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# Effectiveness of Blackboard-Based Virtual Classroom From Faculty Members' Perspective at Prince Sattam bin Abdulaziz University

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**Abstract**
The present study aimed to explore the effectiveness of Blackboard-based virtual classroom in teaching university students. The researcher aimed to explore that from the perspective of the faculty members at Prince Sattam bin Abdulaziz University in Saudi Arabia. He selected a purposive sampling consisting from 100 female and male faculty members who work at the latter university. He developed a questionnaire. The forms of the questionnaire were distributed to those faculty members. However, 92 forms were retrieved. All of the retrieved forms are valid for analysis. SPSS program was used. It was found that Blackboard-based virtual classrooms play an effective role in teaching students. That's concluded from the perspective of faculty members at Prince Sattam bin Abdulaziz University in Al-Salil, Saudi Arabia. It was found that the Blackboard-based virtual classroom makes the learning process enjoyable and promotes positive attitudes among students towards their cultural heritage. It was found that such a classroom enhances students' understanding of complex concepts, and improves students' academic achievement. It was found that such a classroom assists students in doing assignments, and motivates them to learn.
**Keywords:** Blackboard, Prince Sattam bin Abdulaziz University, virtual classrooms, Saudi Arabia, University
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## 1. Introduction:

Since 1970s, researchers, faculty members and instructors have been providing much attention to technology-based education. Therefore, a term called virtual education has emerged. Virtual education refers to the use of an online system or software that includes several features and tools for managing and supporting the learning or training process (Mosquera, 2017). The virtual learning environment must be consisting from several elements. The first element is the headset. A headset is needed in the virtual environment order for learners to hear one another and express themselves. It may be a wired or a wireless headset. However, the audio quality must be high in order to increase the learners' concentration. There mustn't be any noise to keep students well-focused (Huggett, 2017).

The second element is represented in the webcam. In a virtual session, the learners and/or the instructor may choose to shut down the webcam. The webcam may be a built in webcam or a separate device. Thus, a virtual learning session may be an audio session or an audio-visual session. The audio session is held through a conference call, whereas the audio-visual session may be held through using the video-conferencing feature. The third element is represented in the software or system. This software may be called a virtual meeting software or a virtual classroom software (Huggett, 2017).

A virtual environment may be used to teach an online course or support face-to-face courses. It may be used by teachers and students for sharing and presenting academic resources and carrying out academic activities. It enables students to interact effectively with their colleagues and instructors. It increases students' engagement in the learning process (Sneha & Nagaraja, 2013). Through using a virtual environment, instructors shall be capable to devote more time and effort than the instructors teaching in a conventional environment. The use of a virtual environment shall provide opportunities for engaging in individual discussions and group ones. It shall enable instructors to respond fast and effectively to students' questions. It shall enable instructors to assess a great number of students effectively and design assignments by themselves (Sun, and Chen, 2016).

There are various virtual classroom software, such as: Adobe connect, AirClass by Lenovo, Jigsaw, Go to Training, Zoom, and Saba Virtual classroom (Huggett, 2017). There are also many online systems that can be used for delivering virtual education. For instance, the Blackboard is an online system which enables learners to manage their online learning process. It enables learners to be taught or trained virtually. It enables learners to communicate online with their colleagues and instructor. In fact, a Blackboard-based virtual classroom enables learners to learn through using various types of content (i.e. texts, videos, images, internet links and audio). It enables learners to message each other and engage in discussions. It enables instructors to detect plagiarism in students' assignments and projects. It provides students with access to educational blogs (Danver, 2016).

## 2. Statement of the Problem

Virtual environment has been increasingly used by students all around the world to learn. In such an environment, the instructor shall serve as a facilitator. That means that the instructor shall facilitate the process of obtaining knowledge instead of using the spoon-feeding method for the delivery of information (Sun, and Chen, 2016). Due to the increasing attention given to virtual learning, several online systems were created to practice virtual learning. Such systems include: Blackboard. Blackboard was founded by Blackboard Inc. The latter company is specialized in educational consultations and software. It was established in 1997 by Mattthew Pittinsky and Michael Chasen. The Blackboard system provides parents, instructors and students with many opportunities and advantages. It can be used for training, and providing school education and higher education too (Danver, 2016).

