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Female Faculty Perspectives On Blended Learning At Universities In Saudi Arabia

Hind Hamed B Alghanmi

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FEMALE FACULTY PERSPECTIVES ON BLENDED LEARNING AT
UNIVERSITIES IN SAUDI ARABIA

by
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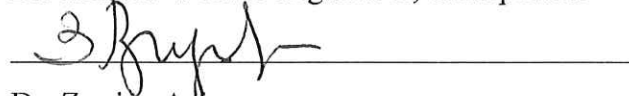
A dissertation
Submitted to the Graduate Faculty
of the
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in partial fulfillment of the requirements
for the degree of
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c 2018 Hind ALGhanmi

This dissertation, submitted by Hind AlGhanmi in partial fulfillment of the requirements for the Degree of Doctor of Philosophy from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.



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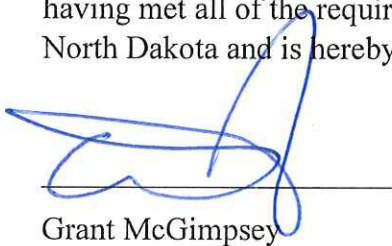


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Title FEMALE FACULTY PERSPECTIVES ON BLENDED
LEARNING AT UNIVERSITIES IN SAUDI ARABIA

Department Educational leadership

Degree Doctor of Philosophy

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Hind ALGhanmi

09/14/2018

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I thank God for my family who are always there to support me. Thank you all.

DEDICATION

To my Mom who taught me that we are born strong.

To my Dad who walked me the road when there was no road.

To my lovely sisters, Naziha, Samiah, Siham, Hwazen and my niece Reem.

ABSTRACT

Adopting technology is one of the priorities in the Saudi education system. The reform of Saudi education leads to the need to focus on BL as a tool for adopting technology into any college classroom. This study focuses specifically on technology usage for teaching among female faculty. In 2018, women's education in Saudi Arabia has undergone an incredible social transition, and women's education is different and more advanced than before. This study looks to learn about female faculty members' views and experiences as they relate to the adoption of BL in their classrooms. It seeks to provide in-depth knowledge essential to adopt BL according to a Diffusion of Innovation (DOI) and Technology Acceptance Model (TAM) theoretical framework. DOI explains adoption in the social setting with all the possible social culture factors. The TAM explains faculty-level acceptance, specifically explaining external factors' effects on faculty members' beliefs and influencing them toward the BL. Because this study gathers information on female faculty members' experiences with BL, a qualitative theme analysis was the appropriate research design to use. In particular, I used a qualitative research method to study female faculty members' perspectives, collecting data via individual interviews. It is included interviews with female faculty members from four public, 4-year institutions in Saudi Arabia. Faculty members' flexibility and their relationship to the adoption of BL depended on their benefits and challenges. According to this study's participants, the challenges of the BL approach in Saudi Arabia necessitate urgent strategic plans at all levels. Faculty members' knowledge and understanding regarding the definitions of BL showed their acceptance. Faculty support should be a priority for these institutions, which should adopt policies to help achieve Vision 2030—a natural, well-organized way to reform higher education. The gender aspect of the teaching culture considerably impacts the female faculty's use of BL in Saudi Arabia. This study's results—that the women faculty believe there is a need for evaluation, and official leadership rules for the adoption of BL. To summarize, the results indicated that women adopted BL when circumstances permitted. The obstacles, in their eyes, were a lack of faculty support, poor strategic evaluation plans, and insufficient empowerment at the institutional level.

Chapter 1: Introduction

In Saudi Arabia, the government has been investing in technology in educational sectors to improve teaching and learning for the past several years. Educational sectors in Saudi Arabia are institutions that provide education for people, including schools of all levels, public and private universities, specific institutions that teach many programs, and all administrations under the Ministry of Education (MOE). According to the Ministry of Communications and Information Technology (2016), since 2007, the government of Saudi Arabia has prioritized and has supported the introduction of modern technology, such as Blackboard and other learning management systems, mobile systems, writing software, and online discussions, into the educational system. It has established a centralized unit to apply and emphasize a national strategic plan for technology in education, known as the National E-learning and Distance Learning Centre (2017). According to Alebaikan and Troudi (2010), most universities require their members, whether faculty members or students, to use the center and its services. Services provided by the center and university website include access to an electronic library for academic programs and course content and the facilitation of assignments sent. Alebaikan and Troudi (2010) also provided a context of origin for the use of the Internet in Saudi Arabia, indicating that the Internet has been available for the public in-country since 1999.

The availability of technology in the education system does not always mean it is going to be used. At many universities across the country, the adoption of technology does not correlate with its subsequent usage by the administration, faculty members, or students (Al-Sarrani, 2010). For instance, some suburban universities do not even have university e-mail addresses (Alebaikan & Troudi, 2010). From browsing the public institution websites, the e-mail

addresses for some faculty members are hosted at Hotmail and Google, not the official institution (Albaha, 2018; King Abdul-Aziz University [KAU], 2018; King Saudi University [KSU], 2018), and some of the faculty members only list a phone number. However, Alebaikan and Troudi reminded us that

In Fall 2007, King Saud University in Riyadh approved the implementation of e-learning courses in the College of Applied Studies and Community Services (CASCS) to overcome the rapid growth of students applying for college education. The e-learning courses in the CASCS are not totally online. (p. 509)

This mix of teaching approaches with technology, infusing computer-based learning with learning inside the classroom through more traditional teaching techniques, I refer to as blended learning (BL). Such a blended learning (BL) approach to education can, I argue, be used as a framework to address challenges in the Saudi education system, particularly in areas where women are teaching, as institutions undergo the modernization, reform, and development of technology-driven teaching and learning environments (Alshahrani & Ward, 2014).

This study focuses specifically on technology usage for teaching among female faculty. It is important to know that men and women are largely segregated in much of Saudi Arabian society; this includes higher education, where women attend different sections of courses, view courses by television while men attend live, or attend female-only institutions. Some might be surprised to learn that sixty percent of students in Saudi Arabia are female (MOE, 2018). Even so, women are underrepresented in the leadership of academia, and that impacts addressing their needs and concerns (Aldawsari, 2016). Women are a new population in this type of study (Alebaikan & Troudi, 2010; Alshahrani & Ward, 2014; Tshabalala et al., 2014). Past studies conducted included female and male faculty without consideration of gender, segregation that

might take place, or the culture inside the women's sections of the university (Han-Fen et al., 2013). Females were excluded for a long time in the STEM disciplines in Saudi Arabia (El-Sherbeeney, 2014 & Hamdan, 2005). The situation is changing in 2018—the time of this writing—and many schools are opening new STEM majors for females. However, female still suffer from this historical exclusion, and it will take time to recover and build capacity. Many other studies in the past recommended conducting future research exclusively on the female faculty in Saudi institutions such as Alghanmi (2014) and Rather (2016).

The reform of Saudi education leads to the need to focus on BL as a tool for adopting technology into any college classroom. Students of the current generation are digital natives who require that educators focus on teaching and learning methodologies, such as BL (Cardoza & Tunks, 2014). As part of the challenge, Alshahrani and Ward (2014) noted that the impacted cultures often display resistance to adopting BL. Hu, Al-Gahtani, and Hu, (2013) also found that segregated education is making women's colleges secondary regarding the priority of reform due to the politics of education and the personal interests of institutional decision-makers. Thus, this study focuses specifically on the experiences of female faculty members in adopting and using BL in the sex-segregated higher-education institutions of Saudi Arabia.

According to the Ministry of Education (MOE; 2014), there are many types of universities in Saudi Arabia: Some are public, and some private; others are old, and some are new. Two universities teach entirely online and via distance methods. One university, Princess Nourah bint Abdulrahman University (PNU), established in 2004, is solely for women, including the leadership and staff. Alkhalaf, Nguyen, Nguyen, and Drew (2013) explained that institutional growth in Saudi Arabia exploded recently, from 2005 to 2009. During this time, a new university was opened every three months, and five colleges were opened every five months, illustrating the

growth that higher education in Saudi Arabia has experienced in the past few years. According to the MOE (2018), Saudi Arabia currently has 25 public universities and 38 private colleges and universities. This growth is due to fact that the population of Saudi Arabia is mostly young.

Figure 1 shows a chart from Here is a Figure 1 from the General Authority for Statistics (2016, p. 40), and the numbers in the middle are the age ranges:

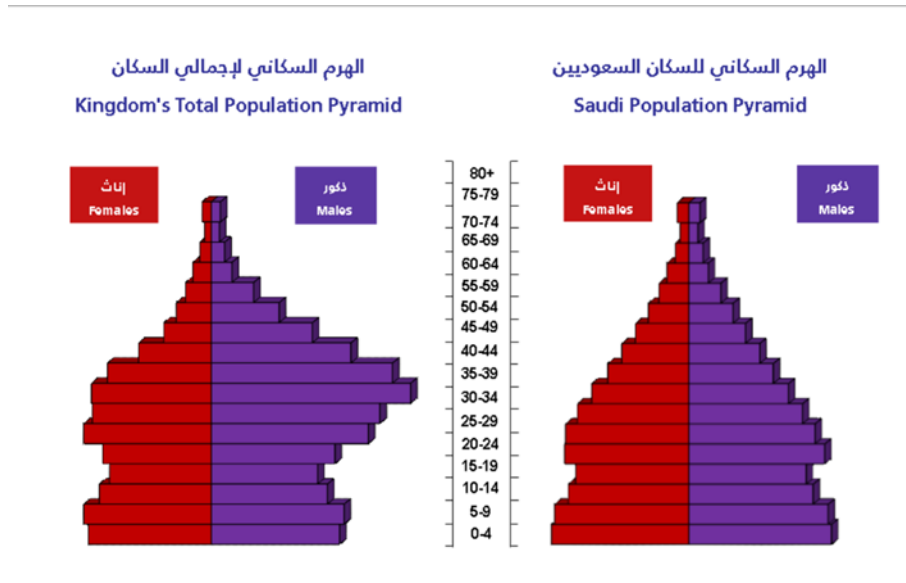


Figure 1: Kingdom total population.

However, the number of universities is not sufficient to effectively teach all these students. Therefore, the education system continues to seek ways to meet demand, such as increasing the number of online and e-learning classrooms and programs (Alebaikan & Troudi, 2010).

Women's Education in Saudi Arabia

Education for women is an important topic in Saudi Arabian society, and it has gone through many important changes (Aldawsari, 2016; Hamdan, 2005; Rather, 2016). Hamdan (2005) explained the history of women's education in Saudi Arabia: Women's schooling from elementary until university was under the Department of Religion Guidance until 2002.

However, boys schooling was administered by the Ministry of Education. The goals of education of boys and girls are different. Mainly girls' education focuses on preparing excellent housewives and mothers, with a few chances of conducting careers in teaching and nursing.

In 2018, women's education in Saudi Arabia has undergone an incredible social transition, and women's education is different and more advanced than before. Saudi women study abroad around the world. They also have more majors at school from which to choose, such as electrical engineering and engineering in general. Women are not ministers or ambassadors yet, however. Finally, Saudi women have their own comprehensive institution for women at PNU, where women are students, faculty, administrators, and leaders. As the university states in its mission, its goal is "To become a comprehensive university for women, distinguished with its academic leadership and scientific research that contributes to building a knowledge economy with societal and international partnerships" (PNU, 2016).

According to Rather (2016),

In 2014, the Kingdom of Saudi Arabia stunned the world with its incredible social transition when the 'Ministry of Education' released statistics which showed that more than half of the students graduating from the universities inside the country were the kingdom's women subjects, and a substantial number of female students were enrolled outside the country, most of them preferring to study in the United States. (p. 1)

Despite the progress that women in the Saudi education system have made as students, women still have many issues to overcome as leaders in higher education. According to Aldawsari (2016), women continue to be underrepresented in leadership roles at higher-education institutions due to many factors:

Saudi female leaders face a large number of professional challenges: women's lack of authority, their marginalization, and their lack of experience and training, while societal and personal challenges ranked last. Findings also demonstrated that many of the participants argue that factors impeding Saudi women ascension to leadership include oppressive gender stereotyping, gender discrimination, glass ceiling, and history of Saudi women's education. (p. 5)

Despite all the progress women have made at many levels in higher education in Saudi Arabia, many female faculty members still face challenges every day in the workplace.

Problem Statement

Adopting technology is one of the priorities in the Saudi education system (MOE, 2015), yet it is not universally implemented by faculty members nor is technology universally implemented across institutional types. The evaluation of BL from the female faculty members' perspective is needed to help understand and improve the BL process in women's colleges. Understanding BL processes and technology processes, in general, will likely increase the adoption and effective use of technology. This study seeks to provide in-depth knowledge essential to adopt BL according to a Diffusion of Innovation and Technology Acceptance Model theoretical framework. Of interest is how female faculty members adopt BL in their classrooms and throughout their institutions, as well as any barriers they face in implementation and use.

Study Purpose

The purpose of this qualitative study is to understand how BL is used in higher education by female faculty members at Saudi institutions, specifically women's colleges. This study seeks to learn about female faculty members' views and experiences as they relate to the adoption of BL in their classrooms.

Research Question

This study is guided by one primary research question: How do female teachers and faculty members at Saudi women's colleges view the process of adopting BL in their classrooms and throughout their institutions? Sub-questions for the study included whether there were barriers or problems frequently faced by female faculty members (or their institutions) in adopting or implementing BL.

Rationale for the Study

It is no longer appropriate to focus solely on traditional education when members of society are moving forward in the use of technology. According to Alkhalaf et al. (2013), the number of Internet users in Saudi Arabia increased from 200,000 in 2000 to 4,800,000 in 2006, and the number continues to grow. According to M2PressWIRE (2006), the increase of internet usage in Saudi Arabia is considered the highest in the region at 3000 %. Many institutions consider that e-learning methods, such as BL, meet the needs of growing student populations (Collins, 2011). Adopting BL is a need, and the reviews of faculty members' experiences in other countries and cultures have shown the same need. For example, according to Tshabalala, Ndeya-Ndereya, and Van der Merwe (2014) and Collins (2011), adopting BL is a tool that enhances education and technology in many developing countries, such as South Africa. According to Al-Senaidi, Lin, and Poirot (2009), adopting technology also impacts social change in developing countries, such as Oman. We can use these past studies to inform the BL process in Saudi Arabia. The Saudi education system is similar to other education systems in Arabian Gulf countries, such as Oman, and the two countries' social cultures are similar. South Africa is a part of this comparison because the Saudi government hires many teachers from South Africa.

BL in Saudi Arabia is not a cosmetic way of learning. According to Alghanmi (2014), BL is necessary because most students, faculty members, and leaders are not taking empowerment technology seriously. According to past studies (e.g., Alebaikan & Troudi, 2010; Alshahrani & Ward, 2014; Tshabalala et.al., 2014), adopting BL involves many factors, such as access to resources, faculty members' reception or resistance, student reception, technical support, and some cultural impacts. Lopez-Perez, Perez-Lopez, and Rodriguez-Ariza (2011) found that the measurement of adopting BL is affected by utility, motivation, and satisfaction. However, all the past studies that were reviewed for this study were conducted mostly in Saudi Arabia and were not specifically about women. Exploring women's experiences regarding to the usage of technology will add more to the context of BL in Saudi Arabia. Moreover, previous studies did not take into consideration faculty members' perspectives.

BL is a way to adopt technology in education specifically and in society in general. According to Han-Fen et al. (2013), adopting technology in general in working places across Saudi Arabia is slow due to social cultural factors, one of which is the segregation of men and women in education in all Saudi universities. This current study is important because it addresses the need to understand more about the adopting BL experiences in female sections at Saudi universities (Alghanmi, 2014; MOH, 2015). More specifically, this study seeks to learn about female faculty members' views and experiences as they relate to the adoption of BL in their classrooms. This study increases such an understanding by reporting the attitudes of women faculty members toward using and adopting BL in the classroom. This study also improves our understanding of the cultural effects of BL.

Focusing on empowerment technology through BL requires that every single student be able to use technology sufficiently and efficiently. Modern life requires dealing with technology

in increasing aspects. Education meets this need by applying technology in the classroom. Nowadays, most countries exchange and share educational and scientific research at a global level and doing so requires dealing with advanced technology. Saudi Arabia is looking for global education and therefore must invest in technology-driven education. Sharing global trends is not possible without sharing certain things in education, such as technology and BL in the classroom. This study meets the need for research about BL in Saudi universities, especially in educational institutions for women only. Moreover, this study created new methods by which to examine adopting BL in women's colleges. Most of the previous studies just considered observations about student outcomes or presented the results of quantitative surveys to examine the challenges associated with BL (Al-Sarrani, 2010; Alkhalaf, Nguyen, Nguyen, & Drew, 2013). Many existing studies examined men's colleges, and many studies covered just one university (Al-Qahtani & Higgins, 2013; Alebaikan & Troudi, 2010; Alshahrani & Ward, 2014), but this study covers four universities in different areas of Saudi Arabia.

As mentioned before, this study aligns with the mission of education of Saudi Arabia. BL in Saudi Arabia is one way to achieve many goals of the Saudi education mission and vision. According to the MOE (2015), women are the majority (60%) of the students and graduates in Saudi universities. Therefore, finding out more about BL in female faculty-led classrooms is important and is the focus of the study. The potential significance of this study is that it offers new and different insights to understanding at what stage BL is incorporated at Saudi institutions, especially in colleges for women and universities, from the faculty members' points of view. The study also contributes to the existing literature by examining the perspectives of female faculty members, a population that is different from those used in past studies (Alebaikan

& Troudi, 2010; Alghanmi, 2014; Alshahrani & Ward, 2014). Finally, this study enhances awareness of teaching in female universities in general and of BL specifically.

Many groups of people can benefit from the findings of this study. Alghanmi (2014) mentioned the need for future research to focus on studying leaders' responses and female responses to adopting BL. Therefore, the policy makers and many other stakeholders who are responsible for implementing BL in university classrooms can benefit from this study. In their recommendations for future research, Mirriahi, Alonzo, McIntyre, Kligyte, and Fox (2015) found that a study like this might help others improve their work in the future. Teachers, faculty, and leaders in any institution that has a mission of adopting technology via BL will find this study helpful in understanding the factors that impact implementation. Sociologists who are studying female empowerment and integration in education will benefit from the study. Educational technology entrepreneurs and organizations who are trying to find a market for their products may also learn from the results of this study. The goal of each group might be different, but the need for more understanding is what unites them. As Moskal, Dziuban, and Hartman (2013) noted, "Whatever the motivation to blend, it is clear that the strategy works best when clearly aligned with the institution's mission and goals and the needs of students, faculty, and institution are simultaneously addressed" (p. 20).

Terms

The paper included definitions that need to explain according to the study. Here some of the terms:

Blended Learning

BL, as mentioned above, has many definitions. According to Collins (2011), BL does not have a one-size-fits-all approach. Some definitions combine instructional and delivery media

(Kaur, 2013), while others combine online and face-to-face (F2F) instruction (Bonk & Graham, 2012); both are too broad. In this study, I used the definition of BL as a way of adopting e-learning into traditional educational environments to save classroom space and time. This definition matches that used in past studies about BL in Saudi Arabia (Alebaikan & Troudi, 2010). In this study, I used the definition of BL in Saudi Arabia in the same way that Al-Qahtani and Higgins (2013) did:

Blended learning took the form of a combination of face-to-face classroom teaching with lecture and class formats and the use of an asynchronous online classroom. The students had to attend classes in person, but also had access to an asynchronous online classroom to undertake a range of learning activities based on their classes. These included enhancing their knowledge through additional reading and through browsing relevant linked websites, with other activities such as self-assessments, exercises and group tasks and structured discussions. (p. 223)

This definition is similar to the widely discussed “flipped classroom.” They are slightly different, however. According to Long, Cummins, and Waugh (2017), a flipped classroom is an instructional model rather than a definition of Blended learning itself. The key is the time allotted for teaching the subject, and students must know about the lesson before each class. “The fundamental idea behind the flipped classroom is that more in-class time can be devoted to active learning and that the instructor can provide immediate feedback during the active learning session” (Long et al., 2017, p. 195). Another definition is “A simplified description of a ‘flipped’ classroom is that: (a) the professor’s lecture is delivered at home and (b) the student’s homework is done in class” (Slomanson, 2014, p. 95). However, the term blended learning is more general, as time factors during or after the class are not important. In a BL classroom, the instructions can

be F2F, online, or mixed. Students do not need to know everything before the class time and do their homework during class time (Slomanson, 2014, p. 95).

BL vs. Integrating technology

There are differences between the term technology integration and blended learning (Khosrowpour and Gale Group, 2005). In general education, it is a new trend to differentiate between technology integration and blended learning in terms of practice (Wong, 2014). According to Wong (2014), the difference between BL and integration technology is that BL is one form of integrating technology. BL focused on e-learning and face to face style of teaching. BL focused on collaboration between students and students and teachers. BL allows personalizing students' learning to their needs or preferences. Integrating technology focuses on delivering information, and the teacher leading the technological activity.

In sum, then, BL is a subset of integrating technology, the question most studied by Saudi scholars in the past (Alkhalaf, Nguyen, Nguyen, & Drew, 2013). In the educational technology field, it is common to examine one type of teaching format or one kind of tool. That is why the study is approaching the new experiences of female faculty in this new setting, specific population, and specific type teaching (BL).

Adopting Technology

This term refers to using technology in a successful manner by teaching students about and integrating more tools, which can be used to better teach and manage students' educational outcomes.

Empowerment Technology

The term empowerment technology is meant to provide efficient technology in the teaching setting. Empowerment technology is a way of using technology and the Internet as a

tool outside of the classroom, as well as use it as a life skill with applications in all areas of students' lives. Technology is a goal itself in academia aside from learning about the subject and course material. When institutions have empowered technology in their mission, the students and the faculty members will use technology in every aspect of their work. Empowerment technology is a way to achieve Saudi Arabia's purpose of global and modern education.

E-Podium

An e-podium is a digital lecture system that makes communicating with audience easier. It is a desk workstation and comes in varied models and features. It typically has, at a minimum, a computer connected to a projector to show multimedia to the class. E-podiums are connected to the Internet. Some of them can control the light of the room and can sometimes connect to an external device, such as a laptop, tablet, microphone, Smartboard, and more. E-podiums are built into the rooms and cannot be transferred or moved to any other classroom.

Methodological Overview

Because this study gathers information on female faculty members' experiences with BL, a qualitative theme analysis was the appropriate research design to use. In particular, I used a qualitative research method to study female faculty members' perspectives, collecting data via individual interviews. The data analysis was guided by the diffusion of innovation (DOI) theory and the technology acceptance model (TAM; Davis ,1989,). I gathered data via individual interviews with female faculty members at Saudi colleges and universities. The themes drawn from participants' responses are discussed in Chapters 4 and 5 of this study.

Summary

This study highlights the perspectives of female faculty members about the adoption of BL in Saudi women's colleges. Chapter 2 highlights the relevant literature for this study, including an overview of BL and what is known about female faculty members' experiences in the Saudi education system. Chapter 3 is an overview of the methodology that were used to carry out this study. Chapter 4 details the findings from the interviews with female faculty members. Chapter 5 discusses these findings and posits policy and practical steps suggested by the interview results.

Chapter 2: Literature Review

The literature review draws a picture of the adoption process and status of BL at Saudi women's colleges. In this chapter, I review the definitions of BL in existing studies and what is known about the impact of BL on students, faculty, administration leaders, and institutions. I explore some of the reasons that make BL adoption important and highlight the actual state of the technology and challenges associated with BL that are reported in existing studies. Moreover, to explore the adoption of BL in Saudi Arabia, this paper examines BL in other countries, such as in the United States, Great Britain, and Canada, and compares the adoption process to that which occurs in the Saudi education system. Finally, I highlight literature about the theories that frame my study, such as DOI theory (Rogers, 2003), the technology acceptance model (TAM; Davis, 1989), as well as the use of qualitative methodology, to gain a better understanding of female experiences in Saudi institutions in adopting BL in their official classrooms.

Defining Blended Learning

BL has no single definition, but a review of the literature reveals that the meaning of BL is often synonymous with three words: blend, mix, and hybrid. For example, Driscoll (2002) defined BL as

1. Combining or mixing modes of web-based technology (e.g., having a live virtual classroom, giving self-paced instruction, using collaborative learning, and streaming video, audio, and text) to accomplish an educational goal.
2. Combining various pedagogical approaches (e.g., constructivism, behaviorism, cognitivism) to produce an optimal learning outcome with or without instructional technology.

3. Combining any form of instructional technology (e.g., videotape, CD-ROM, web-based training, film) with F2F instructor-led training.
4. Mixing or combining instructional technology with actual job tasks to create a harmonious effect of learning and working (p. 1).

O'Byrne and Pytash (2015) found that BL is also referred to as hybrid or mixed-mode learning, depending on the country of reference. For example, "hybrid learning" is used more often in the United States, but the same approach is referred to as BL in Saudi Arabia.

