Assessment of the Use of the Blackboard E-learning Management System from the Point of View of University Students During the COVID-19 Pandemic

Dr: Hanan Ahhmed Saleh Aifan

Assistant Professor, Najran University

Abstract: The current study aimed to investigate university students' views of online learning using Blackboard during the COVID-19 pandemic and the platform's benefits and challenges. The participants of the study were 150 female students at Najran University who participated in an electronic survey designed for the purpose of the study. Analyzing the data using different descriptive statistics (means, SDs,…etc), the findings demonstrated that the sudden shift to entirely online learning using Blackboard during the pandemic caused intense stress and worry and made students feel uncomfortable. However, the participants reported that Blackboard provided them with some benefits during the pandemic, including being able to track their grades and deadlines for assignments, improving their technology skills, enabling them to work on assignments at any time, increasing their sense of responsibility for their learning, improving their communication with their instructors, facilitating the effective delivery of course materials, and enabling them to accomplish their assignments efficiently. On the other hand, the findings revealed some challenges facing the participants when learning online using Blackboard, including Internet issues, the high number of assignments given by instructors, and the short time afforded for exams on Blackboard. In addition, students reported that they currently do not prefer the fully electronic learning using Blackboard, but they prefer the traditional learning. However, as for resuming school after the pandemic ends, students reported they would prefer a fully traditional learning.

Keywords: electronic learning, Blackboard, LMS, COVID-19, pandemic, online learning.

تقييم استخدام نظام إدارة التعلم الإلكتروني Blackboard في التعلم من وجهة نظر طالبات المرحلة الجامعية

أثناء جائحة كورونا COVID -19

د: حنان أحمد صالح عيفان

أستاذ مساعد جامعة نجران

المستخلص:

تهدف الدراسة الحالية إلى البحث في آراء الطالبات الجامعيات حول التعلم الإلكتروني باستخدام البلاك بورد أثناء جائحة كورونا COVID-19 وفوائد البلاك بورد وعيوبه. بلغ عدد المشاركات في الدراسة ١٥٠ طالبة بجامعة نجران شاركن في استبانة إلكترونية مصممة لغرض الدراسة. بتحليل البيانات باستخدام طرق إحصائية وصفية مختلفة (المتوسط، الانحراف المعياري... إلخ)، كشفت النتائج أن التحول المفاجئ إلى التعلم الإلكتروني الكلي باستخدام البلاك بورد أثناء الجائحة تسبب في توتر شديد وقلق لدى الطالبات، وجعلهن يشعرن بعدم الارتياح. وبالرغم من ذلك، فقد أفادت المشاركات بأن البلاك بورد زودهن ببعض الفوائد أثناء الجائحة مثل: القدرة على تتبع درجاتهن والمواعيد النهائية للمهام، تحسين مهاراتهن التكنولوجية، تمكينهن من إنجاز المهام الدراسية في أي وقت، زيادة إحساسهن بالمسؤولية تجاه تعلمهن، تحسين تواصلهن مع أساتذة المقررات، تسهيل تقديم المواد العلمية للمقررات بشكل فعال، تمكينهن من إنجاز مهامهن الدراسية بكفاءة. من ناحية أخرى، كشفت نتائج الدراسة عن بعض التحديات التي واجهت الطالبات أثناء التعلم إلكترونياً باستخدام البلاك بورد، بما في ذلك مشكلات الإنترنت، والعدد الكبير من المهام الدراسية التي يفرضها أساتذة المقررات، والوقت القصير المتاح للامتحانات على البلاك بورد. بالإضافة إلى ذلك، أفادت الطالبات أنهن حاليًا لا يفضلن التعلم الإلكتروني الكلي باستخدام البلاك بورد، ولكن يفضلن التعلم التقليدي في بيئة الصف. أيضًا، بالنسبة لاستئناف الدراسة بعد انتهاء الجائحة، أفادت الطالبات أنهن يفضلن التعلم الحضوري الكلي في بيئة الصف.

الكلمات المفتاحية: التعلم الإلكتروني، البلاك بورد، نظام إدارة التعلم LMS ، كوفيد-١٩، الجائحة، التعلم عبر الإنترنت.

(*) للمراسلة:

دكتورة: حنان أحمد عيفان

قسم: المناهج وطرق التدريس، كلية: التربية، جامعة: نجران، ص ب: ٨٨٩١ رمز بريدي: ١٠٠١١ المدينة: نجران المملكة العربية السعودية.

(*) Corresponding Author:

Doctor: Hanan Ahmad Aifan Dept: Curriculum &Teaching Faculty: Education University: Najran. P.O. Box: 1988, Code: 11001, City: Najran Kingdom of Saudi Arabia.

e-mail: haayfan@nu.edu.sa

Introduction

There is no doubt regarding the effects that COVID-19 pandemic has brought about in the world. After the World Health Organization (WHO) declared COVID-19 an international pandemic on March 11, 2020, many aspects of life across the globe were severely impacted (Mailizar et al., 2020). The WHO recommended maintaining physical distance as a measure to protect people from the virus. One aspect of life that has been affected by the COVID-19 pandemic is education. Educational institutions suddenly shifted from traditional to entirely online and distance learning. This rapid transition has had serious impacts on students and instructors, as institutional technical resources were insufficiently prepared for this change. Crawford et al. (2020) concluded that universities rapidly closed their face-to-face operations and moved to digitalized education. Some universities were already partially prepared for this endeavor given the university had some blended or fully online offerings, while other had a lot more ground to cover. Nevertheless, as nobody knows when this pandemic will end, educational institutions around the globe have decided to use their available technical resources to create online learning materials for students of all academic fields (Kaur, 2020).

The Saudi government shut down all schools on March 8, 2020 as a preventive and precautionary measure. Ten hours later, the Saudi minister of education announced that the Saudi education system would shift from traditional to entirely distanced e-learning education utilizing different virtual platforms and learning management systems (Saudi Ministry of Education, 2020).

Electronic learning, or 'e-learning,' is learning that uses digital and electronic tools and media. The term 'e-learning' is used to describe different types of learning, including distributed learning, online-distance learning, and hybrid learning (Maltz & Deblois, 2005). The OECD (2005) defines 'e-learning' as the use of information and communication technologies in diverse processes of education to support and enhance learning in institutions of higher education, including the usage of information and communication technology as a complement to traditional classrooms, online learning or a mix of the two.

It is obvious that e-learning has helped with education continue despite the lockdown due to the COVID-19 pandemic. Some of the benefits of e-learning when it is adopted in higher education include flexibility, access to a large amount of information, and the ability to take into consideration learning differences, focus on learners' needs, and reduce the cost of traveling to and from classes. The adoption of e-learning provides institutions and their students with flexible time and place of delivery, increases the opportunity for interactivity between students and teachers during content delivery, and permits each student to study at his or her own pace and speed (Smedley, 2010 & Algahtani, 2011).