A Blackboard-based virtual classrooms enables students to identify the progress they have achieved. It enables students to visit e-libraries. It enables instructors to design their own material. It enables instructors to keep track of students' grades. It enables instructors to identify their extent of compliance with standards. It offers students and instructors a calendar of events to remind them of important dates. It enables instructors to use social media in teaching students (Danver, 2016).

In the light of the increasing use of virtual environment in the education field, it's necessary to shed a light on the use of such an environment in developing countries. Therefore, the researcher of the present study aimed to explore the effectiveness of using Blackboard-based virtual classroom in teaching students. He aimed to explore that from the perspective of the faculty members in Prince Sattam bin Abdulaziz University.

## 3. Objectives

This study aimed to:

1- Assess the capabilities of the faculty members in Prince Sattam bin Abdulaziz University in employing technology-based teaching methods
2- Explore the effectiveness of Blackboard-based virtual classroom in teaching university students from the perspective of the faculty members at Prince Sattam bin Abdulaziz University.

## 4. Questions:

This study aimed to answer those questions:

Q.1. What is the level of capabilities of the faculty members in Prince Sattam bin Abdulaziz University in employing technology-based teaching methods?

Q.2. How effective is Blackboard-based virtual classroom in teaching university students from the perspective of the faculty members at Prince Sattam bin Abdulaziz University?

## 5. The Study's Significance:

The present study is significant because it's useful for:

a- Officials at the Ministry of Higher Education in Saudi Arabia: The present study shall encourage those officials to dedicate more funds for increasing the use of virtual environments at public colleges and universities. It shall encourage those officials to hold workshops for faculty members about the way of using virtual applications and ICT for teaching.
b- Curricula developers: The present study shall encourage curricula developers to design curricula for online courses. It shall encourage curricula developers to include virtual learning activities in curricula.
**c-** Researchers: The present study shall encourage researchers to conduct studies about the effectiveness of virtual environments in teaching students at higher education institutions with targeting various courses. Conducting more studies about this subject shall enable instructors to meet the students' academic needs.

## 6. Limits:

The present study was conducted in in Prince Sattam bin Abdulaziz University in Al-Salil, Saudi Arabia during the 1st semester of the academic year (2019/2020).

## 7. Definition of Terms

### *7.1. Operational definitions*

*Faculty members: This term refers to the faculty members who teach at Prince Sattam bin Abdulaziz University.

*Prince Sattam bin Abdulaziz University: A public university at Al-Salil in Saudi Arabia.

### *7.2. Theoretical definitions:*

*Virtual classroom: It refers to a classroom at which the students and the instructor are connected through using a web platform or system. It's characterized with using synchronous learning style and having a high level of

 

interaction. The learning in this classroom is led by the instructor. In this classroom, the learning objectives that are well-defined. The students in this classroom may be dispersed geographically (i.e. in different places). The web platform or system enables students to share files, interact and chat (Huggett, 2017).
*Blackboard: It is an online system that enables learners to manage their online learning. It enables learners to be taught or trained virtually. It enables learners to communicate online with their colleagues and instructor (Danver, 2016).

## 8. THEORETICAL FRAMEWORK

### *8.1. VIRTUAL EDUCATION:*

The use of an online environment motivates students to learn. It also improves the way students interact with their instructor. It promotes collaboration between students. It provides learning opportunities that are characterized with flexibility. It offers learning opportunities that are affordable and accessible. It enables students to overcome the geographical and financial limitations hindering them from receiving education. It enables students to learn without facing the schedule conflicts (Sun, and Chen, 2016). Virtual education provides students with opportunities to learn. It provides students with education of high quality. It improves students' learning outcomes and skills (Barbour, and Reevesb, 2009).

Virtual education improves students' skills and expand their knowledge. It improves students' mental operations, decision making skills and learning experiences (Loke, 2015). The 3-D virtual educational environment enables students to access inaccessible environment. It enables students to master the tasks assigned to them. It assists students in doing assignments. It displays practical applications for theoretical knowledge. It motivates students through engaging them in the learning process. It enables students to understand complex systems, concepts and environments. It enables learners to understand complex metaphors. It improves students' capacity to recall information and problem solving skills. It enables students to see dangerous and risks practical experiments. It improves students' comprehension for the material (Choi et al., 2016).