Bonk and Graham (2012) expanded on Driscoll's definition by documenting three themes about how pedagogical approaches are combined in BL: (a) combining instructional and delivery media, (b) combining instructional methods, and (c) combining F2F and online instruction. In a similar vein, Kaur (2013) defined BL from the holistic, educational, and pragmatic perspectives. The holistic perspective refers to concerns with delivering instruction by media. The educational perspective means the integration of online courses with traditional courses. Finally, the pragmatic perspective is concerned about where and how to teach the courses.

Determining a specific definition of BL is not easy. It depends on factors such as place, culture, stage of student learning, and stage of the faculty members' experiences for blend, mission, and vision of the institution.

According to Bonk and Graham (2012), the definition of BL is an ongoing conversation because it is included in two environments (online and traditional), and it has past, present, and future views. For example, in the past, the focus has been on traditional instruction; with time, the focus is more on blended instruction for the future. Each has its own advantages, and each faculty or institution chooses what definition it needs depending on its students' needs and its institutional mission. Bonk and Graham (2012) also explained that there are many levels of BL,

ranging from activity, lesson, program, and institution. Tshabalala et al. (2014) supported that claim by saying “the absence of a universal definition for blended learning allows HE Is [Higher Education Institutions] to contextualize the concept according to their respective environments” (p. 102). Therefore, BL could be defined by the specific use of the institution.

As I mentioned in Chapter 1, I defined BL in this study in the same manner as Driscoll (2002), who stated that to use BL is “to combine or mix modes of web-based technology (e.g., live virtual classroom, self-paced instruction, collaborative learning, streaming video, audio, and text) to accomplish an educational goal” (p. 1). Therefore, from the students’ perspective, they study by integrating technology in their learning and communication. From the faculty members’ perspective, they incorporate activities based on technology in their lesson plan to achieve their educational goal. The BL environment in this study included both inside and outside the classroom. The instructional approach of the BL lesson in this study is Web-based (online) and F2F. The tools in this BL classroom are various technology devices, the Internet, and social applications. Both the teachers and the students were using technology to manage and communicate their work together. The faculty members in this study used a variety of integrating technologies to teach, administrate, assist, evaluate tasks, and communicate with students inside and outside the classroom.

Blended Learning Models

The variation in the way BL is defined or explained highlights the fact that BL serves different goals depending on the ways in which BL is used. According to O’Byrne and Pytash (2015), although educators and researchers experiment with different BL models, there is no perfect way to achieve the balance between F2F and online instructions in BL. Moskal et al. (2013) supported this notion:

There are many models for blended learning, and it is clear from the literature that these models involve a complex mix of variables that are based at least in part on the culture, resources, and instructional philosophy of the institution and educator (p. 20).

Historically, the developments and successes of BL have been dependent on many factors. Poon (2013) defined the success of BL (citing Stacey & Gerbic, 2008) as “practice which promotes achievement of high-quality learning outcomes and positive student learning experiences, with high teacher satisfaction and a reasonable workload that allows staff time for research and scholarship” (p. 965). Some studies (Lopez-Perez, Perez-Lopez, & Rodriguez-Ariza, 2011; Porter, Graham, Spring, & Welch, 2014) mentioned the wideness of the study area related to BL. For example, topics in BL, such as methods of teaching or the result of combinations and the integration of technology, are not the only tool to measure this success. More recently, BL has been used to enhance the study of students’ experiences (Al-Qahtani & Higgins, 2013), pedagogical applications (Graham, Woodfield, & Harrison, 2013), and educational outcomes (Al-Qahtani & Higgins, 2013; Almuqayteeb, 2010).

Kenney and Newcombe (2011) showed seven principles as a guide to the successful adoption of BL: “promoting interaction between students and faculty, enhancing reciprocity and cooperation among students, promoting active learning, providing prompt feedback, increasing time on task, setting high expectations, and recognizing diversity in learning” (p. 47). According to Bangert (2004), “The Seven Principles framework offers solid, research-based guidance for the design and delivery of Internet-based courses” (p. 221). These principles are informed by the seven general principles of teaching (Chickering & Gamson, 1999).

Impact of Blended Learning

Another concern of scholars—beyond defining and characterizing BL—has been measuring its impacts. According to Wong, Tatnall, and Burgess (2014), most institutions use BL to transform traditional F2F education and to support teaching activities, which in turn support students' achievement of stated learning outcomes. According to Kaur (2013), “blended learning is provided by the effective combination of various modes of delivery, models of teaching and styles of learning which are exercised in an interactively meaningful learning environment” (p. 612). Moreover, Al-Qahtani and Higgins (2013) agreed with Alebaikan and Troudi (2010) when they found that BL has been used to enhance education delivery methods and costs while improving outcomes for students as well.

BL is not that different from the methods currently used in Saudi higher education in that it is used in many ways to achieve many goals. For instance, according to Alebaikan and Troudi (2010),

Some [Saudi] universities promote blended learning to offer flexibility in the time and place of learning (Sharpe, 2006). Studies have overwhelmingly shown that blended learning can be used to improve pedagogy, increase cost-effectiveness, access and flexibility, and simplify revision (Graham, 2005; Osguthorpe & Graham, 2003). (p. 507)

Al-Qahtani and Higgins (2013) supported this by saying,

A number of aims are associated with the design of blended learning environments. Osguthorpe and Graham (2003, p. 231) emphasize six aims of designing blended learning, which include ‘pedagogical richness, access to knowledge, social interaction, personal agency, cost effectiveness, and ease of revision’; factors all supported by *Bernard et al.’s (2009) meta-analysis. (p. 223)*

The impact of BL is influenced by the learning goals, the stages of the process, and the institutional place or context. For example, Inoue (2009) explained that institutions use BL to reduce the cost of education in the humanities college by delivering instruction online, and in the pharmacy college, faculty used BL to bring instructions from different sites and from experts abroad. These decisions were made to help the institution meet its learning goals and to fulfill the institutional mission.

The impacts of BL on students and on faculty members are explored in this literature review. In addition, the impact of BL on Saudi institutions and on Saudi society is addressed.

Impact on Student

Many studies examine the impacts of BL courses and education on students inside and outside Saudi Arabia. This portion of the literature review explores these impacts in multiple environments that have implemented BL.

Authors of numerous studies (e.g., Al-Sarrani, 2010; Alebaikan & Troudi, 2010; Aynur & Funda, 2012; Cardoza & Tunks, 2014; Kwak, Menezes, & Sherwood, 2015) mentioned the power of BL in Saudi Arabia to enhance students' motivation in the classroom and the quality of learning in postsecondary environments. According to Alebaikan and Troudi (2010), "Harvard Business School faculty DeLacey and Leonard (2002) reported that students not only learned more when online sessions were added to traditional courses, but student interaction and satisfaction improved as well" (p. 50). Kwak, Menezes, and Sherwood (2015) found that BL enhances the quality of the educational experience because it enhances the ability of students to engage with media, and it helps cut the cost of course delivery. Kwak et al. (2015) agreed and supported what Aynur and Funda (2012) found and asserted that students thought that BL made their learning more permanent, improved learning experiences, and enhanced learning

responsibilities. Students can move outside the traditional classroom to learn, affording them the opportunity to simultaneously be students and workers these days, a common dual role position required of them due to the rising cost of education. Barker (2015) found that “The major advantage of hybrid classes is that this forum allows some flexibility to students with multiple responsibilities to maximize their time” (p. 144). BL can also be a way to cut students’ costs. According to Barker (2015), “hybrid courses provide an alternative to spending time on campus; it reduces commuting time and travel expenses” (p. 145).

According to Al-Sarrani (2010), adopting BL increases the benefits to students at institutions in Saudi Arabia. More specifically, BL provides flexibility in courses. For example, BL provides more time to engage in general, and there are no time limits on reading or using the online material provided throughout the course. BL helps students become more autonomous and responsible learners (Alebakian & Troudi, 2010; Gecer & Dag, 2012). El Mansour and Mupinga (2007) also noted that students enjoy their BL courses because the approach fits their lifestyle. Evidence from other studies (e.g., Al-Sarrani, 2010; Alebaikan, 2012; Alebaikan & Troudi, 2010; Aljahni, 2014) shows that BL is working in other ways. For example, according to Al-Sarrani (2010), students are satisfied with their learning experience in BL courses, as is illustrated in “that students appreciate the mix of the face-to-face format in sessions because it satisfies their socialization needs and the opportunity to complete other portions of the course online” (p. 58). Alebaikan and Troudi (2010) showed an increase in the positive behaviors and attitudes toward learning mathematics because of the use of BL in the classroom. They noted that BL provides students the same chance of learning experiences and matches students’ modes and styles at the same time. Aljahni (2014) and Alebaikan (2012) supported the positive impact on students in general and on specific subjects, such as mathematics and foreign languages. Al-

Qahtani and Higgins (2013) supported these findings when they noted that, “In conclusion, the blended learning approach undertaken in this study appears to have provided a clear advantage in terms of the students’ achievement” (p. 228). In summary, BL impacts student learning in many ways, such as enhancing students’ satisfaction and motivation in the classroom, enhancing the overall quality of learning for students, and improving students’ self-responsibility skills in learning.

Impact on Faculty

BL impacts faculty members in several ways that parallel its impact on students. For example, according to Al-Sarrani (2010), BL enhances student–faculty interactions. According to Du and Wu (2014), BL enhances student–faculty interactions, as determined by how many times the student can reach the teacher, whether outside the classroom or at an assigned office hour. Vaughan (2007) indicated that BL enhanced student–faculty interactions not just because students are more engaged in their learning experiences and become more active learners, but because faculty members see that their interactions with students result in a higher quality of learning than F2F interactions. BL also enhances faculty members’ satisfaction and motivation levels.

BL also helps faculty members keep up to date with new information and new technology (Al-Sarrani, 2010). For instance, BL supports faculty members’ efforts to improve student learning. As O’Byrne and Pytash (2015) indicated,

In the hands of experienced teachers, both modes of [computer-mediated communication (i.e., synchronous and asynchronous)] can be used as novel tools to enhance the learning acquisition process by encouraging interaction among participants, collaborative text construction, and the formation of electronic communities of learners. (p. 138)

O’Byrne and Pytash (2015) saw technology impacting teaching methods, times, places, and ways of teaching and learning. Many faculty members try to find ways to add technology to their lessons and to their classrooms; BL is one way to do so. Mirriahi (2015) said that “in the case of blended learning, teaching staff beliefs and attitudes formed from their experience with educational technology can contribute greatly to its successful adoption and integration in their own course design” (p. 5). That means that faculty members use their own experiences in each class to reform the courses and to add a BL format. Therefore, an advanced study of faculty experiences with adopting BL is crucial in terms of the benefits and the understanding in teaching and learning.

It is common for faculty members to use BL to improve pedagogy, as Taylor and Newton (2013) explained. Al-Sarrani (2010) stated that BL can be used to change instructional models from teacher centered to learner centered, from F2F to online, and, finally, it can be used to provide more tools for interactions between students and faculty. According to Porter, Graham, Spring, and Welch (2014), BL adds pedagogical improvements and increases the effectiveness and satisfaction of the learning experiences (p. 186). Kezar (2011) explained that considering the impact of BL on faculty members is highly recommended, including for multiple strategies and pedagogies such as problem-based learning, team-based learning, and case-based learning. BL can also transform a large lecture-based class into one that is more student centered. However, Kezar (2011) and Graham, Woodfield, and Harrison (2013) agreed that the deep study of the effectiveness of BL depends on how much the education system is flexible when adopting stages of technology in the first place.

A few studies focused on the impact of BL on Saudi faculty members in particular. The impact on Saudi faculty members is similar to their peers around the world. At Taiba University,

BL enhances student–faculty interactions in terms of quality and quantity. Compared to F2F and e-learning environments, BL has a better chance to help interactions between students and faculty members and between students and their peers compared to other learning styles, whether they be F2F or e-learning. The flexibility of the BL education style enhances interactions (Al-Sarrani, 2010).

Moukali (2012) studied the impact of BL on female and male faculty members at Jazan University in Saudi Arabia and found that female faculty members had a critical reason to use BL in their courses. Because they are different due to external factors, such as less training and support, and due to internal factors, their satisfaction is less when applying new technology in their courses, so they can use BL courses. Moukali (2012) also said that “Female faculty. . . reported less experience in using educational technologies” (p. 128) and suggested that the reason for less experience in BL environments is related to the lessened support for technology, which in turn leads to fewer female faculty members adopting BL in their classrooms. Alaugab (2007) and Al-Sarrani (2010) found that women teaching at Saudi institutions are willing to teach and learn in online environments and adapt to technology, but no study reveals their personal opinions about BL. The participants also agreed that it requires more effort and time to use a BL format in courses. Al-Sarrani (2010) showed the big picture of faculty members’ attitudes toward BL when he said that “In Saudi Arabia, Alsaif (2005) found that university faculty members had more positive attitudes toward using technology in their teaching at the university due to required university technology use, opportunities for scholarly pursuit and enhanced job security” (p. 36). In the future, faculty members will likely be expected to be experts in BL because technology is increasingly necessary in everyday life. This thin

strand of research shows the need for more studies about BL and faculty—specifically female faculty members.

Impact on Institution

Porter et al. (2014) stated that “While a number of scholars have conducted course-level investigations of BL’s effectiveness; very few have provided guidance for BL adoption at the institutional level” (p. 185). Poon (2013) recommended that every institution create a policy, a plan, resources, and a support system to make BL initiatives successful and helpful for all. Institutions benefit from having a strategic plan for adopting BL most of the time (Al-Sarrani, 2010). According to Gustafson and Kors (2004), having a strategic plan in the institutional mission specific to adopting and assessing technology is the first step to adopting technology effectively. Although many institutions include BL generally in the technological component of their strategic plans, very few faculty members know about that strategy of inclusion. How many faculty members are willing to apply more BL? What are the rewards? What are the reasons that cause institutions to consider BL as a means for teaching and learning improvement?

Niemiec and Otte (2009) suggested first determining the need and the reason before planning to use BL. They stated that

The ways and means of a blended learning initiative could entail vast institutional change and enormous demands on resources, or they could have very localized and limited impact. So much depends on the expectations and motives for engaging in blended learning. It’s logical, therefore, to outline the reasons before taking on the challenges.
(p. 91)

According to the MOE, in the case of Saudi Arabia, BL is integrated in the higher education strategic plan, and BL is well positioned to enhance institutional reputations in the

country. For example, Al-Sarrani (2010) saw BL as a chance to improve an institution's reputation when it helps the institution expand student access to knowledge. In the same study, BL represents a chance to redirect and redesign teaching approaches. Changing the teaching style to more practice-based and not just theoretical knowledge, and to consider research papers, not exams or tests, is also a result of applying BL in the Saudi education system.

Adopting BL benefits Saudi institutions because doing so aligns with the mission and vision of Saudi education overall. According to the MOE (2015), the number of students enrolled in higher education programs increases the need for more solutions to include these students and to maintain high-quality education. The MOE presents BL as a tool to include more students because it expands and widens student access to education. Al-Sarrani (2010) explained the need of BL in Saudi institutions when he said that "BL provided opportunities to enhance institution's reputation through the expanded access to its educational offerings" (p. 58). BL is also a reasonable choice for reducing the cost of education, according to Al-Sarrani (2010):

Adopting BL courses give higher education institutions the opportunity to increase their budgets through admitting larger numbers of students to its programs without the need to hire more instructors or build new classrooms. Instructors who adopt BL are able to guide and clarify student's misconceptions that may have regarding online subject. (p. 61)

As Garrison and Vaughan (2013) stated, "Blended learning (re)design initiatives have enormous potential to address a number of teaching and learning challenges facing higher educational institutions" (p. 27). For example, many institutions find solutions to their problems by applying more BL to students' learning experiences. The findings from Saudi studies about BL are in line with the findings from other studies from around the world. For example, incorporating BL into higher-education institutions will reduce the shortage of female faculty

members because the male faculty members would be able to teach F2F to male students and (through media) to female students. However, no specific studies advocated or denied the impact of BL on hiring more or less women in academia in Saudi Arabia. Moreover, in Saudi Arabia, just as in most other nations, there are fewer women in the science and technology departments of higher education. There are few women in leadership positions in these majors. From a worldwide view, as British, Howe-Walsh, and Turnbull (2016) found, “The investigation illustrates the effect of organizational influences such as temporary work arrangements, male-dominated networks, intimidation, and harassment, as well as individual influences such as lack of confidence” (p. 1).

According to Niemiec and Otte (2009), adopting BL brings local benefits to Saudi society. It enhances educational quality by improving students’ learning experiences through modernized education. It also helps citizens and society members adapt easier to the use of technology in their daily lives. Finally, BL helps promote a social culture where everybody will be able to use technology, thus following the MOE’s strategic plan.

Alghanmi (2014) found that BL is a way to meet the demand of the increasing number of students. But before adopting this strategy, Saudi educators should ask the following question: “Is blended learning an expense, or an investment? The answer lies in the institution’s perspective on what it wants to accomplish” (Moskal, Dziuban, & Hartman, 2013, p. 18). Saudi Arabia needs to reduce the cost of higher education; therefore, “BL may facilitate economic goals such as improved cost effectiveness and resource use” (Porter, Graham, Spring, & Welch, 2014, p. 186). A cost and benefits analysis should be applied to get accurate and effective results.

Societal Impacts

For society, adopting technology in general and BL specifically will help the government of Saudi Arabia overcome many problems, such as unemployment, personal safety and security, and the safety of the country. According to the International Labour Office (2013), the unemployment rate is high in Saudi Arabia. For example, many private and public sectors do not hire Saudi people because they think their skills do not match the needs of the organization. According to Torofdar and Yunggar (2012), lack of digital skills causes some unemployment among youth, for educational institutions and other companies claim lack of required skills as the reason for not hiring females, especially. Therefore, teaching and learning with BL will help overcome this lack of digital skills. According to Al-Sarrani (2010),

first-time job seekers 20-24 years of age were half of the unemployed in 2008, and in that year the country already faced an “unemployment crisis.” Unemployment was 11% in 2008, which was exacerbated by the fact that roughly 80% of SA employees are likely to be foreign, largely due to a lack of Saudi competitive skills, educational services and programs. (p. 1)

This number has since changed, and the unemployment rate is higher among youth in most parts of the world, which is true for Saudi Arabia as well. The percentage has risen to 14% in some of the most significant economic countries in the same region as Saudi Arabia (International Labour Organisation, 2015).

Only one third of government jobs in Saudi Arabia are held by women (Al-Sarrani, 2010). The need for educated and empowered women in adopting technology and reforming education is great. From the perspective of a cost and benefits analysis, BL is a step in the direction of empowering local women while reducing the unemployment rate for women. A

second income in the family becomes a need with the social economic change in the life of Saudi people, and this change has a direct connection with adopting BL for female education (Alebaikan, 2012). Thus, empowering women through education reduces unemployment, a key for economic safety and security in a country such as Saudi Arabia where family still has a strong impact on new and modern citizens.

Adopting technology in general and BL specifically is a vital need for the country's security and safeguarding. Saudi Arabia needs educated citizen in terms of using and dealing with technology. Because technical tools have been placed in every hand, there should be a need to use those tools correctly and to be aware of their downsides. Such awareness will increase only if the whole society knows and learns how to use technology. Lately, for instance, Saudi Arabia as a country has suffered from terrorism, especially among the youth and teenagers. According to Rothenberger (2012), a terrorist group prepares and produces its agenda outside of Saudi Arabia, but it sends its messages to teens and young people through social media. In 2015 alone, Hubbard (2015) said many were killed and wounded due to the suicide bombers who were influenced by terrorists via Internet communications. According to Lewis (2005),

The Internet enables global terrorism in several ways. It is an organizational tool and provides a basis for planning, command, control, and communication among diffused groups with little hierarchy or infrastructure. It is a tool for intelligence gathering, providing access to a broad range of material on potential targets, from simple maps to aerial photographs. One of its most valuable uses is for propaganda, to relay the messages, images, and ideas that motivate the terrorist groups. Terrorist groups can use websites, e-mail, and chatrooms for fundraising by soliciting donations from supporters

and by engaging in cybercrime (chiefly fraud or the theft of financial data, such as credit card numbers). (p. 112)

The citizens need more security, more education, and more policies with which to face these new kinds of “weapons.” BL will help citizens become familiar with the technology. Studying with a BL format will help Saudi citizens understand how to use technology. Adopting BL will help achieve the country’s missions (MOE, 2018). One of the country’s missions for education is to fight terrorism and electronic-based crime. BL will help build the students’ literacy when used technology. Therefore, BL could serve more than one goal if the institutions and education systems and in the country as a whole use it correctly.

Challenges of Adopting Blended Learning

Along with noting the benefits and positive impacts of BL, some studies do not consider BL to be successful in a learning environment (El Mansour & Mupinga, 2007; O’Connor, Mortimer, & Bond, 2011). According to El Mansour and Mupinga, (2007), BL is successful in a learning environment if it fits the students’ needs and learning styles and if an institution’s mission supports this kind of learning. Moreover, Porter, and Graham (2016) mentioned that BL would be successful if the institutions reduce all difficulties that face BL, such as faculty acceptance, faculty training, student readiness, and financial and supporting matters. According to O’Connor, Mortimer, and Bond (2011), adopting BL can be impacted by the culture of learning and the culture of the students and faculty, and the society at large might not ready in some cases for more online interaction versus human interaction. One of these challenges is to communicate the new culture of active learning. For example, there should be a push toward more research papers than final exams or standardized tests and more room for students to be

creative with technology. Porter and Graham (2016) also found that administrative decisions have a direct impact on faculty members deciding whether to adopt BL.

The challenges of adopting BL differ depending on several factors, such as where, when, and how the process takes place. Cultures, countries, stockholders, and the environment are all important factors as well. For instance, researchers found that “the availability of sufficient infrastructure, technological support, pedagogical support, evaluation data and an institution’s purpose for adopting BL would most significantly influence faculty adoption” (Porter & Graham, 2016. p. 1). In this section, the challenges of adopting BL are addressed for faculty, administrative leaders, institutional infrastructure, and in total the “organizational readiness,” as put by Kenney and Newcombe (2011, p. 50).

Faculty Challenges

Faculty challenges to adopting and implementing BL begin with a discussion on how institutions adopt and implement BL. Institutions can distribute BL use in three stages: awareness and exploration, adoption and early implementation, and mature implementation and growth (Graham et al., 2013). Some of the challenges identified are related to learning experiences or related to individuals who apply BL or to the strategies of use and leadership. Graham et al. (2013) also drew a parallel to e-learning, asserting that faculty members’ experiences with e-learning can explain some of the difficulty that faculty members who are involved with BL might face. E-learning is the format of teaching via online channels and with online documents. Sangra, Vlachopoulos, and Cabrera (2012) indicated that “E-learning could also be considered a natural evolution of distance learning, which has always taken advantage of the latest tools to emerge in the context of technologies for structuring education” (p. 146). Overall, the result for each stage of BL implementation and distribution is that faculty members

are challenged by the notion of change. For example, if the institution is in the first stage of awareness and exploration, there is a corresponding need for personal and professional development among faculty members. Faculty members' development and professional improvement are key to enhancing teaching design and teaching courses in BL learning.

Alghanmi (2014) mentioned the need for the professional development of faculty members in Saudi Arabia. O'Byrne and Pytash (2015) recommended that faculty development programs should focus on communication skills as much as they focus on technical skills in BL environments.

Al-Sarrani (2010) mentioned that faculty members do not maintain a balance between e-learning formats and F2F formats when planning BL course delivery. Therefore, professional development in course design is necessary. This strand of professional development also helps faculty members learn how to shift from a teacher-centered pedagogy to a learner-centered approach. According to Collins (2011), many factors impact BL course design, such as the type of technology used, the instructor's level of experience, the instructor's personality, and the kind of students in the course, such as whether they are traditional students or nontraditional students. Alebaikan and Troudi (2010) provided some information about the type of technology that is used in BL environments, pointing out that "Online synchronous elements could be online chat, video-conferencing, and/or conference calls, and asynchronous elements could be online discussion boards, online tutorials, online self-assessments, electronic texts, and emails" (p. 54). On a related note, Gerbic (2011) found that integration of traditional and online course material is the most important design aspect of BL courses, while also focusing on the balance between the two. However, adopting BL can be a challenge for some faculty members, as Al-Senaidi et

al. (2009) noted: “A large numbers of faculty members are still hesitant or reluctant to adopt technology for teaching tasks” (p. 575).

