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The Role of Adopting Blackboard System in Light of the Coronavirus Pandemic in Developing the Skills of its Use and Academic Achievement among Taif University Students

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Abstract: The present research aimed to identify the role of adopting Blackboard system in light of the Coronavirus pandemic in developing the skills of its use and academic achievement among Taif University students. The research was applied to a sample of (664) students enrolled in the Colleges of Taif University in the first semester of the academic year 2020/2021. The scale of the role of e-learning management system (Blackboard) in developing the skills of its use (prepared by the researchers) was administered to (233) students, and the scale of the role of the e-learning management system (Blackboard) in achieving academic achievement (prepared by researchers) was administered to (431) students. The authors adopted the descriptive approach. Findings revealed that adopting Blackboard system in light of the Coronavirus pandemic developed the skills of its use and academic achievement among Taif University students. The research recommended activating the role of Blackboard system in Saudi universities in light of crises, in general, and Coronavirus pandemic, in particular, due to its positive impact in this field as well as conducting relevant researches.

Keywords: Academic Achievement, Blackboard, Coronavirus, University students.

1 Introduction

Spread of the Coronavirus (COVID-19) pandemic is a major humanitarian, medical, educational, social, economic, and political issue in 2020 AD. It affected lives as well as money globally. Moreover, it revealed all countries' educational foundations and willingness to adopt distance learning, as a precaution, to reduce its consequences. Adopting e-learning management system (Blackboard) is one of the most fundamental technologies that helped universities face the pandemic.

Saudi Arabia has taken important steps to activate the role of technology in higher education by developing a national plan for information technology. It recommended adopting and applying e-learning and distance learning and in higher education (Mazroua, Makhoulouf & Abdelrahman, 2013). E-learning management system (Blackboard) is one of the educational systems used in the largest international universities because of its effectiveness, safety, and confidentiality. Thus, Saudi universities have adopted it (Al-Milham & Al-Mutairan, 2018). In addition, it is a

global learning management system that outweighs other systems and provides various educational opportunities that remove all barriers and obstacles facing educational institutions and learners. It is also flexible and can be developed easily (Martin, 2008).

Blackboard system is defined educationally as an education system that involves connected and disconnected models of education. Connected models are often online, while the offline ones occur in traditional classes (Balci & Sora, 2009). It was developed by Blackboard Inc. for learning services in Washington. It was designed according to educational foundations to provide learners with e-learning environment. Furthermore, it can be used by one person or many university students (Mazroua et al., 2013).

Learning Management System (Blackboard) is one of the electronic systems of the Deanship of E-Learning and Information Technology at Taif University. It is a system for managing the education process, follow-up students and monitoring the efficiency of the educational process in the educational institution. Moreover, it empowers students to

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review their courses outside the lecture hall anywhere and anytime (electronic systems of the Deanship of E-Learning and Information Technology at Taif University, 11/3/2020).

Taif University adopts the philosophy of teaching and learning based on participation and dialogue between the participants using Learning Management System (Blackboard). It also follows the following objectives of higher education in Saudi Arabia: disseminating computer culture and keeping pace with the developments in educational technologies and communication media. The Ministry of Higher Education in Saudi Arabia develops a national project (King Abdullah bin Abdulaziz Project for Computers) in which it encourages its faculty members and students to use the educational computer and the various forms of communication channels and to establish a specialized research body concerned with the affairs of e-learning (Al-Khalifa, 2009 ; Mokhles, 2015).

Al-Jarrah (2011) argues that educational systems should adopt Blackboard software or develop similar local software that helps manage the educational process at the university and develop the educational competencies of the students as well as provide distance learning to the community members. Mazroua et al. (2013) claim that it is necessary to design quantitative and qualitative training programs that correspond to the needs of faculty members, constantly evaluate training programs as well as define the best ones, maximize the material and moral incentives for faculty members using Blackboard system, constantly develop the efficiency of e-learning laboratories in all colleges of the universities, and prioritize appointing faculty members experienced in using e-learning management systems.

Learning Management System (Blackboard) is based on flexibility in designing and managing interactive courses by faculty members. It also enables the student to interact with courses, attend virtual classes, review the content, complete assignments, pass exams and communicate with the course professor using the tools substantial for the learner interaction, such as notifications, calendar, tasks, grades, user guide, address book, content presentation, communication function, and assessment (Al-Milham & Al-Mutairan, 2018).

