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Faculty Perceptions of the Educational Value of Learning Management Systems

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Abstract

A learning management system (LMS) is a tool ostensibly designed to better manage, and therefore improve, the learning process. Much previous research has indicated the potential benefits for learning and pedagogy that an LMS affords (Heirdsfield, Walker, Tambyah, & Beutel, 2011; Lonn & Teasley, 2009; Morgan, 2003). This study aimed to examine the impact of LMS on teaching and learning in traditional classroom environments. More specifically, it sought to explore the experience and perceptions of faculty in the use of LMS for learning and teaching in Saudi higher education.

A mixed method approach consisting of a questionnaire and in-depth interviews was used to implement the research investigation. In the first phase, quantitative data were collected, via the questionnaire, from 132 faculty members to investigate the nature of their use of the LMS, and to identify which features they used most frequently as well as their reasons. In the second phase, in-depth semi-structured interviews with eleven faculty members were conducted to explore the impact of using the LMS on teaching and learning practices from the perspective of faculty members, and to identify the challenges and/or benefits that they encountered while using this system.

Generally, the study found that although the LMS was not used to its full potential by faculty, it was perceived as a useful educational tool that had a positive effect on their classes in terms of promoting communication with students, improving the quality of teaching, supporting student engagement in learning, maintaining transparency, protecting students' privacy, and clarifying students' responsibility. However, the study revealed some difficulties that might limit the achievement of these benefits such as the students' reluctance to use the system, the

complexity of LMS interface and its reliability, as well as the lack of administrative support in terms of inadequate training programmes to meet the needs of faculty members and a lack of a system of incentives and rewards. The study suggests that the identified benefits are expected to increase when faculty become more familiar with the LMS and when the difficulties they face are resolved.

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Abbreviations

LMS	Learning Management System
ICT	Information and Communication Technology
TAM	Technology Acceptance Model
SAMR	The Substitution, Augmentation, Modification, and Redefinition
SA	Saudi Arabia
KSU	King Saud University
UK	The United Kingdom

Dedication

I gratefully dedicate this thesis to my parents for their love, prayers, encouragement, and unlimited support through my studies.

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CHAPTER 1: INTRODUCTION

Over the past decade, many changes have occurred in higher education institutions around the world. One of the most significant developments has been the shift towards the use of information and communication technology (ICT) in educational processes. This has resulted from optimistic expectations about the value of ICT in developing higher education and providing a more effective and flexible learning experience (Coates, James, & Baldwin, 2005, Oliver, 2002). It is often argued that ICT has the potential to change what can be achieved in higher education teaching, and to make the learning experience more student-centred (Bingimlas, 2009; Broad, Matthews, and McDonald 2004; DeNeui & Dodge, 2006; Drent & Meelissen, 2008; Rogers, 2004). However, as others have argued technology has been slow to bring about significant or fundamental changes to pedagogical frameworks. Learning management systems (LMS) are one of the most common technologies in higher education institutions and many universities are increasingly adopting these systems in order to support the educational process and enrich the learning experience of students (Al-Busaidi & Al-Shihi, 2012; Coates et al., 2005; Lonn & Teasley, 2009; McGill & Klobas, 2009; Weller, 2007). Whilst LMS use is widespread it is not clear whether this technology has fulfilled expectations.

The term LMS refers to an e-learning platform that offers a set of tools that enable the delivery of course materials and information, interaction and communication both between teacher and student and between students, without limitations of time and place (Chang, 2008). Currently, LMSs are used in thousands of courses in universities, with the expectation of this number increasing in the future (Morgan, 2003). Although these systems were initially developed to support distance learning, they have become an integral part of the learning

experience of all types of students. They are widely used to add a virtual dimension to the campus-based classrooms and to supplement traditional face-to-face teaching (Harrington, Gordon, and Schibik, 2004, p. 1). This growing interest in the adoption and use of LMS has been driven by the anticipated benefits of this system for both teacher and student. It is often argued that LMSs have the potential to enrich student learning, make teaching more efficient, and provide opportunities for innovation in teaching and learning (Chang, 2008; Coates et al., 2005; Lonn & Teasley, 2009; Morgan, 2003). Further claims have been made that LMSs will make substantial changes in educational practices and bring new efficiencies to teaching. According to Broad et al., (2004), LMS can shift the focus of teaching and learning from teacher to student as the teacher becomes a facilitator of the student learning process. Rudestam and Schoenholtz-Read (2002) suggested that with LMS it is possible to transform education by reinforcing a suite of various social and constructive pedagogies, by allowing students to access and interact with different resources (as cited in Klobas & McGill, 2010). It also provides the opportunity to implement of many of these practices, and some features within it encourage student-centred approaches to learning (Heirdsfield, Walker, Tambyah, & Beutel, 2011).

Despite the widespread use of LMSs in most universities around the world, not all faculty members use the LMS available to them (Costen, 2009; Morgan, 2003). This emphasises the view that providing the technology (LMS in this case) is not enough to guarantee the successful use by faculty as the uptake and use of technology is dependent on teachers themselves rather than the existence of tools in the classroom (Buabeng-Andoh, 2012). As faculty members seem to play a significant role in deciding if or how to implement technology like LMS in their classrooms, exploring their experience and perceptions about an

LMS is essential for understanding the influence of LMS in pedagogy and its effectiveness in education.

Moreover, previous research on the use of, and attitude towards, LMSs in teaching and learning reports both positive and negative findings; it pointed to variations in views of faculty members about the benefits of LMSs and about whether the implementation of LMS improves pedagogy and therefore enhances student learning. On one hand, the literature indicates that the implementation of LMS in reality is far from achieving the desired goals, as, for a number of reasons, LMS has not always been used to its full potential by faculty members (Blin & Munro, 2008; Dahlstrom, Brooks, & Bichsel, 2014; Lane, 2009; Morgan, 2003). It has been found that LMS is often used as a data repository or a simple tool for communication and managing course materials and information rather than an effective teaching and learning tool to support student interaction and participation in their learning process (Chang, 2008; Garrote, 2007; Holm, Röllinghoff, & Ninck, 2003; Klobas & McGill, 2010; Lonn & Teasley, 2009; Oftebro, 2004; Schoonenboom, 2014; Woods, Baker, & Hopper, 2004). On the other hand, other studies reveal LMS being used in a positive way to provide opportunities that support teaching and learning activities and enhance the role of the student in their own learning (Broad et al., 2004; Costen, 2009; Harrington, Staffo, & Wright, 2006; Heaton-Shrestha, Edirisingha, Burke, & Linsey, 2005; Heaton-Shrestha, May, & Burke, 2009; Heirdsfield et al., 2011; Leese, 2009; Lai & Savage, 2013; Polisca, 2006).

This debate within the literature on whether LMS is used to transform education by improving social and constructive learning, or sustain transmissive models of teaching, suggests that the LMS remains a relative newcomer to repertoires of pedagogical practices, and within western universities attitudes towards it remain somewhat blurred. As Coates et

al., (2005) pointed out, very little is known about the impact of LMS on teaching and learning, in particular how this system might change pedagogy and benefit student learning. Therefore, there is a need for further research into the issues surrounding the use of LMS by faculty and its influence on teaching and learning; this is the focus of this study.

Higher education institutions in Saudi Arabia are following the global trend in investing in technology. Saudi universities, as others, are endeavouring to keep pace with developments in the field of LMS and attempting to activate its use in educational processes. This trend is associated with the desire to change traditional teaching methods into new strategies that foster the active role of students in their learning process. Unlike the transmissive modes of teaching that consider students to be the recipients of information, these new methods provide opportunities for students to construct their own knowledge and meaning based on their own experiences rather than passively receiving information transmitted to them by teachers. To do so, there is an assumption in Saudi Arabia, as has been identified in other places, that the introduction of new technology will facilitate the desired pedagogical change. Therefore, faculty members are encouraged to incorporate LMS in their teaching and learning activities. However, it is noted that there has been insufficient take-up of LMS by faculty in most Saudi universities (Asiri, Mahmud, Bakar, & Ayub, 2012; Bousbahi & Alrazgan, 2015; Hussein, 2011); this represents a challenge to the efforts to spread the culture of e-learning and to the shift towards its application in education that universities seek to achieve (see Chapter 2 for more details). In addition, during my literature review, as I show, I found that faculty perceptions of the educational values of LMS in Saudi Arabia have not particularly been brought to light and there seems to be little research in this area. In fact, most of the research into the adoption and use of LMS has been conducted in the western context with only a few quantitative research studies into the attitude of faculty towards LMS taking place in the Saudi context.

Furthermore, my personal experience and career as a lecturer at King Saud University prompted me to learn more about these systems because there is a movement within the University towards innovation in teaching strategies and the adoption of e-learning applications such as Blackboard-LMS in the classroom. While attending some of the courses and workshops related to this, I noticed a difference in the experience of faculty members with Blackboard-LMS and their desire to use this system in their classes. These observations prompted me to conduct this research to find out how faculty members use Blackboard-LMS in their teaching, what factors influence their use, and how they perceive the pedagogical benefits of this system; to learn whether the use of LMS changes their pedagogy or affects their teaching and learning practices. Therefore, I argue that further research is needed to illuminate these important issues and investigate the influence of LMS on teaching and learning practices in traditional classrooms.