In the second stage of Graham et al.’s (2013) framework, faculty members face challenges related to the adoption or early implementation of BL. In this stage, the challenges that face faculty members when they apply BL include a lack of time, less motivation, resistance, a heavy workload, and not enough resources. Tshabalala et al. (2014) corroborated many of these challenges, indicating that

some of the barriers to the adoption of BL by academic staff are their own adequate or inadequate computer skills, lack of time to prepare new and appropriate teaching and learning materials, students’ restricted access to technological resources and, among academic staff members, a lack of innovative teaching strategies to address the digital generation of students. (p. 103)

One of the most significant challenges of adopting BL as a pedagogical approach is the readiness of faculty members to do so (Moskal et al., 2013; Wong, Tatnall, & Burgess, 2014). Just as challenging, however, are the varying levels at which faculty members are trusted and empowered to make decisions in higher education learning environments. As O’Byrne and Pytash (2015) said, “We need to empower educators and students to work together to collaboratively define and redefine what it means to be able to teach and learn across time, pace, path, and place” (p. 140).

Faculty members face the challenges of the adoption BL on a daily basis; therefore, they are important to the process of brainstorming to find appropriate solutions through collaborating with both students and administrators. Alghanmi (2014) and Al-Sarrani (2010) highlighted the need for administrators to be supportive of faculty members’ BL adoption efforts. Porter et al.

(2014) indicated that “successful BL implementation requires advocacy among administrators, faculty, and other institutional personnel” (p. 186). Consequently, empowering faculty members in the decision-making process to adopt BL is challenging, particularly for an educational system like that in Saudi Arabia. According to Mansour, Alshamrani, Aldahmash, and Alqudah (2013), although teachers are aware of their need for professional development and the quality of education, there is a pressure and need to deliver it (p. 40). Empowering female faculty members is a result of empowering women in general in Saudi society, and even though the government of Saudi Arabia walked a brave step in expanding women’s roles in the workplaces, it is still only the start. For example, Al-Ahmadi (2011) explained that,

despite the considerable expansion in the role of women in Saudi society, evidence indicates that women in upper management positions are facing a different reality from their male counterparts due to various structural and cultural factors that impede their effectiveness as leaders. (p. 150)

Graham et al. (2013) defined the third stage: “Institutions in the mature implementation and growth stage feature a long-established BL definition, advocacy, implementation process, policy, and purpose” (p. 9). The long establishment of BL could take 10 years or longer, as it takes more time to adopt BL, the challenges change. For example, some of the perspectives at this stage imply that faculty members teach BL courses and integrate technology in their classes without any sort of administrative burden. The initiatives come from faculty members because they know the importance of the adoption of BL. They control the time frame of the BL activities in the course design; in other words, faculty members are very professional in teaching and designing BL classes. The institutions at this stage are teaching and operating BL classes and classes that are entirely online as a part of their program. Improving faculty members’

experience and professional development for more advance pedagogy and use of resources remains a challenge in adopting BL at this stage.

Administrative Leaders

Administrative leaders face challenges that tend to be institution specific when it comes to BL. According to Kuh et al. (2005, p.51), matching the institution's vision and mission will lead to establishing and ordering the priorities for the institution. Some institutions use a BL approach to encourage students' intellectual growth and development (which is the mission of the education system in Saudi Arabia), although the situation is different in other institutions where BL adoption is positioned as a new investment with unknown results. Comparing the cases with open eyes on the causes and effects and the costs and benefits is the key to facing all these challenges. Niemiec and Otte (2009) and Taylor and Newton (2013) claimed that administrators are responsible for developing an appropriate strategic plan to adopt BL, and administrators are also integral to identifying the barriers that impede these adoptions. In Saudi Arabia, Alghanmi (2014) showed the need for policy makers to adopt effective BL. The mission of the Saudi government emphasizes adopting technology in general and in education specifically. However, when it comes to policy makers at the institutional level, administrators do not consider adopting technology to be the priority it is supposed to be. For example, some institutions do not have a vision when they draw the institution's budget, which should include BL adoption. According to Mansour et al. (2013), each new manager might have new priorities. Niemiec and Otte (2009) summarized the administrative tasks associated with BL, such as, "change management (at all levels), implementing strategies for successful support, using data to guide planning and decision-making, overcoming resistance, and addressing the policy issues" (p. 91).

According to Liu and Tourtellott (2011), administrators and leaders are responsible for overcoming all challenges through change management and by taking external and internal actions, whether related to funding, resources, culture, or/and policies of the institutions. Allocating resources is an important way to show support for a learning practice like BL. Moreover, institutional leaders must be familiar with the stage of adoption when implementing support strategies. The challenges of administrators at Saudi institutions are similar to those outlined for administrative leaders worldwide in higher education when it comes to implementing BL. According to the MOE (2016), the goal of adopting BL is to enhance student learning experiences and to expand student enrollment in Saudi institutions. With a quick glance at all four institutions' websites for this study, it is clear that the absence of strategic technology plans in most of the Saudi institutions makes the goal even more difficult to achieve. Adoption of BL is still, in many institutions, a faculty-led initiative in individual classrooms and lecture halls. Leaders and educators appreciate the culture of Saudi higher education and its initiatives. However, if their actions do not become official through policies or laws, then students will not collaborate. Alzahrani (2017) argued that, without formal policy, the administration system would not cover the cost and not all faculty members would agree to raise the bar on achievement. Even with an existing development project such as Afaq (this is the name of the project), there is a disconnect in the middle area.

In Saudi Arabia, offering technical support might be a struggle in the adoption of BL. Al-Sarrani (2010) said that, without continuous technical support for the institution, adopting BL becomes more difficult. Furthermore, having a secure, reliable Internet connection is an issue in Saudi Arabia because the Internet is slow and very expensive for students' and faculty's budgets. Abouelenein (2016) supported Al-Sarrani (2010), saying that, even if the Internet exists, the

Internet is not equally available for everybody at an institution. It is only in computer labs or the library, and those are only available when the faculty members or students are in the school. Al-Sarrani (2010) showed the need to offer the Internet in student classrooms and in faculty offices. Even in significantly prestigious universities, a faculty member, most of the time, has to bring his or her own Internet device to teach. Financial challenges should not be an issue in one of the wealthiest countries in the world, but they are for many reasons. Mostly, the leaders' decisions on allocating resources for the budget create this difficulty (Almansour & Kempner, 2016). Each new leader faces new decisions and priorities every year. As Almuqayteeb (2010) found, the barriers that significantly limit faculty members' use of technology included a lack of technical support, lack of effective training, lack of equipment and infrastructure, and lack of administrative support (p. 239).

According to Almuqayteeb (2010), offering support service units and training for female faculty members makes adopting technology in general a pleasurable experience. Niemiec and Otte (2009) explained that adequate support is what faculty members and students need and that it is important to provide critical support at the same time and place to meet faculty members' and students' needs. Al-Sarrani (2010) found that professional development for faculty members reduces resistance and enhances BL adoption.

More resources and support are required for adopting BL and overcoming financial challenges to offer a reliable infrastructure. The need for technical personnel, management software, technical support, and budgets for all these should be first in the planning strategy (Moskal et al., 2013). Furthermore,

Institutions should plan carefully with their vendors to ensure they deliver sufficient capacity and reliability to meet student and faculty needs at all times, and that they have a

scalability plan to grow their infrastructure as usage and demand increase. (Moskal et al., 2013, p.18)

BL relies heavily on engaging technology tools such as computers and Internet access; both should be available and provide strong support to all who need them at institutions of higher learning. As Porter et al. (2014) explained,

Establishing necessary technological infrastructure is central to the success of BL implementation (Niemic & Otte, 2010). Researchers have identified critical administrative decisions, including the decision to invest in necessary technologies and to ensure that those technologies are easy to use. (p. 187)

Al-Sarrani (2010) recommended for each institution to have a strategic plan to adopt BL, and, if it succeeds, this plan should come from the highest level of the country's government. Alghanmi (2014) showed there is a need for a responsive evaluation program in BL environments; this charge should be championed by institutional leaders. The absence of or ineffective evaluation and assessment of a plan adds to the challenges of adopting BL across the postsecondary curriculum. An additional administrative challenge is the absence of real evaluation to address the need for an improved infrastructure. Assessment is the key to moving forward in adopting BL, and as Liu and Tourtellott (2011) recommended, assessing the challenges in women's sectors of higher education is even more difficult. Moukali (2012) and Almuqayteeb (2010) showed that female faculty members have more challenges in adopting and implementing BL because they have more technical support issues compared to male faculty members.

Gender Impact

The gender aspect of the teaching culture considerably impacts the female faculty's use of BL in Saudi Arabia. As in many countries around the world, gender relations negatively affect

and restrict female professional development in academia and higher education. Many researchers (Almansour & Kempner, 2016; Al-Sarrani, 2010; Baruch, 2014; Dukhaykh, 2017) have explained the underrepresentation of women in leadership roles in technology fields. There is often a direct correlation between gender and technology usage. For instance, Baruch (2014) said,

Technology is perceived as a world in which a prominent gender gap exists. This gap in common perceptions is a product of various elements, including accessibility, resources and leisure, but to an extent, it is also a product of men's and women's approaches towards technology. These approaches are expressed in the prominent numerical difference between the number of men and women who choose technological professions as study and occupational professions. (p. 193)

Many researchers have studied women in sciences, technology, engineering, and math (STEM). Most of them have recommended boosting women's involvement in every aspect to help and retain them in STEM. However, there is no clear study of BL and gender in Saudi Arabia. Some researchers have conducted studies about technology use or information with communication and gender, but BL has not been clearly included in these studies. For instance, Shapiro and Williams (2012) explained the effects of women in the domain of STEM and how the threat of stereotyping impacts women's involvement or retention in STEM.

Purushothaman and Zhou (2014) showed, in a study conducted in India, that women face barriers when they try to use technology to teach or when they want to use it as a learning tool. The resistance on the part of some societies to make technology accessible to women has led to more difficulties in female faculty members using the Internet compared to their male counterparts. Purushothaman and Zhou (2014) found that the difficulty women encounter when

trying to use technology has led to a form of stagnation in teaching and learning with technology. Purushothaman and Zhou (2014) argued that women who have access to the Internet are those who have better income. The lack of knowledge and the restrictive access to technology for women have created what some researcher have called technophobia. Indeed, Purushothaman and Zhou (2014) argued that “Literature states that women exhibit more computer anxiety than men” (p. 371). Males also demonstrate a more positive attitude in using the Internet. Females also lack the time to develop technology literacy in some parts of the world due to gender roles. According to Fetterolf and Rudman (2014), for instance, women have a disproportionate role in taking care of children, completing housework, and similar tasks compared to men. This may not be true for all, but, as Purushothaman and Zhou (2014) suggested, to overcome these obstacles, certain factors such as social culture and financial decision-making must be revisited, including the cost for women’s access to technology.

In a study based on Canada, Leach and Turner (2015) found that Canadian data, for example, show that male adults use the Internet slightly more than women (81%-79% in 2009), that the ratio has changed little since 2005, and that age and socioeconomic status are far more important determinants than gender of ICT access and use. (p.1)

Leach and Turner (2015) explained that, in Europe and the United States, the situation is similar. They compared technology use with variables such as the number of women in the domain and the stereotypes, and they noted that,

For the United States . . . the proportion of women studying computer science has fallen from 37% in the mid-1980s to 15% around 2007, and from 39% to 29% of the American

white-collar computing workforce over roughly the same period. (Leach & Turner, 2015, p. 2)

Women's numbers in majors such as computer sciences are decreasing. Christie, O'Neill, Rutter, Young, and Medland (n.d.) said that women held 27% of jobs in computer science and that the numbers are dropping. Christie et al. also found that women used less Internet and technology because of gendered technology. Based on women's opinions in the study, technology is more for men. Klawe (2017) listed three ways to encourage more women to take an interest in technology: engage them more in their study, create confidence in the community, and localize the success. The three methods include three factors: social, culture, and the method of teaching.

The relationship between gender and BL has not been examined enough. According to Villalon (2017), both women and men show a positive attitude toward BL. However, in his review of other literature reviews, he found that many studies in BL did not address gender as a factor. In the case of Saudi Arabia, studies on gender and BL have been conducted from the point of view of social culture and leadership (Almansour & Kempner, 2016). Another case of the gender and technology relationship has been noted by Alzahrani (2017). According to Alzahrani, "If equal access to the Internet is offered for both genders, adopting ICT (Information Communication Technology) for educational purposes might be perceived as being more effective for university students regardless of their gender" (p. 84). Therefore, in my study, most importantly, I seek to cover some of these aspects that have been less explored by previous studies.

Institutional Context and Blended Learning

In the existing studies of BL, researchers have considered the impact and challenges of this pedagogical strategy but have not necessarily considered the institutional or country context.

The place, the mission of the institution, the history, and the stage of adoption all impact the goals of BL and the strategies used to adopt BL at the institutional level. In this section, the comparison between BL in various institutional and country contexts is explored, including the difference in the goals of adopting BL in the first place.

Blended Learning in U.S. Higher Education Systems

Porter et al. (2014) found that 45.09% of the undergraduate and 21% of the graduate programs in the United States offer BL courses, and due to the growth of this type of format, they called it the “new normal” in higher education. Allen et al. (2007) reported that 79% of courses in the U.S. higher-education system are delivered in a BL format. In addition, 55% of institutions in the United States offer at least one blended course. Allen et al. asserted that these percentages suggest that “the market for online/blended delivery has a lot of room for growth” (p. 21). A lot of researchers (Newcombe, 2011; Porter et al., 2014) have focused on determining the need for effective instruction across subjects and academic majors. Kenney and Newcombe (2011) explained that most of the studies of BL investigated students as participants, faculty interactions and level of engagement, and preparation processes for teaching in a BL format.

According to Kanuka and Rourke (2013), when thinking about the stages of applying BL and the stage of acceptance of new technology, U.S> institutions might be considered ahead of many other countries. Kanuka and Rourke explained why the U.S. system is in this position:

The US has a very different approach to faculty development—more of an instructional development model based on computer theory. The EU, AU and UK focus on student learning research. The US is more about people helping with the logistics of the practical and this shows in the popularity of online learning in the US. Canada is a mix of the two

[focus on student learning and instructional development]; more like the UK but a bit further. (p. 29)

Blended Learning in British Higher Education Systems

Taylor and Newton (2013) reviewed over 300 studies about BL in the United Kingdom. They found that most existing studies (e.g., Benson & Anderson, 2010; Hughes, 2007; Motteram, 2006) focused on students' learning experiences, delivery approaches, online strategies such as media blend and activity blend, and resources. Hughes (2007) showed that BL is used in British educational systems as a tool to enhance students' retention, especially for those learners who are at risk of withdrawing from school. In this vein, BL can improve the quality of coursework without lengthening the teaching time. Alebaikan and Troudi (2010) showed that BL is used in the United Kingdom as a strategy to learn while offering flexibility. Benson and Anderson (2010) highlighted the need to have a strategic plan for BL that included adopting all types of technology into teaching pedagogies rather than leaving the adoption decision up to the students' preferences or to the instructors' skills.

Blended Learning in Canadian Higher Education Systems

According to Kanuka and Rourke (2013), Canadian institutions offer many BL courses, but they are still having difficulty with the instructors' design and delivery. Providing resources is a problem, not only for the design of BL but also for the rewards the faculty members may receive. The authors also underscored the importance of developing leadership to facilitate and adopt BL. Kanuka and Rourke summarized this view by stating that

The difficulties of initiating blended learning activities expressed by the participants fell into three groups: a lack of resources to sustain blended learning activities, a perception of blended learning as passive, and a lack of sense of community when engaging in

blended learning activities. While these topics may seem unconnected, they fall within the overarching theme of a “value gap” between the teaching centre and the institutions’ academics. (p. 26)

Blended Learning in Saudi Arabia

Higher education in Saudi Arabia is part of the citizens’ social and economic development. The government’s focus on health and education carries the same level of importance, and higher education is a need, not a privilege. The MOE in Saudi Arabia has frequently emphasized the need to adopt technology into the education system in general. To that end, the National Center for E-learning and Distance Learning exists. According to Al-Sarrani (2010), this organization’s mission is to

1. Deliver higher education to all in an effective way through e-learning,
2. Deliver quality higher education through e-learning,
3. Promote education via technology,
4. Ensure quality standards for e-learning, and
5. Bridge the gap of education and technology (p. 47)

This center is an excellent example of government initiatives to promote a future plan for higher education in Saudi Arabia. Another example is a project named Aafaq. Founded in 2007, the goal of Aafaq is to conduct studies to provide data and assessments about Saudi higher education. In the Aafaq project, leaders have a plan to continue the adoption of technology. As Al-Sarrani (2010) stated, “The Aafaq project is the strategic plan for the introduction of e-learning and other new technologies into higher education” (p. 27). The MOE also requires that Saudi universities study some aspect of the adoption of technology, as Al-Sarrani (2010) did at

Taibah University, where he studied the use of BL. In his study he designed a professional development strategic plan of BL in teaching at Saudi institutions in general.

According to Aljahni (2014), Saudi Arabia is the largest market for information and communication technology in the Middle East. This market impacts online and distance education as well. For example, some Saudi institutions offer totally online classes such as the Centra program at King Abdul-Aziz University (KAU) in Jeddah (2015). In traditional classroom settings, some faculty members use this program to promote BL, but the adoption is far from universal.

Previous study of BL has largely been influenced by the Western understanding of BL, even though the culture and social context are totally different (Aljahni, 2014). Aljahni (2014) and Alebaikan and Troudi (2010) noted that the learning theories applied in studies that are centered on approaches to BL in the United States and the United Kingdom are not always culturally appropriate in Saudi Arabia. BL adoption has happened in global settings between Western and Eastern cultures. Adopting the BL is impacted by the timeline and culture context, as I will note in my explanation of the diffusion of innovation (DOI) and technology acceptance model (TAM) later in the chapter. Because BL was adopted in Western teaching and learning cultures before Saudi Arabia, adopting BL is at various stages in Saudi Arabia, varying within the state and between individuals (Al-Sarrani's, 2010). I started from the definition of Western scholars in this study, but I chose the definitions that would best fit the needs and environment of Saudi Arabia. Other Saudi scholars, Al-Qahtani and Higgins (2013), have used this definition standard in the Western nations. In this case, Saudi Arabia will be the late adopters, and Western countries are the early adopters of BL. According to DOI the later adopter will familiarize faster and modify their adoption to their needs and their specific culture. Yet the different cultural

context and social components do add new factors impacting the adoption of BL (Al-Sarrani's, 2010). This study looked to reveal these new factors by describing female faculty experiences, both at the stage of adopting and the original training of female faculty. This study indicates clearly that the movement between Western and Eastern countries in embracing technology and passing practices of BL across nations required modifications based on their contextual needs.

For example, regarding the teaching style, in most Saudi schools, assessment of students depends on exams, standardized tests, and studying from required textbooks. Aljohani (2016) said, "In terms of weaknesses, students mentioned using traditional methods (including a focus on a test and the lack of human relationships) and a teacher shortage" (p. 5). Not all faculty members have the appropriate level of skills required to use BL in teaching. Administrations and departments often do not consider teaching through technology a priority. BL in many developed countries such as the United States, the United Kingdom, or Canada is in advanced stages, whereas other countries such as Saudi Arabia choose to send students abroad to study in the developed countries instead of implementing strategies and allocating resources for designing BL. This factor constitutes one of the many elements that make this study relevant and groundbreaking in Saudi educational research.

Al-Qahtani and Higgins (2013) conducted a study of BL in higher education environments in Saudi Arabia. For the institutions that they studied, they found that BL was more effective in teaching students when compared to online-only or F2F-only environments. In general, however, the context of BL in the Arab world is limited, and that is true for Saudi Arabia as well. Changing the perception of BL is a big task, from focusing on traditional obstacles, whether internal or external like Alebaikan and Troudi (2010) explain, to the need for a clear strategic local plan that includes the cultural and religious context of Saudi Arabia. A

good example of this approach is Al-Sarrani's (2010) work that outlined stages for faculty members to adopt BL in Saudi institutions: awareness, consequence and management, collaboration, and refocusing. Al-Sarrani found that Saudi faculty members differ in stages from one institution to another and from one part of Saudi Arabia to another.

Gender segregation in higher education is a critical component of the cultural context in Saudi Arabia. The full impact of gender segregation on BL in Saudi Arabia and in female colleges has not yet been studied, although some researchers (e.g., Al-Sarrani, 2010) compared the experiences of men and women in adopting technology in general or they compared faculty members' behavior or their willingness to adopt BL. Alebaikan and Troudi (2011) noted that most of the higher-education institutions in Saudi Arabia are separated by gender. Therefore, the government supports two facilities in each institutional location—one for men and one for women—and it costs more to operate multiple facilities. But, is the society ready to adopt BL? Are the students culturally ready to use technology in this way? Are they responsible enough to handle this change? These questions have been asked in other studies (e.g., Aljahni, 2014), but they have not yet been answered.

In summary, Saudi Arabia is still in the early stages of adopting technology for teaching in higher education environments. Aljahni (2014) explained that there are many researchers (Alebaikan & Troudi, 2011; Al-Sarrani, 2010; Alshahrani & Ward, 2014) that have focused on students' learning experiences, peer-to-peer collaboration, and technical issues surrounding the BL adoption process, but only a few (e.g., Al-Sarrani, 2010) have focused on faculty members' perception. There are no studies that focus on female adoption of BL or on a female faculty population and members' experience with BL at Saudi institutions. Finally, Aljahni (2014)

showed that Saudi Arabia is still in the early stages of adopting technology and that most of the learning experiences are on campus and dependent on a more traditional way of teaching.

Theoretical Framework

To better understand the process of adopting BL, two theories need to be examined: Diffusion of Innovation Theory (DOI) and the Technology Acceptance Model (TAM). For both theories, I explain the theory, define its elements, and describe how it can be used to understand the adoption of BL.

The intersection of DOI and the TAM made them useful as a theoretical framework in this study. Both examine the individual's acceptance level and social point of view, and they classify the factors that impact the internal and external adoption of technology (Rogers, 2003). DOI explains adoption in the social setting with all the possible social culture factors. The TAM explains faculty-level acceptance, specifically explaining external factors' effects on faculty members' beliefs and influencing them toward the BL. DOI and the TAM are different and complement each other in this study. DOI focuses on BL adoption by changing the society's external factors. The TAM reveals the effect of the use of BL on individuals' behaviors.

Diffusion of Innovation (DOI) Theory

Many researchers with studies on adopting technology (Sahin, 2006; Tshabalala et al., 2014) have used diffusion theories to develop new factors or to explore technological innovation in higher education. In my study, the use of the BL technology format and inquiry into the adoption of BL as a new technology will be conducted by applying the DOI theory because adopting BL is considered relatively new in the Saudi education system. The DOI theory explains how to communicate the adoption of new processes in a culture that then leads to social change. Rogers (2003) was one of the most widely known experts in innovation diffusion.

According to Rogers, the elements of DOI are innovation, communication channels, time, and social system. These four elements interact in the diffusion process to create the change of adopting new things. Sahin (2006) defined Rogers' theory "as a widely used theoretical framework in the area of technology diffusion and adoption" (p. 1). The variables and factors of the theory can help to understand the application of innovation diffusion in my study.

DOI theory has four elements: innovation, communication channels, social system, and time. The innovation of this study focused on technological innovation, as Rogers (2003) defined it. According to Rogers, "knowing of technological innovation creates uncertainty about its consequences in the mind of potential adopters. Will the innovation solve an individual's perceived problem?" (p. 14). Rogers also argued that the "Relative advantage is the degree to which invention perceived as better than the idea it supersedes" (p. 15). Regarding compatibility, Rogers referred to it as "the degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of potential adopters" (p. 15). Thus, "Triability is the degree to which an innovation may be experimented with on a limited basis. New ideas that can try on the installment plan will be adopted more quickly than innovations that are not divisible" (p. 16). And she defined, "Observability is the degree to which the result of an innovation is visible to others. The easier it is for individuals to see the results of an innovation, the more likely they are to adopt" (p. 16). Moreover, "Complexity is the degree to which an innovation is perceived as difficult to understand or use" (p. 16).

The second element is communication channels, according to Rogers (2003): "Diffusion is a particular type of communication in which the message content that is exchanged in concerned with a new idea" (p. 18). The communication conditions include the kind of communicators, whether individual to individual or individual to others; the message involves

the state of knowing about something for one person or one party. The communication channel connects the two communicators through a technological set in BL. In this case, new adopters evaluate the innovation depending on their experiences of understanding the innovations from peers who were early adopters.