Blackboard system can be used easily, provides continuous and instant feedback, improves and facilitates communication process, tracks the students' use of the software, and builds the student's additional skills, such as time management, that help him/her perform his/her assignments competently (Al-Blassi, 2016).

Moreover, it provides comfort and flexibility, enhances the value of modern courses on campus and empowers faculty members to manage all courses online, upload documents, make announcements, send e-mail, create online assessments, ...etc. (Electronic Systems of the Deanship of

E-Learning and Information Technology at Taif University, 11/3/2020). Hence, distance learning is consistent with modern developments in education and solves its problems, especially the temporal and geographical ones, whether for the teacher or the student (Abu Al-Hajj, 2019).

Al-Hejailan and Al-Habashi (2018) argue that training courses of E-Learning Management System (Blackboard) should be maximized to train more persons and facilitate access to technical support of the system. Cilliers and Van Niekerk (2018) revealed that faculty members' perceptions of e-learning management system (Blackboard) became positive after participating in three training workshops. Baig, Gazzaz, and Farouq (2020) demonstrated that formative assessment using Blackboard system develops the positive attitude of students towards its services, assignments, online tests, ...etc.

Consequently, E-learning Management System (Blackboard) in light of the Coronavirus (COVID-19) pandemic is a very important topic because of its multiple effects on students' behaviors represented in the skills of its use and academic achievement.

1.1 Terminology of the Research

Blackboard Skills: The authors define them as Taif University students' use of blackboard skills confidently and competently in a way that reduces waste of time and energy. They are procedurally defined as the score that the student gets in the scale of the students' use of E-learning Management System (Blackboard) (prepared by the authors).

Academic Achievement: The desire to succeed, win, and complete work in a satisfactory manner on time, so the student feels satisfied with his/her performance in the academic field, in general, and in the field of achievement, in particular (Al-Khafaji & Al-Zaidi, 2013). The authors procedurally define it as the score the student gets in the Academic achievement scale using E-learning Management System (Blackboard) (prepared by the authors).

1.2 Review of the Literature

Concerning the obstacles that impeded employing E-learning Management System, Mazroua et al. (2013) and Al Meajel and Sharadgah (2018) demonstrated that the administrative and institutional obstacles ranked the first, material obstacles ranked the second, and personal obstacles ranked the third. Sayyaf and Al-Qahtani (2014) and Al-Ruwaili (2018) indicated that the faculty members and students at King Khalid University and King Saud

University moderately used different patterns of Blackboard system. Al-Sayed (2015) showed that students of University of Bisha faced multiple difficulties when using Blackboard system, such as lack of awareness of e-learning culture, lack of experience in dealing with E-learning Management System, and lack of experience in using computers and the internet.

Omar and Al-Masabi (2017) showed that students of Najran University moderately suffered from the difficulty of copy, upload and download large files on smart devices. On the other hand, various studies addressed the effectiveness of the E-learning Management System (Blackboard) among university students. For example, Mazroua (2011) indicated the necessity for the continuous evaluation of the e-learning systems, conducting studies periodically to measure students' attitudes towards e-learning, and showing the advantages and feasibility of e-learning and its importance for students' achievement and comprehension. Moreover, this system allows students to participate with other groups studying the same courses delivered by the same faculty member or other ones.

Sayyaf and Al-Qahtani (2014) asserted the need to improve the experience of King Khalid University in using Blackboard system by considering the viewpoint of students and faculty members. Al-Sadhan (2015) exhibited the necessity for providing students and faculty members with continuous and intensive training on the use of Blackboard system. Abdelwahab (2016) manifested the necessity for adopting collaborative e-learning through e-learning management systems (Blackboard) because they contain participatory components.

Al-Jadee (2018) illustrated the need to reinforce learning platforms that present flipped classroom service (Blackboard) and develop a mechanism for training students and faculty members at the University of Tabuk on how to use and benefit from e-learning platforms. Al-Milham, Al-Badr, and Al-Mutairan (2018) asserted the necessity for delivering training courses for female students at King Saud University on learning management system and encouraging them to use it. Al-Benyan (2019) encouraged faculty members to use Blackboard system in learning and research process in Saudi universities through including it in performance evaluation, offering training courses as well as avoiding material, personal and administrative obstacles.