In light of issues raised above, and with the ongoing widespread investment in LMSs in most universities, the questions to be asked are whether the adoption of LMSs and their use in the education process is achieving the desired goals and whether the promises about the ability of these systems to improve pedagogy and enhance the learning experience of students are being realised? Therefore, I wanted to conduct research, which explored the experience and perceptions of faculty about the educational value of LMS to see whether these aims were actually being fulfilled in Saudi Arabia. My intentions can be encapsulated in the following research aims and overarching questions.

1.1 The aims of the Research

This study intended to investigate the influence of LMS on teaching and learning practices in traditional classroom environments. More specifically, it sought to explore the experience and perceptions of faculty in the use of LMS in learning and teaching practices in Saudi

higher education in order to understand their actual use of these systems and to learn whether this use had changed their pedagogy. The study also aimed to explore whether the introduction of LMS is justified in terms of the benefits it can bring, especially to pedagogy.

1.2 The Research Questions

The aim of the study can be summarised in the following two overarching questions:

In relation to a university in Saudi Arabia:

1. To what extent do the introduction of LMS influence pedagogies?
2. To what extent do the perceived benefits of LMS justify its introduction?

In order to address these overarching questions I used the following subsidiary questions to structure my investigations:

1. How do Saudi faculty use the LMS for teaching and learning?
 - a. Which features within the LMS do faculty use most often?
 - b. For which functions and purposes do faculty choose to use LMS?
2. How do Saudi faculty perceive the impact and benefits of the LMS on their teaching practices and student learning?
3. What factors influence faculty to adopt and use LMS in their courses?
4. What challenges do faculty encounter while using LMS?

Having explained the rationale for conducting this study, its aims, and the main research questions, I go on to discuss the significance of the study. This is followed by a brief description of how this thesis is structured.

1.3 Significance of the Study

Most of the previous research on LMSs and their use in education includes, *inter alia*: students' and teachers' attitudes towards LMS, the use of LMS in teaching and learning, and factors that influence teachers' acceptance and continued use of LMS. However, there is lack of research that has looked specifically into the influence of introducing LMS on pedagogy and at whether the introduction of LMS is justified in terms of the benefits it can bring, especially to pedagogy. Coates et al., (2005) argue that “research into the ramifications of LMS, in particular the pedagogical issues, is still in its infancy” (p.5). Similarly, O'Rourke, Rooney, and Boylan (2015) point out that, despite the increasing investment in the LMS, the actual value added by LMS to the teaching and learning process has not been explored. Therefore, this study is important because it focuses on an area that has not yet been adequately addressed, particularly in Saudi Arabia, where my research was conducted.

In addition, the literature reviewed shows that a significant amount of research investigating the use of LMSs and the perceptions of teachers towards them were quantitative studies with a few qualitative studies conducted in the western context (see Chapter 3). Thus, exploring faculty perception of this phenomenon qualitatively in the Saudi context is considered an important area that has not yet been addressed. To the best of my knowledge, this study is one of the few, particularly in Saudi Arabia, to use a mixed-method research (employing both quantitative and qualitative approaches) to investigate the influence of introducing LMS on teaching and learning practices according to the experiences and perceptions of faculty. As the adoption of LMSs in teaching and learning processes is growing worldwide, and due to the large investment in ICT including LMS in Saudi higher education, conducting research on the various uses of the LMS by faculty and their perceptions about the educational value

of this system is essential to determine whether the introduction of LMS is justified in terms of the benefits it can bring, especially to pedagogy.

The results of this study could help to provide ways to better integrate this technology into teaching at universities. For academics it would provide some examples of good practice for using the LMS and highlight some of the ways in which the LMS is useful in teaching and learning. This research is also important for administrators of e-learning centres because it may help to provide a foundation for any training programme for faculty in LMS integration and give them guidance on any changes to their current training plan. Moreover, the findings are likely to be valuable to different stakeholders in education, including educational planners, decision makers and system developers, by providing them with insight and recommendations about the potential uses of LMS in education, incentives to use it, and an understanding of the difficulties that might limit its effectiveness. It is also hoped that this study will make a significant contribution to the existing literature in the field of LMS and provides a basis for further research in the area.

1.4 Structure of the thesis

This thesis consists of six chapters that are organised as follows:

Chapter One provides a brief background of the current study, setting out the focus of the study, the rationale, its purpose and significance.

Chapter Two describes the context of the study, including a brief background of Saudi Arabia, higher education institutions, pedagogical challenges, development plans and the use of LMSs in Saudi higher education, with a focus on King Saud University as the site of this study.

Chapter Three presents literature that is relevant to the focus of this study. It begins by highlighting the rationale for the use of ICT in higher education and describing constructivism as a learning theory underpinning this study. It then provides an overview of LMSs followed by a review of the assumptions behind the adoption of such systems in the education process and their relationship with the pedagogies. I then discuss the influence of LMSs on teaching and learning, focusing on the different ways these systems are used by faculty and how LMSs impact on teaching and learning. This is followed by a discussion of factors that encourage or discourage the use of technology, including LMS. Finally, relevant literature on the barriers and the difficulties of using LMSs is provided.

Chapter Four provides a detailed description of the procedures that I followed in conducting this study: the research approach and design, methods used for collecting the data and the rationale and justifications for choosing these methods, the strategy used for selecting the sample, the methods used for analysing both the qualitative and quantitative data, and the ethical considerations followed in performing this research.

Chapter Five presents the analyses of the findings from both the quantitative and qualitative parts of the study, and discusses those findings in relation to the existing body of research.

Chapter Six provides answers to my research questions, and discusses the implications, recommendations and limitations of this research as well as suggestions for future research.

The following chapter provides an overview of the research context (Saudi Arabia) with a focus on King Saud University as the site of this study.

CHAPTER 2: CONTEXT OF THE STUDY

This chapter discusses the context where this study was conducted. This outline is important for framing the study, providing a brief description how education is placed within Saudi Arabia. It is divided into five main sections. First, a brief background of Saudi Arabia is presented; this is followed by an overview of the higher education system in the Kingdom; the third section is a discussion of the main pedagogical challenges facing Saudi higher education; then the introduction of LMS in Saudi higher education is highlighted with, finally, a focus on King Saud University as the site of the current study.

2.1 Kingdom of Saudi Arabia

The Kingdom of Saudi Arabia was established in 1932. It is an Arab Islamic country that occupies the largest part of the Arabian Peninsula on the Red Sea, the Arabian Gulf and the Arabian Sea in the Indian Ocean. The Kingdom is characterised by its strategic location between the three continents of Asia, Africa and Europe. Its area is about 2,250,000 square kilometres with a population of 31,742,308, of which around 60% are under the age of 25, according to the Central Department of Information and Statistics (2016).

The kingdom is home to many civilizations and the birthplace of Islam, where there are the holy places in Mecca and Medina. Therefore, Islam influences Saudi society in all aspects of social and cultural life, including education. In fact, Islam regards education and learning to be an obligation for every Muslim, both male and female. This importance of education as a religious duty represents the cornerstone of the educational system in the country and forms the basis on which the state builds its educational responsibilities. In this sense, religion and

education are interrelated and indivisible. Therefore, gender segregation at all levels of education, is a necessity in accordance with Islamic law in the country (Oyaid, 2009); this includes the use of different buildings and separation of male and female teaching staff, although the same curriculum is taught to both male and female students. As a female, I was therefore carrying out research in the female education context since I had best access to this sector.

Saudi society can be described as a relatively conservative society with a modern lifestyle because of the tremendous development that took place in the country after the discovery of oil. The Kingdom is one of the largest countries in the world in terms of oil production and reserves, which are estimated to be 25% of the global reserve. It is also the largest free market in the Middle East. This has been reflected in the rapid progress and steady growth witnessed by the Kingdom in various fields. For example, there has been a marked development in the ICT sector since the Internet service was officially introduced into the country in 1997. Internet penetration in Saudi Arabia has increased rapidly over the past years, rising from 5% in 2001 to 41% by the end of 2010 (Ministry of Communications and Information Technology, 2017). The number of Internet users was estimated at 21 million by the end of 2015 (internet.sa, 2017).

Besides that, the Saudi government has recognised the importance of education as a strategic investment for the country in order to prepare the human resources necessary for the continuation of economic development, so the Kingdom has given the education sector a great deal of attention. For example, the budget allocated by the government to this sector and manpower training for 2017 amounted to \$61.3 billion (Ministry of Finance, 2017), which indicates the extent to which the country considers educational development plans as a priority. In addition, the responsibility for funding education lies entirely with the

government, providing it free of charge to all citizens and residents at all stages. In order to implement the education policy, three main agencies have been established: (a) the Ministry of Education, which supervises the various stages of public education, including primary schools, intermediate schools and secondary schools; (b) the Ministry of Higher Education, which is responsible for supervising universities; and (c) the General Organization for Technical Education and Vocational Training, which is responsible for supervising technical colleges and trade training (Smith & Abouammoh, 2013). In 2015, the Ministry of Education and the Ministry of Higher Education were merged into one ministry, named the Ministry of Education, to be the official body responsible for the public and higher education sector. As the current study focuses on higher education, I discuss this sector in more detail below.