The third element of the diffusion process is time. According to Rogers (2003), The time dimension is involved in diffusion in (1) the innovation-decision process by which an individual passes from first knowledge of innovation through its adoption or rejection, (2) the innovativeness of individual or other unit of adoption (that is, the relative earliness/lateness with which an innovation is adopted) compared with other members of a system, and (3) an innovation's rate of adoption in a system, is usually measured as the number of members of the system who adopt the innovation in a given time of period. (p. 20)

The fourth element is the social system, and here is how Rogers (2003) defined it:

A social system is defined as a set of interrelated units that are engaged in joint problem solving to accomplish a common goal. The members or units of a social system may be individuals, informal groups, organizations, and/or subsystems. . . . Diffusion occurs within a social system. The social structure of the system affects the innovation's diffusion in several ways. The social system constitutes a boundary within which an innovation diffuses. Here we deal with how the system's social structure affects diffusion, the effect of norms on diffusion, the roles of opinion leaders and change agents, types of innovation-decisions, and the consequences of innovation. Each of these issues involves the relationship between the social system and the diffusion process that occur within it. (p. 24)

Below is Rogers' figure of how time has impacted the innovations according to the category of adopters. The impact shows an increase in adopting new innovations as time passes. Early adopters are the small percentages of adopting, and the percentages increased with time:

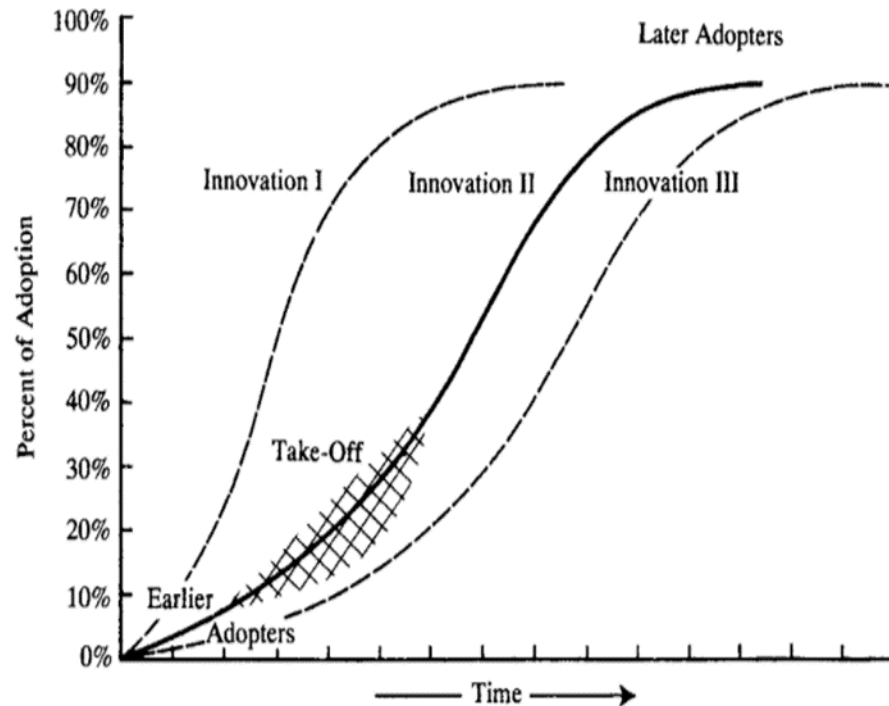


Figure 2. The diffusion processes

How DOI Helped Conduct This Study

Al-Senaidi et al. (2009) defined diffusion as “the process by which an innovation is communicated through certain channels over time among the members of a social system” (p. 576). Through application of the DOI theory, understanding the faculty members' experiences of adopting BL was easier. For example, in female students' experiences of adopting BL, these four elements changed in their experiences, and I sought to learn and uncover the change of adopting BL from the resulting female point of view in this study. As Rogers (2003) and Sahin (2006) noted, the innovation-decision process works in five steps: knowledge, persuasion, decision, implementation, and confirmation. The fifth stage that institutions and faculty members need to

obtain to enhance their adoption of BL is the confirmation step, in which BL becomes the new normal. With practice, a new innovation such as BL in this study must measure the impact or the affect, and Sahin (2006) named it “rate of adoption” (p. 1).

According to Tshabalala et al. (2014), the innovation adoption categories are divided by degrees, as I describe in the methodology chapter. This study followed many other studies in using the DOI theory to understand and evaluate the experiences of women in adopting BL in Saudi higher education environments. Other researchers (e.g., Alaugab, 2007; Aljahni, 2014; Tshabalala et al., 2014) used qualitative, quantitative, and mixed methods with the application of DOI as the theoretical framework. They used the category and the ranks of the theory to evaluate the faculty members’ experiences from their points of view. Many researchers adopted this theory to understand technology adoption. For example, Straub (2009) used the DOI theory to understand the change in behavior to adopt technology. Straub (2009) said,

Although adoption and diffusion theories address different aspects of behavioral changes, most do share certain commonalities and assumptions. Most believe that the adoption process is not a single event. Whereas the decision to or not to adopt an innovation can be a one-time event, the route that leads to one’s decision does not take place in a vacuum.

Beliefs and attitudes are formed over time, which in turn may influence decisions. (p.

628)

In this study, I followed the model of Rogers (2003) by examining innovation through the lens of functions, quality, social rule, and leadership. Themes from the data analysis can be used to guide the understanding of female faculty members’ experiences of adopting BL technology in their institutions.

Technology Acceptance Model (TAM)

The second theory used in this study was TAM, which Davis (1993) developed. TAM is used to understand DOI theory in educational settings. According to Park (2009),

TAM has proven to be a theoretical model in helping to explain and predict user behavior of information technology (Legris, Ingham, & Collette, 2003). TAM is considered an influential extension of theory of reasoned action (TRA), according to Ajzen and Fishbein (1980). (p. 151)

Similarly, Davis (1989) explained that

TAM provides a basis with which one traces how external variables influence belief, attitude, and intention to use. Two cognitive beliefs are posited by TAM: perceived usefulness and perceived ease of use. According to TAM, one's actual use of a technology system is influenced directly or indirectly by the user's behavioral intentions, attitude, perceived usefulness of the system, and perceived ease of the system. TAM also proposes that external factors affect intention and actual use through mediated effects on perceived usefulness and perceived ease of use. (p. 151)

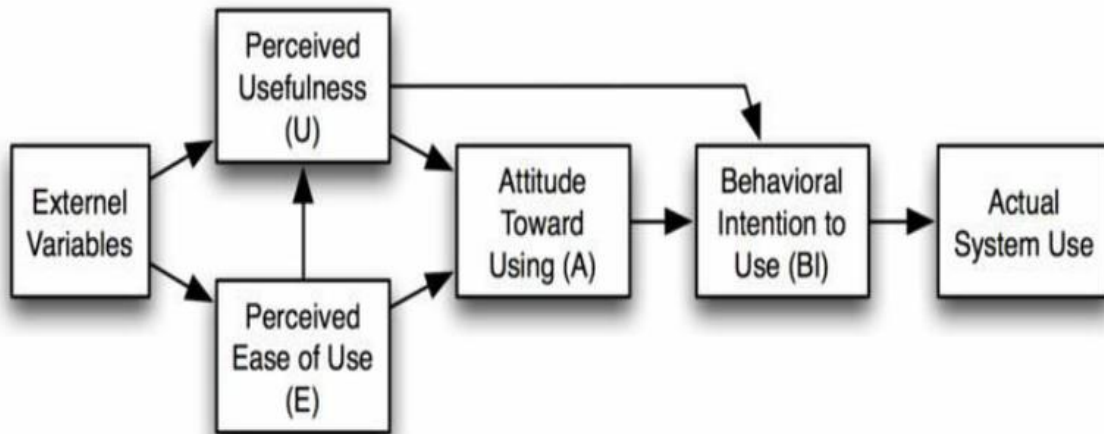


Figure 3. Original technology acceptance model (Used by permission).

According to Straub (2009), TAM is used in an educational setting to clarify acceptance, and it is one of the models used to explain the adoption of technology by individuals. Straub (2009) explained that “perceived ease of use” refers to the “degree to which a person believes that using a particular system would be free of effort” (p. 638). According to Lana and Stagg (2014), TAM was used to adopt many kinds of new technology such as mobile learning and e-learning in education. The usefulness of TAM is that it simplifies the adoption of technology and is used to develop the process of technology acceptance. Lana and Stagg (2014) used TAM to study the compatibility of faculty members’ adoption to operation systems, including mobile learning and e-learning. Therefore, it is logical to apply TAM to other studies about learning and pedagogy, including this study about faculty members’ experiences with BL.

In previous studies, researchers (e.g., Al-Senaidi, et al., 2009; Tshabalala et al., 2014; Tshabalala et al., 2013) utilized TAM. According to Tshabalala et al. (2013) and Lane and Stagg (2014), TAM was implemented so that many researchers could find a way to illustrate the faculty receptions of using a new technology. The acceptances of adoption technology can be seen

through distinct categories such as the perceived ease of use and the perceived usefulness (Tshabalala et al., 2013). TAM is a useful model to study what influences faculty members in the BL-adoption process. TAM helped to understand the data of this study, such as external and internal factors impacting faculty, ease of use, challenges, and descriptive faculty experiences.

Summary

BL is a new trend in higher education. According to Alebaikan (2012), “Blended learning is a permanent trend rather than a passing fad in both higher education and workplace learning settings” (p. 487). Alebaikan (2012) and Aljahni (2014) observed positive attitudes from both students and faculty members toward technology, but questions remain, including the following:

1. Are policy makers ready for this new trend in higher education?
2. Is the social and cultural environment ready to accept this change, especially in education related to women?
3. Is BL a feasible solution for women in education?

No one can predict how fast this adoption will be.

This review highlighted the overview of BL in Saudi as well as the reasons and challenges of BL that relate to students and faculty members—in addition to their impact on the institution and the country. In this study, I explain the view of BL from national and international institutional perspectives. In the next chapter, I describe the methods used to study women faculty members’ experiences and perceptions of BL in Saudi higher education.

Chapter 3: Methodology

In this chapter, I describe the methodology that I used to conduct my study. This qualitative study was intended to understand how BL is used in higher education by female faculty members at Saudi institutions, specifically women's colleges. I sought to learn about female faculty members' views and experiences as they relate to the adoption of BL in their classrooms. This chapter included a description of the research approach, research design, research questions, participants and recruitment, setting, data collection, validity and reliability, and the data analysis procedures I followed.

Research Approach and Worldview

Qualitative research is used in “understanding the meaning that individuals or groups ascribe to a social or human problem” (Creswell, 2012, p. 3). As Lapan, Quartaroli, and Riemer, (2011) stated, “Qualitative research is an approach that enables researchers to explore in detail social and organizational characteristics and individual behaviors and their meanings. To obtain this information, qualitative researchers depend primarily on F2F data collection through observations and in-depth interviews” (p. 70). According to Creswell (2012), qualitative research is used when there is a need to know the complex details and not to rely on existing information or other research studies. In this study, the need was to explore the female faculty members' experiences about adopting BL in their institutions. Personal interviews allowed me to develop a deep understanding of their experiences but from various angles.

Although other researchers have evaluated or highlighted the faculty members' experiences of adopting technology (e.g., Alebaikan & Troudi, 2010; Aljahni, 2014; Al-Senaidi et al., 2009; Tshabalala et al., 2014), none have explored the idea of exclusively focusing on female faculty members' perspectives on using BL in higher education at Saudi women's

colleges. The need to empower female faculty members and to ground their opinion to develop and enhance the education system in general in Saudi Arabia is what led to this study.

Methodological Approach

In the past, the investigations of BL have used similar methods to what I used in this study. For example, Alebaikan and Troudi (2010) indicated that their study “was informed by the interpretive paradigm that appears to be most appropriate to understand and interpret the perceptions of students and instructors towards a new learning environment” (p. 509). They chose methods that emphasized the understanding of participants’ points of view through their analysis of their world. Alshahrani and Ward (2014) also depended on qualitative research approaches adopted from an older study to build a new understanding of BL. In addition, Graham, Woodfield, and Harrison (2013) used qualitative data collection methods (interviewing) and analysis (drawing themes from responses). In my study, I apply similar methods but with a new population: female faculty members in Saudi higher education.

Research Design

The study was a qualitative study using two theories, diffusion of innovation (DOI) and the technology acceptance model (TAM). The theories informed the research questions, which concerned female faculty members’ experiences with BL, including the elements of DOI and the TAM. The interpretation of the experiences depended on the theories’ elements, such as DOI’s time element and the TAM’s technology acceptance stages. All these theoretical elements were included in the research questions, sub-research questions, and interview questions. The study sought female participants who taught at the institution and were willing to participate. To examine female faculty members’ adoption of BL in their institutions, I crafted interview

questions that sought their experiences with BL as innovation; communication channels; time impact; and faculty members' acceptance, behaviors, and attitudes. Questions about faculty using BL strategies included "What teaching strategies do you typically use in the classroom?" "Alternatively, what experience you have had with blended learning environments or techniques?" and all questioning the BL acceptance level. Acceptance levels and stages reveal the level of professional faculty BL adoption. The research questions examine the faculty members' experiences and their BL behaviors inside the classroom and in their instruction.

In this chapter, I present a profile of participants, including a description of who is eligible to participate in my study. I also provide details about my sampling method, site selection, and data collection and how I ensured participants' confidentiality and established credibility and trustworthiness of the data. Finally, I describe my process of data analysis.

Research Question

This study is guided by one primary research question: How do female faculty members at Saudi women's colleges view the process of adopting BL in their classrooms and throughout their institutions? Sub-questions for the study included whether there were barriers or problems frequently faced by female faculty members (or their institutions) in adopting or implementing BL. What kinds of barriers are internal factors or external factors, and why are they barriers or challenges in the first place? How does female faculty members' culture draw a bigger picture of their experiences with BL?

Site Selection

This study included interviews with female faculty members from four public, 4-year institutions in Saudi Arabia: KAU, Umm Al-Qura University, King Saud University (KSU), and

Al Baha University. These institutions are located in Jeddah, Makkah, Riyadh, and Al Baha, respectively. Including institutions that are in different geographic locations may provide perspectives to the study that relate to cultural, societal, and community similarities and differences. The institutions range in age from 10 to 52 years. According to the MOE (2016), the current enrollment for each university is between 30,000 to a maximum of 180,000 students in all of the individual university branches.

The universities chosen are public universities. They are important universities in the Arab world and in the world in general. According to QS World University Rankings (2016), the third- and fourth-ranking universities in the Arab world are KSU and KAU. According to the Top Universities (2016) website, KSU ranks 237 and KAU ranks 303 in the world universities ranking. Umm Al-Qura University is located in the holy city in Makkah (also known as Mecca). And Al Baha University is one of the newest and smallest regional universities in Saudi Arabia. They are all 4-year institutions and offer many graduate programs in different majors. Al Baha University only offers a master's degree in some programs. Therefore, universities represented a wide variance of higher education in Saudi Arabia. The following are profiles for each institution.

Umm Al-Qura University

Umm Al-Qura University was established in 1981 in Makkah. It is a 4-year institution and has undergraduate and graduate students in many majors. According to the MOE (2016), the current enrollment is 66,775 female and male graduate and undergraduate students, with 3,372 faculty members in total. The following is an overview of Umm Al-Qura as an institution:

The existence of Umm Al-Qura University in the Holy City of Makkah gives it a distinguished character as an academic institution that serves Islam and contributes to the

development of human resources and the provision of services at the levels of both the public and private sectors in the light of the requirements of the comprehensive development plans of the country. The major objectives of the University as set by the Council of Ministers Decree number 190 on 21/7/1981 include the following:

- Provision of higher education and graduate studies to enable citizens to contribute to the development of their country in the light of Islamic principles in the following fields:
- Islamic studies
- Natural and applied sciences
- Humanities, social sciences and languages
- Contribution to enhancement of scientific research by conducting and encouraging research and establishing research centers and suggesting means for provision and satisfaction of present-day needs.
- Preparation of specialized scientists and teachers.
- Helping other Islamic societies in the specialized education of their citizens in the different fields of knowledge. (Umm Al-Qura University, 2018)

Kind Saud University

KSU is located in Riyadh, the capital city in the center of the Kingdom of Saudi Arabia, and it was established in 1957. It is a 4-year institution and has two female and male campuses. According to the MOE (2016), enrollment is for both graduate and undergraduate students, and their numbers have reached 66,022 students and 6,997 faculty members. The KSU mission is “To provide students with a quality education, conduct valuable research, serve the national and international societies and contribute to Saudi Arabia’s knowledge society through learning,

creativity, the use of current and developing technologies and effective international partnership” (KSU, 2016, p. 1).

King Abdul-Aziz University

The university’s main campus is located in Jeddah, the second biggest city, in the west region of the Kingdom of Saudi Arabia and on the Red Sea. It was established in 1967. It has 26 colleges and 87 departments. It reserves a high place among higher education in Saudi Arabia. For many reasons, according to KAU (2016), “King Abdul-Aziz University is considered a pioneer in offering higher education to the Saudi girl and the female and male sections were inaugurated in the same year” (p. 8). Their mission focuses on the community of Saudi Arabia as well as “Community Responsibility: Knowledge Development, Research, Innovation and Entrepreneurship” (KAU, 2016, p. 1). The MOE (2016) has shown that the enrollment numbers have reached 132,094 students and 6,148 faculty members.

Al Baha University

Al Baha University is located in the south region of the country at Al Baha city. It is a small new university that was established in 2007. According to Al Baha University (2016) and the MOE (2016), the enrollment numbers reached 18,367 female and male students, both undergraduate and graduate, and 707 faculty members. It has 16 college and 67 departments. According to its website page, the institution’s mission “is to provide distinguished and comprehensive higher education, research, community service and lifelong learning environment through the utilization of the available resources to ensure the best results” (Al Baha University, 2016, p. 2).

From the government’s websites, there are not many differences among these four institutions. They are all public universities, but some offer private degrees or even for-profit

programs. The differences are in the population they serve and the mission statement. Some of them share local views such as Al Baha University, and others have a more globalist perspective on the world such as KSU, KAU, and Umm-Alqura. Umm-Alqura is known for its Islamic studies in this part of the world. Many Muslim students come to study in their Arabic and religions programs. They also offer all other majors to national students such as medical, business, computer sciences, and more. They are all under the control of the MOE, but they do have independent administration. They can ask for funding, apply for positions, and spend their budget as they need.

According to Assidmi and Wolgamuth (2017), admission for the students and hiring faculty members is challenging, and there are crowded schools, high standards, and a very competitive environment, especially in the big cities. A quick search on the faculty list at the university's website showed that many other citizens from other countries close to Saudi Arabia aim to find a job inside Saudi Arabia. The reasons are many, but the essential goals include the reputations of the good schools and the financial benefits. Saudi Arabia is also the location of the two most important holy places for Muslims, which has attracted foreigners to work in Saudi Arabia in general. All Arab countries, some Asian countries, South Africa, some European nations, Canada, and Australia are among the list of countries that some of the faculty members are coming from to teach and research in Saudi Arabia.

Participants

Female faculty members working at four women's colleges that are part of four distinct Saudi Arabian universities were eligible to participate in this study. Faculty members from any academic discipline were welcome to participate. Examples of the disciplines that the women taught at the three women's colleges include curriculum and instruction, kindergarten, education,

English, computer science, general science, and art (modern painting). The female faculty members taught in both undergraduate- and graduate-level programs. Faculty members who teach in many types of classrooms and with varying class sizes were all eligible. Finally, the female faculty members had varied years of work experience in teaching at the college level, ranging from 1 year to 30 years, whether at the same institution or at different institutions.

According to the Saudi MOE (2013), there are 13,000 Saudi Arabian female faculty members across all institutions in Saudi Arabia. Although there are no updated numbers on institutional websites specific to the number of female faculty members who might be eligible to participate in my study, I estimated the target population based on the limited personnel listings that are available. See Table 1 for an estimate of the number of female faculty members by discipline at the four institutions that were the sites for my study.

Table 1

The Targeted Population by Institution

Institution	Department	Women
KAU	Arts and humanities	90
	Education	103
	Sciences	108
KSU	Special education	33
	Law and politics	21
	English	65
Umm Al-Qura	Business	7
	Arabic language	37
	Computer	17
Al-Baha	Engineering and computers	4
	Administration	5
	Physics	4
Total		494

My goal was achieved by interviewing 12 female faculty members from the four institutions that I identified for inclusion in my study. The process of choosing participants provided an equal chance for participants, and it provided enough diversity. The invitation was open to any women in any of the four institutions and chosen colleges, as in the table, regardless of the academic department affiliation or personal characteristics such as nationality, age, or years of experience. The demographic data of the participants are included in Table 2.

Table 2

Participants' Demographic Data

Participant	Discipline	Teaching level	Years of experience
Rowan	Kindergarten education	Undergraduate (levels 1–8)	6
Jamila	Art education	Undergraduate (levels 2–8) and graduate	5
Maha	Psychology	Undergraduate (levels 1–8)	3
Ruba	Education and curriculum instruction	Undergraduate college education and preparatory year	4
Amal	Educational counselling	Undergraduate preparatory year	1
Nora	English language	Undergraduate	3
Lara	Education	Undergraduate	5
Zain	Art education	Undergraduate (levels 1–8)	27
Salma	Art education	Undergraduate college education and preparatory year	3

Farida	Pediatric dentistry	Undergraduate and clinical session	4
Huda	Special education, applied studies, and community service	Undergraduate and preparatory year	7
Anjila	Preparatory year	Freshman	4

The recruitment process was adequately planned. I prepared a personal invitation to each of them that was delivered via phone or e-mail. This variation was planned for, as the various institutions had various protocols for contacting faculty. The invitations were F2F at the researcher's institution in the faculty meeting. I called some faculty members from KSA, KAU, and Umm Al-Qura University; other participants referred them to me. I also asked faculty members I knew at these institutions to send invitations to those eligible for participation in my study. Finally, I employed snowball sampling techniques where I used my network and the networks of female faculty members to recommend individuals who may be interested in participating in my study. The demographics of participants roughly match the population of females in the institution. Every faculty member had an equal chance to participate in this study, though some colleges and majors responded more than other to this invitation, such as education colleges. I increased the number of institutions and departments from which to draw participants; this included five institutions and more targeted faculty.

Data Collection

This study was conducted to understand how BL is used in higher education by female faculty members at Saudi institutions, specifically women's colleges. In this study I sought to learn about female faculty members' views and experiences as they relate to the adoption of BL in their classrooms. I collected data by interviewing 12 female faculty members. In this study,

participants came from four institutions, and some of them had been in a previous institution. They represented various academic disciplines, ages, years of experience, and regions (geographic location). In this section, I describe the interview process.

Interview Process

The participants were asked to answer a series of questions in a one-on-one interview. The interviews were made via phone. The interview was held one time for each participant and lasted from 35 to 60 min. The interviews were audio recorded with permission from the participants.

As the participants of this study are women who speak Arabic, the interviews were conducted in Arabic, and responses were translated from Arabic to English. One of the participants preferred an English interview. All translation works were given to an authorized office from the government of Saudi Arabia and the MOE to translate both the Arabic and English to make sure there were no differences in both versions that might change the meaning of the participants' responses.

Interview Questions

For the semi-structured interviews used in this study, following Glesne's (2011) approach, "Generally, qualitative researchers begin with some interview questions and remain open to reforming and adding to them throughout the research process" (p. 102). The interview questions were generated as existing literature was reviewed. For example, questions about the impact of adopting BL focused on such topics as the reasons, benefits, challenges, and stakeholder perspectives, based on the faculty members' experiences. At the core, all interview questions were geared toward answering the research questions regarding the female faculty members' experiences of adopting BL at Saudi institutions, specifically women's colleges.

The questions of the interviews covered two aspects: demographic information and BL experiences. There were primary questions and prompts that proved to be appropriate and necessary. Short conversations took place between the interview questions (e.g., when I received an example relating to the questions without leading or guiding how the participants should respond). The interview questions included the following:

1. Tell me about your job.
 - a. What do you teach?
 - b. What level of courses do you teach?
 - c. How many years have you been teaching?
 - d. Where did you teach before you started working at your current institution?
 - e. What is your faculty rank?
2. What teaching strategies do you typically use in the classroom? *[maybe provide some examples to get them talking]*
3. How do you define blended learning?
4. What experience have you had with blended learning environments or techniques?
 - a. [prompt] Have you taken a course that uses a blended learning format?
 - b. [prompt] Do you use blended learning as a teaching mode? If so, why do you choose to use this method, and how often do you use it? If not, why don't you use blended learning?
5. Give me an example or two of how you have seen blended learning implemented in higher education for women in Saudi Arabia.
6. What benefits do you think blended learning might offer female faculty members?

7. What are the factors that could prevent the implementation or adoption of blended learning in female higher education in Saudi Arabia?
8. What do you think about blended learning as a teaching strategy at Saudi institutions?
9. Based on experience, what would you like to add that you think is important and I have not asked about?

Confidentiality of Participants

I took several steps to protect the participants' confidentiality in my study. First, I obtained permission to conduct this study from the Institutional Research Board (IRB) at the University of North Dakota to protect the human subjects. Once the study was approved, I prepared a consent form for participants to sign before the interview took place, or the participants sent me a message indicating their agreement after I read the form for them on the phone. Participants had time to read or listen to me about the purpose of the study and the general goals as well as how the data would be used. The statements of informed consent were signed and kept in the researcher's house in a safe place. The files were separated from the other collected data related to the study. Participant confidentiality is essential for this study, and respect for human subjects is of the utmost concern. Pseudonyms were given to each participant. No names were used, and the data transcriptions were saved online.