Accordingly, some studies highlighted the difficulties of E-learning Management System (Blackboard), while others

addressed its positive role, so the major role of the present research to settle this issue. To the authors' knowledge, no previous piece of literature handled the role of adopting E-learning Management System (Blackboard) in light of the Coronavirus (COVID-19) pandemic in developing the skills of its use and academic achievement among students of Taif University. *The present research seeks to address the problem by raising the following questions:*

1. What is the role of adopting E-learning Management System (Blackboard) in light of the Coronavirus (COVID-19) pandemic in developing the skills of its use among Taif University students?
2. What is the role of adopting E-learning Management System (Blackboard) in light of the Coronavirus (COVID-19) pandemic in developing academic achievement among Taif University students?

2 Methodologies

Method

The present research adopted the descriptive method due to its appropriateness for the research and its objectives.

Limits

Human Limits: Taif University students

Spatial Limits: The research was applied to the students of Taif University in the main campus.

Temporal Limits: The research was conducted in the first semester of the academic year 2020/2021.

Participants

All students enrolled in Taif University in the first semester of the academic year 2020/2021.

Sampling

Pilot Sample: The scale of the role of adopting E-learning Management System in developing the skills of its use among the students of Taif University was administered to (50) students and the scale of the role of adopting E-learning Management System in achieving academic achievement among the students of Taif University was administered to (50) students enrolled in Taif University in the first semester of the academic year 2020/2021 to verify the psychometric characteristics of the research tools.

Main Sample: The scale of the role of adopting E-learning Management System in developing the skills of its use among the students of Taif University was administered to

(233) students and the scale of the role of adopting E-learning Management System in achieving academic achievement among the students of Taif University was administered to (431) students enrolled in Taif University in the first semester of the academic year 2020/2021.

Instrumentations

1. *The scale of the role of adopting E-learning Management System in developing the skills of its use among the students of Taif University (prepared by the authors).*

A. Objective: Verifying the role of adopting E-learning Management System in developing the skills of its use among the students of Taif University. To prepare the scale, the authors reviewed the studies of Mazroua et al. (2014), Al-Sayed (2015), Omar and Al-Masabi (2017), Al-Ruwaili (2018), Al-Milham, Al-Badr, and Al-Mutairan (2018), Al Meajel and Sharadgah (2018), Al-Qataan (2018), Al-Shehri (2018), Alkhalidi and Abualkishik (2019), Baig et al. (2020), and Al-Shamri (2019).

B. Description: The scale consists of (33) items distributed to (5) domains. The items (1-6) represent the domain of sign in the system, the items (7-13) represent the domain of interaction with courses and learning using the system, the items (14-20) denote the domain of communication skills, the items (21-26) represent the domain of the skills of attending lectures, and the items (27-33) represent the domain of e-evaluation skills.

C. Assessment: Each item involves three responses (high, moderate and low) evaluated with the scores (3-2-1), respectively. The minimum score of the domains and the total score are: (6, 7, 7, 6, 7, 33), while the maximum score is (18, 21, 21, 18, 21, 99).

Psychometric Characteristics

Juries' validity: The scale was reviewed by (11) Saudi and Egyptian professors of Psychology and Educational Technology. The percentage of their agreement ranged from (81.81%) to (100%). According to their views, some items were omitted and modified to have the final form of the scale.

~Internal Consistency

After verifying the facial validity of the scale, the authors administered it to the pilot sample (n = 50) and estimated Pearson Correlation coefficient to identify the internal validity of the scale by calculating the correlation coefficient between the score of each item and the total score of the domain.

Table (1) shows that all values of correlation coefficient between the items and the total score are statistically significant at the level of (0.01).

Reliability: The pilot sample (n = 50) was used to verify reliability using the two methods of retesting after five weeks and Cronbach's Alpha.

