes previously used a blended learning approach, it was found that most instructors have relied heavily on Blackboard since the outbreak of Covid-19, cutting back on in-person lectures. The use of Blackboard, however, has not resulted in improved educational outcomes. It is therefore recommended that learning and teaching activities should be managed and synchronized in blended learning environments using LMSs in order to ensure a better and more successful educational experience. In this way, the advantages of online and in-person encounters can be effectively combined. The present study concluded that teacher presence is the most significant component of sucessfully delivering the university courses via Blackboard, recognizing the significance of teacher, cognitive, and social presence.

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