Credibility and Trustworthiness of the Data

The credibility and trustworthiness of the data are important. Merriam (2009) explained that the criteria for validity and reliability in qualitative research differ depending on the narrative. According to Creswell (2013), achieving validity and reliability in qualitative research requires different strategies. Creswell (2013) asserted that researchers should look to assess the accuracy of the findings, provide thick descriptions, and maintain closeness to the participants to

achieve validity. Following are the strategies I used to ensure validity in the data collection and analysis processes.

In this study, I sent the transcription to each participant to ensure that my transcriptions and interpretations of the interviews were accurate. After transcribing each interview, I sent the transcription to the participant and asked her if the document was accurate, if anything needed to be changed, and if she agreed with what was written on her behalf. I showed my two peer professors the data analysis, including the results and discussion, and I asked for their feedback. As the interviews progressed, I kept in contact and met with my peers (two faculty members) who read my analysis and compared my data. I also had my advisors work with me on this study. I referred to my reflexivity statement throughout the data collection and analysis.

After having tested all of these validated techniques, I am satisfied with the validity of the study. Some of the participants called me a second or third time to add ideas or clarify things they had said before. The time from data collection until the data were presented was enough for the participants to change or add anything. My peers and advisors mentioned some themes I did not see in the first round of analysis. My peers, however, agrees with my interpretation. They found it logical and agreed that it matches the data. They also agreed that the factors come from the analysis. They were satisfied with the codes' definitions and the themes I derived from the data. For example, one explained the big picture of the participants' responses with examples from the workplace that add to and reflect on specific faculty experiences. A particular example concerns the equal distribution of resources between female and male sections and how it affects new technology because the participant witnessed the same discussion often in budget meetings.

I think I found valid results, as many parts of my study aligned with previous studies' recommendations. Some of the ideas and analyses aligned with what is currently happening at the institutions, which I found out about from news or institutional websites.

Reflexivity Statement

As a researcher who has a professional position in a Saudi university and experience with teaching information technology classes at an institution where some of the study participants may be employed, it is very important to acknowledge that my position may constitute a form of bias in this study. However, my experiences as a lecturer in a Saudi female institution made me eligible to conduct this study. I am a lecturer who teaches information technology for general students and for specific pre-teaching students in many majors. As a full-time lecturer and instructor, I have spent 5 years teaching various courses related to using technology and information technology, e-learning, technology for special needs, and education. I have used BL as a tool to prepare and deliver my courses and classes, both to overcome low support or a lack of time and equipment as well as to modernize the courses. However, I consider myself neutral about BL in my teaching. I regularly teach 16 credit hours with 360 to 480 students, and I feel that applying BL is time consuming. The curriculum and lesson plans are not ready or available for me, so I have to create them by myself. Even though this extra work is considered overtime and is paid, planning class instruction with BL still takes considerable time away from other personal activities, such as spending time with family and friends or doing hobbies.

As a past and current student myself, I took many courses that used BL during my master of science degree in education and major information technology as well as in my PhD courses, for which I was a "traditional" student in the United States for the first 3 years and then completed my dissertation credits in Saudi Arabia. Moreover, as part of my continuing learning

and personal professional development, I took entirely online courses (e-learning) as a full-time lecturer. I taught using a BL format in some of my classes. Additionally, I completed various massive open online courses from an international open school in Australia to have the experience. I completed some online workshops and blended local workshops about various topics in administration, education, and technology. My daily interactions and work mission with students and coworkers are related to using technology in teaching and learning, including BL. As my job requires, I am available to help and guide students and faculty members on these issues. This background helped me to carry out this study because I relied on my networks in most of the institutions; I know much about the faculty members as a woman who interacts with them daily, which is not easy for the opposite gender in a culture like that of Saudi Arabia. I am coming from the inside, as a member of the higher-education system and the MOE. Currently, I have some service duties at my current institution related to maintaining the university's media Web page, and as a senior tutor in helping students and staff to use technical library tools during office hours.

These facts about my position and myself did not overtly influence my ability to carry out this study because the study's methodology depended on the participants' responses. I am aware of some of the problems and challenges as well as the progress with improvements of BL from my experiences, yet I am aware that my personal opinion should not have an impact, and I separated my personal opinion from the data analysis. Additionally, I supported all of the data by comparing my findings to previous studies on BL, and I believe my findings are in line with them. I worked on this research for personal purposes to complete my PhD degree and not to bring information to any agent in the education sector, whether public or private. I did not

receive any job benefits from writing or studying this topic. The goal of this study was to understand BL and not to judge the institution or its people.

My personal position and point of view impacted how I carried out this study because the professional setting was easy to explore for me, as I am a lecturer who communicates with populations similar to those in my study every day. I kept a journal to record my own thoughts and reactions while I was collecting the data. Then, I reviewed my journal while coding and analyzing data to ensure distance between myself and the results. Both of my peer professors reviewed the interview transcripts and my data analysis to ensure there was no bias in the results. The open-ended interviews brought direct quotations from the participants. All of the participants' names and the institutions will be kept confidential and will not be shown to the public.

On one hand, I am a Saudi citizen, which allowed for an emic, or insider, view when analyzing the data that only the local community can understand and notice. On the other hand, my experience of studying abroad for the same major allowed me to bring an international viewpoint and understanding of experiences among non-Saudi faculty members. Therefore, I as the researcher can be a bridge between the data analyses and can bring a wide range of explanations to the same data analysis.

Data Analysis

When analyzing data, I drew themes that emerged in the faculties' responses. According to LeCompte (2000),

The task of analysis, which makes interpretation possible, requires researchers first to determine how to organize their data and use it to construct an intact portrait of the

original phenomenon under study and second, to tell readers what that portrait means. (p. 147)

I analyzed the data by studying the participants' answers to the interview questions. I coded their responses, first by using words in their interview answers. The data-analysis process for this study followed Saldaña's (2013) approach (see Figure 4).

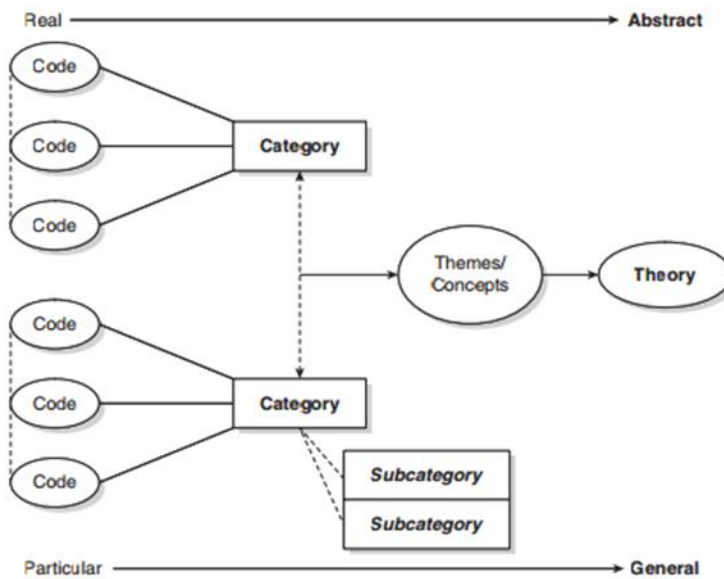


Figure 4. Data analysis according to Saldaña's approach.

I planned to manually find themes from all of the data that I collected in this study. I compared each participant's transcript alone first, for each question, and then I compared all answers from each question transcript. I reached the themes using various techniques, such as looking for keywords in the data and by comparing and contrasting each category of words that emerged, which led to the themes.

From Codes to Themes

Coding and analysis began with building the interview questions. The categories stem from DOI, the TAM, and the literature. Part of each item asks about elements of the theoretical framework and their impact on female faculty members' experiences with BL. The next step was comparing all the participants' interview responses. Then I found the themes that emerged from the theories' elements.

For example, I evaluated interview question 7 (What are the factors that could prevent the implementation or adoption of blended learning in female higher education in Saudi Arabia?) by searching the data for specific terms in the responses, such as "difficulty," "challenge," "not enough," and "not exist." From the data, participants said, "not enough resources," "no access," "design the curriculum," "technical issues," "gender issues," "health issues," and "comprehensive learning such as spelling." The difficulty code leads to the categorization of factors affecting implementation, which led to the theme of limited BL adoption.

The theme is related to the theoretical framework of DOI and TAM. For instance, a lack of theory will limit proof flexibility, such as accepting BL, a comfortable communication channel, the effect of the time, and the impact of culture and society on adoption. In our findings, faculty members use blended learning at an early stage of acceptance and, which supports TAM. In the discussion, the challenges of flexibility affected the BL adoption process.

Several categories emerged (see Chapter 4) and helped me to draw themes from the responses. The themes are faculty members' acceptance, location, and flexibility. The categories are not limited to these three, but these are the most important and most related to the study topic. All of the participants mentioned these three themes as well. Other factors such as external issues were compared to the study topic, such as the students' health, student outcomes, students'

satisfaction, and student performance. I looked between the lines for more in the faculty members' experiences by comparing them. In this process, I also noted some items that researchers looked for, such as the frequency and declaration of keywords. I created tag clouds as a way to find patterns of influence in this study, and I considered the use of infographics that, as DePaolo and Wilkinson (2014) explain, "condense large amounts of assessment data based on frequencies, and presents a holistic, themed picture that is easy for the user to understand and comprehend, and therefore to use in assessment decisions" (p. 39). Word clouds are an easy first step to get a quick understanding about the variables' impact on participants' responses. I compared the participants' answers and quoted similar and different definitions in their answers to Question 1 to draw the experiences category, which led to the theme of the faculty members' acceptance. I showed the relationship of faculty experience to the adoption process. Each question in the interview had a category, which led to the theme. The theme showed the relationship to the adoption process. Showing the process of adopting BL helps to explain the view of adopting BL within Saudi Arabian institutions through female faculty members.

Limitations

There are several limitations to the study. In my experience, most existing studies are in Arabic and are in hard-copy form in many universities' libraries. That has led to me translating most of the studies used in my literature review, and there is a possibility that I may have made translation errors. The fact that most of the participants majored in education is another limitation of this study because participants from various colleges and majors could provide more depth and understanding from their experiences.

Summary and Conclusion

This methodology chapter is written to explain the procedure of the data collection activities and to explain my plan for data analysis for my study. This qualitative study is designed to show female faculty members' experiences with BL in their classrooms and at their home institutions. The collected data were the faculty members' descriptive experiences. I interviewed faculty members to learn about their experiences and to bring more understanding of and awareness to these unheard voices.

Chapter 4: Results

In the previous chapter, I explained the methodology used to conduct this study. The research questions were about understanding women’s experiences with BL at Saudi institutions. I chose four institutions and 12 participants for this study. The methodology I used follows those of similar previous studies by analyzing the data through the lenses of the DOI (Rogers, 2003) and TAM models (Davis, 1993).

I also, analyzed the data according to Saldaña’s approach, which helped me to create Figure 5 for participants’ responses.

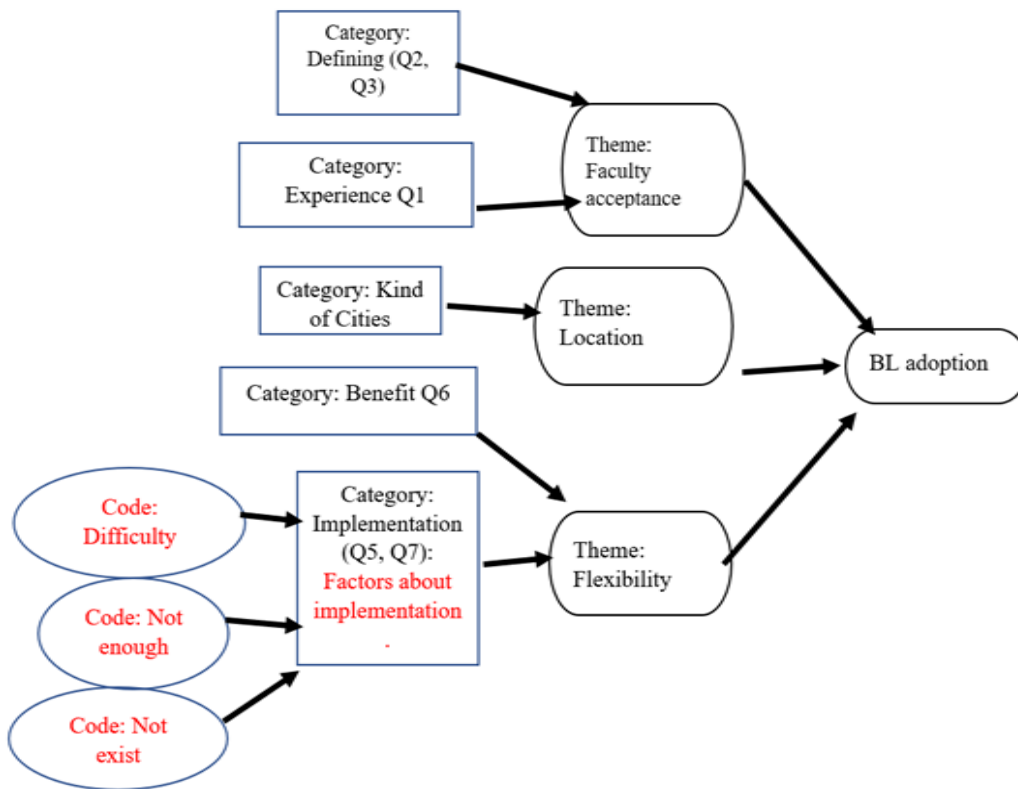


Figure 5. Summary of Themes.

How Participants Define Blended Learning

The native and official language of education in Saudi Arabia, where the participants' institutions are located, is Arabic. The translation of the term blended learning is *التعلم المدمج* /*alraelim almudamij*/. Some refer to it as mixed learning, which is translated as *المتمازج التعلم* /*alraelim almutamazij*/. In this study, I used the definition BL according to Al-Qahtani and Higgins (2013), as a way of mixing e-learning with face-to-face instruction in courses by using available technology tools to teach both inside and outside the classroom. Five participants out of 12 used a similar definition of BL as defined in this study. As mentioned in the literature review when referring to other studies (Alebaikan & Troudi, 2010; Bonk & Graham, 2012; Collins, 2011), BL's definition is still underdeveloped, and no single definition fits all disciplines. It even differs by country, institution, and faculty member. Therefore, in this study, I used the definition of BL as mixing technology tools in teaching and mixing e-learning with F2F in instruction.

The definition of BL differs from one faculty member to another and shows their various experiences and stages of using and interacting with BL as a term in their courses. The participants were categorized into three types according to how they defined BL. Some participants did not define BL in the same way that I did, others had some ideas that matched this study's definition, and the third group defined BL exactly as defined by this study. Only one participant out of the 12 was unable to define BL at all. Some of the participants talked about blended curricula as essential and fundamental for practice courses, and others referred to them as blending types of students. For example, Rowan answered, "What is blended learning? I do not know what it is, but it may be the teaching and methodological approach adopted between the teacher and the student."

Some faculty members also had mixed definitions that did not match the definition of BL in this study. For example, some faculty members considered mixing students of all types, such as traditional and nontraditional students, or mixing students with various majors as BL. Other faculty members considered BL to be mixing methods of teaching and instruction, such as practical and fundamental. Jamila said,

This is the first time I heard about blended learning, but I expect that it is the blend of the theoretical aspect with the practical aspect and adding of technology, but I do not have a specific definition. We can use our own definition of each department and each subject. There is confusion between adopting BL and online learning, distance learning, or electronic learning. As Lara said, “The definition is unclear and incomprehensible for me. There is considerable confusion between remote learning and pure e-learning and blended learning.” Zain defined BL as “the using of technology in learning, but it is common practice to blend the kind of female students.” She also saw it as mixing technology with the curriculum and determining how much mixing would be done.

A third group defined BL as mixing e-learning with F2F in classroom instruction and mixing traditional and modern technology tools in teaching and delivering the class. Ruba said, “It is the blend of technology with education, and it is essential and activated in our universities.” Salma defined BL as “employing technology and utilizing it by blending technology in the educational methods between traditional and modern.” Farida defined BL as using the newest technology to enhance the teaching and learning environment. Huda referred to BL as “employing technology effectively in the educational process in a way that makes it easier for us to clarify the information.” Finally, Anjila referred to “the use of modern means in the classroom to blend e-learning with any means and strategy of education to facilitate the understanding of

students.” Based on all of the answers, the participants had different levels of knowledge of BL’s definition.

As with the various definitions in the literature, judging from the participants’ definitions of BL in this study, BL is not a standard term. Because the definition of BL is not clear, asking the participants to define BL led to a question regarding the involvement of institutions in Saudi Arabia. According to DOI and TAM, the different stages of the faculty members’ development led to the diverse definitions assigned to BL. The faculty members in this study have had different experiences regarding the use of technology. Their different majors and specialties also showed these differences in the development stages. In their responses, the faculty members focused on the integration of technology in their work, but they did not focus on the use of a BL format in classes. This means that their level of professional development allows them to use technology only in the general sense and to have access to it. However, they do not necessary adopt more specific and complex usages of technology like the BL format. Therefore, exploring the adoption of BL in teaching and learning has a part to play in the effective integration of technology within Saudi institutions. However, the needs and reality on the ground are not the same for everyone, as some participants explained.

The study’s definition of BL was new to most of the participants. Therefore, there is a need to clarify what BL means in the context of this study. Implementing BL is essential for the mission of Saudi Arabia, in my view and that of the MOE. Therefore, everyone involved in the adoption of the BL model should know about the definition of BL before they ask them to apply it. The participants were familiar with technology usage in their own ways. Students are also familiar with technology in their daily life. However, BL is still new in academia. The faculty members not knowing the term BL leads to the following question: Do the faculty members have

the information and training they need regarding the use of technology? The fact that the faculty members are not familiar with BL raises the issue of whether they will apply BL approaches to teaching appropriately in their classes. Glazer's (2012) definition of BL has perspectives that can help to introduce the notion of BL to teachers who are not familiar with the term: BL is an instructional design and a delivery mode that can help instructors to overcome challenges while trying to integrate technology into their teaching. BL is a way of teaching and an active learning approach. Glazer (2012) showed examples of diversity among faculty members and how academic majors will provide different contributions. However, the existence of technology in an environment with skilled personnel is always the foundation of BL.

Faculty Members' Previous Experiences with Blended Learning

Though they may have had differing definitions, the study participants had backgrounds in the kind of practices as BL defined in this study. All of the participants have had formal experiences with BL as defined in this study during their graduate training or have taken a professional development workshop on their own, even though it may not have been called BL. All of the participants had experiences with BL when they completed their master's degrees, which was more formal compared to their bachelor's degree. Their experiences depended on their major as students and on their institutions. Even if the whole institution offered advanced technology in the classrooms and/or allowed students to bring personal technology, that often was still not enough for the participants to adopt BL. For example, Maha explained,

Our teaching style was purely theoretical. I am a 2011 graduate, and most of the members who taught us are men, and we always communicated through the internal TV network of the institution, always by presenting the lecture in a traditional way. From my point of view, they could introduce more modern technology.

The internal TV network is a livestream from other classes or offices where male teachers are delivering lectures, and it is a very common practice in Saudi classrooms to have women watch via TV. In this study, simply replacing an F2F presentation with TV does not count as BL.

Overall, from the participants' points of view, adopting BL inside and outside the classroom is not a totally new idea, but it is impacted by many factors, as I discuss later in this dissertation. Huda compared her learning at KSU with her experiences while she studied abroad in special education (she graduated from a French university). She said she did not recognize many differences in adapting to technology between the institution inside Saudi Arabia and outside. The participants' institution was not a factor in their experiences because some of the participants saw support for technology as a priority in their teaching system, while other participants found the complete opposite within various departments at the same institution and with various managers (Umm al-Qura University, for example). Nora studied at the Open Arab University, an open online university. She considers herself an expert at using BL, as most of the courses were taught online and blended, though students attend some classes and final exams in person.

Participants' Actual Use of Blended Learning

Many of the faculty participants did actually use BL methods, even if they did not call the methods as such. In their daily teaching, they often mixed traditional lectures with online presentations. They shared some lessons digitally with the students, sent online assignments, received assignments through e-mail, asked for typed instead of handwritten assignments, asked their students to watch videos online, managed their classes by taking attendance, reported the students' grades, and communicated with students online. Therefore, they used technology in general and used BL as a teaching format.

All of the participants agreed that they used traditional teaching methods and technology in their classes, such as presentations via PowerPoint or similar applications, to present and explain material. They also used e-mail, text messages, and social media applications to maintain and administer their courses inside and outside the classroom. Two of them relied more on traditional tools in their teaching strategy by using textbooks and final exams at the end of the term. However, the use ratio of technology tools compared to traditional tools such as textbooks varied from one lecturer to another. For example, Rowan said,

The main dependence is on the book and on my lecture for the students. Almost 60% relies on my special explanation [presenting information directly from textbooks without any practical activities], and 30% to 40% on the student's effort and activities carried out by the student. Most of the activities are carried out by the student.

Some of the participants see the teaching strategy as depending on their students' needs, the facilities available at their institutions, and how comfortable they are with those facilities. Some institutions are much better equipped in terms of technology, and particularly information technology (IT) facilities and features. These classrooms have e-podiums, which teachers use a lot whenever they can in their teaching strategies. From the researcher, and the participants' observations, institutions have their own types of e-podiums and computer stations. However, this podium typically contains the option to operate a computer and the ability to connect to the Internet, use Universal Serial Bus (USB) drives, and connect to a sound system. Other strategies the participants mentioned included group learning, discussion groups, case studies, and labs with training.

The participants used other strategies if the class needed applications for students, such as for art drawings, medicine, chemistry, and language studies. Jamila said,

The strategy I used is discussions, sometimes traditional ones and sometimes sophisticated using technology such as screen displays and WhatsApp groups. In the master's degree, we rely on cooperative learning and active learning, which is more based on the student.

Maha considered tools such as “presentations, brainstorming, presenting of cases and problems, and use of e-podium.” Nora stated,

presentations and PowerPoint, normal blackboard and paperboard. The presentations were prepared by the same department and the same university. The curriculum is provided by the PowerPoint and is unified. The curriculum of the preparatory year and the presentations are the same.

Salma said,

As most of the courses in our department are practical and as the specialty is fine arts, most of our specialized courses depend on the content of the fine arts, and we use a strategy of information and data presentations using PowerPoint. Very few and simple, like PowerPoint presentations, some designs, and fine arts programs. We can search on the Internet about how we use some raw materials, only we are looking for new [materials].

In general, the faculty members used many strategies and depended on technology most of the time when preparing for their classes, when teaching during classes, and after the tasks and exams.

The faculty members' uses of BL varied. Eleven teachers out of 12 said they do use BL in general and that how much they need BL tools depends on how much effective access and equipment they had. In addition, 10 of the participants used BL daily in their classes in

presenting information, receiving homework and tasks, receiving questions via e-mail, and communicating via social media. Two participants used BL twice weekly, and the rest of their courses involved traditional discussion, lectures, and exams or quizzes. All of the participants had Internet coverage in their area, and they had technology equipment in their classroom, depending on their specific major or department. The faculty members had different experiences with BL, which included preparing lecture presentations, e-mailing tasks, and communicating via e-mail and social media apps (e.g., Twitter, WhatsApp, Snapchat).

Rowan, Jamila, Zain, and Salma all knew about the university's official HTML pages, which have tools to help with their teaching, such as Blackboard, Contra, and many other model programs, including some local programs that are usually used in online classes. However, in the interview, they said that they did not use the pages because they were not interested due to the structure the institutions used, wherein the faculty is only responsible for students' written opinions about the country's copyright rules although they still used their accounts and e-mail addresses.

All of these faculty members were about the same age—in their mid-thirties. This means all of them are from the “digital native” generation. From the researcher observations, most of the institutions considered it the faculty members' responsibility alone to use the institution's technical tools, publish at the institution's website, or use technology. However, the faculty members perceived this as an extra load and not as an attractive method. Farida at KAU said BL experiences exist in her teaching; she used BL to prepare for classes and share study cases with students before class. At Al Baha University, Rowan and Zain depended on their external laptop and data to present information, whether it was official or personal equipment, and did not connect to the Internet in their college. They said this was not the case at all colleges, where they

saw new laptops and new classrooms for information technology majors to use. In conclusion, all of the participants had some sort of experience with BL in their institutions and on their learning journey before as well. Still, if they did not use BL, it was mostly because of external factors.

Participants' Perceptions of Blended Learning Practices

The participants' opinions varied about BL as a teaching strategy in Saudi classrooms, including that it did not exist and was not effective, and that it did exist and was effective; some also said that it did exist but was not effective. Rowan stated that applying BL in Saudi Arabia would be very effective and would make the female faculty members' work a bit easier, especially in such a conservative society (as women cannot move freely in their workplaces like men do, and women cannot mix with men within higher education). She also saw the contradiction between what they teach in their classroom and what they ask their students (pre-teachers) to do in the field. Jamila explained that BL was a strategy that existed but that was not effective because it differed by major. She thought institutions have an excuse because of the availability of the technologies, but she also thought everybody should share the technologies they have available, including places and equipment. Maha believed BL as a strategy exists in the institutions, but she asked whether the institution applies it. Ruba said, "Our university has evolved, and its buildings have evolved, but not all of them. The design does not help to use the technology in some of the university's halls."