Table 1: Correlation between the item of the scale of the role of adopting E-learning Management System in developing the skills of its use among the students of Taif University and its domain.

| 1 st domain | | 2 nd domain | | 3 rd domain | | 4 th domain | | 5 th domain | |
|------------------------|------|------------------------|------|------------------------|------|------------------------|------|------------------------|------|
| No. | ρ | No. | ρ | No. | ρ | No. | ρ | No. | ρ |
| 1 | 0.77 | 7 | 0.76 | 14 | 0.77 | 21 | 0.74 | 27 | 0.74 |
| 0.77 | 0.79 | 8 | 0.78 | 15 | 0.80 | 22 | 0.79 | 28 | 0.72 |
| 0.79 | 0.76 | 9 | 0.78 | 16 | 0.87 | 23 | 0.77 | 29 | 0.78 |
| 0.76 | 0.71 | 10 | 0.80 | 17 | 0.84 | 24 | 0.71 | 30 | 0.77 |
| 0.71 | 0.75 | 11 | 0.77 | 18 | 0.80 | 25 | 0.75 | 31 | 0.78 |
| 6 | 0.80 | 12 | | 19 | 0.79 | 26 | 0.78 | 32 | 0.74 |
| | | 13 | | 20 | 0.76 | | | 33 | 0.72 |

Table 2: Reliability by retesting and Cronbach's Alpha of the scale of the role of adopting E-learning Management System in developing the skills of its use among Taif University students.

| Domains | Retesting | Cronbach's Alpha |
|---|-----------|------------------|
| Sign in the system | 0.81 | 0.71 |
| Interaction with courses and learning using the system, | 0.77 | 0.70 |
| Communication skills | 0.78 | 0.69 |
| Skills of attending lectures | 0.75 | 0.65 |
| Electronic evaluation skills | 0.77 | 0.67 |
| Total score | 0.83 | 0.73 |

Table (2) indicates that the values of reliability coefficient of retesting are significant at the level of (0.01) and the values of Cronbach's Alpha indicate the reliability of the scale. Thus, the results are reliable.

2. Scale of the role of adopting E-learning Management System in developing academic achievement among the students of Taif University (prepared by the authors).

A. Objective: Verifying the role of adopting E-learning Management System in developing academic achievement among the students of Taif University. To prepare the scale, the authors reviewed the studies of Abdelkareem and Al-Rowees (2015), Abdelwahab (2015), Al-Rendy and Aba Al-Khail (2016), Ali (2017), Alhussain (2017), Al-Zahrani (2017), Abu Al-Anin (2018), Oladiran, Lorencowicz, and Becker (2018), Elmaadaway (2018), Al-Qataan (2018), Al-Jadee (2018), Villalon, Luna, and Garcia-Barrera (2019), Abu Al-Hajj (2019), and Conley, Earnshaw, and McWatters (2019).

B. Description: The scale consists of (39) items distributed to (5) domains. The items (1-8) represent the domain of assuming academic responsibility, the items (9-16) denote the domain of academic perseverance, the items (17-23) represent the domain of time management, the items (24-31) denote the domain of academic excellence, and the items (32-39) represent the domain of planning for the

Academic future.

C. Assessment: Each item involves three responses (high, moderate and low) evaluated with the scores (3-2-1), respectively. The minimum score of the domains and the total score are (8, 8, 7, 8, 8, 39), while the maximum score is (34, 24, 21, 24, 24, 117).

Psychometric Characteristics

Juries' validity: The scale was reviewed by (11) Saudi and Egyptian professors of Psychology and Educational Technology. The percentage of their agreement ranged from (90.90%) to (100%). According to their views, some items were omitted and modified to have the final form of the scale .

Internal Consistency

After verifying the facial validity of the scale, the authors administered it to the pilot sample (n = 50) and estimated Pearson Correlation coefficient to identify the internal validity of the scale by calculating the correlation coefficient between the score of each item and the total score of the domain.

Table (3) shows that all values of correlation coefficient between the items and the total score are statistically significant at the level of (0.01).

Reliability: The pilot sample (n = 50) was used to verify reliability using the two methods of retesting after five weeks and Cronbach's Alpha.