One of the e-learning systems that has been utilized during the COVID-19 pandemic is Blackboard, a learning management system (LMS) that allows students and instructors to interact and meet in virtual classes. Blackboard has greatly helped with the continuation of learning, without adverse side effects during the pandemic. It enables instructors to provide course materials that can be remotely accessed at any time and from anywhere using personal computers or smart devices, and it has the following

functionalities: discussion boards, virtual chats, online quizzes, discussion forums, an grading system, and more. It provides a safe environment for students and instructors to meet when there are social distancing requirements. This social distancing enabled by gathering online can contribute to limiting the spread of the novel coronavirus. Students and instructors can continue to communicate and interact online via Blackboard during the pandemic.

Despite all the rapid changes that have happened worldwide because of the COVID-19 pandemic, few recent studies have explored the challenges and opportunities associated with e-learning utilizing LMSs such as Blackboard during a pandemic (Mailizar et al., 2020). Additionally, few studies have examined the effectiveness of e-learning via the Blackboard online learning platform during the pandemic. Therefore, the current study aims to investigate students' views of their online learning experience utilizing Blackboard during the COVID-19 pandemic. Mailizar et al. (2020) suggest that future research should investigate students' opinions regarding online learning via Blackboard to examine the advantages and challenges faced by students during pandemics because students' voices are important to this issue.

Definition of Terms

Blackboard: is a learning management system and web-based virtual learning environment. It is defined as the online learning platform where instructors and students can meet, interact, discuss, and complete tasks, assignments , and tests (Bradford et al., 2007).

Learning Management System LMS: is a software application for the administration, documentation, tracking, reporting, and delivery of educational courses (Bradford et al., 2007).

Coronavirus disease COVID-19: is an infectious disease caused by the SARS-CoV-2 virus. Most people infected with the virus will experience mild to moderate respiratory illness and recover without requiring special treatment. However, some will become seriously ill and require medical attention (Wang et al. , 2020).

Electronic Learning: is the use of digital and electronic tools; such as learning management systems and distance education, for learning.

Literature Review

E-Learning; Advantages and Disadvantages

Studies have demonstrated that there is no common definition for the term 'e-learning'. Keller and Cernerud (2002) define e-learning as learning that is internet-enabled or web-based. It is the use of information and communication technologies in diverse processes of education to support and enhance learning in higher education institutions and includes the usage of information and communication technology as a complement to traditional classrooms, online learning or a mix of the two (OECD, 2005). Abbad et al. (2009) define e-learning as learning that is enabled electronically and powered by the use of digital technologies.

Algahtani (2011) categorizes e-learning into two types. The first category of e-learning is computer-based learning, which includes the use of a full range of hardware and software generally used as

information and communication technology. Each component can be used in one of two ways: computer-managed instruction, in which computers are employed for the purpose of storing and retrieving information to aid in the management of education, and computer-assisted-learning, in which computers are used instead of traditional teaching methods by providing interactive software as a support tool within class or as a tool for self-learning outside the class. The second category of e-learning is internet-based learning. This type is a broad expansion of computer-based learning that makes the content available on the internet (Algahtani, 2011).

In the educational field, Zeitoun (2008) classified modes of e-learning into three categories: an assistant mode, which supplements traditional teaching methods as needed; a blended mode, which offers short-term combination of online and traditional teaching methods; and a completely online mode, which involves exclusively using online learning. The completely online mode can be divided into two types, synchronous or asynchronous, determined by the chosen timing for interaction, according to Algahtani (2011). Synchronous timing involves instructors and/or learners accessing the online platform at the same time. Asynchronous learning allows all participants to post communications to any other participant over the internet at any time (Algahtani, 2011).

In Saudi higher education, e-learning has evolved rapidly and widely according to Alshehri (2016). Algahtani (2011) classified three models of e-learning in Saudi higher education: blended, adjunct, and online models. The adjunct model is when e-learning is used to assist learning in a traditional classroom to provide relative independence to the learners. The blended e-learning model involves a mixture of traditional and e-learning methods in a classroom setting. The third model, online, is an entirely e-learning model that does not involve traditional learning settings (Algahtani, 2011).

Alanazi and Alshaalan (2020) argue that in the shift to e-learning due to the COVID-19 pandemic, the majority of Saudi faculties have utilized several LMSs or telecommunication applications for teaching, such as Blackboard, Zoom, and Microsoft Teams. Algahtani (2011) argues that the benefits of e-learning are greater than the benefits of traditional learning if e-learning is properly used and applied. Some of the advantages of adopting e-learning in education found by previous studies are as follows: it provides a great deal of flexibility in terms of the time and place for students to learn, it allows easy access to a large amount of information for both students and instructors, it facilitates interactivity and collaboration between students and instructors, it allows for taking individual differences into consideration, it permits self-paced learning, it motivates students to learn, it facilitates exchanging and respecting different points of view, and it is cost effective since there is no need for students to travel and no need for multiple buildings to accommodate large numbers of learners (Smedley, 2010 and Algahtani, 2011).

Alanazi and Alshaalan (2020) studied faculty members' views on the use of e-learning in Saudi medical and health education during the COVID-19 pandemic. The findings showed that the majority of the faculty were enthusiastic and confident about using e-learning in teaching and that e-learning is a useful tool that could be implemented in their courses. The findings of the study also revealed that e-learning/teaching gives instructors the opportunity to work at their own pace at any time and

from anywhere and helps them avoid difficulties attending formal sessions and in-person meetings. Additionally, the majority of the instructors reported that disagreed that e-learning has created more problems, such as plagiarism, security issues and technical issues, than it has solved.

On the other hand, adopting e-learning in education has brought about some challenges. Researchers have demonstrated that the learning process is much easier using traditional methods given the lack of face-to-face interaction on online platforms. Additionally, it is difficult to control or regulate activities such as cheating and plagiarism. It also negatively impacts socialization and highlights the role of instructors as directors of learning. Moreover, hands-on scientific practical experiences are more difficult to provide through e-learning, and it brings about unanticipated costs in both time and money due to the costs associated with the heavy use of certain online services (Lewis, 2000; Almosa, 2002; Marc, 2002; Klein and Ware, 2003; Hameed et al., 2008).

Al-Draiby (2010) discussed some of the challenges that arise when implementing e-learning in Saudi higher education. These challenges include technical obstacles, material and financial obstacles, organizational and administrative obstacles, and obstacles associated with the education community.

However, in the face of the COVID-19 pandemic and shifting to entirely e-learning methods using LMSs, there should be more investigations into the challenges involved in adopting e-learning, as it has become the main method for helping instructors and students ensure acceptable outcomes.

