UTILIZATION OF VIRTUAL CLASSROOM SYSTEM IN TRADITIONAL TEACHING: BENEFITS AND CHALLENGES

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ABSTRACT: *The present study aims to identify fulltime female students' perspectives of using the virtual classroom (via the blackboard system) as a main teaching tool to deliver learning materials in College of Science and Arts, Najran University, Saudi Arabia, for the academic year 2017/2018. It also sheds light on male faculty members' views on using this system in comparison with the videoconference system used by male faculty members to teach female students at their campuses. The study is based on data elicited from conducting interviews with 5 female students and 5 male faculty members. The main findings indicated that male faculty members prefer to use the virtual classroom system rather than teaching via the videoconference system; and although female students like being taught via the virtual classroom, they prefer to use the videoconference system due to Internet connection problems.*

KEYWORDS: E-learning, Virtual classroom, blended learning, Saudi Education, Female students' higher education, social cultural theory

INTRODUCTION

Information and communication technologies (ICTs) have been in general enthusiastically implemented by policy makers and researchers in the education system (Kozma 2003). As these technologies advance, so new ways of using them in the education field are emerging. For example, whereas Web 1.0 features support the behaviorist approach, Web 2.0 features promote collaboration between learners in order to obtain knowledge (Wankel and Blessinger 2013). However, success in using these technologies in teaching and learning strategy depends on a combination of factors, such as the strategy of a university towards adoption of ICTs in the education system, students' and faculties' abilities to use these new technologies in the educational process, and/or the digital infrastructures available for students and faculties to use them effectively in teaching and learning strategy (Littlejohn and Pegler 2007; Stacey and Gerbic 2008; Qadri, Ahmed et al. 2014).

E-learning can be used to support the traditional way of learning (blended learning) or online learning. It can also be used to overcome some of the challenges that face instructors and learners in their daily formal and informal teaching (Bonk and Graham 2012; Rowley and OâDea 2014). One of the main advantages of E-learning is its focus on the individual learner. It increases the opportunity for self-learning by allowing individual learners to obtain the information they need with/without support from the expert. E-learning provides learners with the flexibility to learn according to their free time (Stacey and Gerbic 2008; Bonk and Graham 2012). Further, learners can listen to and/or reread course materials as often as is necessary to acquire a full

understanding of new knowledge (Rowley and OâDea 2014). In other words, E-learning does not limit the learner to a place or time, and increases the opportunity to learn in an informal learning setting. Learners can seek information themselves wherever there is an Internet connection and at whatever time is convenient to them.

However, to effectively implement E-learning in the education system, teaching pedagogies need to be changed (Bonk and Graham 2012). Students should be viewed as active agents and allowed to collaborate in learning tasks or solving complex problems. In other words, the role of faculty members needs to be changed from providing knowledge to providing resources for learning and encouraging learners to take up cognitive processes to obtain new knowledge (Bransford 2000). However, learners need a great deal of motivation and time management in the absence of the traditional social interaction between learners and their instructors. This becomes especially critical when learners study online. In their study, Castillo-Merino and Serradell-LApez (2014) found that motivation is the main variable affecting students' performance when learning in an online environment. Importantly, more research needs to be done on how e-learning is being used by instructors rather than focusing on the benefits of its usage (Littlejohn and Pegler 2007). Specifically, there is a lack of research on the use of E-learning by Saudi women (Alamri, Cristea et al. 2014).

Women's higher education in the KSA
Providing higher education to Saudi male and female students is the responsibility of the Ministry of Higher Education, which was established in 1975 (Jamjoom and Kelly 2013). Currently, the Ministry of Higher Education and the Ministry of Education has merged in one ministry called the Ministry of Education. The goal of the Ministry of Education is to help students (higher education, k-12 and kindergarten) discover their individual talents and prepare them for life in the information age (Alkhalaf, Drew et al. 2012).

The Saudi government has invested heavily in women's education. Whereas only one Higher Education College was available for women in 1967, today, there are 26 public universities available for female students to complete their higher education (MOHE 2015). These universities and their branches are located in different parts of the country and female students have the opportunity to attend any one of them. Importantly, males and females study at separate campuses. This gender segregation is based on Islamic values and Saudi culture. Female students also have the opportunity to study different disciplines abroad. According to a Ministry of Education report (2013), the number of female students who studied abroad in 2013 was over 27,500. While female students can study any subject, they are, however, encouraged to study those disciplines considered more suitable to their feminine nature, such as teaching, nursing, and medicine (Al Rawaf and Simmons 1991).