2.2 Higher Education

As mentioned earlier, the Saudi government has made it a high priority to provide Saudi citizens with education. To do so, the Educational Policy charter was launched in 1970, and the Ministry of Education (Higher Education) was established in 1975 to support the implementation of education policies in this sector. It is responsible for planning and coordinating Saudi's needs in the field of higher education in order to provide qualified national cadres in various disciplines to serve the national development goals (Ministry of Education, 2017).

Currently, there are 24 public universities distributed throughout the Kingdom. These universities are supervised by the Ministry of Education and fully funded by the government, with considerable autonomy in administrative and academic aspects (Ministry of Communications and Information Technology, 2017). So, students do not pay any tuition

fees and are offered a monthly grant to encourage them to complete their university education. This financial support from the government has led most Saudi students to enroll in traditional education programmes that are sometimes supported by technology, although full distance learning programmes are still under development. The situation in Saudi Arabia is different from that in most Western countries where students are often responsible for paying their own tuition fees (which may be subsidised by government loans) and which has led to an increase in the demand for part-time programmes and distance learning because students need to work to supplement their income (Colbran & Al-Ghreimil, 2013).

With regard to private education, nine private universities have been established to date and the government encourages investment in this sector and offers generous scholarships for students to study at these universities (Al-Eisa & Smith, 2013). Most Saudi universities are considered relatively new as 16 of the public universities and all the private ones have been established over the past decade, reflecting a rapid growth in this sector. Saudi universities differ in their classifications based on their mission and orientation, and can be divided into five groups: comprehensive universities with a research focus, comprehensive, teaching, specialised universities with a research focus and specialised universities (Mazi & Altbach, 2013, p.19).

Table (1) presents a list of Saudi government universities and their classifications. In line with the teachings of Islam and the prevailing culture in Saudi society, almost all universities have two campuses, one for male and the other for female students. The exceptions are three universities: Princess Nourah bint Abdulrahman University which only accept female students, King Fahd University for Petroleum and Minerals and the Islamic University, which are male-only universities.

Table (1): A list of Saudi government universities and their classifications (source: Mazi & Altbach, 2013, p.20).

University	Category
King Saud University King Abdulaziz University Umm al-Qura University King Faisal University	Comprehensive universities with a research focus
King Fahd University of Petroleum and Minerals	Specialised universities with a research focus
King Khalid University Qassim University Taibah University Taif University	Comprehensive universities
Imam Muhammad bin Saud University Islamic University King Saud Bin Abdulaziz University for Medical Sciences	Specialised universities
Al Jouf University Hail University Jazan University Al Baha University Najran University Princess Noura Bint Abdul Rahman University Tabuk University Northern Borders University Dammam University Kharj University Shaqra University Majmaah University	Teaching universities

To enhance opportunities for student learning and to foster Saudi competencies to be able to sustain economic growth, the government has moved towards the globalisation of learning. In 2005, the King Abdullah Overseas Scholarship programme was launched and sponsors more than 120,000 students studying in 50 countries, predominantly Australia, Canada, the United Kingdom and the United States; and more than 20% of those students are women (Jamjoom and Kelly, 2013; Ministry of Education, 2017). In addition, many universities require their new teaching staff to complete their graduate studies at one of the world's leading

international universities to diversify their learning experience, benefit from the international expertise and achieve a higher standard of education. In fact, studying abroad has had an impact on the findings of this study as will be discussed later in Chapter 5.

As in many education systems around the world, the Ministry of Education in Saudi Arabia is seeking to introduce many reforms and improvements to its educational system. In this regard, it launched a long-term plan aimed to prepare qualified human resources to be able to pursue economic development (Saudi Embassy-Washington, 2013). In this plan, the emphasis was on the importance of moving towards building a 'knowledge society'. In order to attain this goal, the ministry initiated a number of projects. For instance, in 2005, the Ministry implemented a strategic plan called Future Plan for University Education in the Kingdom of Saudi Arabia (or 'AAFAQ' which means 'Horizon') to improve higher education over a 25-year period. It is based on three dimensions: expansion of the system in order to absorb increasing numbers of students, quality assurance in university education institutions, and the differentiation and diversity of these institutions based on their vision and mission.

This plan aims to promote scientific research, improve the quality of education by developing creativity and excellence in teaching, and enhance students' learning skills, as well as address the shortage of graduates in some vital disciplines. It also aims to improve women's higher education opportunities and develop e-learning and distance learning by fostering the use of ICT in university education, and support the development of infrastructure (Aafaq, 2017). In order to achieve these goals and reach international standards in university education, many programmes have been developed, such as academic accreditation and evaluation programmes, programmes for the development of creativity and excellence in teaching, and e-learning and distance learning projects. Such efforts reflect the strong desire of the Saudi

government to reach international standards in university education, including making improvements in pedagogies and providing new learning opportunities for students to enable them to compete internationally. This discussion of Saudi higher education is essential to help clarify the findings of this study, as presented in the Findings and Discussion chapter.

2.3 Pedagogical Challenges

The increased use of the Internet and the spread of technology among students in Saudi Arabia have raised concerns about existing learning and teaching practices, as the new generation of students anticipates new pedagogy in which technology is widely used in classroom. Until very recently, traditional teacher-centred learning has been the pedagogical approach prevalent in most Saudi universities (Darandari and Murphy, 2013). According to Al-Ghamdi and Tight (2013), the most common method of teaching in most Saudi universities is the traditional lecture in which it is the intention that the lecturer transfers information to students who listen without much participation, while the assessment depends on the student's ability to recall that information. Qureshi (2006) pointed out that one of the reasons for this is that although faculty members are very knowledgeable in their subject area, they lack knowledge and skills in effective pedagogies. Most Saudi faculty members take up their post without any formal pedagogical preparation, meaning that most of them lack skills to actively engage students in their learning process, so they tend to use the same traditional teaching method with which they were taught (cited in Al-Ghamdi and Tight, 2013).

Currently, most Saudi universities are seeking to make innovations in teaching strategies and to shift towards active learning models based on constructivist theories of learning. Such approaches advocate the use of teaching and learning methods that focus on the vital role of the student in constructing their knowledge through active engagement in the learning process as opposed to traditional teacher-centered approaches which focus on the teacher and

the use of examinations as a key means of evaluating students (Darandari and Murphy, 2013). Al-Nassar and Dow (2013) argue that this improvement should first and foremost come from faculty members developing more effective means of teaching through the use of teaching methods that enhance student interaction, better use of modern technologies that are now available, and linking students' assessment to course objectives. Students should be also supported to be active participants in their by creating a supportive and technology-rich learning environment.

Given the vital role that technology plays in contemporary education and in order to achieve the desired pedagogical change towards a student-centered approach to learning, higher education institutions are urging their faculty members to use advanced technology to support traditional face-to-face teaching and to enhance the role of students in the learning process. There is an assumption in Saudi Arabia, as has been identified in other places, that the introduction of new technology will bring about new pedagogical changes. One of the most widely used educational technologies is learning management systems, which are often used to support blended learning and to enhance teaching methods in traditional classrooms (Mogus, Djurdjevic, & Suvak, 2012). As the present study focuses on the use of these systems, they will be discussed in more detail below.

2.4 LMS in Saudi Higher Education

Due to the crucial role that ICT plays in contemporary education, and its potential benefits for educators and students, the Ministry of Education has given significant attention to the implementation of ICT as part of its educational reform efforts. In this regard, the National Centre for e-Learning and Distance Learning was established in 2006 with responsibility for the dissemination of e-learning and its applications in the educational system in Saudi Arabia.

It aims to assist universities meet the growing demand for higher education by helping to implement and provide distance learning and blended learning programmes at universities. In addition, the Centre plays an important role in supporting universities achieve excellence in learning and teaching through the optimal implementation of ICTs and other technological applications. It is also responsible for providing technical support and tools to promote e-learning at the administrative and educational levels (The National Centre for e-Learning and D-Learning, 2017). In conjunction with these efforts, many universities have set up a special centre or deanship for e-learning and distance learning to support blended learning and the adoption of a learning management system at university. This deanship offers many training courses and technical support for interested faculty members (Bousbahi & Alrazgan, 2015).

It is clear that this growing interest in the adoption of ICT and e-learning applications such as a learning management system in Saudi higher education is an attempt to improve the quality of teaching and learning and encourage innovation in existing pedagogy. However, the provision of these tools, specifically learning management systems, which are the focus of this study, is insufficient alone to guarantee their successful utilisation but that faculty members have to take responsibility to use LMS in their classrooms and incorporate it into their teaching practices. According to Asiri, Mahmud, Bakar, and Ayub (2012), the use of LMS has not been sufficiently achieved in most Saudi universities. They highlighted that faculty attitude towards technology is a strong determinant for the success of any initiative intended to implement technology in an educational setting. The results of the study conducted by Hussein (2011) to investigate the attitudes of faculty members in six Saudi universities towards the use of LMS have revealed positive attitudes towards using this system in general. However, the study also revealed some obstacles facing faculty that limit their effective use of the system. These obstacles included physical difficulties such as the

absence of direct technical support; personal constraints as a result of the refusal of some heads of departments to use them; and administrative constraints as a result of the unwillingness of some faculty members to change the academe. Alzahrani and Aljraiwi (2017) pointed out that the use of LMS by Saudi students was limited to accessing course materials, schedules and their grades, which is far less than the system's functionality/capability. This suggests that further research is needed to understand the perspective of Saudi faculty members on the use of these systems in teaching and learning.