Blackboard, a Learning Management System (LMS)

In 1997, Blackboard LLC was founded by two educational advisors, Matthew Pittinsky and Michael Chasen, as a consulting firm to provide technical standards for online learning applications (Bradford et al., 2007). Then, it was transformed into a nonprofit organization within the National Learning Infrastructure Initiative of Educause: IMS Global Learning Consortium. The vision behind Blackboard was to provide college professors with a user-friendly means to put course information such as syllabi, reference sites, and study guides on the web. One year later, Blackboard joined with CourseInfo LLC, a course management software provider and startup company at Cornell University, and released their first software product for online learning. After that, Blackboard Inc. developed a Richmond-based competitor, MadDuck Technologies in 2000. Later, in January 2001, Blackboard purchased CampusWide Access Solutions Inc. from AT&T and CEI SpecialTeams from iCollege Inc. Then, Blackboard LLC started to purchase their competitor companies, such as Promethius, which they bought from George Washington University. In 2004, Blackboard went public and released plans to raise up to $75.2 million in an initial stock offering. Since then, Blackboard Inc. has merged with rival e-learning software company WebCT, and together, they control up to 80 percent of the academic course management system market in North America (Bradford et al., 2007).

Bradford (2006) argued that Blackboard is used by more than 70 percent of U.S. colleges and universities. Blackboard included over 12 million users in over 60 countries in 2006. Used in over 2,200 educational institutions, Blackboard is offered in 12 languages and contains more than 2,500 supplemental features from educational publishers. Blackboard Inc. (BBBB) is traded on the NASDAQ exchange, and the trading price doubled in 2005 (Jayson, 2006).

Bradford (2006) demonstrates some benefits of using Blackboard, including (1) increased availability of course materials, (2) quick feedback, (3) improved communication, (4) assignment tracking, and (5) skill building. With the benefit of increased availability, students can access their course material on Blackboard at any time and from anywhere and can submit and download assignments, lectures, slides, videos, and audio, according to Bradford (2006). AlKarani and AlThobaity (2020) revealed that students reported that when they attend lectures on Blackboard, they do not have to spend time preparing for and traveling to school.

According to Bradford (2006), students can obtain two types of feedback: faculty-initiated feedback and automated feedback. Students can obtain their scores on exams and quizzes immediately and confidentially after submitting their assignment or responses on Blackboard. Additionally, Blackboard improves communication by providing students with four options for communication: announcements, discussions, virtual classrooms, and email. Using the announcement function, faculty members can immediately send messages related to the course to students. With the discussion function, faculty members can create topics of discussion related to the course and encourage students to participate by responding to the questions and comments of the instructor other students. By answering others' questions and participating in discussions on Blackboard, students can be supported and find solutions to their problems (Bradford et al., 2007).

AlKarani and ALThobaity (2020) stated that many participants reported that interactions in lectures using Blackboard were better than their interactions and participation in traditional lectures for some reason. For example, students were absent from traditional lectures more than they were for lectures on Blackboard, and students felt more comfortable participating through Blackboard than in traditional lectures where they felt shy about participate and afraid to give wrong answers.

Moreover, the virtual classroom function enables faculty members to give live lectures to their students. Blackboard also enables faculty members to record these lectures to help students go back after the class is over and watch the lectures at their pace, which helps accommodate individual differences among learners. The virtual classroom provides faculty and students with chatting, audio, and video functions so that they have live interactions. Blackboard also has an email function, where students' email addresses can be stored and faculty can send email to one student, a group of students, or all students (Bradford et al., 2007).

The fourth benefit of Blackboard is tracking. With this function, faculty members can track students' assignments, the dates and times of submission and the modification of assignments as well as identify late assignments. Students, on the other hand, can track their progress by viewing the gradebook (Bradford et al., 2007).

Moreover, Blackboard provides students an opportunity to improve other skills such as organization and time management. Students can enhance their skills to match course expectations. They can also learn to use their time wisely by viewing posting dates and deadlines for all documents posted by instructors and by checking the course calendar or the gradebook (Bradford et al., 2007).

However, the use of Blackboard may present some problems that might negatively affect student

learning. A common major problem is a lack of Internet access and/or essential devices (e.g., computers, laptops, smart phones, etc.) for some students, especially those with low incomes. An additional difficulty is that it is hard to learn online for some users. Bradford (2006) argues that Blackboard is hard to learn on. The argument for this limitation of Blackboard was supported by a study conducted at University of Wisconsin. The findings of the study revealed that faculty, students, and staff found that learning to use the course management systems on Blackboard was harder than expected. The findings also showed that the faculty viewed Blackboard management systems as inflexible and time consuming to use, and many students were not proficient with using Blackboard (Carnevale, 2003).

Another limitation of Blackboard is the capability and competency of users to utilize its tools. Mioduser et al. (1999) argued that students with in-depth knowledge of how to use Blackboard will gain more from utilizing Blackboard than those with less experience and skills. Additionally, instructors' awareness, competency with using Blackboard, and teaching method can present major difficulties for students when utilizing Blackboard. When instructors are knowledgeable about Blackboard and its different advantages and tools, they are more adept at sharing their course materials and helping students obtain a good understanding of the course material. On the other hand, when students are competent in utilizing Blackboard for their courses, they will experience more benefits, and their learning outcomes will be enhanced. Being competent at using Blackboard is very important for both instructors and students (Alturise, 2020).

Additionally, the Blackboard interface can be a source of major difficulty for some instructors and students. Cigdem and Topcu (2015) emphasized that the Blackboard interface needs to be user-friendly for students and instructors, but it has been a major challenge to convince web designers and web developers to adjust the websites to make them meet the needs of instructors dealing with lockdowns and social distancing during the pandemic.

As previous studies examined the advantages and limitations of Blackboard in the era before the crisis, it is very important to investigate its effectiveness and challenges specifically during a pandemic.

Utilizing Blackboard for Learning During the COVID-19 Pandemic

As the whole world is facing the COVID-19 pandemic, most educational institutions have been affected by lockdown measures and have adopted e-learning in response to the preventative measures enacted. In most Saudi higher educational institutions, Blackboard has been the online platform used to deliver university courses. Studies have demonstrated that Blackboard has provided students with some benefits during the COVID-19 pandemic. One of the LMS's advantages is enabling the delivery of class content at a convenient time for students taking classes at home. ALKarani and AlThobaity (2020) concluded that the majority of the participants in their study reported that they preferred having lectures on Blackboard rather than in traditional classrooms. This was because lectures through Blackboard do not require students to spend time preparing for class, such as getting ready to go to school and travelling between school and home. Additionally, Khalil et al. (2020) conclude that preclinical students would prefer online learning for the upcoming academic year. Participants in the study agreed that online

sessions were time saving and that their performance was improved due to their enhanced ability to use time efficiently. On the other hand, other studies demonstrated that students prefer traditional learning. Moawad's (2020) findings demonstrated that 16% of students found learning and attending lectures at home inconvenient and that they preferred conventional learning methods, while 3% of students found learning online rewarding and suitable to their needs because they could learn and attend lectures from the comfort of their home and at a convenient time.