Table 3: Correlation between the item of the scale of the role of adopting E-learning Management System in developing academic achievement among Taif University students and its domain.

| 1 st domain | | 2 nd domain | | 3 rd domain | | 4 th domain | | 5 th domain | |
|------------------------|------|------------------------|------|------------------------|------|------------------------|------|------------------------|------|
| No. | ρ | No. | ρ | No. | ρ | No. | ρ | No. | ρ |
| 1 | 0.85 | 9 | 0.77 | 17 | 0.71 | 24 | 0.80 | 32 | 0.74 |
| 2 | 0.81 | 10 | 0.76 | 18 | 0.74 | 25 | 0.79 | 33 | 0.71 |
| 3 | 0.80 | 11 | 0.77 | 19 | 0.78 | 26 | 0.77 | 34 | 0.75 |
| 4 | 0.79 | 12 | 0.75 | 20 | 0.78 | 27 | 0.75 | 35 | 0.71 |
| 5 | 0.77 | 13 | 0.79 | 21 | 0.79 | 28 | 0.72 | 36 | 0.76 |
| 6 | 0.75 | 14 | 0.71 | 22 | 0.74 | 29 | 0.78 | 37 | 0.78 |
| 7 | 0.74 | 15 | 0.75 | 23 | 0.72 | 30 | 0.79 | 38 | 0.75 |
| 8 | 0.73 | 16 | 0.77 | | | 31 | 0.72 | 39 | 0.72 |

Table 4: Reliability by retesting and Cronbach's Alpha of the scale of the role of adopting E-learning Management System in developing the academic achievement among the students of Taif University.

| Domains | Retesting | Cronbach's Alpha |
|----------------------------------|-----------|------------------|
| Assuming academic responsibility | 0.78 | 0.69 |
| Academic perseverance | 0.79 | 0.68 |
| Time management | 0.80 | 0.70 |
| Academic excellence | 0.85 | 0.71 |
| Planning for the academic future | 0.84 | 0.74 |
| Total score | 0.87 | 0.76 |

Table (4) shows that the values of reliability coefficient of retesting are significant at the level of (0.01) and the values of Cronbach's Alpha indicate the reliability of the scale. Thus, the results are reliable.

Findings

To analyze the findings of the research, arithmetic means were used and the degree of the effectiveness of adopting

E-learning Management System (Blackboard) in light of the Coronavirus pandemic in developing the skills of its use and academic achievement from the students' point of view was defined. Accordingly, the categories (cell length) are arranged in a descending order as shown in the table (5).

Findings of the 1st Question

Table (6) presents the response to the question.

Table 5: Minimum and maximum degrees of the scale.

| Arithmetic mean | | Degree of the effectiveness of adopting E-learning Management System (Blackboard) in developing the skills of its use | Degree of the effectiveness of adopting E-learning Management System (Blackboard) in developing academic achievement |
|-----------------|------|---|--|
| From | To | | |
| 2,34 | 3 | High | High |
| 1,67 | 2,33 | Moderate | Moderate |
| 1 | 1,66 | Low | Low |

Table 6: Arithmetic mean and the degree of the effectiveness of adopting E-learning Management System (Blackboard) in developing the skills of its use among the students of Taif University.

| No. | Domains and items | Role of adopting E-learning Management System (Blackboard) in developing the skills of its use among the students of Taif University | | |
|--|---|--|---------------------------------|---------------|
| | | Mean | Degree of the skill development | Skill ranking |
| 1 st domain: Sign in the system Using Blackboard in light of the Coronavirus pandemic developed my skills in: | | | | |
| 1 | Choose the appropriate device for the system. | 2.59 | High | 2 |
| 2 | Choose the appropriate internet browser to access Blackboard. | 2.71 | High | 1 |
| 3 | Take advantage of technical support services. | 2.01 | Moderate | 6 |
| 4 | Use the links of access to lectures and tests. | 2.50 | High | 3 |
| 5 | Simplicity and speed of sign in Blackboard system. | 2.48 | High | 4 |
| 6 | Change system language. | 2.29 | High | 5 |
| Total | | 2.43 | High | |
| 2 nd domain: Interaction with courses and learning while using Blackboard. Using Blackboard in light of the Coronavirus pandemic developed my skills in: | | | | |
| 7 | Browse the course list. | 2.60 | High | 4 |
| 8 | Log in the virtual class | 2.76 | High | 1 |
| 9 | Benefit from the content files | 2.55 | High | 5 |
| 10 | Participate in assessment using questionnaires on the system. | 2.50 | High | 6 |
| 11 | Interact with the course professor and colleagues in groups and forums. | 2.61 | High | 3 |
| 12 | Know my grades easily. | 2.66 | High | 2 |
| 13 | Obtain contact information with the course professor. | 2.38 | High | 7 |
| Total | | 2.58 | High | |