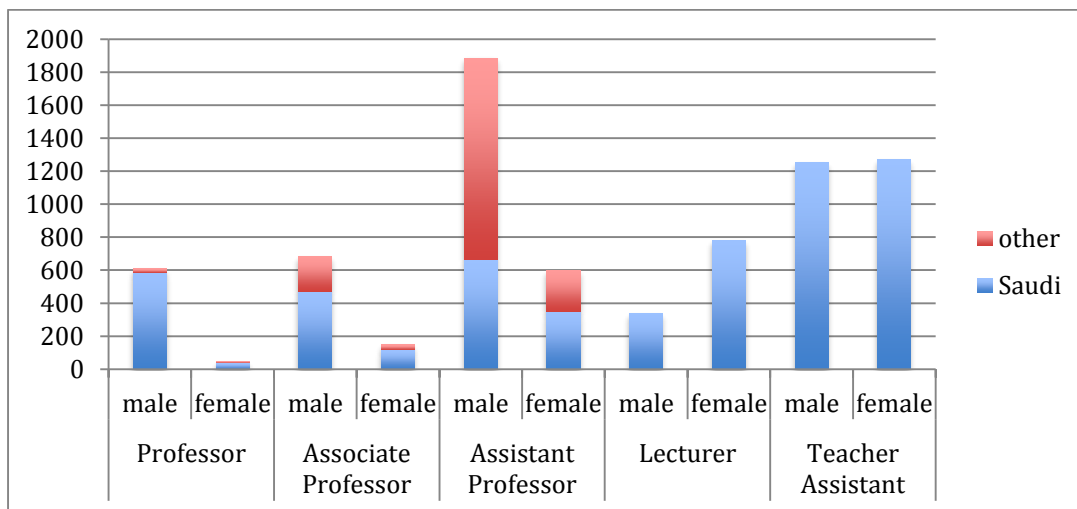
It is hoped that this study will offer faculty members some effective ways to use LMS to improve the teaching and learning process, provides guidance and recommendations to those responsible for e-learning about the factors that encourage the adoption of these systems, and explains the difficulties that limit their use by faculty members in order to overcome them in the future.

2.5 King Saud University- the focus of this study

King Saud University (KSU), the oldest university in Saudi Arabia, was established in 1957 in the capital city, Riyadh. It is considered as a pioneering higher education institution in the Kingdom and one of the leading universities, not only in Arab countries, but also in the world (Shanghai Academic Ranking of World Universities, 2016). According to the Times Higher Education World University Rankings, the University was ranked number 221 in 2010 (cited in Smith & Abouammoh, 2013). KSU is also the largest university in Saudi Arabia in terms of academic programmes, number of students and faculty members. At present, it has 66,020 students and 7,612 faculty members (Ministry of Higher Education, 2016). Figure (1) shows the distribution of faculty members according to their academic rank and gender.

The university offers several diplomas, Bachelors and Masters programmes, as well as PhDs that cover most subject areas. Due to cultural and religious reasons, the university has separate campuses for male and female students. Each campus has its own administrative and teaching staff, although male teaching staff may teach female students via closed-circuit television.

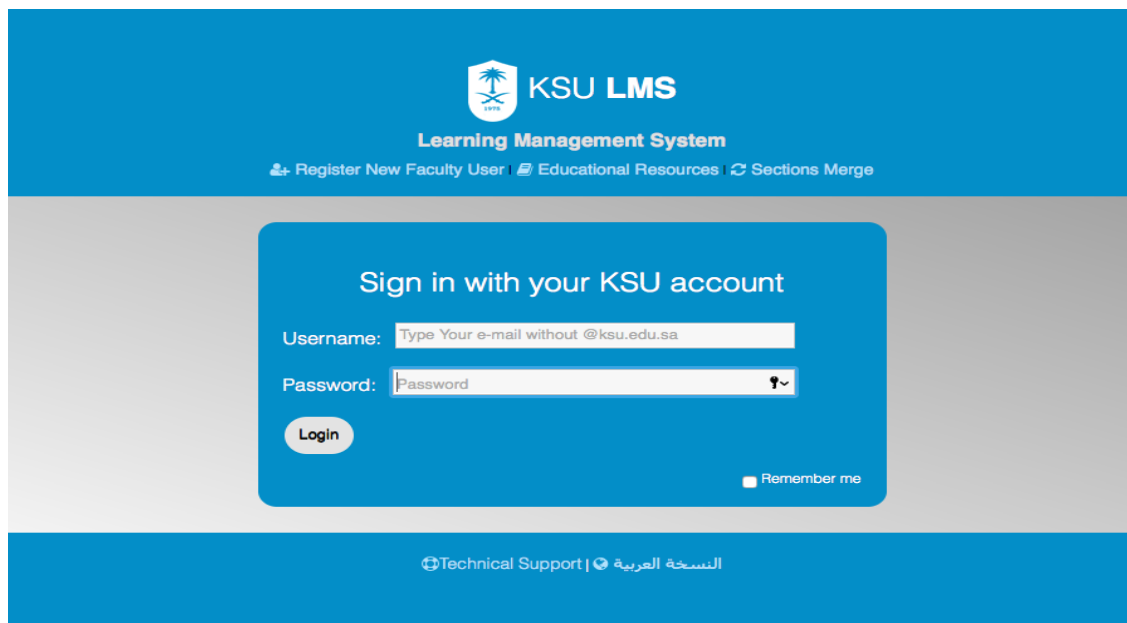
Figure (1): the distribution of faculty members according to their academic rank and gender.



As part of the University's endeavour to change the prevailing pedagogical paradigm to a more active learning model, and improve the quality of education and develop its outputs, the University strives to provide an electronic environment that is supportive of faculty members and motivates students. It is also keen to diversify teaching and learning methods to accommodate the growing number of students and meet their expectations of intensive use of technology in the classroom. To achieve this goal, the University has developed its infrastructure, facilitated access to the Internet in all of its buildings, provided hundreds of smart classrooms, and offered many advanced educational technologies in its colleges to promote knowledge-building (KSU, 2017).

In addition, the University has introduced Blackboard-LMS and encouraged faculty to adopt it into their teaching. This system could be considered as relatively new to faculty since it was established in 2010. When it was introduced it was not compulsory for faculty to integrate it into courses although they were encouraged to use it. Since then, a number of workshops, training sessions and online materials have been provided to promote the adoption and integration of this system in face-to-face classes. It is worth mentioning that this study took place in 2015, which was only five years after LMS was first introduced.

Figure (2): The front-end of King Saud University's blackboard system



Furthermore, the University has set up several centres to undertake the training and professional development of faculty in various fields such as teaching and research skills, and personal and technical skills. One of these centres is the Deanship of the Development of Skills, which was established to assume responsibility for developing various skills of faculty members in order to improve the quality of the educational process as a whole. Recently, it has started to provide mandatory training for new faculty members in several skills including active learning strategies. Additionally, the Deanship of e-Learning and Distance Learning

was established in 2007 in order to spread the e-learning culture and use ICT applications across the university. It aims to improve the skills of faculty members and motivate them to implement active e-learning applications, such as Blackboard-LMS (KSU, 2014). The Deanship offers faculty members technical support in cooperation with the Deanship of Electronic Transactions and Communications at the University.

However, Alsalloum and Radwan (2013) stated that only 10% of KSU faculty members were using the Blackboard-LMS system. Hence, in this study, I aim to investigate how faculty perceive Blackboard-LMS for teaching and learning purposes, how Blackboard-LMS is being used by faculty, what factors encourage them to use this system, and what obstacles they encounter.

2.6 Summary

The information presented above demonstrates the increasing importance given to ICT in Saudi higher education, which aims to improve and develop the learning and teaching process and promote pedagogy that focuses on students, in order to build a knowledge society and continue economic progress in the country. This study is in line with existing initiatives to promote the use of technology in learning and teaching in Saudi Arabia. Whilst I see, theoretically, that LMSs have the potential to bring many educational benefits and change pedagogy, investigating the experience and perspective of teachers as key users of these systems is crucial. This study is an attempt to explore the use of LMSs in teaching and learning by highlighting their educational benefits, identifying encouraging factors for their use, and uncovering difficulties that limit their effectiveness from the perspective of faculty members. Thus, the results of this study may help to achieve some of the objectives of Saudi higher education.

CHAPTER 3: LITERATURE REVIEW

3.1 Introduction

This chapter highlights literature that is relevant to the focus of my study. It served as scaffolding that helped me to understand the issues surrounding the adoption and use of LMSs by faculty members at KSU. The literature review was not a straightforward process, as some parts of this chapter were written at the beginning of my study before I collected my data; however, I added some sections and updated them throughout the writing of the thesis because there were new themes that emerged during data analysis and discussion.