Another advantage of Blackboard is its well-organized tools, which help facilitate the learning process. According to AlKarani and AlThobaity (2020), all of the participants mentioned that Blackboard is well organized and designed in a professional manner, which helped them use it easily and facilitated the learning process. Blackboard automatically records student attendance, which takes a long time in traditional lectures. Additionally, students can easily access information related to their courses on Blackboard. Alkhaldi & Abualkishik (2019) argued that learning and teaching on Blackboard provides easier access to information because it is accessible at any time and from anywhere.

Alturise (2020) also found some advantages of Blackboard during the COVID-19 pandemic, including providing easy communication, a user-friendly interface, an easy way to manage assignments and quizzes, and a transparent grading system particularly suitable for students. Khalil et al. (2020) also demonstrated other benefits of using Blackboard during the COVID-19 pandemic. One is being able to master the content in less time than when engaged in on-campus learning. With Blackboard, students can utilize their time productively to achieve their individual goals.

On the other hand, the sudden shift to completely online has brought about some challenges during the COVID-19 pandemic. Affouneh (2020) argued that the adoption of online learning during the COVID-19 pandemic had disadvantages, which demotivated students to learn online via LMSs such as Blackboard. Dahwan (2020) argues that universities faced challenges related to accessibility, affordability, flexibility, learning pedagogy, staff readiness and quality management when they shifted to entirely online due to the pandemic. Additionally, in Khalil et al.'s (2020) study, participants reported that they encountered challenges, including related to methodological, technical, and behavioral challenges and some related to content presentation during class sessions and online exams.

Academic stress among students is another challenge that has emerged during the COVID-19 pandemic. According to Moawad (2020), as a result of changing from conventional to online learning, students report feeling stressed. Some of the stressors include student assessments and final exams, the ways students are assessed, how this semester will be calculated in their GPA, how their instructors will handle their assignments, and the question of whether they will be assessed fairly. Dahwan (2020) also concluded that many students have faced psychological problems during the COVID-19 pandemic, experiencing stress, fear, anxiety, depression and insomnia, which has led to a lack of focus and concentration. A study by AlKarani and AlThobaity (2020) also demonstrated that students reported that they were afraid when they first started using Blackboard during the crisis.

Additionally, technical issues are another obstacle that students have faced when learning online using

Blackboard during the COVID-19 pandemic. Researchers have concluded that during the COVID-19 pandemic, students have faced many technical difficulties. These difficulties have damaged and slowed down the learning process and reduced or stopped the direct communication between instructors and learners, according to Hoq (2020) and Favale et al. (2020). Some of these issues are related to access to the Internet. According to Dahwan (2020) and Huang (2020), Internet speed and accessibility have posed a serious issue for the use of Blackboard for language learning during the COVID-19 pandemic. Alkhaldi and Abualkishik (2019) also concluded that one of the main problems and concerns with using Blackboard for online learning is weak Internet signals.

Instructors giving too many assignments and projects is another challenge. According to Moawad (2020), 13% of the students reported that they had concerns about the increase in homework and assignments by instructors because of the situation and the difficulties they were facing during the pandemic.

Additionally, the lack of face-to-face interaction negatively affects some learning skills. According to Alturies (2020), 77.17% of students think it is difficult to have discussions to answer their questions during online courses, which diminishes their problem-solving capability. In addition, with an online course system, there is no way to physically collaborate in teams and work on team projects to improve teamwork abilities. Khalil et al. (2020) also demonstrated that one of the challenges that students face when traditional learning suddenly shifts to synchronized online learning, such as during the COVID-19 pandemic, is a lack of nonverbal communication by instructors.

However, there should be more investigations that aim to help find the best solutions to overcome challenges both students and instructors face in using Blackboard during a pandemic and to develop effective methods for using Blackboard for e-learning to help students improve their learning experience and enhance their learning outcomes, especially during a pandemic.

The Study Problem

Like many other aspects of life, education has been severely impacted during the COVID-19 pandemic. As universities shut down due to the pandemic, administrative, instructors, and students were affected by this shift where social distances measures were followed to prevent the spread of the virus. Due to this rapid transformation, educational institutions decide to use the available technical resources to create online environments for students from all academic fields. One of the online platforms used during the pandemic to create and deliver online learning materials by instructors is Blackboard. Therefore, to investigate how university students assess electronic learning using Blackboard during the COVID-19 pandemic and the platform's advantages and challenges the current study was designed and conducted.

The Purpose of the Study

The study aims to determine:

(1) To assess the university students' point of view toward online learning using Blackboard during the COVID-19 pandemic, and to investigate the platform's benefits and challenges.

The Importance of the Study

Certainly, we are facing a global pandemic of COVID-19 and severely impacted by its threats. Education is one of the life aspects that has been negatively affected by this pandemic as all worldwide educational institutions are closed. With this sudden shift, untrained instructors were facing some difficulties to continue the provision of teaching to students, while students were worried and feeling stressful due to that transformation. However, the findings of the current study will help instructors to better understand students' perspectives toward the shift from the face-to-face to completely electronic learning. Additionally, the results of the current study will provide the instructors, administrative, and policy makers about the benefits with which Blackboard provide the students during pandemics from the students' point of view. This will lead to better utilization of the Blackboard system and services by instructors. In addition, the results will reflect better vision regarding the challenges which the students are facing due to this change. Thus, accordingly, administrative and instructors should employ proper solutions and strategies to minimize these challenges as no one knows when this pandemic will end.

Research Questions

Given the above overview of the previous research, the research questions of the current study are as follows:

1-How do students assess the use of Blackboard for online learning after transitioning to the complete e-learning due to the COVID-19 pandemic?

2-How beneficial is Blackboard for students after they have transitioned to the complete online learning during the COVID-19 pandemic?

3- How effective was Blackboard in delivering the courses during the COVID-19 pandemic from the students' perspectives?

4-Which learning methods (traditional face-to-face/online) have students preferred during the COVID-19 pandemic, and after the pandemic ends?

5-What are the main challenges students have faced while using Blackboard for learning after transitioning to the full electronic learning during the COVID-19 pandemic?

Method

Research participants

The participants in this study included all students enrolled in the researcher's "Educational Technology and Means" course during the spring of 2020. There were 150 female students from different academic majors (ranging from the humanities to the sciences) at the College of Arts and Science, Najran University (see Figure 1).