The virtual classroom software consists of several features. Such features are listed below:

1- Document sharing
2- Chatting
3- Drawing and annotation
4- Status indicators
5- Raising hand virtually
6- Making a poll: Through this features, learners can be asked challenging questions, including multiple-answer and short-answer questions.
7- Distributing files and materials:
8- Separating students into groups
9- Making tests and quizzes: Such features shall enable the instructors to identify the learners' amount of knowledge and check their comprehension
10- Using a whiteboard: This feature is represented in an electronic screen that students can type or draw on.
11- Presenting an application for theoretical knowledge (Huggett, 2017).

The use of a virtual classroom assists students in doing assignments and organize their academic folders. It enables students to engage in discussions over academic issues. It enables instructors to identify students' feedback on the resources instantly. It enables students to post questions and share academic resources with each other. It increases students' engagement in the teaching-learning process. It enables students to attend conferences while they are sitting at home. It enables instructors to improve their performance (Beaumont, 2018).

### *8.2. BLACKBOARD*

Blackboard enables instructors to design a sheet that includes the criteria that shall be adopted for correction. It enables instructors and students to engage in a discussion. It enables students to detect spelling mistakes and grammatical ones. It enables students to improve their writing skills. However, the students with poor computer skills are usually resistant to the use of Blackboard. Some students do not have access to internet at home. That hinders those students from using the Blackboard system. Sometimes, instructors and students face technical problems when using Blackboard. That shall discourage both from using Blackboard (Munoz-Luna and Taillefer, 2017).

Blackboard is a flexible system that is usually used for complementing the face-to-face classroom delivery. It serves as an effective medium that enables instructors and students to exchange knowledge and communicate. It offers excellent peer support and stimulates peer learning. It stimulates student-centered learning and encourages students to learn in an ongoing manner. It encourages students to engage actively in the learning process. It provides instructors and students with additional academic resources and improves students' higher order thinking skills. It enables students to work in groups. It enables students to research about the topic before engaging in the discussion. It enables students to respond at the time that suits them (Information Resources

 

Management Association (IRMA), 2018).

The use of the Blackboard system promotes collaboration among students. It creates an environment that is characterized with being motivational and user-friendly. It improves the learning outcomes. It is associated with high levels of engagement and interactivity. It enables instructors to display knowledge in many innovative methods. However, the use of this system is affected by the amount of training provided to instructors, the financial incentives granted to instructors. It's affected by instructors' attitudes towards the use of technology in education (Alokluk, 2018).

Blackboard enables instructors to store and upload academic resources. It enables instructors to create a link for the academic material. It enables instructors to update and edit the material. It facilitates the process of distributing the course material to students. It enables students to give instant feedback on the academic material. It enables students to save time while learning. It facilitates the process of assessing students and identifying their amount of knowledge. It enables instructors to keep a professional diary. Having the capacity to do that shall enable instructors to develop themselves professionally. It enables students to record their progress. It enables students to find answers for questions without relying on the instructor. It provides learning opportunities that are flexible. However, there are several challenges associated with the use of Blackboard. For instance, Blackboard operates slowly. It may stop operating suddenly. It doesn't enable many user to interact simultaneously. In addition the layout of the screen in Blackboard is messy (Habib, 2019).

## 9. Empirical Studies

El-Zawaidy and Zaki (2014) aimed to explore faculty members' attitudes towards using Blackboard in Saudi Arabia. 360 faculty members were surveyed. They were selected from King Saud University, Taif University-College of Education and King Khaled University. It was found that Blackboard is easy to use and respondents consider it as the best system they have ever used. It was found that Blackboard enables instructors to interact with students and instructors would like to learn more information about Blackboard. It was found that respondents would recommend using Blackboard.

Ismaeel and Al-Abdullatif (2016) aimed to explore the effectiveness of using interactive virtual museum in promoting positive attitudes among students towards their cultural heritage. The sample consists from 118 6$^{th}$ grade students. Those students were selected from two schools at Saudi Arabia. It was found that using interactive virtual museum plays an effective role in promoting positive attitudes among students towards their cultural heritage. It was found that such use shall promote knowledge among students about their cultural heritage and maintain the culture heritage. It was found that such use shall increase students' enthusiasm to learn.