| | | | | |
|---|---|------|----------|------------|
| 3 rd domain: Communication skills | | | | |
| Using Blackboard in light of the Coronavirus pandemic developed my skills in: | | | | |
| 14 | Constant review of the course announcements. | 2.63 | High | 1 |
| 15 | Have conversations with the participants. | 2.47 | High | 4 |
| 16 | Respond to course e-mails. | 2.49 | High | 3 |
| 17 | Perform synchronous communication | 2.23 | Moderate | 6 |
| 18 | Perform asynchronous communication | 2.11 | High | 7 |
| 19 | Interaction within groups. | 2.52 | High | 2 |
| 20 | Participate in forums, blogs and diaries. | 2.32 | High | 5 |
| Total | | 2.40 | High | |
| 4 th domain: Skills of attending lectures | | | | |
| Using Blackboard in light of the Coronavirus pandemic developed my skills in: | | | | |
| 21 | Rapid log in virtual classrooms | 2.55 | High | 4 |
| 22 | Deliver presentations using virtual classes | 2.56 | High | 3 |
| 23 | Conduct discussions in virtual classrooms | 2.67 | High | 1 |
| 24 | Download recorded lectures | 2.49 | High | 5 frequent |
| 25 | Benefit from lectures-related learning sources | 2.49 | High | 5 frequent |
| 26 | Use appropriate communication methods while attending lectures. | 2.60 | High | 2 |
| Total | | 2.56 | High | |
| 5 th domain: E-evaluation skills | | | | |
| Using Blackboard in light of the Coronavirus pandemic developed my skills in: | | | | |
| 27 | Upload assignments on the system. | 2.67 | High | 2 |
| 28 | Take theoretical tests | 2.60 | High | 3 |
| 29 | Conduct performance tests. | 2.48 | High | 5 |
| 30 | Accomplish assignments within groups. | 2.57 | High | 4 |
| 31 | View my scores through the grade center. | 2.72 | High | 1 |
| 32 | Request an additional opportunity when technical failure occurs during testing. | 2.33 | Moderate | 7 |
| 33 | Request feedback from the course professor. | 2.44 | High | 6 |
| Total | | 2.54 | High | |

Table (6) reveals that using Blackboard in light of the Coronavirus pandemic developed the skills of its use among Taif University students with degree (High) in all domains. The domain of "interaction with courses and learning while using Blackboard" ranked first, with arithmetic mean (2.58). The domain of "skills of attending lectures" ranked second, with arithmetic mean (2.56). The domain of "e-evaluation skills" ranked third, with arithmetic mean (2.54). The domain of "sign in the system" ranked fourth, with arithmetic mean (2.43). The domain of "communication skills" ranked fifth, with arithmetic mean (2.40).

Findings of the 2nd Question

Table (7) presents the response to the question.

Table (7) Shows that using Blackboard in light of the Coronavirus pandemic developed academic achievement among Taif University students with degree (high) in all domains. The domain of "time management " ranked first, with arithmetic mean (2.60). The domain of "academic

Excellence" ranked second, with arithmetic mean (2.57). The domain of "planning for academic future "ranked third, with arithmetic mean (2.54). The domain of "academic perseverance" ranked fourth, with arithmetic mean (2.50). The domain of "assuming academic responsibility" ranked fifth, with arithmetic mean (2.40).