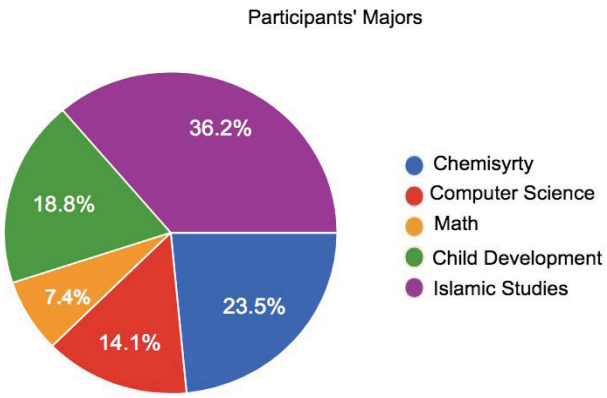

Figure 1. Percentages of Students' Majors

Instrument

The instrument used in the current study is an electronic survey adopted from Uziak et al.'s (2018) study after permission was obtained to use the questionnaire. The electronic survey was distributed using Google Forms at the end of the semester. The survey items were modified to match the purpose of the current study, specifically the shift from traditional to entirely online learning using Blackboard during the pandemic. The survey consisted of six parts, each answered on a five-point Likert-type scale.

The first part of the survey consisted of three questions about students' feelings when using Blackboard once the learning suddenly shifted to entirely online learning due to the pandemic.

The second part of the survey measured the benefits of using Blackboard during the pandemic from the students' perspective. Items 1 and 2 asked about how easy/difficult it was to remember and follow the process on Blackboard when the learning mode shifted to being entirely online. Items 3-18 examined some educational benefits of Blackboard that students gained when learning electronically during the pandemic.

The third part of the survey, the eighth question, measured Blackboard's effectiveness from students' perspective in delivering the course "Educational Technology and Means" during the COVID-19 pandemic.

The fourth part of the survey (items 1-10) examined what learning methods students would prefer for during and after the pandemic.

The fifth part was an open-ended question asking about challenges that the participants encountered when using Blackboard after transitioning to entirely online learning.

The last part was created to collect demographic information related to the participants and what Blackboard tools they used before and during the pandemic.

Procedure:

After obtaining permission to use the survey by Uziak et al. (2018), at the end of the spring 2020 semester, the researcher sent the students a link to the electronic survey and the consent form. The

survey took approximately 15-20 minutes to complete.

Data Analysis

Different statistical methods were used to analyze the collected data, and the Statistical Package for Social Science (SPSS) software version 20 was used to analyze the data in this study. All analyses were conducted using $p \leq .05$ as a level of statistical significance. Descriptive statistics are computed to analyze demographic data and give an overview of their distribution. This type of analysis provides information about frequencies and percentages in the data.

For the first questions, descriptive statistics (percentages and frequencies) were used. For the second, third, fourth, and fifth questions, descriptive statistics (means and standard deviations) were computed.

Validity and reliability

According to Creswell (2009:235), validity refers to whether it is possible to draw meaningful and useful inferences from scores on particular instruments. Frey (2006) defines validity as the extent to which an instrument measures what it is intended to measure. The survey items in the current study were developed based on content validity, and experts (Alshaiki, Faiza, Dammas, Osamah, Alhuraity, Ahmad, and Ron, Aust) in research and survey design and educational technology reviewed the survey structure. The experts' comments and feedback helped improve the quality of the survey items and ensure that they were relevant to the current study's purpose. The researcher accordingly made adjustments to the survey items to improve the quality of the survey items.

According to Creswell (2009:233), reliability refers to whether the scores for items of an instrument are internally consistent over time and if there is consistency in test administration and scoring. Cronbach's alpha was computed for three dimensions to ensure that the instruments were reliable and had internal consistency. Using SPSS, the Cronbach's alpha coefficient was .887, .866, and .897 for the second, third, and fourth questions, respectively. Thus, based on the findings of the reliability analysis, revisions and adjustments will be made.

Results

First research question

How do students assess the use of Blackboard for online learning after transitioning to the complete e-learning due to the COVID-19 pandemic? The majority of the participants (61.7%) reported that they felt worried when other people talked about using Blackboard during the pandemic, as traditional learning suddenly shifted to completely online learning (see figure 2).

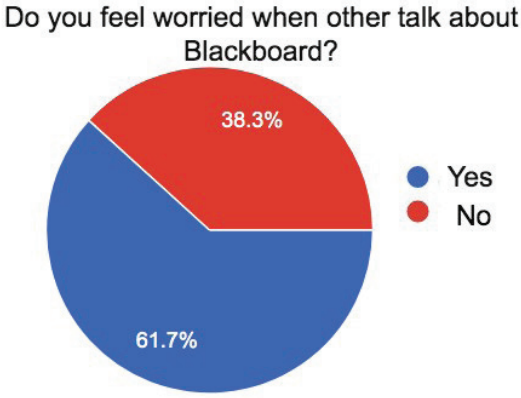

Figure 2. Feeling Worried When Others Talk About Blackboard

In addition, the majority of the participants (79.9%) reported that they felt nervous and uncomfortable when using Blackboard during the COVID-19 pandemic (see figure 3).

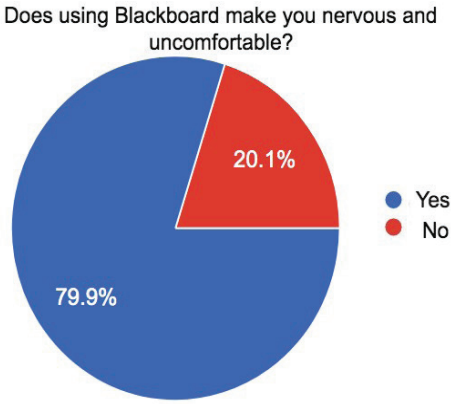

Figure 3. Feeling Nervous and Uncomfortable When Using Blackboard

Additionally, the majority of the participants (87.2%) reported that using Blackboard caused them stress during the COVID-19 pandemic (see figure 4).

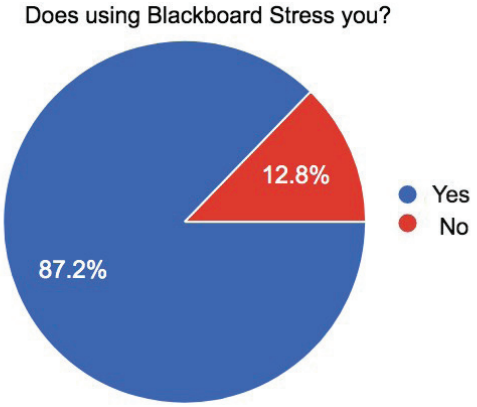

Figure 4. Feeling Stressful When Using Blackboard

Second research question

How beneficial is Blackboard for students after they have transitioned to the complete online learning during the COVID-19 pandemic? Students reported some advantages of Blackboard during the pandemic such as: helping them to meet deadline (M=3.71, SD=1.00), working individually in an effective way (M=3.70, SD=1.02), tracking their grades (M=3.66, SD= 1.01), developing their technology skills (M=3.52, SD=1.09), receiving information effectively(M=3.51, SD=1.14), working at any time (M=3.45, SD=1.08), gaining a sense of being charge of their learning(M=3.34, SD=1.09), accessing more than only a lecture for information on a particular subject(M=3.28, SD=1.12), improving their communication with the instructor(M=3.27,SD=1.10), accessing additional materials to support the lecture content (M=3.22, SD=1.13), accomplishing their assignment quickly and efficiently(M=3.08,SD=1.14), having positive learning experiences (M=3.07, SD=1.13), working effectively in groups (M=3.07, SD=1.14), making the best use of their study time(M=2.93, SD=1.11), and enhancing their learning quality(M=2.75, SD=1.13) (see Table 1(.