Zabadi and Al-Alawi (2016) aimed to explore the attitudes of university students towards e-learning in Jeddah, Saudi Arabia. The sample consists from (371) students. Those students were chosen from 4 colleges in KSA through using the stratified random sampling method. A three-part questionnaire was used. It was found that students feel comfortable to learn through using technology. It was found that students prefer doing assignment through using technology and feel more satisfied with the quality of the provided education when using an e-learning platform. It was found that students prefer getting the material through downloading it. It was found that students prefer using the online library and reading e-books over using the conventional library and reading paper-based books. It was found that using technology makes learning easier and facilitates the process of sharing an academic material. However, it was found that using an e-learning platform requires having computer skills that are advanced.

Alhawiti (2017) aimed to explore the effectiveness of virtual classes in raising students' academic achievement in English language courses. He adopted an experimental approach and selected a sample consisting from 224 students who were selected from Tabuk Community College in Saudi Arabia. Those students were divided into experimental and control groups. Pre-test and post-test were used. It was found that virtual classes can significantly improve students' academic achievement in English language courses.

Mosquera (2017) aimed to explore the effectiveness of using a virtual environment for teaching EFL students in a public university located at Colombia. The sample consists from 5 instructors and 210 students. Those instructors and students were selected through using the convenience sampling method. A questionnaire was used and notes were taken through observation. It was found that using a virtual environment makes EFL students feel motivated and enthusiastic to learn language. It was found that using a virtual environment can be used for teaching all subjects. It was found that using a virtual environment makes the learning process fun for EFL students. It was found that using a virtual environment enhances the instructors' experiences in teaching and stimulates students' learning. It was found that using a virtual environment makes communication between the instructor and the students' more effective. It was found that using a virtual environment enables instructors to carry out a variety of activities and enables EFL students to interact effectively with one another.

Vargas-Madriz (2018) aimed to explore the extent of experiencing a sense of closeness in an online learning environment in Canada. 5 university students were interviewed. It was found that the online learning environment makes students experience much closeness to one another. Subramanian (2019) aimed to explore

 

students' attitudes towards using a virtual environment in teaching science and math. 200 school student were sampled. They were selected from 6th-12th grades in Kochi, Trivandrum. A fourteen-item questionnaire was used. It was found that using a virtual environment plays an effective role in teaching science and math. It was found that the use of a virtual learning environment shall facilitate the process of teaching practical modules. It was found that the use of such an environment shall assist students in understanding concepts and improve their academic achievement. It was found that the use of such an environment shall reduce the fear and anxiety that are associated with learning math and science. It was found that the use of such an environment shall make the learning process enjoyable.

Ibrahim et al. (2019) aimed to explore faculty members' attitudes towards using the Blackboard system in teaching students at Saudi Arabia. The sample consists from 174 faculty members working at Hafr Al-Batin University. A survey was used. It was found that the respondents have positive attitudes. It was found Blackboard facilitates the communication between students and instructors and enables instructors to use a variety of teaching methods. It was found that Blackboard enables students to expand their knowledge and makes learning enjoyable. It was found that Blackboard enables instructors to develop their skills in using computer. It was found that Blackboard doesn't enable faculty members to develop their teaching skills nor save time and effort when teaching students. It was found that Blackboard is difficult to use.

## 10. Methodolgy:

### *10.1. Approach*

A descriptive analytical approach is adopted.

### *10.2. Population and sample*

The population consists from all the faculty members who work at Prince Sattam bin Abdulaziz University in Al-Salil, Saudi Arabia. The researcher selected a purposive sampling consisting from 100 female and male faculty members who work at the latter university. Those faculty members were selected from all the faculties of the university. The researcher developed a questionnaire. The forms of the questionnaire were distributed to those faculty members. However, 92 forms were retrieved. All of the retrieved forms are valid for analysis. Demographic data about the respondents is presented below

Table (1): Distribution of the respondents in accordance with gender and experience

| Variable | Category | Frequency | Percentage% |
|---|---|---|---|
| Experience | 5 years or less | 7 | 7.608 |
| | 6-12 years | 22 | 23.913 |
| | 13 years or more | 63 | 68.478 |
| Gender | Male | 48 | 52.17 |
| | Female | 44 | 47.82 |

N=92

Based on table (1), it was found that 7.60% of the respondents have 5 years of experience or less and 23.91% of the respondents have 6-12 years of experience. It was found that 68.47% of the respondents have 13 years of experience or more. That means that Prince Sattam bin Abdulaziz University is highly concerned in recruiting faculty members who possess much experience. That's because gaining much experience shall enable the faculty members to show a better performance at work. In addition, having much experience shall enable the faculty members to employ teaching methods effectively. Based on table (1), 52.17% of the respondents are males and 47.82% of the respondents are females.