Table 7: Arithmetic mean and the degree of the effectiveness of adopting E-learning Management System (Blackboard) in developing academic achievement among the students of Taif University.

| No. | Domains and items | Role of adopting E-learning Management System (Blackboard) in developing academic achievement among the students of Taif University | | |
|---|--|---|--|--------------|
| | | Responses mean | Degree of academic achievement development | Item ranking |
| 1 st domain: Assuming academic responsibility Using Blackboard in light of the Coronavirus pandemic helped me to: | | | | |
| 1 | Face academic problems | 2.12 | Moderate | 7 |
| 2 | Interact and participate in lectures | 2.51 | High | 3 |
| 3 | Active participation in lectures. | 2.49 | High | 4 frequent |
| 4 | Good preparation for exams | 2.49 | High | 4 frequent |
| 5 | Quality of accomplishing academic assignments | 2.46 | High | 5 |
| 6 | Increase my self-confidence in performing academic tasks. | 2.54 | High | 2 |
| 7 | Easy access to educational content, such as recorded lectures, links, ...etc., through Blackboard. | 2.65 | High | 1 |
| 8 | Develop my group leadership skills. | 2.37 | High | 6 |
| Total | | 2.45 | High | |
| 2 nd domain: Academic perseverance Using Blackboard in light of the Coronavirus pandemic helped me to: | | | | |
| 9 | Spend more time studying. | 2.28 | Moderate | 6 |
| 10 | Do my hardest to achieve academic excellence. | 2.60 | High | 4 |
| 11 | Ensure excellence in accomplishing duties and assignments | 2.70 | High | 3 |
| 12 | Ensure that academic tasks are completed on time | 2.73 | High | 2 |
| 13 | Enjoy challenging academic assignments. | 1.97 | Moderate | 7 |
| 14 | Make an effort to prepare well for the tests. | 2.51 | High | 5 frequent |
| 15 | | 2.51 | High | 5 frequent |
| 16 | Insistence on academic excellence | 2.74 | High | 1 |
| Total | | 2.50 | High | |
| 3 rd domain: Time management Using Blackboard in light of the Coronavirus pandemic helped me to: | | | | |
| 17 | Organize academic work by adhering to a specific timeline for the completion of academic tasks. | 2.51 | High | 5 |
| 18 | Attend lectures on time and to the end. | 2.71 | High | 3 |
| 19 | Do duties and assignments on time. | 2.73 | High | 2 |
| 20 | Commit to complete the exams on time. | 2.79 | High | 1 |
| 21 | Balance between study and daily activities | 2.42 | High | 7 |
| 22 | Increase study time when necessary | 2.50 | High | 6 |
| 23 | Save time and effort wasted when going to the university | 2.57 | High | 4 |
| Total | | 2.60 | High | |

| 4 th domain: Academic excellence | | | | |
|---|--|------|----------|------------|
| Using Blackboard in light of the Coronavirus pandemic helped me to: | | | | |
| 24 | Increase my academic ambitions | 2.60 | High | 3 |
| 25 | Feel the importance of study and excellence | 2.66 | High | 2 |
| 26 | Improve my score in some courses | 2.69 | High | 1 |
| 27 | Increase collaboration with colleagues to accomplish academic tasks. | 2.55 | High | 4 |
| 28 | Get constant feedback. | 2.48 | High | 7 frequent |
| 29 | Master courses | 2.54 | High | 5 |
| 30 | Develop presentation skills | 2.48 | High | 7 frequent |
| 31 | Develop communication skills and academic teamwork. | 2.52 | High | 6 |
| Total | | 2.57 | High | |
| 5 th domain: Planning for academic future | | | | |
| Using Blackboard in light of the Coronavirus pandemic helped me to: | | | | |
| 32 | Develop an enforceable study plan | 2.43 | High | 6 |
| 33 | Arrange courses study based on their priority | 2.52 | High | 5 |
| 34 | Plan to improve my GPA in the present and upcoming semester. | 2.77 | High | 1 |
| 35 | Prioritize personal development in my academic field. | 2.68 | High | 2 |
| 36 | Establish a weekly study schedule. | 2.38 | High | 7 |
| 37 | Concern with pre-preparation for lectures. | 2.33 | Moderate | 8 |
| 38 | Early and good preparation for exams in the upcoming semesters. | 2.59 | High | 4 |
| 39 | Plan to pursue post-graduate studies after graduation. | 2.66 | High | 3 |
| Total | | 2.54 | High | |