Table 1.Advantages of Blackboard During the Pandemic

N	Items	Mean	SD	*Level	Rank
150	Blackboard helped them to meet deadline	3.71	1.00	H	1
	Work individually in an effective way	3.70	1.02	H	2
	Track their grades	3.66	1.01	H	3
	Develop their technology skills	3.52	1.09	A	4
	Receive information effectively (e.g., syllabus, timetable, and announcements	3.51	1.14		
	6. Be able to work at any time	3.45	1.08	A	5
	7. Gain a sense of being charge of their own learning	3.34	1.09	A	6
	8. Access more than only a lecture for information on a particular subject	3.28	1.12	A	7
	9. Improve their communication with the instructor	3.27	1.10	A	8
	10. Access additional material to support the lecture content	3.22	1.13	A	9
	11. Accomplish their assignments quickly and efficiently	3.08	1.14	A	10
	12. Have positive learning experiences	3.07	1.13	A	11
	13. Work effectively in groups	3.07	1.14	A	11
	14. Making the best use of their study time	2.93	1.11	A	13
	15. Enhancing their learning quality	2.75	1.13	A	14

*The levels were categorized into: H=High, A=Average, L=Low, and they were obtained by dividing the length of the period (5 points Likert type) by 3, so that the value was 2.33. The values occur within:

1-2.33 =Low

2.33-3.66 =Average

3.66-4.99 =High

Third research question

How effective was Blackboard in delivering the courses during the COVID-19 pandemic from the students' perspectives? In terms of the effectiveness of Blackboard in delivering the course ma-

terial during the COVID-19 pandemic, students reported some advantages of Blackboard in delivering the course material during the pandemic include: getting through most of the course materials (M=3.76, SD=0.8), studying the course materials on a regular basis (M=3.49, SD=1.04), expressing their own points of view (M=3.47,SD=1.20), maintaining an environment where they were comfortable asking questions (M=3.46, SD=1.19), providing useful feedback on the assign work by instructors (M=3.38, SD=1.14), improving the interaction between the instructors and students (M=3.36, SD=1.19), presenting the course content in an organized way(M=3.35, SD=1.09), managing the class activities well (M=3.29, SD=1.17), making it enjoyable for the students to learn during the course (M=3.17, SD=1.20), helping the students to learn and understand the course materials (M=3.10, SD=1.16), explaining difficult concepts and ideas clearly(M=3.05, SD=1.18), learning more from the Blackboard materials than in class before shifting to the full e-learning(M=2.79, SD=1.34) (see Table 2)

Table 2.The Effectiveness of Blackboard in Delivering the Course Materials.

N	Items	Mean	SD	*Level	Rank
150	Be able to get through most of the course materials	3.76	0.8	H	1
	Blackboard encouraged them to study the course materials on a regular basis	3.49	1.04	A	2
	Express their own points of view		1.20	A	3
	Maintained an environment where they were comfortable asking questions	3.47	1.19	A	4
		3.46			
	Allowed the instructor to provide useful feedback on the assigned work		1.14	A	5
		3.38			6
	Improved the interaction between the students and the course instructor		1.19	A	
		3.36			
	Helped present the course content in an organized way		1.09	A	7
	Helped manage class activities well	3.35	1.17		8
	Made it enjoyable for students to learn during the course	3.29	1.20	A	9
	Helped students learn and understand the course materials	3.17	1.16	A	10
	Helped explain difficult concepts and/or ideas clearly	3.10	1.18	A	11
	Have learned more from the Blackboard materials than from the course materials delivered in the class before the shift to full e-learning	3.05 2.79	1.34	A	12

*The levels were categorized into: H=High, A=Average, L=Low, and they were obtained by dividing the length of the period (5 points Likert type) by 3, so that the value was 2.33. The values occur within:

1-2.33 =Low

2.33-3.66 =Average

3.66-4.99 =High

Fourth research question

Which learning methods (traditional face-to-face/online) have students preferred during the COVID-19 pandemic, and after the pandemic ends? The following preferences were reported by participants regarding courses delivery during the COVID-19 pandemic: traditional using technology such as PowerPoint (M=3.46, SD=1.14), only traditional methods and no use of Blackboard(M=3.34, SD=1.22), only Blackboard without traditional methods (M=2.66, SD=1.39), mixed methods (traditional and Blackboard) (M=3.28, SD=1.17), traditional and Blackboard along with technology(M=3.13, SD=1.25), having fully traditional (face-to-face) courses after the pandemic ends (M=3.21, SD=1.33), mixed methods (Blackboard and traditional methods (M=3.25, SD=1.35),

and continuing to have fully online learning using Blackboard (M=2.68, SD=1.40), respectively (see Table 3).

Table 3. Participants' Preferences Regarding Course Delivery During COVID-19

N	Items	Mean	SD	Level*	Rank
150	Courses delivered using traditional using technology such as PowerPoint	3.46	1.14	A	1
	Courses delivered using only traditional methods and no use of Blackboard	3.34	1.22	A	2
	Courses delivered using only Blackboard without traditional methods	2.66	1.39	A	8
	Courses delivered using mixed methods (traditional and Blackboard	3.28	1.17	A	3
	Traditional and Blackboard along with technology such as PowerPoint, and PowerPoint and Blackboard	3.13	1.25	A	6
	Going back to having fully traditional (face-to-face) courses after the pandemic ends	3.21	1.33	A	5
	Having courses delivered using mixed methods (Blackboard and traditional methods	3.25	1.35	A	4
	Continuing to have fully online learning using Blackboard	2.68	1.40	A	7

*The levels were categorized into: H=High, A=Average, L=Low, and they were obtained by dividing the length

of the period (5 points Likert type) by 3, so that the value was 2.33. The values occur within:

1-2.33 =Low

2.33-3.66 =Average

3.66-4.99 =High

Fifth research question

What are the main challenges students have faced while using Blackboard for learning after transitioning to the full electronic learning during the COVID-19 pandemic? Students reported some challenges with learning online via Blackboard during the pandemic. Their responses were categorized into four categories which are: challenges related to tests (short test duration (11.33%), tests are difficult (3.33%), tests are given at random times (1.33%), only one attempt permitted for taking tests on Blackboard (1.33%), Blackboard freeze during tests (1.33%), and timing of tests is inappropriate (0.7%); assignment issues (too many assignments to do (18%), not enough time to finish homework (10%), assignments are difficult to understand (4%), and difficult assignments (2.7%)); technical issues (Internet issues (30%), Blackboard freezing (23.33%), voice and audio cutting out (6%), device freezing (0.66%), and difficulties to upload assignments to Blackboard (0.66%)); and challenges related to instructors (lectures were given at a different time not on their assigned class time (3.33%), instructors' voice is quiet (2%), Internet issues faced students during test times were ignored (1.33%), instructors ignore Internet issues faced by students (1.33%), instructors are unable to use Blackboard (1.33%), instructors did not respond to student questions on discussion boards (1.33%), instructors are not qualified enough to teach the course (0.66%), instructors posted the course material lately (0.66%), lacking of face-to-face communication

between instructors and students (0.66%), and instructors are not collaborating with students (0.66%)).