### *10.3. Instrument*

The researcher developed a five-point Likert questionnaire. This questionnaire consists from two parts. Part one aims at collecting demographic data, such as: experience. It aims at collecting data about the capabilities of respondents in employing technology-based teaching methods. As for part two, it aims at collecting data about the effectiveness of Blackboard-based virtual classroom in teaching university students. The questionnaire consists from fifteen (15) statements. It was developed after reviewing the studies made by Vargas-Madriz (2018), Subramanian (2019), Mosquera (2017), Ismaeel and Al-Abdullatif (2016), Loke (2015), Choi et al. (2016), Alhawiti (2017), Beaumont (2018), Reevesb (2009), Danver (2016), and Habib (2019). Through the cover page of the questionnaire, the researcher confirmed that the collected data shall remain confidential. The questionnaire forms were distributed in Arabic language. Later on, the questionnaire was translated into English language to be presented in this research.

### *10.4. Validity of Instrument*

To make sure that the questionnaire is valid, the preliminary version of the questionnaire was sent to two faculty

 

members. It was sent in Arabic language. It consists from 16 statements. Those faculty members work at a Saudi university and possess much experience. They are specialized in educational sciences. They were asked to assess this version in terms of (a-language, b-relevancy, and c-clarity). They suggested that that the questionnaire is free from language mistake, clear and capable of meeting the intended goals. However, one of them recommended deleting a statement and the other faculty member recommended re-drafting a statement to become clearer. Thus, the researcher made these changes to come up with the final version of the questionnaire.

*10.5. Reliability of Instrument*

To measure how reliable the questionnaire is, the Cronbach Alpha coefficient value is calculated. It's 0.894. This value is deemed as high. Hence, the instrument is deemed as reliable. It provides accurate results.

*10.6. Statistical analysis methods and criteria*

Through the use of the SPSS program, data was analyzed. Percentages, standard deviations, Cronbach Alpha coefficient value and means were calculated. The criteria presented in the second table are used for the classification of means:

Table (2): The criteria used for the classification of means

| Range | Level | Attitude |
|---|---|---|
| 2.33 or less | Low | Negative |
| 2.34-3.66 | Moderate | Moderate |
| 3.67 or more | High | Positive |

**Source:** Al-Amery (2020)

## 11. Results and Discussion

*11.1. Results and discussion related to the first question:*

Q.1. What is the level of capabilities of the faculty members in Prince Sattam bin Abdulaziz University in employing technology-based teaching methods?

Table (3) presents data related to the 1st question. It presents the relevant percentages and frequencies:

Table (3): The capabilities of the faculty members in Prince Sattam bin Abdulaziz University in employing technology-based teaching methods

| **Question** | **Category** | **Frequency** | **Percentage** |
|---|---|---|---|
| How do you assess your capabilities in employing technology-based teaching methods? | **Excellent** | 15 | 16.30 |
| | **Very good** | 65 | 70.65 |
| | **Good** | 6 | 6.52 |
| | **Fair** | 2 | 2.17 |
| | **Poor** | 4 | 4.34 |

Through the third table, it can be noticed that 16.30% of the respondents have excellent capabilities in employing technology-based teaching methods. It was found that 70.65% of the respondents have very good capabilities in this regard. It was found that 6.52% of the respondents have good capabilities and 2.17 % of the respondents have fair capabilities. It was found that 4.34% of the respondents have poor capabilities. Based on these percentages, it was found that most of the respondents have very good capabilities in this regard. That indicates that Prince Sattam bin Abdulaziz University provides much attention to staff development and keeping up with technology. It indicates that Prince Sattam bin Abdulaziz University seeks recruiting the faculty members who have much IT-related expertise.

*11.2. Results and discussion related to the second question:*

Q.2. How effective is Blackboard-based virtual classroom in teaching university students from the perspective of the faculty members at Prince Sattam bin Abdulaziz University?