Despite the efforts being made, female students still have fewer opportunities to select the university and discipline of their choice than male students. One of the main reasons is Saudi traditional culture that discourages females from travelling and living far away from their home (Hamdan 2005). Female students therefore normally attend the university campus nearest to their town, city or village. As a result, female students' choice of higher education programs is limited to those offered at university

campuses near to their home and such programs do not in general include computer and medicine courses but are usually confined to the Arts. Moreover, for females to study abroad or at a university far from their family home, they require a male guardian to be with them. To overcome this cultural restriction, universities are beginning to use the new information and communication technologies to enable female students to gain access to a wider variety of study programs. To achieve this, male faculty members give lectures to female students through a closed-circuit television with a one-way video and a two-way audio broadcast system. They can present topic materials via the video system into female students' study rooms and both can communicate via the audio broadcast system.

Blended e-learning is now being viewed by some Saudi universities as a transformer that enables changes in the teaching and learning process. They are consequently now including e-learning in their education system (Alkhalaf, Drew et al. 2012; Alamri, Cristea et al. 2014). Blended e-learning is especially regarded as a value to educate girls and women (Alebaikan 2012). Blended e-learning at Najran University is a combination of face-to-face and online learning via the blackboard learning system. The aim is to enhance the traditional lecture at the university campus with additional features offered by the virtual classroom (via the blackboard system) and discussion boards, thereby providing students with a far wider range of teaching materials and recorded lessons (Deanship 2015). In this way, the lecturer can provide one hour of teaching per week through the virtual classroom system or discussion boards, even though male students may not be present at the university campus.

This paper focuses on the implementation of an E-learning project at Sharoura College of the Sciences and Arts. As the project is in its early stage, the focus will be on the process by which the project is being implemented, rather than an attempt to evaluate the outcomes of this project. The case study approach is employed since it is argued that the case study can be used to obtain rich information when seeking to answer how and why questions (Yin 2013).

The study context
Najran University has started using the Blackboard learning management system to support teaching and learning for both males and females (Deanship 2015), since such system offers more opportunity to actively interact with students (Littlejohn and Pegler 2007; Stacey and Gerbic 2008). A small project has been implemented to tackle the issue of lack of communication between female students and their male faculty members when using the videoconference system.

As previously indicated, Saudi female students, in the Saudi education system, study separately from male students in a detached campus. Accordingly, a videoconference system has been designed to support communication with female students via a video camera that allows male faculty members to convey lecture materials into female students' study rooms. Female students are able to use the audio video system to ask and answer instructors' questions. To this end, the interactive features of the Blackboard system, e.g. group discussion, can be used to increase the interactivity of the learning environment (Alkhalaf, Drew et al. 2012).

The aforementioned project also overcomes the issue of a limited number of rooms available for male faculty members to use the videoconference system. In consequence, the blackboard as a learning management system is viewed as a tool to provide more interaction between male faculty members and their female students via usage of the virtual classroom feature. The virtual classroom feature in this case is used to provide lectures to several female students' study rooms. To do so, each study room is provided with a large speaker and microphone. The room is also provided with a data show, which is connected to the main PC in the lab. Female students also have the opportunity to use their own blackboard account. In this case, they can use one of the computer PCs in the lab. Thus, they individually join the instructor's virtual classroom and use the microphone connected to their PC to communicate with the instructor. It should be noted that the virtual classroom is intended to be used to provide video and audio communication to support formal classroom learning in female students' campuses and not to communicate with female students when they are at home or in other places.

The study design
The research design was guided by socio-cultural theory. To investigate teaching and learning practices and the value of using the blackboard learning management system to support teaching in a formal setting, a combination of quantitative and qualitative research methods within a case study approach was viewed as appropriate to achieve a better understanding of how blackboard and virtual classroom features are being used in the teaching and learning process.