Amal, Nora, and Zain thought the available BL was very beneficial and effective, and that it would also improve the quality of teaching and learning. In her experience, Lara thought BL as a strategy was available only on paper and that it was not effective in the classroom. She argued that BL as a teaching strategy needed classrooms like computer labs that are designed in a way that makes them accessible to everyone. Salma is sorry that BL is not a teaching strategy in

all universities, even though she thought was a very important strategy. Farida answered, “What I am saying is if we have BL with a good strategy, it should help us as a teacher or a tutor.”

There is a connection between faculty members who see BL as effective and how they try to adopt it in their courses. For example, Jamila carried her laptop and projector from one classroom to another because she believed that BL was helping her and her students. As another example, Farida used the BL format to flip the classroom and send students the material before class. Again, she did this because she believed in BL’s effectiveness.

Benefits of Blended Learning

According to the participants, in the ideal situations and circumstances based on their experiences, applying and implementing BL in higher education would be very helpful and effective, and it could generate benefits for both students and faculty. They also saw the ideal circumstances as including access to technology and the Internet, good knowledge and development among faculty members, and general readiness among everyone in the institutions. Lara explained that the perfect BL requires collaboration from the administration, the faculty, and the quality insurance department for each course. She said that BL format is

very useful and I have already mentioned the previous examples, but their application requires concerted efforts in all respects. Work pressure, administration, and quality demand these conditions, but they are always on paper, and their actual application cannot be ascertained.

Then, they provided examples in their education system. For example, Anjila said,

I hope that the blended learning is taught and applied early in the pre-university stages and activated more, but we must differentiate between the student levels. And according to my scientific specialization—chemistry—I prefer to apply it earlier. It will be a

dilemma for the students to demand to hand over their duties and take assignments later in the university [studies], like dry lab experiences. It helps the education to have an impact.

A dry lab is an online stimulation lab on the Internet without chemical substances. It is safer and cheaper for institutions, compared to actual labs in the schools. Salma said,

I think we have a conference of student works in our Saudi universities (a scientific conference) where there are talks about the use of blended learning in education applications in the outputs for education, such as medicine and nursing. I think it is an effective result of the blend of technology as well as in the general education in schools but according to school conditions as well.

There are many benefits to adopting BL adoption among faculty, in terms of class preparation, teacher development, and self-learning. In these three themes, the participants highlighted the positive impact of BL adoption in their classes. For example, Rowan, Jamila, and Maha saw better class preparation in terms of faculty members saving time and effort compared to traditional teaching. In terms of savings, Amal saw BL as saving on paperwork. Lara and Salma thought that adopting BL would help faculty members to choose from many learning resources, keep their course up to date, distance themselves from poor teaching methods, and add more fun. Salma explained that adopting BL would enhance communication for all students who learn differently.

BL is a self-learning method for faculty members in their personal learning and in changing their teaching modes as well. According to Salma, using BL is a way to learn more about the subject matter and about new technology, which can lead to knowing more about the new era of education, such as about information banks and digital libraries. Jamila also

considered BL to be a way to create new, rich knowledge in the faculty's major, which could lead to richness in job experiences. Salma saw BL as enhancing the teachers' desire to change in their job. Regarding personal development, Rowan, Lara, and Salma thought that adopting BL would help the faculty members to update their courses and match the current times in their teaching. Nora and Lara agreed with Salma; they see adopting and using BL as the only way to help faculty members to develop within their environment. Anjila saw adopting BL as a tool to help teachers to enhance their ability to develop their work and increase their experiences. In addition, Nora thought that, because faculty members use technologies in front of their students, they are pushed to learn more and to develop themselves. Zain saw BL as a quick feedback tool that can offer faculty members a way to assess their courses.

BL is also a way to enhance the faculty's teaching experiences. Zain saw BL as a way to move teaching and learning from the traditional, old way toward a more modern, direct, and practical way of teaching and learning. Nora saw BL as being a "good and effective thing. The application of blended learning in our lectures makes it easier to deliver the information and is easier for teaching." Huda said BL in higher education can be a way to encourage faculty members to update their knowledge and develop themselves in terms of using technology and a collecting more experiences. Huda added,

It will enrich the knowledge of the faculty members. Most members do not have much experience in activating the technology of blended learning in their teaching. The university gives introductory courses on the use of technology in general and activation of it in teaching, but they are not mandatory, and the faculty members either have the desire to attend or not.

Jamila said BL is a way for faculty members to move forward to match the scientific and education revolution, even if official support from institutions is not available for all faculty. Based on websites and my observations, faculty members' professional development requires each program to offer at least one course that should be taught to students. These courses in all fields explain how to adopt technology in the major. After 2006, (KSA, 2018, PNU, 2017, KAU, 2017, and Al Baha University, 2017), added the training for electronic learning.

Factors Limiting the Adoption of Blended Learning

The participants noted numerous factors that could prevent the implementation or adoption of BL in female higher education in Saudi Arabia, including access to the Internet and technology, technical support, financial support, the classroom environment, and leadership controls.

Access to the Internet and Technology Tools

Access to Internet and technology tools influenced the faculty members' experiences with BL and their teaching strategies. Participants' experiences with BL were divided depending on how much access they had to the Internet and/or technology tools. The participants had three kinds of access: no access, limited access, and full access. Limited access meant not enough Internet equipment for everybody or not having access at particular times. It also means the faculty members or students rely on their own private Internet access as well. Many factors impacted the access participants had. Their experiences with BL were affected by access, including the existing and nonexistent experiences in their teaching models. Their experiences differed because of many factors, such as the available facilities, available equipment, stratifying of students, and faculty members' development and knowledge.

In terms of their experiences with BL, some of the participants had full access to Internet and technology tools. They defined “good” BL adoption as dependent on the existence of technology facilities and tools. More than one teacher gave a view of the regular classroom in the various institutions. Jamila and Zain had full experiences with BL, whether in preparing for classes, doing course tasks, giving exams, or leading the classes. For example, Jamila said, “I think I have committed myself to teaching in this way, and I am very confident in its importance and development and the results we will get as teachers when using it.” Anjila had similar success at KSU, where most of the classrooms and halls have Internet access and at least one e-podium. She said, “It was an effective and good experience at KSU. There is an e-podium in the hall, and we use all its possibilities and benefited from it.”

The location of the classroom impacted the participants’ access. At Al Baha University, Umm al-Qura University, and KAU, Internet access differs depending on the department in which the class is located, such as in an old building at an old campus versus in a new, innovative classroom at a new campus. Therefore, the access is varied. The participants who worked at PNU said most of their experiences with BL and technology were familiar and common, as the institution offered tech facilities as good as KSU’s. Based on the websites of all five universities (KSU, KAU, PNU, Al Baha, and Umm al-Qura), each offers one or more ways to help teachers organize and instruct their classes, such as Blackboard, other learning management systems, or other local institutional pages to meet the needs of the students, teachers, and administrators. Most build classrooms with e-podiums, but these are not in all classrooms, departments, or majors. The participants mentioned that if the facilities do not exist, they just switch to the traditional type of teaching. Some departments have more advanced technology and access, such as majors that teach IT or subjects related to technology. Nora said,

“All the halls are equipped, and there is no difficulty in equipment access. Dealing with devices was easy, and there is no role for the coordinator.” Nora meant by “the coordinator” that in some universities, resource center personnel have a remote control for the projector, and faculty members have to request it for every class in which they want to use it.

The data examination depends on the institution’s location and how it is impacting the implementation process. The participants at KSU and PNU, which are in Riyadh, the capital city of Saudi Arabia, are familiar with technology in their classrooms. The same is true of the faculty members from KAU in Jeddah, the second largest commercial city in Saudi Arabia. Amal said, “Yes, I use it. It is used in all lectures. Communicating with students is via e-mail, Twitter, WhatsApp, and mobile numbers for some students, through my personal accounts and not the university accounts.” All of the participants taught in a classroom where technology is available, but they mentioned other classrooms where it does not exist or classrooms that are not effective enough to use all technology devices (such as because of electric plugs, air conditioners that affect the teaching and learning environment of the class, and Internet that is not strong enough.)

Technical Support

Every participant mentioned difficulties with technical support. For example, Lara had seen the condition of BL and tech in general at the institutions and believed the practice of BL should be easier for everyone. Nora agreed by saying technical support is not well trained and does not exist when they need it. The equipment and technologies are also sometimes absent. They also mentioned external factors, such as working hours of the technical support, impact adopting BL. Salma mentioned “the lack of Internet availability and its poorness, if it is available”, prevented her from adopt more BL. Lara saw many computers that simply did not work or were broken; technical support was a major issue for her, with poor Internet signal in

some places. Anjila thought the existence or nonexistence of technical support impacted the factors on adopting BL.

Financial Support

The third factor, financial support, influenced the adoption of BL, according to some of the faculty. Anjila thought that not having enough financial support impacted BL's adoption. Jamila believed adoption of BL depended on the faculty's personal equipment and the high costs to the faculty members' personal budgets. Amal clarified that whether or not professional equipment exists, the absence of coordinators prevented more BL. Jamila explained,

During my teaching experience, I have never relinquished my personal laptop and projector, and I carried them from one lecture to another—they are the backbone of my teaching style. And I cannot relinquish the WhatsApp group [WhatsApp is the most famous social media app in Saudi Arabia, in both social life and education (Latifi, 2016)] of my students, whom I am teaching to communicate, where I update information about the class. All the effort is on the teacher herself in the faculty that I teach in, and this is unfair to the teacher compared to the rest of the departments. For example, the Department of Education Technology or the Department of Computers Science have all the technology that helps them to give [more BL format classes], while we cannot. We have heard over and over [by the deans and administrators of the university] that our department does not require the presence of technology to activate it as a method of blended learning because we do not need it.

This revealed the importance of fair allocation of resources within the institutions.

Financial support impacts other areas such as the availability of technical support and the mobility of female faculty. Maha said,

The large halls are equipped with two projector devices and the e-podium. The small halls are equipped with a device only. When operating or experiencing failures, we ask for help from IT technical support, but official working hours end at 2 pm (that is the regular work time). These are blocking the use of different techniques.

It is worth mentioning here that the female sections at the universities do have more students compared to the male sections in the same majors, due to high numbers of female students in all Saudi higher education (MOE, 2017). Even though Saudi Arabia is one of the richest countries in the world, when financial issues come up, should faculties question the expertise of those who create the budgets of these institutions?

Classroom Environment

The fourth factor that prevented BL implementation was the classroom environment. Lara said the number of students is too high for the current facilities. For example, Maha said that before, “sometimes we have a problem in capacity, and sometimes it is appropriate”—some classes have 40 to 60 students. Some computer lab classes have 25 students, but once extra students are added, it can easily reach 45 students. Jamila said, “The other factor that the teacher may face is the magnitude and pressure of the course, in the sense that the course is quite big and does not help for application [of BL].” Zain said that the classroom environment does not meet all the faculty’s needs, and students and workers lack the common sense to use this equipment carefully and not damage it. More time is needed to plan a course, and the classrooms’ locations sometime involve walking a long distance with personal computers and laptops between classes.

Professional Development

The faculty members saw professional development as a key to adopting BL. However, the absence of internal factors such as professional development for faculty members and an

eagerness to learn more will be an obstacle. Salma said, “sometimes, faculty members lack knowledge about the technology and teaching method, as there is not any background.

Sometimes, the laziness of the faculty member in using technology and all these factors affect [BL adoption].” Maha considered BL as currently applied in Saudi higher education and thought the effectiveness of BL was related to the willingness and eagerness of faculty members to apply it. According to available faculty assessment forms (PNU, 2017), the focus is on publishing and research, social services, and teaching, without explaining the relationship to technology in general. Later in this paper, I explain how the required faculty development does not address technology adoption or BL specifically.

Leadership

The fifth factor discussed by the participants was the leadership and rules in each institution. The leadership offers teachers training and time for self-development, allocate resources, ensure quality insurance, and provide rules in using BL within the classroom. Lara discussed this issue:

Codifying, how to use it[BL], and apply all its own conditions. The application process should be easy and simple and not tied to a tight agenda. For example, when applying discussion forums, the faculty member is required to monitor the content.

Anjila thought the existence of teacher training would help. Zain clarified that some leaders had personal thoughts and opinions on which majors and classes need to have the “perfect” classroom technologies.

Rowan and Amal agreed that when BL exists as a strategy implemented by university leaders, the educational leaders find ways to encourage and support faculty members in applying BL. The BL approach then becomes an effective learning experience for both faculty members

and students. Amal added that the curriculum is not designed to apply a BL strategy yet. In summary, each faculty member's personal experience affected her opinion, which showed the various situations that each faculty member might face in any of the sampled institutions. Regardless of the institution's location or name, the teachers thought about the same factors that prevented the adoption of BL.

What the Participants Think Needs to Be Done to Aid in Adopting Blended Learning

In addition to asking about their experiences, I asked the participants what they thought would encourage more adoption of BL. The answers from the participants focused on two aspects on adopting BL in Saudi institutions. Regardless of their location, they all mentioned the need for a strategic plan to adopt BL in each institution, including a method of evaluation, and the need to be aware of negativity when adopting BL. Based on the institutions' websites, the strategic plans are not clear and/or BL adoption is missing from the institution's plans. Many areas need to be covered in the institutions' planning, such as assessment of the quality principles, evaluations of BL's adoption, and evaluation of the faculty members' behavior toward BL. For example, each institution needs to offer facilities and technical support. Rowan said, "It is difficult to assign homework to a student if she does not have an Internet connection. This is one of the obstacles in the way of blended learning, whether inside or outside the university." Zain agreed, saying, "The absence of awareness makes our task of blending technology with education more difficult, and there must be respect for the facilities and for other people." Moreover, Farida added, "I think it is a good thing [to adopt BL], but we need to make sure we have access for everybody first."

I browsed and reviewed the institutions' websites to search for a strategic BL plan, but they are not published on the websites and are not available yet. I found the information

technology strategic plan and roadmap for the whole education system from the National Commission for Academic Accreditation & Assessment to create the budget (NCAAA; 2017):

20. Annual expenditure on IT budget, including a) Percentage of the total institution, or college, or program budget allocated for IT; b) Percentage of IT budget allocated per program for institutional or per student for programmatic; c) Percentage of IT budget allocated for software licenses; d) Percentage of IT budget allocated for IT security; e) Percentage of IT budget allocated for IT maintenance. (p. 4)

The other perspective that female faculty members wish to be asked about is the evaluation process of adopting BL and of the faculty members in adopting BL. Jamila highlighted the need for supervisory bodies for BL adoption:

Who is responsible? Do we have supervisory bodies or just voluntary initiatives from the professors? What are the functional requirements that require a certain level of technical skills for the faculty member? Personally, I did not see the evaluation of the teacher based on a specific form indicating the use of technology. I wish the performance indicators for the members would contain a reference to the faculty member's relationship with the technology; and if it exists, I am not aware of or acquainted with its existence.

Maha agreed by saying, "I would like to get an answer as to how the faculty member is evaluated. Is there an evaluation of the members? Did they apply the blended learning effectively?" Lara said,

I hope to apply the principles of quality, because if the principles, that is applied, the possibility of applying blended learning on the ground becomes a reality. [BL] may apply in our situation, but its application becomes bad or on paper only. From my point of view, there must be a real law on the mechanism of its application.

Salma agreed:

I hope that blended learning becomes mandatory and we have a quality scheme that governs the faculty member and her practices in this aspect—is it applied or not? When is its application quality, distinctive, and useful? Have students benefited? I hope it will register in the faculty member evaluation. I expect it to be very useful, and we need it in our time.

Therefore, the participants' answers highlight the need for a general evaluation process from beginning to end of experiences of adopting BL. At the end, both faculty members who applied BL wanted to get the credit of their work, and those who did not wanted more roles, so the evaluation meets both their needs.

The evaluation process for education is new in Saudi Arabia. It began in 2015 via the NCAAA, an autonomous department that assesses educational institutions in Saudi Arabia and encourages universities, through workshops, to build assessment forms and obtain accreditation from Saudi Arabia. The NCAAA is still working on the rubrics and forms at the individual institutions. Evaluation of technology use in education is also new, and evaluations of BL do not exist yet. However, the NCAAA (2017) has evaluation policies for education at the institutions and for various program levels as well as indicators and processes to evaluate institutions and programs for accreditation. However, most of the institutions do not have such forms yet; if the institutions do, they are still underdeveloped on their quality assurance departments.

The evaluation rubric for adapting to technology in general and BL specifically is available at the ministry level but not available and unclear at the institution, college, program, and faculty assessment levels. Assessments of faculty members' or institution's behavior in adopting technology or BL specifically are not available at each institution. NCAAA has

indicators in its evaluation policies for any program at an institution, but technology come as a second priority, and faculty professional development is the third priority, as discussed below.

Support for Improvements in Teaching Quality

Standards for improvement in teaching quality were established by the MOE, through NCAAA (2018):

4.7.1 Training programs in teaching skills should be provided within the institution for both new and continuing teaching staff, including those with part-time teaching responsibilities.

4.7.2 Training programs in teaching should include effective use of new and emerging technology.

4.7.3 Opportunities should be provided for the additional professional development of teaching staff, with special assistance given to any who are facing difficulties. (NCAAA, p. 21)

Because of the importance of such standards, this study sought to bring new understanding of experiences of adopting BL, and it could potentially aid in creating the evaluation rubric in each institution.

To explain the case more, a quick glance at each institution's website for the rubric or any evaluation forms for faculty members showed that they are not published for the faculty members or the public. However, the faculty evaluations should go with the NCAAA's policies on program evaluation. This study involved examining the faculty assessment documents at PNU, which are in Arabic. They only have one component to give the faculty 10 points out of 100 if they apply and use new teaching methods or new technology, with no further explanation. The rest of the assessment is about the faculty members' research publications, whether they

follow the rules and system of their positions, and the members' other personal skills. The other four institutions did not publish their assessments or faculty evaluation forms.

The third theme the faculty members mentioned was a need to watch out for how BL might negatively impact the learning process and students' basic skills, such as handwriting. For example, Ruba said, "Moving to the blended learning completely or almost completely may cause a complete gap in education. In terms of the moral aspect of the use of technology in education, the student needs to be codifying [by clear rules of use technology]." Farida also said, "We could compare the BL and traditional learning and how much they impact the students before we apply [BL] as a teacher." Anjila said,

I would like to point out the negatives that students may face when using this type of learning: for example, dispensing with handwriting, misspellings, and the students not mastering the skills of writing and reading well. Blended learning shortens time, but only if it is adopted in a good way considering the social, psychological, health, and financial factors.

Conclusion

In the end, the findings from the interviews, the evaluation of the institutions' public websites, and the comparison of the institutions' documents all support the conclusion that the adoption process exists at the country level with the NCAAA. However, at the institution and program levels, the mission and planning are vague, without strict rules for adopting BL.

Faculty members' knowledge and understanding regarding the definitions of BL showed their acceptance. Even though they did not have perfect technical support, most of them applied BL in their courses. They applied BL even though they were not asked to do so. The

compression of all the data resources showed that Saudi institutions and their faculty members are in the initial stages of accepting BL-specific technology and that applying the DOI and TAM theories in the Saudi higher-education system increases acceptance of the new orientations.

Examining the locations where BL has been adopted revealed that there is no relationship between locations; there are examples of groups at same institution in which some have full BL equipment, support, and applications even as others have poor BL equipment, support, and applications. These locations could even be in neighboring classrooms or across majors at the same school. For example, at Umm al-Qura University, faculty members within the same major had varied experiences in adopting BL.

Faculty members' flexibility and their relationship to the adoption of BL depended on their benefits and challenges. The participants were sure about the benefits of BL if they could overcome the challenges through external help such as strategic plans for BL adoption or road maps with clear and realistic evaluation rubrics at the institution and program levels; this is shown in their interview responses. Finally, I summarized the relations of the finding to the theoretical framework of DOI and TAM.

Chapter 5: Discussion and Recommendations

In this study I collected data via phone interviews with 12 participants, all female lecturers educated at different institutions (both Saudi and non-Saudi) around the world. This study focused only on their experiences with the adoption of Blended Learning (BL) inside Saudi Arabia. The 12 participants had a diverse age range; 11 were from Saudi Arabia, and one was from Jordan. Their teaching experience ranged from 2 years to 27 years, though most were in their first 5 years of teaching. Their disciplines included kindergarten, chemistry, medicine, education, special education, art, language arts, Quran studies, and English.

From my findings, BL adoption is in the initial stage of acceptance, according to the TAM and DOI theories. BL adoption at the Saudi system level will likely increase faculty acceptance. Also, more time will be required to fully adopt BL in the education system socially and culturally. The findings support the theoretical framework principles and describe the faculty's experiences with BL. The results show that proper circumstances could lead to more widespread BL adoption, including the establishment of a strategic BL plan, providing faculty support and empowering more women in leadership.

According to the TAM and DOI, BL adoption requires time, cultural support, and societal support. Clear, strategic evaluation plans will help in writing the goals and the missions to adopt BL. Also, the TAM and DOI empower women to take action and make change in their society. As Rowan said, the conservative organization of universities makes it difficult for a female to adopt BL. Also, faculty support is vital to BL adoption, according to the TAM and DOI. Gaining faculty support is the first step to applying the TAM principles to make BL useful and smooth, which will lead the faculty to accept BL.

Connections to DOI and the TAM

Finding a high level of acceptance at the adoption stage supports the theoretical framework of DOI and the TAM. The four elements of DOI are innovation, communication channels, time, and social culture. Applying DOI showed that the first element is innovation. In this case, BL is an innovation because it transforms classroom instruction. Adopting innovations, according to DOI, requires an understanding of BL, keeping the BL simple, and learning from early adopters with a focus on its cultural and social factors. When the participant Maha explained her experiences with BL when she was a student, she mentioned that it is an innovation and a new part of the system because previously, all the classes used general, traditional instructions and formats. The adoption of BL brought about the element of innovation; this idea supports the DOI theory about innovation.

The second element is the communication channels, examining the communication medium, the connection's setting, and the number of the people who interact. BL instructions can be provided electronically. According to DOI, most of the new adopters depend on other early adopters' experiences. Therefore, their old experiences with BL affect their current adoption stage. Nora saw herself as an expert in BL because of her early involvement with an open online university that depended heavily on the BL format. Her experience supports the theory of levels of adoption and the theory that communication channels enhance BL experiences. For example, Nora used BL as a communication tool all the time in her learning; therefore, she built her communication channels in advance, which made it easier for her to use BL more frequently in her classroom.

These elements lead to the third element: time. BL adoption takes time with new experiences. Participants who spend time studying and using BL in their classes adopt it more

easily and quickly. For example, Salma said because they did not spend time creating instructions and activities in their fine art subjects, they did not use BL very much. On the other hand, Nora, whose studies took place in an online education environment and who had previous experience using BL, found it easier to adopt in her instruction.

The fourth element involves social and cultural change. Rowan, Nora, and Farida all mentioned the difficulty of adoption because of external factors, such as technical support, budgets, classroom type, curriculum, and leadership, which all impact the cultural and social aspects of BL adoption. From the participant's point of view, controlling the external factors and a supportive culture would make them more willing to adopt it. Societal acceptance would also increase the level of faculty acceptance. When participants mentioned the appropriate circumstances for BL adoption, they referred to cultural and social acceptance. For example, Jamila questioned the BL evaluation process: "Who is responsible? Do we have supervisory bodies or just voluntary initiatives from the professors?" Lara also wanted to know about the principles of adopting BL, and Salam believed the evaluation of BL was a necessary governmental process. Ruba called for "codifying," and she referred to good rules in BL practice. In summary, as I have shown, DOI is essential to understand the step-by-step BL adoption process and explain how the general theme is related to the understanding of female faculty members' experiences.

The other model used in this study was the TAM, which helped classify the adoption levels. In BL adoption, the faculty goes through distinct stages, as the findings show. These theories help explain faculty experiences and the level of "perceived usefulness and perceived ease of use" (Davis, 1989, p. 151). Jamila mentioned self-learning as a tool for adopting more BL. Each faculty member used her technology tools to adopt BL. A variety of devices,

instructions, and teaching styles emphasized the components of the theory's usefulness, making it easier to adopt BL. As the TAM stated, controlling the use of BL will impact how faculties adopt it as a new method. The TAM confirms that BL is dependent on faculty members' initiation and behaviors. Time also affects faculty experiences. From the finding support of the TAM theoretical framework will significantly increase BL acceptance. In the end, BL can change traditional instructional design, and more faculty experiences with BL will lead to its adoption because according to the TAM, more healthy BL behaviors will lead to the creation of a system to adopt BL.