Table (4) presents standard deviation for identifying the effectiveness of effectiveness of Blackboard-based virtual classroom from the perspective of the faculty members in Prince Sattam bin Abdulaziz University

Table (4): The effectiveness of Blackboard-based virtual classroom from the perspective of the faculty members in Prince Sattam bin Abdulaziz Universitys

| No. | Statement | Mean | Std. | Attitude | Level |
|---|---|---|---|---|---|
| 1. | Students in a Blackboard-based virtual classroom shall enjoy much closeness to each other | 2.11 | 0.61 | Negative | Low |
| 2. | The Blackboard-based virtual classroom shall reduce the fear and anxiety that are associated with the learning process | 2.27 | 0.64 | Negative | Low |
| 3. | The Blackboard-based virtual classroom shall make the learning process enjoyable | 4.73 | 0.32 | Positive | High |

 

| No. | Statement | Mean | Std. | Attitude | Level |
|---|---|---|---|---|---|
| 4. | The Blackboard-based virtual classroom is effective for teaching all subjects | 2.29 | 0.27 | Negative | Low |
| 5. | The Blackboard-based virtual classroom is effective for promoting positive attitudes among students towards their cultural heritage | 4.56 | 0.71 | Positive | High |
| 6. | The Blackboard-based virtual classroom shall improve students' decision making skills | 4.72 | 0.44 | Positive | High |
| 7. | The Blackboard-based virtual classroom shall enhance students' understanding of complex concepts. | 4.87 | 0.67 | Positive | High |
| 8. | The Blackboard-based virtual classroom shall improve students' academic achievement | 4.81 | 0.50 | Positive | High |
| 9. | The Blackboard-based virtual classroom shall assist students in doing assignments | 4.55 | 0.58 | Positive | High |
| 10. | The Blackboard-based virtual classroom provides poor students with opportunities to learn | 2.31 | 0.84 | Negative | Low |
| 11. | The Blackboard-based virtual classroom shall improve students' problem solving skills | 4.93 | 0.24 | Positive | High |
| 12. | The Blackboard-based virtual classroom shall enable instructors to identify their extent of compliance with standards | 4.97 | 0.72 | Positive | High |
| 13. | The Blackboard operates fast | 2.25 | 0.54 | Negative | Low |
| 14. | The Blackboard-based virtual classroom shall motivate students to learn | 4.88 | 0.53 | Positive | High |
| 15. | The Blackboard is easy to use | 2.04 | 0.12 | Negative | Low |
| | Total | 3.75 | 0.51 | Positive | High |

Based on the fourth table, it was found that the overall mean is 3.75. That means that Blackboard-based virtual classrooms play an effective role in teaching students. That's concluded from the perspective of the faculty members at Prince Sattam bin Abdulaziz University in Al-Salil, Saudi Arabia. It was found that students in a Blackboard-based virtual classroom shall not enjoy much closeness to each other, because the relevant mean is 2.11. The latter result is inconsistent with the result concluded by Vargas-Madriz (2018). That may be attributed to the fact that feeling closeness to one another requires being physically present with one another.

It was found that the Blackboard-based virtual classroom shall not reduce the feelings of fear and anxiety that are associated with the learning process because the relevant mean is 2.27. The latter result is inconsistent with the result concluded by Subramanian (2019). That may be attributed to the fact that reducing such feelings is affected by the instructor's social skills and the way he/she interacts with his/her students. It was found that the Blackboard-based virtual classroom shall make the learning process enjoyable because the relevant mean is 4.73. The latter result is consistent with the result concluded by Subramanian (2019). That may be attributed to the fact that young people enjoy the use of technology. It may be attributed to the fact that using multimedia shall make the learning process enjoyable.

It was found that the Blackboard-based virtual classroom isn't effective for teaching all subjects, because the relevant mean is 2.29. The latter result is inconsistent with the result concluded by Mosquera (2017). That may be attributed to the fact that teaching some courses requires having the teacher physically present to teach students practical skills. Such courses may include: music and drawing courses. It was found that the Blackboard-based virtual classroom is effective for promoting positive attitudes among students towards their cultural heritage, because the relevant mean is 4.56. The latter result is consistent with the result concluded by Ismaeel and Al-Abdullatif (2016). That is because the virtual environment enables students to access unlimited amount of interesting information about the positive aspects of heritage. That shall make students admire their heritage and culture.