The chapter begins by throwing light on the rationale for the use of ICT in higher education and describing constructivism as a learning theory underpinning this study. It then provides an overview of LMSs to gain a deeper understanding of these platforms. This is followed by a review of the assumptions behind the adoption of such systems in the education process and their relationship with the pedagogies. I then discuss the influence of LMSs on teaching and learning, focusing on the different ways these systems are used by faculty and how LMSs impact learning and teaching. This is followed by a discussion of factors that encourage or hinder the use of technology, including LMS. Finally, relevant literature on the barriers and difficulties of using LMSs is provided.

It is noteworthy that most of the reviewed literature relevant to LMSs is from Western literature and other international contexts that are relevant to my study due to the lack of research in this area in Arab countries, particularly in Saudi Arabia. However, Arabic literature that addresses the use of ICT and e-learning is also reviewed.

3.2 ICT and Change in Higher Education

Information and Communication Technologies (ICT) have influenced many aspects of everyday life, including education. Although the effect of ICT within education has not been as extensive as in other fields, it has become an essential part of contemporary education in the higher education sector since the mid-1990s (Kirkup and Kirkwood, 2005; Oliver, 2002; Selwyn, 2014). This is reflected in the highly institutional investments in ICT infrastructure and various aspects of university use of ICT (Selwyn, 2007). In fact, this growing trend towards adopting technologies in higher education institutions is based on the belief about the student's vital role in building the knowledge society and the promises associated with the capability of new technologies to transform pedagogies and promote student-centred approaches to learning (Bingimlas, 2009; Broad et al., 2004; DeNeui & Dodge, 2006; Drent & Meelissen, 2008; Oliver, 2002; Rogers, 2004). These approaches refer to broad teaching methods that shift the emphasis in the learning process from the teacher to the student. These approaches have their foundation in the constructivist¹ theory of learning, which asserts the active role of students in their own learning. It puts students at the core of learning and emphasises their critical role in constructing knowledge contrary to the traditional methods of teaching that marginalize the role of the student as merely a receiver of information. Thereby, the teacher in this approach has the role of a guide and facilitator of students' learning by providing students with opportunities for social interaction and self-reflection (Lane, 2008).

It has been argued that with ICT, there are opportunities to expand or even change what can be achieved in teaching (Garrison & Anderson, 2003, as cited in Kirkwood, 2009). In this sense, the communication aspect of ICT has been the key motivator for change. At the beginning of the 21st Century, Oliver (2002) pointed out that different factors have emerged

¹ I will explain the constructivist theory in section 3.3.

which have strengthened the adoption of ICTs into learning settings, and that contemporary trends suggested extensive changes in the planning and delivery of education as a result of the opportunities afforded by ICT. Later, Kirkwood (2009) highlighted that ICT had the potential to provide communication, store vast amounts of information, facilitate interaction, and allow information to be presented in different formats which enable the creation of active learning environments where students can engage in challenging activities to develop their cognitive abilities. Thus, ICT was seen to have the potential to make qualitative improvements in learning outcomes because of the possibility of creating learning activities and opportunities that would have been very difficult to attain without it. Furthermore, DeNeui and Dodge (2006) argued that information technology has the capacity to bring about change in mainstream teaching and learning methods. According to Oliver (2002), the potential of ICT can provide opportunities to change education towards more student-centred enterprise rather than those focuses on teacher. Broad et al. (2004) support the point that technologies offer opportunities to disrupt traditional pedagogies and claim that web-based learning could enrich learning experience and offer new opportunities that focus on active engagement of students in their learning process.

Despite the early promises of ICT in transforming pedagogy, its actual impact in practice has been questioned by several researchers, arguing that it has fallen short of the anticipated changes in teaching and learning although its widespread adoption in most higher education institutions (Kirkup and Kirkwood, 2005; Kirkwood, 2009; Selwyn, 2007). For instance, Kirkwood (2009) indicated that within blended learning contexts, it seems that a lot of the ICT use by teaching staff is to replicate or finish off existing teaching practices that began in class. So teachers tend to adopt tools that could be easily integrated into their existing educational activities, which facilitate what teachers already do (Kirkup and Kirkwood,

2005). Fundamental change in teaching and learning practices are therefore unperturbed by new technology. Similarly, Davies and Merchant (2009) argued as mentioned earlier, that despite the existence of technology in classrooms, it has predominantly been used to provide more ‘polished performances of conventional practices’, the notion which Davies and Merchant used to refer to the replication and reproducing of older practices (p. 2). According to Laurillard (2007):

We tend to use technology to support traditional modes of teaching – improving the quality of lecture presentations using interactive whiteboards, making lecture notes readable in PowerPoint and available online, extending the library by providing access to digital resources and libraries, recreating face-to-face tutorial discussions asynchronously online – all of them good, incremental improvements in quality and flexibility, but nowhere near being transformational. (xv, as cited in Blin & Munro, 2008)

In the LMS context, as this study is concerned with the impact of LMS on teaching and learning, there is controversy within the literature about the effectiveness of these systems as tools to enhance the educational process or as digital repositories of educational content (Carvalho, Areal, & Silva, 2011). Coates et al. (2005) predicted that information technology such as learning management systems (LMS) would have significant implications for the teaching and learning process in universities, and would contribute to more efficient teaching. In this respect, Rudestam and Schoenholtz-Read (2002) suggested that LMSs could promote transformation in education by facilitating social and constructive learning (as cited in Klobas, 2010). It provides different tools that can support student-centred approaches of learning and facilitates the application of many of these practices (Heirdsfield et al., 2011). However, whether all these things materialised remains to be seen.

3.3 Constructivist Theories of Learning

The literature reviewed shows that constructivist theories of learning have heavily influenced teaching and learning in higher education (Biggs, 1996; Sharpe et al., 2006; Selwyn, 2007). It is the most prevalent theoretical perspective in research on web-based learning (Dougiamas & Taylor, 2002). In addition, much of research in the area of educational technology advocates a move toward more student-centred learning approaches and argue that constructivist pedagogical principles can be achieved through the use of educational technology (Attwell & Hughes, 2010; Broad et al., 2004; Knight, 2010; Leese, 2009; Lonn & Teasley, 2009; Rogers, 2004; Saunders & Gale, 2012). Since my intention in this study was to understand the impact of using Blackboard-LMS on teaching and learning and to explore whether participants expressed a perceived change in teaching practices, leading to more student-centred approaches, I considered the constructivist theories, particularly social constructivism, as a theoretical framework to learn whether LMSs are being used in a manner consistent with constructivist teaching.

Constructivism comprises a set of theories which stress the active participation of learners in the learning process and the centrality of the learner's activities in creating meaning. The essential core of constructivism is that learners construct their own knowledge and meaning from their own experiences rather than passively receiving information that is transmitted to them by others (Pritchard, 2009; Savery & Duffy, 1995; Selwyn, 2007). Biggs (1996) pointed out that "learners arrive at meaning by actively selecting and cumulatively constructing their own knowledge through both individual and social activities" (p.348). Kanuka and Anderson (1999) refer to a range of different perspectives of constructivism, each with different implications for how we construct knowledge and how educators will facilitate knowledge construction. However, despite these differences, all positions emphasise the active role of

individuals in constructing knowledge based on their previous experiences. In addition, all portray learning as an active rather than passive process.

Piaget's work formed the foundation of constructivist theory (Pritchard, 2009). His view of learning is contrary to transmissive methods of teaching and was based on the belief that learners construct their knowledge through active and personal experimentation rather than absorbing information from a teacher (Mayes & de Freitas, 2007). Piaget's constructivist theory focuses on the intrapersonal process of individual knowledge construction (Liu & Matthews, 2005). It views learners' cognitive development as a result of adaptation, which occurs due to assimilation and accommodation processes whereby learners incorporate new information into the existing mental structures or 'schema' through active participation in learning. Savery and Duffy (1995) described this need for accommodation as puzzlement or cognitive conflict, which represents the stimulus that drives the learning process and determines what is learned.

Vygotsky, who seems to have been a key proponent of social constructivism, adds a significant dimension to the constructivist theory (Pritchard, 2009; Selwyn, 2007). He highlighted the influence of culture and social contexts in learning and emphasised that knowledge is the result of social interaction and language use (Vygotsky, 1978). This view of the social and cultural nature of learning sees interaction with others as a crucial resource for supporting individual cognitive development (Selwyn, 2007); therefore, learning occurs when a learner is able to reach shared meaning under the guidance and assistance of more knowledgeable or more skilled others such as a teacher or through peer collaboration – a concept Vygotsky (1978) described as the 'zone of proximal development' (ZPD). This

suggests that learners negotiate meaning via their interaction and conversations with others, which can lead to new knowledge construction.