At the end, the study's results supported DOI theory, which suggests that BL cannot be adopted at a female college without changes in the social and institutional cultures. Innovations take time and need communication channels if they are to become new norms.

This study's findings also supported TAM. For example, TAM indicates that the choice of whether to adopt a technology is based on its usefulness, the system it is used in, and the intention of the faculty members with regard to the new technology. In this study, technical support was an issue, and an absence of strategic plans sometimes prevented faculty members from adopting technology in general and BL in particular. Similarly, TAM includes the need to respect both internal and external factors, which can impact faculty acceptance of the new technology. This study's findings supported that fact, as both internal and external factors affected the adoption of BL.

In this chapter, I discuss some of these main findings, particularly regarding the needs for evaluation and faculty support. In addition, even though the participants did not directly discuss the impact that gender factors have on female faculty members' experiences in terms of adopting

BL in their classrooms, gender did have an impact. I discuss these factors related to gender, particularly female leadership, in this chapter.

Need for Strategic Evaluation

According to this study's participants, the challenges of the BL approach in Saudi Arabia necessitate urgent strategic plans at all levels. Almansour and Kempner (2016) identified institutional factors as one of the "three basic problems for Arab universities"; these factors include "poor strategic planning, lack of autonomy, [and a] flawed appointment process for administrators" (p. 878). When adopting BL in Saudi Arabia's higher-education system, strategic planning necessitates a road map of the required quality-assurance and assessment tasks. There is also a vital need to evaluate Saudi institutions' teaching and learning methods. According to Al-Wassia et al. (2015), evaluation "emphasizes that mindsets should be changed at the Macro-level (Government), Meso-level (Institution) and Micro-level (Classroom)" (p. S16). Researchers from other countries, including those with extensive experience in quality assessment in higher education, have recommended using this method; Saudi Arabia should borrow those countries' programs or send its students to study in those countries (MOE, 2018). Saudi educational leaders could adopt some of those countries' evaluation systems and modify them to fit the Saudi community. One way to provide better higher education is to assess its quality, as Koçer et al. (2017) stated:

Quality assessment methods are of high topicality in the agenda of higher education institutions, especially the question of whether methodology used for internal and external assessment has a relevant influence on teaching, and the improvement of teaching quality by including effectiveness, efficiency, reliability, responsiveness as well

as empathy. On the one hand, it is a logical and a justified movement towards the standardization of quality assessment procedures, but on the other hand integration of an individualized approach, which allow assessing one's performance in essence and providing solutions for different higher education practice specifics, which can be seen both in higher education institutions internationally as well as locally. (p. 2)

For example, in the United States, Stokes-Beverley et al. (2016) recommended that evaluations of preservice teacher programs include accreditation certificates from an agency to ensure that the teachers have the minimum technology skills. Saudi Arabia's higher-education institutions similarly should have clear strategic plans for adopting BL as a transformative strategy in terms of accreditation. Because of BL's demonstrated benefits (Aljahni, 2014; Al-Sarrani, 2010; Alshahrani & Ward, 2014), Saudi Arabia should adopt a policy that supports the use of BL as a tool to reform higher education. Neil and Sprusansky (2017) reported that Saudi Vision 2030 would help modernize Saudi Arabia by providing evaluation at all levels. Hakim (2015) viewed the existing teacher evaluation system in the following way:

The teachers opined that the appraisal system practiced at their institution was not objective enough to measure their performance properly, calling for the trained and objective observers to conduct a fair evaluation. They also supported peer evaluation provided that it is accompanied by coaching and mentoring, suggesting that peer coaching and mentoring can be a successful alternative to a regular evaluation system to measure the teacher performance. (p. 102)

Participants saw that being involved in the global economy would require a strict evaluation plan to adopt BL in Saudi Arabia. The country's mission means that there is a need

for every evaluation step. As Baki (2004) explained, there can be no changes without evaluating the education system in its entirety:

The Saudi government is looking for economic change. For such a change to occur, the education system needs to be re-evaluated. Preserving society and culture is important, but the extent of preservation needs to be revisited for education to prepare both men and women for life in the global economy. (p. 7)

Abouelenein (2016) considered Saudi Arabia's need for international and global education to modernize its educational system. BL-formatted courses and the adoption of BL could speed up the achievement of this goal. Koç et al. (2017) said, "International student mobility in the acquisition of education is ever increasing, and this forces education systems and service providers to think about the attractiveness and compliance with international quality standards" (p. 3). According to Dukhaykh (2017), the fact that women will be allowed to drive starting in June 2018 will change many aspects of Saudi life; for instance, more job opportunities will be offered to fit women's specific needs and desires. This change will also help female workers to be on time and to complete both work tasks and family tasks. Saudi Arabia has the highest percentage of people who die on the road in the world, as vehicular accidents are the cause of 17 deaths daily (Alarabiya, 2018).

Faculty Support

This study's results matched those of other studies. For example, Tshabalala et al. (2014) demonstrated that faculty members face these challenges in adopting BL: faculty training, faculty support, and technical support. Almuqayteeb (2010) and Ma'arop and Embi (2016) had similar results. Tshabalala et al.'s (2014) and Ma'arop and Embi's (2016) studies were different from this study because they took place in countries with coeducational systems. Almuqayteeb

(2010) studied a single female college in Dammam, a city on the east coast of Saudi Arabia. Institutions are responsible for achieving faculty support and commitment. Sari and Karsen (2016) said,

According to the result, the conclusion for effective blended learning is starting from the institutional commitment as a foundation. Otherwise, the facilities and access should be improved and appropriate with the learning conditions, and the satisfaction of user will be increased and the learning will be more effective. (p. 80)

However, other researchers, such as Ma'arop and Embi (2016), have recommended providing institutional support for faculty members by training them and finding the right programs for mixing BL with the traditional aspects of teaching. Ma'arop and Embi also suggested that institutions should find the appropriate technical and equipment support by following other countries' lead. In this study, I used past studies as guides to find recommendations for Saudi Arabia. On the one hand, reducing the cost of education should allow for more faculty support. BL has helped many governments to reduce education expenses in general; this effect exists in Saudi Arabia as well. According to Dehaas (2012), in Canada, many institutions have transferred from F2F to BL-format classes due to budget issues. Therefore, BL is a way of saving money; this could be the case in Saudi Arabia as well. BL specifically reduces the number of professors who must teach, shortens the time spent in classes and lectures, and deepens the focus on training undergraduates. BL helped in Australia, according to Crawford and Jenkins (2017), in that

it has been identified that innovative solutions through blended learning may be beneficial in responding to the issue of reduced government funding to Australian universities in an unpredictable time of required educational change. Such an approach

will allow for an expansion of faculty, library and classroom facilities and a maximisation of resources through technology. (p. 53)

On the other hand, BL reduces the cost to institutions by allowing them to use only the technologies that they need. For example, institutions often spend large portions of their budgets on websites, software, and tools that are more helpful for classroom administration than for teaching and creating classes (Abouelenein, 2016). This also applies to faculty members, who use technology because it makes administration easier, even though it does not necessarily help with teaching. Abouelenein (2016) found that Saudi universities required education faculty members to participate in technology training. This study's results showed the faculty members' needs related to learning how to use active BL in their courses. In this study, the participants believed that BL had a beneficial impact on their teaching and class preparation. According to Crawford and Jenkins (2017), "Thoughtful pedagogical planning by a discipline expert is required in order to ensure learning activities are relevant and meaningful" (p. 68). Faculty training affects the quality of teaching and learning in higher education: "Quality assurance of teaching staff—higher education institutions across the world pay more and more attention to teaching excellence and carrying out specific activities to ensure constant high-quality teaching resulting in high level learning" (Koç et al., 2017, p. 3). Reforming an institution's budget allows it to provide more teacher training and development for BL.

This study's finding that BL adoption depends on faculty support is in agreement with those of other studies on this topic (e.g., Abouelenein, 2016; Almansour & Kempner, 2016). This study listed faculty training, equipment, and controlled workloads as possible supports. In this study, participants referred to the perfect circumstance as the institution offering to update its classes and adopt BL. For instance, women's workloads are greater than men's due to cultural

components. The challenges that female faculty members face in adopting BL in higher education are both internal and external. For example, inside institutions,

the instructors, however, have to deal with several other issues like increased workload, increased time devotion, lack of skills to conduct blended learning and difficulty in finding the right blend for their curriculum. Based on the data, it appears that workload being the most frequently reported issue among the instructors. (Ma'arop & Embi, 2016, p. 48)

Duties from outside the institutions, including personal and family factors, should be included in faculty members' workloads. Alzahrani (2017) explained that, in the social culture of Saudi Arabia, men are traditionally responsible for financial matters, and women are traditionally responsible for household matters—first and foremost, raising children. In this culture, female faculty members face many occupational and family conflicts. For example, Almutairi (2017) said, “Overall, work-family and family-work conflict, and social support play an important role in female teachers' job satisfaction which in turn affects their performance” (p. 295). Moreover, the absence of day care in many institutions means that female faculty members face more challenges than their male coworkers do (Alomair, 2015). This study's participants felt the burdens of their workloads, but they never mentioned that these burdens could also come from outside the workplace.

Other scholars have also noticed the conflicts that female faculty members face in their professional development. All of these conflicts are related—in one way or another to the culture of the community in which the faculty members work and live. Almansour and Kempner (2016) noted, “Responsibilities to the family were both the major consideration and limitation for participating in the public sphere and conducting research” (p. 879). Based on this observation,

faculty members' family obligations differ across institutions. Some institutions provided day care services or even kindergarten, but these were unplanned, individual initiatives. In the end, adopting BL in institutions and throughout society should be a priority in any strategic plan for Saudi Arabia's higher-education system.

Female Leadership

The participants in this study did not explicitly discuss the impact that gender has on BL adoption because there were no direct interview questions about this topic. Even though the effect of gender impact is clear in the adoption of BL through the lenses of social culture and leadership, no researchers have yet examined the impact that gender has on BL. However, Almansour and Kempner (2016) argued that, to be able to adopt BL, female faculty members would have many specific needs that are different from those of their male colleagues. To simplify those needs and understand them, Almansour and Kempner argue, leaders must include local women who have overcome leadership problems and who are aware of the risks and challenges. This study's results supported those of Almansour and Kempner, Dukhaykh (2017), and Al-Sarrani (2010):

Leadership and communication are considered to be key quality culture-forming factors in the structural-managerial and cultural-psychological dimensions. The role of leaders is associated with their ability to localise resources, clarify roles and responsibilities, form partnerships and optimise human and process management. (Koçke et al., 2017, p. 7)

According to Hodges (2017), Saudi female leadership is a newer topic in Saudi Arabia than it is in other Middle Eastern countries. Therefore, it is important to describe the positions that female faculty members hold, their real experiences, and their ability to succeed as leaders in their disciplines. Hodges noted,

In a study of women in the Middle East Shahine (1997) found that women are subjected to socialization, educational and social pressures that prevent the formation of values and attitudes appropriate to leadership roles, thus limiting the effectiveness of women in leadership positions. This is exacerbated by the limited authority that women are given which Almenkash, Abdulaziz, Shaman, Haijan, and Dagsh, (2007) found tended to be disproportionate to the size of their responsibility. This supports the findings of a study conducted by Al-Halawani (2002) across the Arab world which concluded that women in many sectors of government were operating under the umbrella of men, which reduced their levels of responsibility and accountability, because they had to defer to men and that ultimately this negatively impacted the performance of women-only sections. (p. 5)

Hodges then summarized how social views regarding women impact female leadership in general:

In particular, participants believed that women's leadership opportunities were constrained by the view in society that women lack the capabilities for coping with the demands of leadership. This was described by one woman as follows: "women are considered to be weak, not able to handle sophisticated tasks and needing to be looked after by men." (p. 8)

Every institution has standards and policies for dealing with female leadership, but this does not always help female faculty members. All the top leaders at universities are men. For example, the presidents of all public universities are men. However, in February 2017, a female doctor was hired as a chairperson at Taif University's medical college, which includes both female and male sections (MOE, 2018). At PNU (the biggest female campus in the world), the university president has been a woman for the university's entire history. However, it hired a

man as a vice president recently. The vice president of the MOE is the highest position that a woman has occupied since 2011 (MOE, 2018). Many women have been hired in these high-level positions by the order of the king himself. In the private sector, there is also a female president at Effat University, which is another female university. The Saudi media has also discussed this issue heavily. Almansour and Kempner (2016) “discovered no unified standards for leadership in other Saudi universities with multiple male and female directors in departments and divisions that lacked organizational guidelines and job descriptions” (p. 877). Gender segregation also impacts the female learning experience, as Alshaghdali et al. (2014) found that female students cannot choose whichever major they want, with some—such as petroleum engineering studies—being out of reach. Women thus experience a glass ceiling in Saudi higher education. According to Abalkhail (2017),

the competition among women for HE [higher education], the respondents saw that higher educational attainment provides women with the opportunity to access career choices. Thus, holding a professional status helps women to achieve social respect, offers a means of security and helps them to enjoy improved social and financial status, allowing them to experience independence in the wider societal context.

However, a transformation has occurred regarding the country’s female positions since Saudi Vision 2030 began. This change has been carried out on the highest level, by order of the King and the Crown Prince.

In this study, I found no gender segregation in the adoption of BL in terms of home Internet access, but this might not be sufficient at educational institutions or in workplaces. This shows that this change must occur in institutions and at the societal level. Alzahrani (2017)

explained how Saudi Arabia's conservative culture differentiates between men and women by offering women Internet access at home. Alzahrani (2017)

sought the locations that university students used to access the Internet. The results revealed that while the Internet café was applicable to male students, it was not applicable to all female students (Aldebasi & Ahmed, 2013). This restriction of Internet access seems not only to be for female students, but it involves females over the country, as Alhareth (2013) stated that Internet access for females in the Saudi context is really unavailable because of the culture of the society and negative male beliefs of using the Internet by females, which they could use in a wrong way. (p. 82)

Nevertheless, those results do not match those of this study, in which I found that all students at Saudi institutions can have their own electronic devices, including laptops and smartphones. In October 2017, the MOE told the last seven universities that still did not allow female students to carry smartphones to begin doing so (Toumi, 2017). Now, all universities allow their students to have their own smart devices with Internet access; of course, such access is dependent on each student's budget. Purchasing such devices may lead to financial obstacles for faculty members and students, but it could also increase their Internet access during classes.

Gender segregation is the primary reason for the insufficient technical support in the female sections. Technology-support personnel tend to be men, and men are not allowed in the women's buildings during work hours. There are no female sections for IT support, and the IT support department works outside the female campus most of the time. Perhaps there are female workers in this department, but there are not enough to cover all the needs of the female sections. For example, based on observations of institutions such as KAU (2018), Al Baha (2018), and KSU (2018), for female faculty members to have access to their official institutional e-mail

accounts and portals, they must apply to the IT department. Most of the time, the IT department is far from the female departments; it is also run by men, and women are either not allowed to enter the department's building or are required to come at specific times. At the largest universities, women can apply online for services that they need, but this also requires certain technological skills. On the other hand, in male sections, the technicians and engineers are allowed in the IT building during all business hours. Male faculty members can easily enter the IT department to ask for any service that they want. This demonstrates the general adoption of technology at the institutions, but it also demonstrates that BL adoption is being hampered by insufficient technical support. This study's participants mentioned their struggles with technical support but did not mention details. This absence of detail could be for two reasons. First, the participants may have assumed that I knew about their technical struggles. Second, they may not have recognized the specific obstacles to adequate technical support. Typically, the participants report their technical issues to their departments via other staff members, at which point, their issues were resolved. Mostly, they were not directly involved with technical support.

Another aspect of gender segregation that impacts BL adoption is the decision-making process for equally allocating resources. According to Abalkhail (2017), this decision is impacted by gender segregation in the workplace. Alomair (2015) stated,

They argued that in gender-segregated campuses, conservative male academic leaders do not engage in direct lines of communication with female academics. The authors emphasized that female deans and faculty members, in turn, are excluded from decision-making processes, thus highlighting structural challenges that maintain gender hierarchies in educational institutions (p. 87).

Female underrepresentation is a global phenomenon in academia at the levels of faculty, administration, and upper-level staff, and Saudi Arabia is no different. Even though women are making progress in society and are becoming more empowered, they are still underrepresented as leaders in Saudi higher education. As for female faculty members, gender segregation impacts their leadership and limits their numbers at each institution. There are a high number of women with academic qualifications, but they are not guaranteed to hold senior administrative positions. Hodges (2017) summarized this by noting that the underrepresentation of female leaders in Saudi Arabia is due to the lack of rules regarding the male and female sections, the lack of control over budgetary and financial issues, and the lack of participants in the planning and decision-making processes. As Alomair (2015) said,

Despite gender-segregation policies applied in Saudi Arabia's higher education that offers opportunities for female leadership, women are underrepresented in leadership positions (Jamjoom & Kelly, 2013). While over half of college students enrolled in Saudi Arabia's higher education institutions are females (Al Ankari, 2013), only 4% of college and university presidents are women (p. 82).

According to Al Yousef (2016), the underrepresentation of female leaders also exists in employment and in general. This underrepresentation is due to the Saudi social culture. Alomair (2015) listed

the biggest barriers to female leaders: 1) the double-burden syndrome; 2) lack of pro-family public policies and support services such as daycare; 3) family and social expectations that women will not work continuously; and 4) lack of appropriate infrastructure such as transportation and gender-segregated work spaces. (p. 86)

Leadership impacts women's chances of getting the training they need, as there are unfair employee-selection processes. For example, Hodges (2017) stated, "The majority of respondents (two-thirds) reported that organizational practices are a key challenge for women's leadership opportunities. Participants spoke about being discriminated against regarding selection, as well as, training, and development" (p. 9).

This study's results—that the women faculty in this study believe there is a need for evaluation and for clear, official leadership rules for the adoption of BL—are similar to what Alghanmi (2014) and Al-Sarrani (2010) found. Moreover, top administration should create a strategic plan for evaluation. This study's participants agreed with Al-Sarrani (2010), who recommended the same process years ago. At a quick glance, the NCAAA (2017) treated its male and female sections equally in terms of assessment. This indicates that the law and its rules are identical (NCAAA, 2017). However, in practice, existing female and male faculty leaders are dissimilar with regard to resources and planning.

With all the changes that are occurring in society, the current culture will not stay the same forever. In 2017 alone, women gained the rights to drive, to have sports classes in schools, to open up public cinemas and entertainment for all, to work in any job or seek any degree, and to get medical care without a guardian's permission. In 2018, the MOE elected 14 female vice presidents for female sections at public universities. However, women still face conservative mentalities from some men in their organizations, including in higher education. As Hodges (2017) noted, "This is reflected in a prevailing traditional conservative mentality among some men, which reinforces the exclusion of women leaders despite their education" (p. 11). It is not the norm in the cases of other disciplines, where coeducation at school impacts mixed

workplaces such as public hospitals. According to Kassim et al. (2015), female doctors are equal in their workplaces. Should women and men in higher education learn from these doctors?

Recommendations

Many questions remain to be asked, and various directions must be considered to build the scientific research on BL. One such direction is to establish the criteria for evaluating BL in the Saudi higher-education system. The requirements for this task include scientific research about BL's best practices, both in and out of classrooms. For example, a general education with relatively little training is considered the normal way to learn in Saudi Arabia. However, modern technological advances are forcing everyone to change. The MOE (2017) has created an evaluation system that institutions should follow. The MOE can plan for transformations to add more technology in education, and BL is key in these changes. For example, the MOE can establish policies that reduce teaching faculty members' workloads and that require a minimum level of technology skills for all national and international faculty members. The MOE can also establish a policy that requires each institution to have a curriculum committee composed of experts on BL adoption who will report directly to the ministry and who will help establish a system that focuses on adopting BL at the K–12 level. Institutions can also require students to take BL assessments every term at the same time as the faculty assessments. Institutions should use these assessments to enhance those institutions technology experiences, particularly in BL.

Faculty support should be a priority for these institutions, which should adopt policies to help achieve Vision 2030—a natural, well-organized way to reform higher education. For example, Alqahtani (2016) said that KSU has started planning according to Vision 2030, which emphasizes faculty development and collaboration between universities and community businesses. Universities should take the lead and create relationships with the surrounding

communities. The adoption of BL could cost the institutions money; however, the gain for the country as a whole will be substantial.

The transformation of Saudi education toward globalization will help the nation to more quickly modernize and adopt BL. Many universities in Saudi Arabia import curricula, programs, and businesses from famous international universities. For example, in 2015, KAU made a 3-year deal with the University of Oxford's medical school; which included adding new knowledge to the field, inviting faculty from each school to teach at the other school, and sending students abroad (KAU, 2018). Another example is King Fahd University's 2009 deal with the Massachusetts Institute of Technology to do the same for faculty members who studied petroleum and minerals (MOE, 2017). In 2011, KSU made a similar agreement with the University of Wisconsin-Madison (MOE,2017). There are more examples of successful experiences that led to program changes at Saudi universities.

However, there is still no deal on BL-specific programs, which are what Saudi Arabia needs to adopt BL. At the country level, the MOE (2018) has agreements with countries such as Japan, Malaysia, and various European countries. Saudi Arabia already sends thousands of students and teachers to study abroad so that they can bring their knowledge back to the country. These scholars can then put their experiences into local frames of Saudi culture and society. Most of those who study abroad do so in relatively small classes, and their faculty members have other responsibilities aside from teaching and administration. These experiences can apply to new generations of faculty members at Saudi institutions.

Any strategic plan benefits from the country's human resources. 30 and under comprise a majority of the Saudi population (General Authority for Statistics, 2018). The young generations have high unemployment, and young people often must wait years to get hired. Many countries

rely on their youths to act as part-time labor, simply to give them the chance to gain experience; this is exactly what Saudi Arabia needs to consider now. Alqahtani (2016) recommended that, to match the strategic planning of Vision 2030, KSA's goal should be to focus on quality, not quantity, of students. Researchers can start from other countries' experiences, as there are many common areas in terms of BL adoption, emerging educational technology, and women's empowerment in higher education.

A government can establish criteria for female empowerment to ensure that female faculty members are vital in higher education. Universities in many countries, including the United States, consider workplace diversity—in terms of gender, race, class, ethnicity, disability, marital status, age, and more—when hiring faculty members. They use this method to protect minorities. However, the United States has not achieved equality (Villalon, 2017; Klawe, 2017). Saudi Arabia should use a similar system and apply it to organizations to ensure that they have good percentages of women and well-written policies to protect everyone, including women. Another recommendation based on the results of this study is to open colleges and programs to teach technical support to Saudi women, to provide more support for those women in their studies, and to hire more women in these institutions. By doing so, Saudi Arabia will lower the women's unemployment rate and provide continuous technical support. Leaders at the institutional and university levels should consider this a developmental priority for society. Leaders will use the results of future research to create new policies for BL and Saudi higher education.

Conclusion

This study focused on how female teachers and faculty members at Saudi women's colleges view the process of adopting BL in their classrooms and throughout their institutions. In

this study, I introduced findings on women's experiences with BL adoption and described all the advantages and challenges the participants had faced. I interpreted their experiences through the lenses of Saudi culture and the higher-education system. To summarize, the results indicated that women adopted BL when circumstances permitted. The obstacles, in their eyes, were a lack of faculty support, poor strategic evaluation plans, and insufficient empowerment at the institutional level. Government policies protect women's empowerment in the workplace. Nevertheless, conservative leaders have not given female empowerment much attention. To truly implement BL, though, such attention and support will be needed.