It was found that the Blackboard-based virtual classroom improves students' decision making skills, because the relevant mean is 4.72. The latter result is consistent with the result concluded by Loke (2015). That may be attributed to the fact that the Blackboard makes students in control over their learning process and enforces them to make their choices and decisions by themselves. It was found that the Blackboard-based virtual classroom shall enhance students' understanding of complex concepts. That's because the relevant mean is 4.87. The latter result is consistent with what's suggested by Choi et al. (2016). It may be attributed to the fact that the virtual environment enables students to see practical illustrations for complex concepts.

It was found that the Blackboard-based virtual classroom shall improve students' academic achievement. That's because the relevant mean is 4.81. The latter result is consistent with what's suggested by Alhawiti (2017).

 

It may be attributed to the fact that the virtual environment enables student to access unlimited amount of knowledge and resources when preparing for exams. That shall enable students to prepare well for exams. Thus, students shall obtain scores that are higher than the students who aren't provided with many resources. It was found that the Blackboard-based virtual classroom shall assist students in doing assignments, because the relevant mean is 4.55. The latter result is consistent with what's suggested by Choi et al. (2016) and Beaumont (2018). It may be attributed to the fact that the virtual environment provides students with the ability to visit e-library. That shall make the process of doing assignments easier.

It was found that such a classroom shall not provide poor students with opportunities to learn. That's because the relevant mean is 2.31. The latter result is inconsistent with what's suggested by Barbour, and Reevesb (2009). It may be attributed to the fact that accessing this classroom requires having a computer and an internet access at home which may be expensive for poor students. It was found that such a classroom shall improve students' problem solving skills. That's because the relevant mean is 4.93. The latter result is consistent with what's suggested by Choi et al., (2016). It may be attributed to the fact that using a virtual environment shall enable students to gain virtual experiences that are difficult to gain in actual life due to being risky or costly. That shall make students capable of coming up with creative solutions for problems.

It was found that such a classroom shall enable instructors to identify their extent of compliance with standards. That's because the relevant mean is 4.97. The latter result is consistent with what's suggested by Danver (2016). That's because virtual environments usually provides instructors with checklist and standards for assessing themselves after class. It was found that the Blackboard is slow, because the relevant mean is 2.25. The latter result is inconsistent with what's suggested by Habib (2019).

It was found that such a classroom shall motivate students to learn, because the relevant mean is 4.88. The latter result is consistent with the result concluded by Mosquera (2017). It may be attributed to the fact that the use of technology shall make students learn through virtual experiences instead of just reading a text. It was found that Blackboard is difficult to use, because the relevant mean is 2.04. The latter result is consistent with the result reached by Ibrahim et al. (2019).

## 12. Conclusion

Through the use of a statistical analysis program (i.e. SPSS program), it was found that most of the respondents have very good capabilities in employing technology-based teaching methods. It was found that Blackboard-based virtual classrooms play an effective role in teaching students. That's concluded from the perspective of the faculty members at Prince Sattam bin Abdulaziz University in Al-Salil, Saudi Arabia. It was found that the Blackboard-based virtual classroom makes the learning process enjoyable and promotes positive attitudes among students towards their cultural heritage. It was found that such a classroom enhances students' understanding of complex concepts, and improves students' academic achievement. It was found that such a classroom assists students in doing assignments, motivates them to learn and improves their problem solving skills. It was found that such a classroom enables instructors to identify their extent of compliance with standards. However, it was found that such a classroom doesn't reduce the fear and anxiety that are associated with the learning process. It was found that such a classroom is not effective for teaching all subjects and doesn't make students enjoy much closeness to each other.

## 13. Recommendations:

The researcher recommends:

1- Providing faculty members and students with more training courses about the way of using ICT and virtual learning applications
2- Using financial and moral incentives to encourage faculty members to teach students through using a virtual system.
3- Holding workshops for faculty members in Saudi Arabia in order to promote awareness about the significance of using technology in education. Such workshops must be funded by the Saudi Ministry of Higher Education.
4- Enlisting exercises in the curricula used at Saudi universities that require using a virtual system.
5- Encouraging faculty members in Saudi Arabia to engage in online discussions with their students.
6- Conducting studies about the effectiveness of Blackboard-based virtual classroom in teaching schools students.

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