Linked to Vygotsky's concept of the ZPD, scaffolding is a process whereby a teacher or a more competent peer assists an individual learner to perform a task that was difficult to complete alone and brings the learner to a state of competence in which he/she can complete a similar task independently (Selwyn, 2007; Smit, van Eerde, & Bakker, 2013). Accordingly, the role of teachers in the social constructivist perspective is to facilitate students' learning through embracing teaching strategies that focus on active engagement of students in their learning rather than just providing information. Teachers are expected to create learning environments in which students can express their ideas and collaborate with peers to construct meaning. In this way, students have opportunities to share, negotiate and reflect on their understanding to reshape their knowledge (Gensburg & Herman, 2009). According to Sherman and Kurshan (2005), teachers should provide feedback and facilitate discussion during the learning process. This feedback is crucial for students to reflect on and acquire new information necessary to develop meaning of knowledge. Furthermore, ICT applications have extended the notion of scaffolding and can be used to assist learners in achieving their level of potential development by providing extensive resources, self-assessment and feedback from tutors and facilitating interactions with peers and a self-reflection process (Shah & Cunningham, 2009). This explanation of scaffolding and the role of the teacher are essential to this study, as they help to elucidate the impacts of using an LMS in the classroom.

It is important to take into account that constructivism is a theory of learning and is not a specific pedagogy. Thus, it does not lead to a prescribed constructivist teaching approach (Doolittle & Hicks, 2003). However, several researchers suggest some essential principles of teaching based on the assumptions of constructivism (Savery and Duffy, 1995; Doolittle, 1999). Savery and Duffy (1995) identify these principles as:

1. Anchor all learning activities to a larger task or problem.
2. Support the learner in developing ownership for the overall problem or task.
3. Design an authentic task.
4. Design the task and the learning environment to reflect the complexity of the environment they should be able to function in at the end of learning.
5. Give the learner ownership of the process used to develop a solution.
6. Design the learning environment to support and challenge the learner's thinking.
7. Encourage testing ideas against alternative views and alternative contexts.
8. Provide opportunity for and support reflection on both the content learned and the learning process. (p. 3-6)

These principles of constructivist teaching affirm the active engagement of students in their learning process. Thus the role of teachers changes to facilitate and guide student learning, which implies a relocation of power towards the student. Teachers within the constructivist perspective must create a learning environment that supports and challenges students' thinking by designing authentic tasks and activities, providing relevant feedback, integrating appropriate assessments and facilitating discussions. Indeed, such teaching methods that embrace constructivist principles are often described as student-centred approaches to learning. LMSs are a type of ICT application that has been claimed to facilitate constructivist teaching, as Lonn and Teasley (2008) state

LMS are providing tools for the kinds of active online engagement preferred by today's generation of students, such as discussion tools, chat rooms, wikis, and blogs. These tools provide opportunities for using LMS that are consistent with constructivist approaches to learning rather than simple transmission of knowledge models... However, for this shift to occur both faculty and students will need to recognize the opportunities provided by the system and use them to innovate teaching and learning practices. (p.1)

Therefore, it is important to provide an overview of such systems to gain more understanding about these tools.

3.4 An Overview of Learning Management Systems (LMSs)

Many universities have sought to introduce information and communication technologies into their educational systems in order to adapt to the needs of the current generation surrounded by technology. One of the most prominent developments in higher education has been the embracing of LMSs (Coates et al., 2005; Costen, 2009; McGill & Klobas, 2009). Weller (2007) pointed out that LMS is one of the most prevailing technologies in higher education. Thus, most universities in the world are increasingly using these systems to support the educational process (Al-Busaidi & Al-Shihi, 2012), to add a virtual dimension to their traditional educational system (Coates et al., 2005) and to solve the problems they face (Heaton-Shrestha et al., 2005; Weller, 2007). For example, over 90% of US academic institutions and 95% of UK higher education institutions have adopted one or more types of LMS to support teaching and the learning process (Browne, Jenkins, & Walker, 2006; Hawkins & Rudy, 2007). Harrington et al., (2004) claimed that although these systems “were initially developed for use in distance education pedagogies, their use in on-campus classroom settings to complement traditional courses is now considered a viable and often preferred option” (p. 1). Many universities, therefore, are trying to provide these systems to support blended learning contexts.

Various terminologies have been used to refer to LMSs, such as Virtual Learning Environments (VLEs), Web-based System (Lonn & Teasley, 2009), Managed Learning Environment (MLE), Learning Platform (LP) (Chikwa, 2012) , Online Learning, Learning Content Management System (LCMS), Course Management Systems (CMS) (Al-Busaidi &

Al-Shihi, 2012). Sometimes LMSs are known as Portals, Distributed Learning Systems and Instructional Management Systems. They consist of a range of course management tools and instructional tools to support online learning environments (Coates et al., 2005). Recently, the name of these systems have been changed from course management systems to learning management systems due to the notion of their ability for supporting learning more than simply providing course content effectively (Lonn & Teasley, 2009).

These terms are being used within literature interchangeably because of the difficulty of distinguishing between these types, especially with the development of their functionality (Chikwa, 2012). In contrast, there is little agreement about which term should be used. Some educators have thought that the term Learning Management System (LMS) causes consternation due to the suggestion that it is used for managing a student's learning in a very direct manner. This is somewhat inconsistent with the constructivist teaching approaches that many prefer in e-learning and seem more appropriate in training contexts. Weller (2007) states that the term VLE and LMS are considered synonymous; however, some terms are preferred among others geographically. For instance, VLE is more prevalent in Europe, while LMS is favoured in the US, and the terms are used interchangeably in other countries. In the current study, I use the term LMS when citing or paraphrasing other alternative terms used by other researchers for the convenience of discussion and because it is the terminology that we tend to use in Saudi Arabia.

There are numerous definitions of LMS. However, I focus on some definitions being used in terms of LMS functionality. For instance, Chang (2008) referred to LMS as “an e-learning platform that enables teachers to manage their specific courses and interchange information with students via various tools provided within the LMS, including tools for communication

(e.g., email, discussion board, virtual chat) and tools for course distribution (e.g., Content, syllabus, assessments)” (p.34). Likewise, Weller (2007) defined an LMS as “a software system that combines a number of different tools that are used to systematically deliver content online and facilitate the learning experience around the content” (p. 5).

Similarly, many studies describe LMS as a broad term that offers a sets of tools that allow for the preparation of the course, the management of the teaching materials, the sharing of information, and interaction and communication between other students and tutors without limitations of time and place, thereby promoting blended learning (Costen, 2009; Heaton-Shrestha et al., 2005; Heaton-Shrestha, Gipps, Edirisingha, & Linsey, 2007; Knight, 2010; Leese, 2009; Lonn & Teasley, 2009; van Raaij & Schepers, 2008).

Despite the fact that LMS began to develop in the 1990s (Chikwa, 2012), the reliance on LMS has been increased by most higher education institutions that are now using this system to deliver their courses (Browne et al., 2006). There are different companies that produce two basic types of LMS. This first type is open-source² software, which can be adjusted to meet the needs of a specific institution because there is a legal framework for using the code and there is shared development. The second type is commercial software, which users must purchase a license for in order to benefit from it as it is owned by the producer (Weller, 2007). For example, Moodle, Caroline, A Tutor, Classweb, and Course work are names of open source LMSs. In contrast, Blackboard, ANGEL, WebCT, and Learning Space from Lotus are examples of commercial LMSs (Chang, 2008; Coates et al., 2005).

² Free with no licensing fees

However, these systems generally offer a similar functionality, despite the diverse features of these systems. Weller (2007) pointed out three dimensions of LMS functionalities, which are institutional, academic, and learner. Each dimension has different needs and priorities. By taking the academic dimension into account, as it is the focus of this study, Costen (2009) and Coates et al (2005) have argued that while each system has some precise specifications, most LMS typically provide a number of tools for pedagogical functions and course distribution. These tools include:

- Synchronous and asynchronous communication, e.g., announcement, chat rooms, discussion forums, and email
- Content delivery and development, e.g., syllabus, learning materials, and links to other educational resources on the Internet
- Assessment, e.g., multiple-choice testing, quizzes, and gradebook
- Class management, e.g., registration, enrolling, and electronic office hours.

Generally speaking, Weller (2007, p. 18) summarised the main functions of LMS in learning and teaching purposes as:

- Content delivery – easy upload and management of content in a variety of formats.
- Asynchronous discussion – text based discussion boards that can be easily created and are straightforward to use, with threading of messages and attachment capability.
- Online assessment – a range of assessment tools including multiple choice, matching pairs and short text answers.
- Student tracking – the ability to record a student’s progress through a course and have this information presented in a concise format.
- Synchronous discussion – text based discussion in real time, perhaps combined with other real time tools such as a shared whiteboard or webcasting.
- Student tools – these usually include a calendar, a personal area for uploading resources, a note-taking tool, and email (p. 18).

In the next section, the rationales for adopting LMS are outlined.

3.5 Assumptions behind LMS Adoption

It is useful if not essential to provide an insight into the rationale of using an LMS in the educational process, as there are several views about the importance of adopting an LMS in higher education. On one hand, some views about the value of LMS have called attention to economic issues. For instance, LMS use is proposed as an appropriate solution for tackling the massive demands for access to higher education; it also has been argued that the incorporation of this system into higher education has business goals based on the employment of large numbers of support staff members who help the limited numbers of more expensive academic staff members who create the content (Coates et al., 2005).