The study was carried out at Sharoura College of the Sciences and Arts where female students have the opportunity to study one of seven educational programs, namely: Islamic Studies, Arabic, English, Maths, Chemistry, Computer Science, and Kindergarten. At the time of the study, 51 courses relating to different subjects were being taught by male faculty members via the videoconference system. 10 of the 51 courses were selected for participation in this research together with female students studying in the Computer Science and Chemistry departments in their final year. As, female students studying Computer Science and Chemistry in their final year are more likely to have experience in computer usage since they attend a course in how to use ICT in teaching and learning. In other words, the blackboard system is used to provide 25 hours of teaching per week. Four male faculty members from the Computer Science department and 1 male faculty members from the Chemistry department participated in this study. All had received training in how to use the blackboard system as had the five female student participants.

The study was conducted in two phases. In the first phase, the focus was on students' and faculty members' perspectives of using this new teaching method, the challenges they might face and their view on how to improve the learning environment. In the second phase, the focus was on how female students and their instructors used this new teaching and learning method and to what extent it supported or hindered their learning. To obtain rich data for each phase, a mixed research methodology was used to collect qualitative and quantitative data in order to facilitate in-depth analysis for each phase.

In the first phase, the study sought out to what extent female students and their instructors accepted the use of the e-learning system for teaching and learning. Quantitative and qualitative data were needed to provide a comprehensive answer to this question. Accordingly, an interview schedule was designed to elicit female students' views on the value and challenges of applying this system. Five female students participated in a focus group interview. Semi-structured interviews were also conducted with 5 male faculty members. In the second phase, the study sought to find out how the virtual classroom was being used in the teaching and learning setting. To this end, qualitative data was elicited in order to provide a deep understanding of how instructors and students were using the blackboard system and the virtual classroom for their teaching and learning. Classroom observation was employed to also collect the information required for this phase. The researcher attended several male faculty members' lectures and employed a female assistant to observe female students' classroom setting.

This paper presents primary findings of the first phase based on data collected from 5 male faculty members and 5 female students via semi-structured interviews and focus group, respectively. Thematic analysis was used as a mechanism for processing data gathered from both faculty members and female students. The analysis was carried out following Braun and Clarke's (2006) guidelines for carrying out thematic analysis, i.e.: become familiar with the data, generate initial codes, search for themes, and review generated themes and suggestions from other scholars (e.g. Hammersley and Atkinson 2007; Creswell 2009).

DISCUSSION

As indicated above, this paper presents primary findings based on the interview data gathered from female students and their instructors. The interviews focused on the identification of the benefits and limitations of using of the virtual classroom to deliver teaching materials compared with the videoconference system. Three sub-themes emerged during the analysis of the data provided by interviewees, namely, interest is the key to success, lack of readiness limits the success, and cultural restriction.

Interest is the key to success
Those faculty members who had a genuine interest in ICTs showed a great interest in using the blackboard and its features to support their teaching practice. In this study, although 4 instructors were specialists in computer science, the chemistry lecturer was the one who used the blackboard features most frequently in his daily teaching. In his view *"new technologies offer more time for students to communicate with professors*" (Instructor5_I). His willingness to use the new technologies led him to read more about different ways of using the blackboard system and the features that could be used to extend learning beyond the university campus. He uploaded his materials on the blackboard in advance and used the discussion board to present several questions. His aim was to follow up his female students' understanding of the lectures delivered through the online classroom. Although he found using the blackboard time-consuming, he enjoyed this type of learning as "*students become more involved in the course and obtain deep understanding*". Instructor 2 also showed a similar interest in

using the blackboard system. He used most of the features that the blackboard board offered, benefiting from his experience in using this system and the training he had received prior to the project's implementation. According to instructor 2, via the virtual classroom "*female students can work in groups more easily and I can provide them with rich information about the topic*" (Instructor2_I). In his view, in the new e-learning environment, the roles of instructors and students are changing, so, "*we need to use different ways to encourage students to benefit from this new system, and to meet students' growing expectations*" (instructor2_I). Rennie and Morrison (2013) contend that individuals in educational institutions need to become active participants in the learning process in order to increase the success of blended learning. Faculty members who have less interest in using the blackboard system limit its usage to providing lectures through the virtual classroom features and utilising the videoconference system. These faculty members/instructors do not involve female students in such activities outside lecture time. Instructor 4_I stated "*I do not have enough time to set questions for female students to participate in discussions or active teaching during the day*" (Instructor 3_I).