However, the highest ranked challenges that students reported were Internet issues (30%), too many assignments from instructors (18%), and the short timeframes given by instructors for completing tests (11.33%) (see Table 4).

Table 4. Challenges Students Faced When Using Blackboard During Full Online Learning

Challenges	Frequencies	Percentages
Short test duration .1	17	11.33%
Tests are difficult .2	5	3.33%
Tests are given at random times .3	2	1.33%
Only one attempt permitted for taking tests on .4 Blackboard	2	1.33%
Blackboard freeze during tests .5	2	1.33%
Timing of tests is inappropriate (in the evening .6 (when it should be in the morning to avoid Internet issues	1	0.7%
Too many assignments to do .7	27	18%
Not enough time to finish homework .8	15	10%
Assignments are difficult to understand .9	6	4%
Difficult assignments .10	4	2.7%
Internet issues .11	45	30%
Blackboard freezing .12	35	23.33%
Voice and audio cutting out .13	9	6%
Device freezing .14	1	0.66%
Difficult to upload assignments to Blackboard .15	1	0.66%
Lectures were given at a different time, not on.16 their assigned class time	5	3.33%
Instructors' voice is quiet .17	3	2%
Internet issues faced students during test times .18 were ignored	2	1.33%
Instructors ignore Internet issues faced by .19 students	2	1.33%
Instructors are unable to use Blackboard .20	2	1.33%
Instructors did not respond to student questions .21 on discussion boards	2	1.33%
Instructors are not qualified enough to teach the.22 course	1	0.66%
Instructors posted the course material lately.23	1	0.66%
Lacking of face-to-face communication between .24 instructors and students	1	0.66%
Instructor is not collaborating with students .25	1	0.66%

Additional findings

Participants reported that before the shift to completely online learning due to the pandemic, the tools they used on Blackboard were the homework submission tool (94.6%), discussion board (76.5%), announcements (43.6%), course files (40.3%), mailing lists (25.5%), and other tools (28.2%) (see Figure 5).

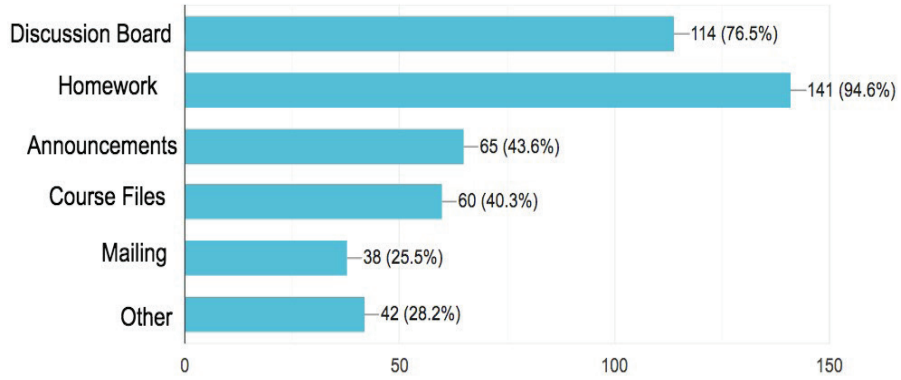

Figure 5. Tools used by the participants before the transition to fully online learning

Moreover, participants were asked about the tools they used in addition to Blackboard to support their learning during the COVID-19 pandemic. They reported that they mostly used the Internet (72.5%), WhatsApp (67.1%), e-mail (66.4%), and SMS (3.4%) (see Figure 6).

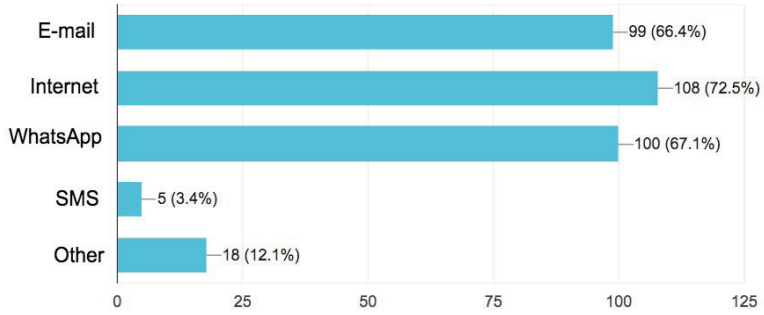

Figure 6. Tools used by the Participants in Addition to Blackboard

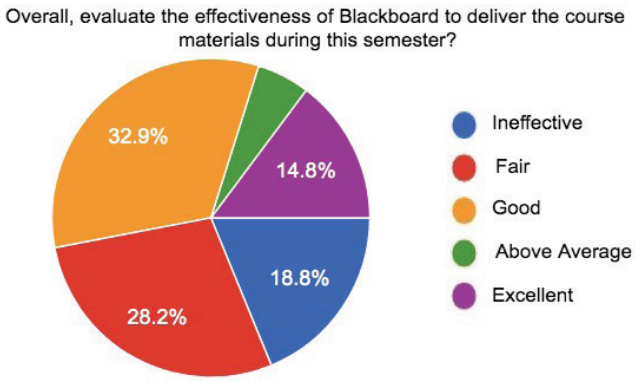

Figure 7. Effectiveness of Blackboard in Delivering Course Materials

Additionally, in terms of the effectiveness of Blackboard in delivering the course material during the COVID-19 pandemic, 32.9% of the participants reported that overall, Blackboard was good at delivering the course materials during the pandemic (see Figure 7).

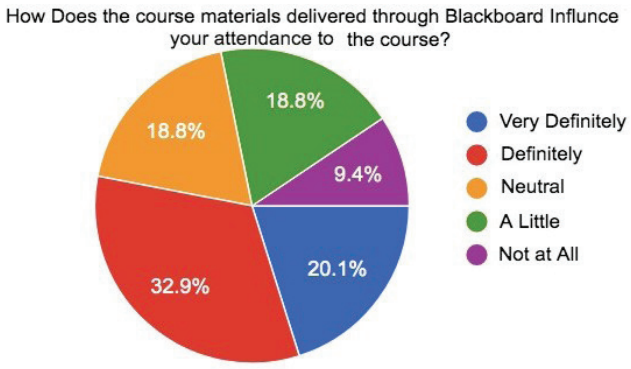

Figure 8. Influence of Course Materials Being Delivered through Blackboard on Students' Attendance of Virtual Lectures

Additionally, 32.9% of the participants reported that the course material delivered through Blackboard definitely influenced their attendance in the virtual classroom on Blackboard (see Figure 8).