On other hand, more general claims about adoption and use of LMSs are driven by pedagogical considerations (Broad et al., 2004; Heaton-Shrestha et al., 2007; Knight, 2010; Leese, 2009; Lonn & Teasley, 2009; Rogers, 2004). As Coates et al., (2005, p. 27) pointed out, LMSs may improve pedagogical practices beyond the mere transmission of text. Indeed, Bates (2000) stated that the starting point is motivated by optimistic expectations about the value of using ICT tools that could potentially develop higher education and lead to effective and flexible educational experience (cited in Oftebro, 2004). These expectations encourage many universities to adopt new information technologies like LMSs. In addition, Coates et al. (2005) suggested numerous reasons that promoted the rapid uptake of LMSs in higher education institutions. Firstly, LMS can increase the efficiency of teaching by facilitating flexible course delivery, reducing course management, enhancing knowledge management, and supporting communication and conferencing. Secondly, the promise that is made about the value of LMS for enriching students' learning may be one of the motives for their rapid uptake. It is seen as a means of reinforcing a suite of various constructivist pedagogies, by allowing students to access and interact with different resources. Thirdly, student

expectations that universities should embrace advanced and leading-edge technologies have driven institutions to adopt LMS in order to accommodate the information-age generation. Finally, the use of LMSs appears to be part of the change in the culture of teaching and learning, where technology is assumed to be important. In the same vein, Leese (2009) claimed that with the growth of student numbers, the diversity of their backgrounds, and the limited time available to teaching staff to promote crucial skills of students, it is essential to consider teaching and learning methods that could motivate students to participate effectively in their learning. She mentioned Oliver's suggestion (2007), which proposed that a blended learning approach (through the use of LMS) can be scaffolding for students' learning and help them solve these problems.

As I focus in this study on the impact of using LMSs in teaching and the learning practices, therefore, it is helpful to present the different assumptions and expectations made about the benefits of using LMSs for teacher and student.

According to Knight (2010), LMSs are beneficial for several reasons. Practically, materials can be uploaded/downloaded in different formats and can be updated and accessed continuously. Pedagogically, LMSs can provide students with flexibility and can be personalised by individuals to aid their specific learning needs and demands. In addition, advocates of educational technology such as LMSs have made claims that these systems can make the difference to active learning. They can enhance the quality of learning and support students' critical thinking skills, thereby promoting better understanding (Rogers, 2004). This viewpoint is further supported by Broad et al., (2004) who stated that LMS can change the assertiveness of teachers to more student-learning oriented as the role of teacher converts from being a provider of information to a facilitator of the student learning process. Thus, a central justification for using LMS is that they will enhance active learning approaches

among students (Broad et al., 2004; Rogers, 2004). According to Bradford et al. (2007), the LMSs could be considered a useful tool for enhancing student learning and improving teaching methods. They can support students and teachers by (1) increasing the availability and flexibility for accessing course materials including assignments, lecture slides, reading lists and videos anytime from anywhere; (2) providing instant feedback on students' work as well as allowing for giving and viewing students' grades confidentially using Gradebook tools; (3) promoting interactions between students and teachers and among students themselves through announcements, discussions, virtual classrooms and e-mail features; (4) tracking students' own progress via Gradebook; and (5) building some key skills such as organisation, time management and communication. These attributes have been identified as contributing to students' learning and improving the effectiveness of teaching (Heirdsfield et al., 2011).

However, the implementation of the LMS on the ground has failed to meet these promises. As I discuss in section 3.7.1, several studies have been conducted to investigate how an LMS was being used which indicated that many teaching staff have adopted LMS as communication and material distribution tools to supplement or even replicate their existing educational practices in online environments (Heirdsfield, 2011; Klobas, 2010; Lonn & Teasley, 2009). Similarly, Blin and Munro (2008) indicated that despite the widespread use of the LMS within the university, little alteration has occurred in teaching practices. The LMS was mostly used for managing the classroom and distributing learning materials and course information. Such use of LMS tends to focus on the delivery of information, which may help to sustain traditional models of teaching rather than enhancing teaching itself, and exploring more innovative pedagogic approaches to learning. Indeed, Lane (2009) argues that there are 'inherent pedagogies' of many LMSs that seems to encourage conventional modes

of teaching dating from the 19th century. Some tools within LMS, such as announcements, course content, and assessments, are guided by the desire for information delivery rather than pedagogical reasons, which in turn may impede teachers from using creative teaching methods and may, in fact, dictate the ways teachers teach. This debate on whether LMS is used to change education by improving social and constructive learning or sustain transmissive models of teaching suggests a need for more studies that explore how faculty are using LMS in their teaching and how LMS impacts teaching practices and student learning based on empirical data, which is the focus of this study.

3.6 LMSs and Pedagogy

In the previous section I discussed the assumptions underlying the implementation of LMSs in higher education institutions. In this section, I focus on the design of LMSs, their advantages, and disadvantages for teaching and learning purposes. This discussion is essential in this study, as it clarifies whether the LMS can support faculty to develop their teaching methods and employ their desired pedagogical strategies.

It has been argued that LMSs are designed to support users in the teaching and learning process (Morgan, 2003). They provide a vehicle that can facilitate communication between students and teachers and among students themselves and promote interaction between them (Lonn & Teasley, 2009; West, Waddoups & Graham, 2007). In addition, LMSs have integrated digital tools that can help create active learning environments and expand dialogue beyond the classroom (Broad et al., 2004; Coates et al., 2005; Costen, 2009; Garrote, 2007; Knight, 2010; Leese, 2009; McGill & Klobas, 2009; Morgan, 2003; Oftebro, 2004). According to Ioannou and Hannafin (2006), synchronous and asynchronous communication tools are one of the strongest features within LMSs that enable teachers to create a dynamic learning environment consistent with the social constructivist perspective. Herse and Lee

(2005) also highlighted the valuable contribution of using LMSs to facilitate change from passive to active learning, arguing that the communicative aspect of LMSs can be used as a catalyst for supporting learning communities and promoting student reflection, which in turn may encourage student-centred approaches to learning. Furthermore, Heirdsfield et al., (2011) stated that LMSs provide opportunities for enactment of many 'best' pedagogical practices which have been identified within the literature to contribute to student learning, such as encouraging active learning, facilitating cooperative and collaborative learning, providing instant feedback to students and emphasising time on task. These can be achieved through the effective use of interactive features within LMSs such as discussion boards, wikis, blogs and assessment tools.

Despite these advantages and functionalities afforded by LMSs, several researchers (Clay, Wheeler, & Attwell, 2009; Coates et al., 2005; Lane, 2008; Wheeler, 2015) critiqued their design and argued that the highly structured nature of most of LMSs may dictate the use of traditional modes of teaching and discourage the teacher from using creative pedagogy. According to Lane (2008), the built-in pedagogy of many LMSs limits innovation and creativity in teaching, particularly for novice teachers. These systems have been organized in a way that encourages information delivery instead of helping teachers to translate their individual teaching methods into online environments. This was confirmed by Bradford et al. (2007), who suggested that the pedagogically restrictive nature of Blackboard limits creativity by confining teaching to a restricted format. Similarly, Coates et al. (2005) pointed out that LMSs are not pedagogically neutral technologies; instead, their preset organization may reinforce conceptions of teaching as the transmission of information and may impede teachers from implementing other teaching strategies. This argument is supported by the findings of West et al.'s (2007) study, which showed that some faculty felt that an LMS was too inflexible to adapt to their preferred way of teaching, which departed from information

delivery. Wheeler and Attwell in (Clay et al., 2009) criticised the design of most LMSs that stifle creativity among teachers and students. They viewed the privacy of these systems in terms of allowing only students enrolled in the course to access the content or what they called "walled garden" ran counter to the needs of the current generation of students for freedom in learning. They went further and called for the demise of LMSs and replaced them with a Personal Learning Environment where students can manage their digital learning tools.

In this regard, Wheeler (2015) states that:

... the VLE has essentially a common architecture and purpose: it is there to restrict access, deliver homogenous content and control the activities of its user. It lumbers ever forward into confined spaces, tripping itself over as it goes, and is slow to adapt to new requirements (p.122).

In fact, the affordances of technologies (including LMS) versus their neutrality and how they influence teaching have been a controversial issue for over thirty years. Clark (1983) began the debate about the potential neutrality of technology when he wrote an article after reviewing the literature on educational technology and concluded that any positive effects that educational technologies have on educational results were not due to the technology used but rather to the teaching content embedded in them. He claimed that technology itself does not influence teaching but is a mere vehicle, like a truck or a delivery mechanism that transports teaching content (Clark, 1994). In contrast, other researchers (Kozma, 1994; McLuhan, 1964) have argued that technologies are not neutral and that each technology has certain attributes that make it more or less suitable for accomplishing particular types of learning tasks. So technology does not merely deliver content but allows students to interact with content, which can make a difference for learning. Kozma (1994) asserted that the type of technology chosen could affect the sorts of messages that can be delivered. Therefore, technology and the method used have an integrative relationship in which technology is considered to be an integral and necessary component of some effective pedagogy.