Lack of readiness limits the success
Findings from this study indicated that successful usage of blended learning is affected by instructors' knowledge of the features offered by the blackboard a learning management system to support the teaching and learning process. Although instructors had attended a training course to apply the blackboard system in their teaching practice, only 2 of the 5 instructors used most of its features. Instructors claimed that "*the training we had was insufficient*" (Instructor 3_I). Female students also indicated that they required more time to become familiar with the system. Student ST3 claimed that "*instructors only use the blackboard [the virtual classroom] to present teaching materials during lecture time*". This, according to most students, did not get them involved in using this system, and they consequently did not benefit from its features. Moreover, instructors normally used the Doc-Cam to provide more explanation about the point they were presenting and hand-wrote the information on paper which was passed to the female students' teaching room. Female students found this more helpful than using the white board which the blackboard system offers.

Although female students liked the blackboard system, they preferred to go back to using the videoconference system. In their view, certain problems needed to be addressed before using the blackboard system to present teaching materials during lecture time and support their learning afterwards. ST5 reported "*our course group was set to use the videoconference system, but when we moved to the computer the speaker was not working*". This, in her view, was a clear sign that steps needed to be taken to ensure the new teaching and learning system was functioning effectively (ST2_I). However, after solving sound technical problems, female students and their instructors reported that the sound when using the virtual classroom was clearer than when using the video conference sound system. Other problems that led students and instructors to ask for improved infrastructure and preparation before implementing the blackboard system was lack of connection speed to the Internet. Instructor4 remarked "*although I enjoy teaching with the virtual learning system, the drop connection and low speed of the Internet hinders the start of several lectures and interrupts others*" (Instructor 4_I). Female students indicated that one of the main reasons for preferring

26

use of the videoconference system was the fast connection to this system and fewer technical problems during lecture time.

Cultural restriction

Findings from this study indicated that culture plays a critical role in successfully implementing blended e-learning in female students' education in the KSA. Male faculty member found it difficult to provide extra lessons outside the official working and lecturing hours at the university campus. Instructor5 stated "*I use the discussion board to assess my students' understanding but due to the cultural aspect and college system I cannot give extra lessons via the blackboard system*" (Instructor 5_I). Two other instructors indicated that one of the main reasons for their not using even the discussion board to communicate with their female students was the cultural environment. For example, Instructor3 reported, *"I created a Whats app group to help my female students but it was not a good experience, so, I limited my usage of the blackboard to the assigned lecture time*" (Instructor 3_I).

This experience is found in other studies conducted in the Saudi context. For example, one of the main factors hindering the progress of implementing technology in the Saudi education system was reported to be the cultural factor (Hamdan 2005; Jamjoom and Kelly 2013). However, Alamri, Cristea et al. (2014) found that Saudi female students are welcoming the use of new technologies and have a positive attitude to their usage for supporting their learning at university. Student 4 stated "*I found the Blackboard system helpful and I bought a laptop to use at home but not all instructors are willing to provide us with more information via this system*". Accordingly, it can be said that the prevailing culture tends to restrict the communication between female students and male faculty members not the use of new technologies. However, female students reported that use of the blackboard increased the interaction between them and their instructors since the system allowed them to present their work send homework and discuss topics with students in their teaching group and with some instructors. Teacher Instructor5 reported that through *"the sharing desktop feature I can easily allow female students to share their work with me and other students"* (Instructor5_I).

CONCLUSION

In this study, primary results have been presented based on a focus group interview with 5 female students and semi-structured interviews with 5 male faculty members. The results suggest that using the virtual classroom as a means of teaching and learning seems to better provide instruction and support to learners than using the videoconference system. Two of the reasons are the blackboard system's facility to share instructors' desktop, which easily allows the presentation of learning materials to the teaching classroom, and the discussion board allowing more interaction between female students and their instructors. However, due to technical problems and poor Internet speed connection, female students asked to go back to the videoconference system. A main reason for this was the lack of tools integrated with the blackboard system. As a result, female students and their instructors were reliant on a Doc-cam connection to the teacher's computer to provide more explanation of ideas discussed during lectures and handwritten notes passed to female students'

classrooms. Blended e-learning will be more successful when more effectively integrated with traditional learning, when the cultural aspect is more carefully taken into account, and when the equipment required to increase students' and instructors' interaction at the time of lectures and afterwards is provided.

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