References

- Alarabiya. (March 21,2018). Report: Saudi Arabia records 526,000 road accidents annually. *Saudi Gazette, Jeddah*. Retrieved from: <http://english.alarabiya.net/en/News/middle-east/2016/01/01/Report-Saudi-Arabia-records-526-000-road-accidents-annually.html>
- Abalkhail, J. M. (2017). Women and leadership: Challenges and opportunities in Saudi higher education. *Career Development International*, 22(2), 165.
- Abouelenein, Y. M. (2016). Training needs for faculty members: Towards achieving quality of university education in the light of technological innovations. *Educational Research And Reviews*, 11(13), 1180–1193.
- Al Baha University. (2018). Home. Retrieved from <http://portal.bu.edu.sa/university-history>
- Al Yousef, N. A. (2016). Gender equality in Saudi Arabia: New steps, new hopes. In *Conference Proceedings of the G20 Youth Forum 2016* (pp. 111–115). Garmisch-Partenkirchen, Germany: G200 association.
- Al-Ahmadi, H. (2011). Challenges facing women leaders in Saudi Arabia. *Human Resource Development International*, 14(2), 149–166. doi:10.1080/13678868.2011.558311
- Alaugab, A. M. (2007). Benefits, barriers, and attitudes of Saudi female faculty and students toward online learning in higher education. *Dissertation Abstracts International Section A*, 68, 965.
- Aldawsari, R. A. (2016). *Under-representation of Saudi women leaders in the Saudi higher education* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Global. (Order No. 10130061)

- Alebaikan, R. (2012). The future of blended learning. *International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering*, (63), 484.
- Alebaikan, R., & Troudi, S. (2010). Online discussion in blended courses at Saudi universities. *Procedia: Social and Behavioral Sciences*, 2(2), 507–514.
- Alebaikan, R., & Troudi, S. (2011). Blended learning in Saudi universities: Challenges and perspectives. *Research in Learning Technology*, 18(1), 49–59. doi:10.3402/rlt.v18i1.10750
- Alghanmi, S. (2014). Investigating the interpersonal and contextual factors govern Saudi lecturers' motivation in creating innovative blended learning environment that Web 2.0-based. *Turkish Online Journal of Educational Technology*, 13(3), 96–106.
- Aljahni, A. (2014). An evaluation of blended learning in higher education: A case study on the kingdom of Saudi Arabia. Retrieved from <http://repository.sdl.edu.sa/WebViewer/Default.aspx>
- Aljohani, O. (2016). *Evaluating students' perceptions of instructional practices employed in adult education program at King Saud University*. Available from ProQuest Dissertations & Theses Global. (Order No. 10019487)
- Alkhalaf, S., Nguyen, J., Nguyen, A., & Drew, S. (2013). Online learner satisfaction and collaborative learning: Evidence from Saudi Arabia. *International Journal of Information and Communication Technology Education*, 9(2), 66–86.
- Allen, I. E., Seaman, J., Garrett, R., & Sloan Consortium. (2007). *Blending in: The extent and promise of blended education in the United States*. Newburyport, MA: Sloan Consortium.
- Almansour, S., & Kempner, K. (2016). The role of Arab women faculty in the public sphere. *Studies in Higher Education*, 41(5), 874–886.

- Almuqayteeb, T. A. (2010). Attitudes of female faculty toward the use of computer technologies and the barriers that limit their use of technologies in girls' colleges in Saudi Arabia. *Dissertation Abstracts International Section A*, 70, 4643.
- Almutairi, D. O. (2017). Work-family conflict, social support and job satisfaction among Saudi female teachers in Riyadh, Saudi Arabia. *Journal of Educational Sciences*, 29(2), 287–298.
- Alomair, M. O. (2015). Female leadership capacity and effectiveness: A critical analysis of the literature on higher education in Saudi Arabia. *International Journal of Higher Education*, 4(4), 81–93.
- Al-Qahtani, A. A., & Higgins, S. (2013). Effects of traditional, blended and e-learning on students' achievement in higher education. *Journal of Computer Assisted Learning*, 29(3), 220–234. doi:10.1111/j.1365-2729.2012.00490.x
- Alqahtani, S. A. (2016). King Saud University's strategic plan implementation (KSU 2030). *Journal of Competitiveness Studies*, 24(1), 1–15.
- Al-Sarrani, N. (2010, January 1). Concerns and professional development needs of science faculty at Taibah University in adopting blended learning. Retrieved from <http://krex.k-state.edu/dspace/handle/2097/3887>
- Al-Senaidi, S., Lin, L., & Poirot, J. (2009). Barriers to adopting technology for teaching and learning in Oman. *Computers & Education*, 53(3), 575–590.
- Alshaghdali, N., Greener, S., & Loveless, A. (2014). Quality of women's learning experiences in the digital age in higher education in Saudi Arabia. *Alan S. Weber, Sihem Hamlaoui, Conference on E-Learning*, Kidmor. END (pp. 607–617).

- Alshahrani, S., & Ward, R. (2014, February). *Shifting from traditional approaches of teaching to a blended learning approach; challenges and possible solutions*. Paper presented at the Seventh Saudi Students Conference, Edinburgh, Scotland. Retrieved from <http://www.macs.hw.ac.uk/~eaar1/Eshrag%20Refaee/Saudi%207th%20Scientific%20Conference.pdf>
- Al-Wassia, R., Hamed, O., Al-Wassia, H., Alafari, R., & Jamjoom, R. (2015). Cultural challenges to implementation of formative assessment in Saudi Arabia: An exploratory study. *Medical Teacher, 37*(S1), S9–S19. doi:10.3109/0142159X.2015.1006601
- Alzahrani, M. G. (2017). The developments of ICT and the need for blended learning in Saudi Arabia. *Journal of Education and Practice, 8*(9), 79–87.
- Assidmi, L., & Wolgamuth, E. (2017). Uncovering the dynamics of the Saudi youth unemployment crisis. *Systemic Practice and Action Research, 30*(2), 173.
- Baki, R. (2004). Gender-segregated education in Saudi Arabia: Its impact on social norms and the Saudi labor market. *Education Policy Analysis Archives, 12*(28), 1–15.
- Barker, J. (2015). Benefits of hybrid classes in community colleges. *Contemporary Issues in Education Research, 8*(3), 143–146.
- Baruch, R. (2014). Women and information technology: How do female students of education perceive information technology, and what is their approach toward it? *Journal of International Women's Studies, 15*(1), 190–214.
- Benson, V., & Anderson, D. (2010). Towards a strategic approach to the introduction of blended learning: Challenges faced and lessons learned. *British Journal of Educational Technology, 41*(6), 129–131. doi:10.1111/j.1467-8535.2010.01066.x

- Bonk, C. J., & Graham, C. R. (2012). *The handbook of blended learning: Global perspectives, local designs*. Retrieved from https://books.google.com.sa/books/about/The_Handbook_of_Blended_Learning.html?id=2u2TxK06PwUC&redir_esc=y
- Carbonell, K., Dailey-Hebert, A., & Gijsselaers, W. (2013). Unleashing the creative potential of faculty to create blended learning. *The Internet and Higher Education, 18*, 29.
- Cardoza, Y., & Tunks, J. (2014). The bring your own technology initiative: An examination of teachers' adoption. *Computers in the Schools, 31*(4), 293–315.
- Cassell, C., & Symon, G. (2004). *Essential guide to qualitative methods in organizational research*. Thousand Oaks, CA: Sage.
- Chickering, A. W., & Gamson, Z. F. (1999). Development and adaptations of the seven principles for good practice in undergraduate education. *New Directions for Teaching & Learning, 1999*(80), 75.
- Christie, M., O'Neill, M., Rutter, K., Young, G., & Medland, A. (n.d.). Understanding why women are under-represented in science, technology, engineering and mathematics (STEM) within higher education: A regional case study. *Production, 27*, 1–9.
- Collins, P. T. (2011). An insider's view to meeting the challenges of blended learning solutions. *ATD, 65*(12), 56–61.
- Crawford, R., & Jenkins, L. (2017). Blended learning and team teaching: Adapting pedagogy in response to the changing digital tertiary environment. *Australasian Journal of Educational Technology, 33*(2), 51–72. doi:10.14742/ajet.2924
- Dehaas, J. (2012). Where did the prof go? *Maclean's, 125*(16), 54.

- DePaolo, C., & Wilkinson, K. (2014). Get your head into the clouds: Using word clouds for analyzing qualitative assessment data. *Techtrends: Linking Research & Practice to Improve Learning*, 58(3), 38–44. doi:10.1007/s11528-014-0750-9
- Doo Hun, L., & Morris, M. L. (2009). Learner and instructional factors influencing learning outcomes within a blended learning environment. *Journal of Educational Technology & Society*, 12(4), 282–293.
- Driscoll, M. (2002). Blended learning: Let's get beyond the hype. *E-Learning*, 3(3), 54.
- Du, C., & Wu, J. (2014). The effect of human interactions on student performance and satisfaction of blended learning. *Academy of Educational Leadership Journal*, 18(3), 11.
- Dukhaykh, S. (2017). Women still can't drive in Saudi Arabia, yet they're entering the workforce in droves. *Academy of Management Annual Meeting Proceedings, 2017(1)*, 1. doi:10.5465/AMBPP.2017.14373abstract
- Effat University. (2108). About Effat University. Retrieved from <http://www.kff.com/en/Effat-University>
- El Mansour, B., & Mupinga, D. M. (2007). Students' positive and negative experiences in hybrid and online classes. *College Student Journal*, 41(1), 242–248.
- El-Sherbeeny, A. M. (2014). Highlighting the Need for Engineering Education for Females in Saudi Arabia. *Proceedings Of The ASEE Annual Conference & Exposition*, 1-8.
- Fetterolf, J., & Rudman, C. (2014). Gender inequality in the home: The role of relative income, support for traditional gender roles, and perceived entitlement. *Gender Issues*, 31(3), 219–237.
- Garrison, D., & Vaughan, N. (2013). Institutional change and leadership associated with blended learning innovation: Two case studies. *Internet and Higher Education*, 18, 24–28.

Gecer, A., & Dag, F. (2012). A blended learning experience. *Educational Sciences: Theory and Practice*, 12(1), 438–442.

General Authority for Statistics [Saudi Arabia]. (2018a). Demographic research. Retrieved from https://www.stats.gov.sa/sites/default/files/en-demographic-research-2016_4.pdf

General Authority for Statistics [Saudi Arabia]. (2018b). Stats. Retrieved from <https://www.stats.gov.sa/en/43>

Gerbic, P. (2011). Teaching using a blended approach: What does the literature tell us? *Educational Media International*, 48(3), 221–234. doi:10.1080/09523987.2011.615159

Glazer, F. (2012). *New Pedagogies and Practices for Teaching in Higher Education Series: Blended learning: Across the disciplines, across the academy*. Sterling, Va.: Stylus.

Glesne, C. (2011). *Becoming qualitative researchers: An introduction* (4th ed.). Boston, MA: Pearson.

Graham, C. R., Woodfield, W., & Harrison, J. B. (2013). A framework for institutional adoption and implementation of blended learning in higher education. *The Internet and Higher Education*, 18(0), 4–14. doi:10.1016/j.iheduc.2012.09.003

Gustafson, K. K., & Kors, K. (2004). Strategic implications of an educational technology assessment. *EDUCAUSE Quarterly*, 27(2), 71–72.

Hakim, B. M. (2015). Teacher evaluation as a tool for professional development: A case of Saudi Arabia. *Advances in Language and Literary Studies*, 6(5), 97–103.

Hamdan, A. (2005). Women and education in Saudi Arabia: Challenges and achievements. *International Education Journal*, 6(1), 42–64.

- Hu, Han-fen; Al-Gahtani, Said S.; and Hu, Paul Jen-Hwa. (2013). Examining the moderating role of gender in Arabian workers' acceptance of computer technology. *Communications of the Association for Information Systems*, 4(33), 3347–3366.
- Hilliard, A. T. (2015). Global blended learning practices for teaching and learning, leadership, and professional development. *Journal of International Education Research*, 11(3), 179–200. Retrieved from <http://search.proquest.com/docview/1704360322?accountid=142908>
- Hodges, J. (2017). Cracking the walls of leadership: Women in Saudi Arabia. *Gender in Management*, 32(1), 34–46. Retrieved from <https://search.proquest.com/docview/1892633721?accountid=142908>
- Howe-Walsh, L., & Turnbull, S. (2016). Barriers to women leaders in academia: Tales from science and technology. *Studies in Higher Education*, 41(3), 415–428.
- Hubbard, B. (2015). Explosion near Shiite mosque kills 4 in eastern Saudi Arabia. *The New York Times*. Retrieved from <https://www.nytimes.com/2015/05/30/world/middleeast/mosque-bombing-saudi-arabia-shiites-dammam.html>
- Hughes, G. (2007). Using blended learning to increase learner support and improve retention. *Teaching In Higher Education*, 12(3), 349–363.
doi:10.1080/13562510701278690
- Inoue, Y. (2009). *Cases on online and blended learning technologies in higher education: Concepts and practices*. Hershey, PA: IGI Global.
- International Labour Office. (2013). *Global employment trends 2013: Recovering from a second jobs dip*. Geneva, Switzerland: Author.
- International Labour Organisation. (2015). Regional focus: High youth unemployment in Middle East and Africa hitting consumer incomes—June 2015. *Euromonitor International*.

Retrieved from <https://blog.euromonitor.com/2009/08/regional-focus-growing-internet-usage-in-the-middle-east-and-north-africa.html>

Internet Usage Has Been Growing At an Enormous Rate over the Past Few Years, Particularly In Iran, Saudi Arabia, Syria and Yemen. (2006). M2PressWIRE,

Kanuka, H., & Rourke, L. (2013). Using blended learning strategies to address teaching development needs: How does Canada compare? *Canadian Journal of Higher Education*, 43(3), 19–35.

Kassim, N. M., Bogari, N., & Zain, M. (2015). Female students' perception of service quality in a gender-segregated college environment. *Social Behavior and Personality*, 43(6), 921–930. Retrieved from <https://search-proquest-com.sdl.idm.oclc.org/docview/1721707431?accountid=142908>

Kaur, M. (2013). Blended learning: Its challenges and future. *Procedia: Social and Behavioral Sciences*, 93, 612–617.

Kenney, J., & Newcombe, E. (2011). Adopting a blended learning approach: Challenges encountered and lessons learned in an action research study. *Journal of Asynchronous Learning Networks*, 15(1), 45–57.

Kezar, A. J. (2011). *New Pedagogies and Practices for Teaching in Higher Education Series: Blended learning: Across the disciplines, across the academy*. Sterling, VA: Stylus.

King Abdul-Aziz University (KAU). (n.d.). Home. Retrieved from <http://www.kau.edu.sa/home>

King Saud University (KSU). (n.d.). International ranking. Retrieved from http://vp-development.kau.edu.sa/Content.aspx?Site_ID=351&lng=EN&cid=236846

Klawe, M. (2017). 3 ways to get more women into tech. *The Chronicle of Higher Education*, 64(11), A12.

- Koçe, T., Jansone-Ratinika, N., & Koka, R. (2017). Formative assessment on an individual and an institutional level on the way to quality culture in higher education. *Problems of Education in the 21st Century*, 75(1), 54–71.
- Kuh, G. D., Kinzie, J., Schuh, J. H., Whitt, E. J., & Associates. (2005). *Student success in college: Creating conditions that matter*. San Francisco, CA: Jossey-Bass.
- Kwak, D., Menezes, F., & Sherwood, C. (2015). Assessing the impact of blended learning on student performance. *Economic Record*, 91(292), 91–106.
- Lane, M., & Stagg, A. (2014). University staff adoption of iPads: An empirical study using an extended technology acceptance model. *Australasian Journal of Information Systems*, 18(3), 53–74.
- Lapan, S. D., Quartaroli, M. T., & Riemer, F. J. (2011). *Qualitative research: An introduction to methods and designs*. San Francisco, CA: Jossey-Bass.
- Latifi, S. (2016). Information technology: New generations. In Latifi, S. *13th International Conference on Information Technology* (pp. 25–37). Cham, USA: Springer.
- Leach, L., & Turner, S. (2015). Computer users do gender. *Sage Open*, 5(4), 1–14.
- LeCompte, M. D. (2000). Analyzing qualitative data. *Theory Into Practice*, 39(3), 146–154.
- Lewis, J. A. (2005). The Internet and terrorism. *Proceedings of the Annual Meeting: American Society of International Law*, 99, 112–115.
- Liu, Y., & Tourtellott, M. (2011). Blending at small colleges: Challenges and solutions. *Journal of Asynchronous Learning Networks*, 15(1), 58–67.
- Long, T., Cummins, J., & Waugh, M. (2017). Use of the flipped classroom instructional model in higher education: Instructors' perspectives. *Journal of Computing in Higher Education*, 29(2), 179–200.

Lopez-Perez, M. V., Perez-Lopez, M. C., & Rodriguez-Ariza, L. (2011). Blended learning in higher education: Students' perceptions and their relation to outcomes. *Computers & Education, 56*(3), 818.

Ma'arop, A. H., & Embi, M. A. (2016). Implementation of blended learning in higher learning institutions: A review of the literature. *International Education Studies, 9*(3), 41–52.

Mansour, N., Alshamrani, S. M., Aldahmash, A. H., & Alqudah, B. M. (2013). Saudi Arabian science teachers and supervisors' views of professional development needs. *Eurasian Journal of Educational Research, 51*(1), 29–44.

McKenney, S., & Thomas, C. (2012). *Conducting educational research design*. New York, NY: Routledge.

Merriam, S. (2009). *Qualitative research: A guide to design and implementation*. San Francisco, CA: Jossey-Bass.

Ministry of Communications and Information Technology [Saudi Arabia]. (n.d.). About. Retrieved from <http://www.mcit.gov.sa/Ar/AboutMcit/Pages/MCITMisson.aspx>

Ministry of Education (MOE) [Saudi Arabia]. (2016). Planning information. Retrieved from <https://departments.moe.gov.sa/PLANNINGINFORMATION/RELATEDDEPARTMENTS/EDUCATIONSTATISTICSCENTER/EDUCATIONDETAILEDREPORTS/Pages/default.aspx>

Ministry of Education (MOE) [Saudi Arabia]. (n.d.). Mission. Retrieved from <http://www.mohe.gov.sa/ar/default.aspx>

Mirriahi, N., Alonzo, D., McIntyre, S., Kligyte, G., & Fox, B. (2015). Blended learning innovations: Leadership and change in one Australian institution. *International Journal*

- of Education and Development Using Information and Communication Technology*, 11(1), 4–16.
- Moskal, P., Dziuban, C., & Hartman, J. (2013). Blended learning: A dangerous idea? *The Internet and Higher Education*, 18, 15–23. doi:10.1016/j.iheduc.2012.12.001
- Motteram, G. (2006). “Blended” education and the transformation of teachers: A long-term case study in postgraduate UK higher education. *British Journal of Educational Technology*, 37(1), 17–30. doi:10.1111/j.1467-8535.2005.00511.x
- Moukali, K. H. (2012). *Factors that affect faculty attitudes toward adoption of technology-rich blended learning*. Available from ProQuest Dissertations & Theses A&I. (Order No. 3545391)
- Murchison, J. M. (2010). *Ethnography essentials: Designing, conducting, and presenting your research*. San Francisco, CA: Jossey-Bass
- National Commission on Academic Accreditation and Assessment (NCAAA) [Saudi Arabia]. (2018). Declaration of mission, vision and good practice. Retrieved from <http://www.ncaaa.org.sa/Releases/Pages/StandardsPdf.aspx>
- National E-Learning and Distance Learning Centre. (2017). About us. Retrieved from <http://www.elc.edu.sa/?q=en/aboutus>
- Neil, E., & Sprusansky, D. (2017). A look at Saudi Arabia Vision 2030. *Washington Report on Middle East Affairs*, 36(1), 53.
- Niemiec, M., & Otte, G. (2009). An administrator’s guide to the whys and hows of blended learning. *Journal of Asynchronous Learning Networks*, 13(1), 19–30.
- Nowell, G. (2011). Student course evaluations in traditional and blended courses: A case study. *American Journal of Business Education*, 4(1), 13–18.

- O'Byrne, W., & Pytash, K. (2015). Hybrid and blended learning. *Journal of Adolescent & Adult Literacy, 59*(2), 137–140.
- Ocak, M. (2011). Why are faculty members not teaching blended courses? Insights from faculty members. *Computers & Education, 56*(3), 689–699.
- O'Connor, C., Mortimer, D., & Bond, S. (2011). Blended learning issues, benefiting and challenges. *International Journal of Employment Studies, 19*(2), 62–82.
- Onsman, A. (2011). It is better to light a candle than to ban the darkness: Government-led academic development in Saudi Arabian universities. *Higher Education, 62*(4), 519–532. doi:10.1007/s10734-010-9402-y
- Park, Sung Youl. (2009). An Analysis of the Technology Acceptance Model in Understanding University Students' Behavioral Intention to Use e-Learning. *Educational Technology & Society, 12*(3), 150-162.
- Poon, J. (2013). Blended learning: An institutional approach for enhancing students' learning experiences. *Journal of Online Learning and Teaching, 9*(2), 271–290.
- Porter, W., Graham, C., Spring, K., & Welch, K. R. (2014). Blended learning in higher education: Institutional adoption and implementation. *Computers & Education, 75*, 185.
- Porter, W. W., & Graham, C. R. (2016). Institutional drivers and barriers to faculty adoption of blended learning in higher education. *British Journal of Educational Technology, 47*(4), 748–762. doi:10.1111/bjet.12269
- Princess Nourah bint Abdulrahman University (PNU). (n.d.). Overview. Retrieved from <http://www.pnu.edu.sa/en/University/Pages/Intro.aspx>

- Purushothaman, A., & Zhou, C. (2014). Change toward a creative society in developing contexts: Women's barriers to learning by information and communication technology. *Gender, Technology and Development, 18*(3), 363–386.
- Rather, F. M. (2016). Education and women empowerment in Saudi Arabia. *Quarterly Journal of Chinese Studies, 4*(3), 96–110. Retrieved from <http://search.proquest.com/docview/1804469825?accountid=142908>
- Rogers, E. (2003). *Diffusion of innovations* (5th ed.). New York, NY: Free Press.
- Rothenberger, L. (2012). Terrorist groups: Using Internet and social media for disseminating ideas. New tools for promoting political change. *Revista Română de Comunicare și Relații Publice, 14*(3), 7–23.
- Sahin, I. (2006). Detailed review of Rogers' diffusion of innovations theory and educational technology-related studies based on Rogers' theory. *The Turkish Online Journal of Educational Technology, 5*(2), 14–23.
- Saldaña, J. (2013). *The coding manual for qualitative researchers* (2nd ed.). Los Angeles, CA: Sage.
- Sangra, A., Vlachopoulos, D., & Cabrera, N. (2012). Building an inclusive definition of e-learning: An approach to the conceptual framework. *International Review of Research in Open and Distance Learning, 13*(2), 145–159.
- Sari, R., & Karsen, M. (2016). An empirical study on blended learning to improve quality of learning in higher education. doi:10.1109/ICIMTech.2016.7930336
- Seliaman, M., & Al-Turki, M. (2012). Mobile learning adoption in Saudi Arabia. *World Academy of Science, Engineering and Technology, 69*, 291–293.
- Shapiro, J., & Williams, R. (2012). The role of stereotype threats in undermining girls' and women's performance and interest in STEM fields. *Sex Roles, 66*(3), 175–183.

- Slomanson, William R. (2014). Blended learning: A flipped classroom experiment. *Journal of Legal Education*, 64(1), 93–102.
- Stewart, D. (2015). Women's colleges and universities in a global context. *Journal of College Student Development*, 56(6), 645–648.
- Stokes-Beverley, C., Simoy, I., & Department of Education [United State of America]. (2016). *Advancing educational technology in teacher preparation: Policy brief*. Retrieved from <https://tech.ed.gov/teacherprep/>
- Straub, E. T. (2009). Understanding technology adoption: Theory and future directions for informal learning. *Review of Educational Research*, 79(2), 625–649.
- Taylor, J. A., & Newton, D. (2013). Beyond blended learning: A case study of institutional change at an Australian regional university. *Internet and Higher Education*, 18, 54–60.
- Top Universities. (2016). QS world university rankings 2015/16. Retrieved from [http://www.topuniversities.com/university-rankings/world-university-rankings/2015#sorting=rank+region="+country=77+faculty="+stars=false+search](http://www.topuniversities.com/university-rankings/world-university-rankings/2015#sorting=rank+region=)
- Toumi, H. (2017). Now, Saudi female students allowed to carry mobiles on campus. *Gulf News*. Retrieved from <http://gulfnews.com/news/gulf/saudi-arabia/now-saudi-female-students-allowed-to-carry-mobiles-on-campus-1.2099683>
- Torofdar, Y. A., & Yunggar, M. M. (2012). Nationalization of Manpower Resources in Saudi Arabia: A Closer View at 'Saudization'. Annual International Conference On Human Resource Management & Professional Development For The Digital Age, 60-64. doi:10.5176/2251-2449_HRM&PD12.27

- Tshabalala, M., Ndeya-Ndereya, C., & Van der Merwe, T. (2013). Academic staff's challenges in adopting blended learning: Reality at a developing university. *International Conference on e-Learning, 1*(12), 396.
- Tshabalala, M., Ndeya-Ndereya, C., & Van der Merwe, T. (2014). Implementing blended learning at a developing university: Obstacles in the way. *Electronic Journal of E-Learning, 12*(1), 101–110.
- Umm Al-Qura University. (n.d.). About. Retrieved from <https://uqu.edu.sa/english#>
- Vaughan, N. (2007). Perspectives on Blended Learning in Higher Education. *International Journal on E-Learning, 6*(1), 81-94.
- Villalon, C. (2017). *Influence of instructors' attitudes, gender, and technology training when implementing blended learning*. Available from ProQuest Dissertations & Theses Global. (Order No. 10603062)
- Wade, R. (2012). Pedagogy, places and people. *Journal of Teacher Education for Sustainability, 14*(2), 147–170. doi:10.2478/v10099-012-0014-8
- Wong, L., Tatnall, A., & Burgess, S. (2014). A framework for investigating blended learning effectiveness. *Education + Training, 56*(2/3), 233–251. doi:10.1108/ET-04-2013-0049