Discussion

The findings of the current study are mostly consistent with those of previous studies. In terms of how the participants viewed their usage of Blackboard when traditional learning suddenly shifted to entirely online learning due to the COVID-19 pandemic, 87.2% of the participants reported that using Blackboard caused them stress, 61.7% of the participants reported they felt worried when other people talked about Blackboard, and 79.9% of them reported that they felt nervous and uncomfortable when using Blackboard during the pandemic. These findings are consistent with those in the studies of Moawad (2020), Dahwan (2020), and AlKarani and AlThobaity (2020), which revealed that students experienced academic stress when learning online using Blackboard during the COVID-19 pandemic. this seems normal due to the sudden shift to e-learning, as the majority of schools around the world previously depended on the conventional learning modes where students attend classes in person. This shift was a new experience for instructors, students, and administrators, and some of the students did not have prior experience with Blackboard, hindering their use of the system during completely online learning. Additionally, students reported other stressful challenges, including Internet issues, having too many assignments from the instructors, and the short duration of exams. These challenges caused students stress. Symptoms of depression have increased among university students while completing their coursework on Blackboard (Barker et al., 2018).

The findings also showed that students reported some benefits of Blackboard during the COVID-19 pandemic, including helping students meet deadlines, work individually in an effective way, keep track of their grades, develop their technology skills, receive information effectively, and do their coursework at any time. Additionally, regarding the effectiveness of Blackboard in delivering courses, the participants reported that they were able to get through most of the course materials, study the course materials on a regular basis, express their own points of view, maintain an environment where they were comfortable asking questions, receive useful feedback on their assigned work, improve their interactions with instructors, access the course content in an organized way, manage class activities well, enjoy

learning in the course, and learn and understand the course materials, including difficult concepts and/or ideas. These benefits and the effectiveness of Blackboard that students reported are consistent with what was demonstrated in the studies by AlKarani and AlThobaity (2020), Moawad (2020), Khalil et al. (2020), Alturaise (2020), Alkhaldi and Abualkishik (2019), Bradford et al. (2007), Algahtani (2011), Smedley (2010), and Pittinsky and Bell (2005). However, the lowest number of students agreed that the following was a benefit of using Blackboard: "Blackboard enhances my learning quality (M=2.75, SD= 1.13)". This might be due to the lack of in-person experiences and interactions, which are not possible in online environments. Therefore, educators should develop ways for students to feel a sense of belonging and develop relationships even if they are online.

Furthermore, the participants reported that during the COVID-19 pandemic, they preferred to have courses delivered using traditional technology such as PowerPoint (M=3.46, SD=1.14) and to have courses delivered only by traditional methods without using Blackboard. They also reported that after the pandemic ends, they would preferred to return to have full-time traditional learning for all of their courses (M=3.29, SD=1.33). This is consistent across their responses, as the smallest number of students agreed that Blackboard had the following benefit: "I have learned more from the Blackboard materials than from the course materials delivered in the class before the shift to full e-learning (M=2.79, SD=1.34). Additionally, this is consistent with Moawad's (2020) findings, which demonstrated that 16% of the students found learning and taking lectures at home inconvenient, while 3% of students found learning through online platforms rewarding and suitable. However, the findings of the current study contradict those of ALKarani and AlThobaity (2020) and Khalil (2020), as students in those studies stated that they preferred online learning via Blackboard during the pandemic rather than traditional methods. This might be because the current study was conducted in the first semester of the pandemic, when the WHO announced that COVID-19 was a global crisis and traditional learning was accordingly shifted to e-learning, so it was new experience for the students, who encountered some obstacles and had concerns related to this transition. This contradiction might depend on the students' majors, technical skills, obstacles, and instructors and on the nature of their courses as well (e.g., whether a lecture or practical course). Thus, more studies that investigate the reasons affecting students' preferred methods of learning (traditional/online) during and after pandemics would be crucial.

Moreover, the findings demonstrated that students encountered some challenges, such as Internet issues, when learning online using Blackboard during the COVID-19 pandemic. This supports the findings of Alkhaldi and Abualkishik (2019), Dahwan (2020), Huang (2020), Alturise (2020), Affouneh (2020), and Moawad (2020), which revealed that Internet speed and accessibility can be a serious issue in using Blackboard during the COVID-19 pandemic.

Other obstacles included having too many assignments and insufficient time from instructors to complete tests. This is consistent with Moawad's (2020) findings, as students reported that they had concerns about tests and an increased volume of homework and assignments because of the pandemic situation and the difficulties they have faced during it. This might be because the evaluation and grading

mechanisms have changed due to the shift to entirely online learning and to the instructors having unclear objectives and plans. Additionally, for some instructors, this was their first time using Blackboard for teaching online, so their technical skills, knowledge, attitudes, and experiences with e-learning impacted their usage of the LMS. Additionally, as instructors were asked to provide a weekly report regarding what they accomplished during online teaching, this might have led to increased difficulty.

Conclusion and future studies

The findings of the current study demonstrated that students were stressed and worried when traditional learning shifted to full online learning using Blackboard during the COVID-19 pandemic. The study also revealed some benefits and challenges experienced by the students when learning online via Blackboard during the pandemic.

Thus, more research is needed to explore the challenges involved in utilizing Blackboard for e-learning that hinder students in achieving their learning goals and negatively impact their learning during pandemics and to identify solutions to these challenges. To overcome the challenges indicated by the participants, instructors should be clear about their plans for assignments, avoid giving unplanned or too many assignments, and give students enough time to complete their assignments and tests to reduce much of the stress the students have experienced during the CODIV-19 pandemic. Additionally, administrators should provide Blackboard training for both students and instructors across all universities to help them effectively utilize all of these online platform tools.

Additionally, as there are contradictory findings in previous studies and the current study regarding the learning method that students would prefer during and after the COVID-19 pandemic, more studies are needed to understand the reasons behind these contradictions. Additionally, future studies should examine the perceptions of students across all universities, including how they perceive their learning to be proceeding during the COVID-19 pandemic. Additionally, 72.5% and 67% of the participants reported that they used the Internet and WhatsApp to support their learning during the pandemic, so there should be more investigation into the role of social media and Internet applications in supporting student learning during the COVID-19 pandemic. Additionally, the quality of students' learning using online platforms and what factors impact this quality should be examined in future studies.

Conflict of Interest: The author declares that she has no conflict of interests.

Availability of data and material: other researchers can access my data by sending e-mail to haayfan@nu.edu.sa

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Not applicable' beneath the relevant sub-heading...

Participants of the study: were not disadvantaged and that the data have been anonymized. They agreed to participate after they sign a consent form.

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