3 Discussions

Findings of the first question indicated that adopting E-learning Management System (Blackboard) in light of the Coronavirus pandemic developed the skills of its use among Taif University students. These findings are consistent with Badawi (2010) that demonstrated the effectiveness of teaching a proposed unit in e-learning in developing the skills of using content management programs and the attitudes of educational diploma students at King Khalid University towards e-learning, Al-Shehri and Muhammad (2014) that revealed the effectiveness of training female students of the College of Education at Najran University on the use of Blackboard in developing the skills of its use and the students' attitudes towards it, Al-Sadhan (2015) that illustrated the positive attitudes of students and faculty members in the College of Computer Science and information at Imam Muhammad bin Saud University towards using Blackboard in university education, Abdelwahab (2016) that asserted the

effectiveness of collaborative e-learning based on the use of Blackboard in developing electronic design skills, Al-Randi and Aba Al-Khail (2016) that illustrated the positive attitudes of the students of the University of Jordan towards using Blackboard, Omar and Al-Masabi (2017) that showed the effectiveness of using the application of Blackboard Mobile Learn in developing the attitudes of female students at Najran University towards mobile e-learning, Abu Al-Anin (2018) that demonstrated the effectiveness of applying blended learning strategy via Blackboard in developing the skills of creating electronic programs, Al-Qataan (2018) that illustrated the effectiveness of teaching entrepreneurship course electronically using Blackboard in developing the positive attitude towards e-learning among the students of the preparatory year deanship at the University of Hail, Villalon et al. (2019) that indicated that the lecturers' evaluation of Blackboard Collaborate platform in a distance university was positive, and Baig et al. (2020) demonstrated the positive attitude of students towards the services uploaded on Blackboard, assignments, online tests, ...etc.

Findings of the second question indicated that adopting E-learning Management System (Blackboard) in light of the Coronavirus pandemic developed academic achievement among Taif University students. The result is consistent with Mazroua (2011) that manifested the positive effect of e-learning on increasing academic achievement of King Khalid University students who electronically interacted with economics course (2), Al-Jarrah (2011) that manifested the effectiveness of Blackboard in facilitating the education of the students of the University of Jordan who are enrolled in the Higher Diploma in Information and Communication Technology in Education and maximizing their class participation as well as achievement, Abdelkareem and Al-Rowees (2015) that indicated the effectiveness of teaching a course that was designed in light of the principles of social constructivism theory using Blackboard system in improving academic achievement and developing the attitudes towards the course among students of the College of Education at King Saud University, and Abdelwahab (2016) that demonstrated the effectiveness of collaborative e-learning based on the use of Blackboard in learning retention among the students of the Faculty of Computers at the Islamic University of Madinah, Al-Randi and Aba Al-Khail (2016) showed that the use of Blackboard facilitated learning process, Ali (2017) that illustrated that the effectiveness of Learning Management System (Blackboard) in motivating Saudi English language students at the University of Bisha to work more seriously and learn more competently, Alhussain (2017) that showed that Blackboard had a positive impact on SEU students in terms of improving the quality of the learning environment and the students' individual academic performance, Al-Zahrani (2017) that revealed the effectiveness of using Blackboard from the faculty members' perspective in the preparatory year at the University of Hail, Abu Al-Anin (2018) that demonstrated the effectiveness of applying blended learning strategy via Blackboard in developing academic achievement; Uziak, Oladiran, Lorencowicz, and Becker (2018) showed the effectiveness of the use of Blackboard software from the students and instructor's perspective in delivering a third year mechanical engineering course at the University of Botswana (UB), Elmaadaway (2018) that exhibited the effectiveness of flipped classroom approach in class engagement and skill performance in a Blackboard course, Al-Qataan (2018) that illustrated the effectiveness of teaching entrepreneurship course electronically using Blackboard in developing academic achievement, Al-Jadee (2018) that revealed the effectiveness of using the flipped classroom strategy via Blackboard in improving achievement in communication skills course at the University of Tabuk, Abu Al-Hajj (2019) that showed the effectiveness of using Blackboard system in studying the course of introduction to Islamic culture among Qassim University students and motivating them from their perspective and Conley, Earnshaw, and McWatters (2019) illustrated the effectiveness of two different types of course

layouts in Blackboard (i.e. functional and chronological) in improving academic achievement.

Recommendation

The research recommends activating the role of Blackboard system in Saudi universities in light of crises, in general, and Coronavirus pandemic in particular, due to its positive impact in this field as well as conducting relevant researches.

Conflict of interest

The authors have no conflicts of interest to disclose.

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