In the same regard, other researchers (Georgouli, Skalkidis, and Guerreiro, 2008; Morgan, 2003) highlighted that LMSs are merely neutral tools that cannot themselves change teaching practices and that their significance is determined by teachers; therefore, teachers have to understand an LMS's potential to be able to use it effectively to support their desired pedagogies. In fact, it is not the providing of tools that defined their learning benefits but how they were implemented and used in the classroom (Coates et al., 2005). Supporting this point, Georgouli et al. (2008) pointed out that LMSs are solely collections of tools, even if they might imply some kind of pedagogies, and the actual value of these systems for teaching and learning depends on their successful use by teachers of any discipline. Similarly, Morgan (2003) asserted that regardless of the traditional modes of teaching and learning that are frequently adopted in LMSs by faculty, these systems indeed could facilitate another range of pedagogies, such as constructivist teaching methods, through the use of their advanced tools. However, in order to achieve such pedagogies, faculty have to possess adequate skills and knowledge of using these tools. Lane (2008) agreed with Morgan on the importance of acquiring sufficient knowledge of how to teach using online technology, suggesting that lack of such knowledge is a crucial reason for letting LMSs dictate what kind of teaching methods a teacher will use. These issues are significant to this study, as we will see later in the Findings section, as they indicate that there are other factors which may play an important role in how LMSs impact on teaching.

3.7 Use, Benefits, and Previous LMS Research

As has been mentioned, the adoption of LMSs in most higher education institutions has been associated with the growing promises of the capability of these systems to enhance pedagogy and their anticipated ability to change pedagogy to more student-centred approaches to learning. As a result, discovery of the pedagogical impacts and benefits of using LMSs depends to a great extent on real case studies and empirical research. Therefore, in this section, I attempt to analyse their impact based on the literature available in this area.

Research on using LMSs and their impact on teaching and learning reports both positive and negative findings. In addition, many researchers highlight that LMSs have not always been used by faculty members to their fullest capability (Dahlstrom et al, 2014; Morgan, 2003). In fact, faculty use LMSs in many ways, from a simple tool for communication and managing course materials and information to complex environments that enhance interactive teaching and learning (Chang, 2008; Heirdsfield et al., 2011; Klobas & McGill, 2010; Lonn & Teasley, 2009).

In the following sections, I first present literature that reveals how faculty adopt and use LMSs in their teaching and what features within these systems they prefer to use, and then I focus on research that describes how faculty view the impact of LMSs on teaching and learning.

3.7.1 The Utilisation of LMSs

A significant amount of research has addressed the widespread use of LMSs as tools for distributing learning materials and accessing course information, facilitating the management of courses, and communicating with students (Chang, 2008; Garrote, 2007; Holm, Röllinghoff, & Ninck, 2003; Klobas & McGill, 2010; Lonn & Teasley, 2009; Oftebro, 2004; Schoonenboom, 2014; Woods et al., 2004). For example, Woods et al. (2004) sought to

identify primary uses of Blackboard-LMS to support face-to-face teaching by examining responses from 862 academic staff at 38 institutions in the United States using a self-administered survey, and they found that the LMSs were predominantly used for administrative purposes and course management, such as posting lecture slides, materials, syllabi and grades, sending email, collecting and returning assignments, and administering exams.

However, few participants used Blackboard as a pedagogical tool for developing student critical thinking skills and promoting interactive teaching. Researchers also found that experience with the system was the main factor determining Blackboard usage; faculty who had more experience in LMS usage were more likely to use different features than were faculty with less experience. Accordingly, the study concluded that faculty should be given enough time to formulate best practices with this system. Similar results were found in a study by Oftebro (2004), which attempted to investigate the role of LMS – Blackboard in particular – on innovation in teaching activities at two Norwegian higher education institutions. A selection of teachers was interviewed about their perceptions of the profitability and compatibility of Blackboard. The study reported that teachers perceived and used Blackboard more as a tool for communication and distribution of information and course material than as a facilitator of new, innovative pedagogy. However, the researcher argued that innovation (introducing LMS) is an ongoing process that needs time, and teachers could expand their use of Blackboard and explore new teaching approaches when they get more familiar with the LMS. This kind of use is also confirmed by the report conducted by the Organization for Economic Co-operation and Development (OECD) in 2005, as cited in Chang (2008, p.21) which showed that “universities primarily use LMS for administrative purposes, and that LMS so far have had a limited impact on pedagogy.”

In another study, Chang (2008) explored the use of an LMS at Midwestern University and found that Blackboard was used initially for administrative purposes by most faculty members who adopted Blackboard in their teaching, while few of them took pedagogical issues into consideration. However, it is worth mentioning that in this study most faculty had not attended Blackboard training, and this might have affected their use of the system. Similarly, Lonn and Teasley (2009) conducted a quantitative study using both survey and user logs to investigate the use of an LMS as reported by faculty and students at Midwestern University to determine the actual use of this system and whether it supported traditional classroom teaching. The study concluded that the LMS was used mostly for document distribution and communication purposes rather than to support interactive teaching and learning practices. However, the researchers mentioned that as the use of LMS was not necessary for every course at this university, faculty may need time to understand the value of the interactive LMS features, and through continued use they may begin to use them to facilitate more active learning opportunities.

This finding is consistent with the results of Limniou and Smith (2010), who conducted a survey study with 33 faculty and 108 engineering students at the University of Manchester in the UK to learn how they responded to the use of LMSs in teaching and learning. The study revealed that faculty members' views were related to traditional teaching perspectives, which many engineering teachers usually follow, according to the researchers. Thus, the most valuable benefits of an LMS from the faculty's point of view was its ability to facilitate access to learning material, posting of announcements, and student assessment. By doing so, faculty can overcome the limitation of lecture time to deliver course information and help students improve their background knowledge. However, students stated that using a more interactive teaching approach with the use of collaboration tools and receiving individual feedback could resolve their difficulties regarding the courses. Supporting this point,

Almarashdeh, Sahari, Zin, & Alsmadi, (2010) pointed out that many teachers restrict themselves to distributing course materials (such as the syllabus, reading resources and lecture slides) and never use the LMS's interactive tools (discussion forum, chat, email); however, others may wish to use the discussion board to generate a discussion among students, but the lack of instant feedback has discouraged them from using these features.

Similarly, the results from a quantitative study by Schoonenboom (2014) on the use of an LMS for various teaching tasks with 180 faculty at a Dutch research university confirmed the findings in the literature and emphasised that most faculty members used LMS for distributing learning materials, whereas they used it less for effective communication, and even less as a tool for collaborative learning. The results also showed that the low intention to use an LMS for performing a specific task can be explained by (1) low task importance, (2) low LMS usefulness, and/or (3) low LMS ease of use. Another explanation was highlighted by Shelton (2014), who found that a number of faculty members often used 'core technologies' such as LMSs even though they did not think the technologies had a positive impact on their teaching because they felt they should use these systems for reasons other than enhancing their teaching. This issue is important in this study, as it highlights the role of faculty beliefs in determining the way an LMS is used in a course and how this impacts teaching.

In a recent study, O'Rourke et al., (2015) conducted a survey study with 219 faculty members to find out how they used the LMS as part of their teaching practice and what value it added to the teaching and learning process. The results of this study asserted what was found in previous research where the LMS was used to support conventional teaching methods, distribute course content and communicate with students rather than being used for providing more interactive activities and pedagogical innovation among faculty members. The Saudi context is no different from the foregoing, and this is evident from the results of a

study by Bousbahi and Alrazgan (2015), who surveyed 20 faculty members in the IT department in KSU to learn how they perceived an LMS as a teaching and a learning tool. Despite the fact that not all participants were users of the LMS, the results showed that when faculty used the LMS, they mainly did so to effectively manage their courses rather than for pedagogical reasons. This was evident from the frequent use of the document area, announcements and email tools.

It is clear that most of the studies presented above, except Oftebro's (2004), were quantitative studies that employed a questionnaire to find out the most frequently used and useful tools within LMSs from the perspective of the participants; this indicates a lack of qualitative studies on how faculty actually use LMSs in their teaching. In addition, all of the studies, despite differences in their contexts, have agreed that most faculty use LMSs to manage course materials and distribute information, and this reflects the traditional way of teaching. This kind of LMS use seem to reproduce existing teaching practices with no functional change, which minimizes the benefits of LMS and limits its impact to merely improving the efficiency of what faculty already do rather than promoting quality teaching. Most of these studies also show that faculty do not use the full potential of these systems to support interactive teaching and learning due to several reasons (Costen, 2009; Limniou & Smith, 2010; Lonn & Teasley, 2009; West et al., 2007). In most cases, it is argued that more interactive features of LMSs are used when teachers have become familiar and gained more experience with the system; thus faculty can expand their use of the LMS and explore more creative teaching approaches (Morgan, 2003; Oftebro, 2004; West et al., 2007; Woods et al., 2004).

Another argument was found in an investigation by Garrote (2007) about lecturers' use of and attitudes toward LMSs in a Swedish university. It was found that despite the fact that most lecturers used only parts of LMS tools to distribute documents and transfer information, the participants, even those who did not use other available tools within LMS, believed that LMS has a potential to benefit teaching and learning. The researcher argued that lecturers choose not to use the tools that enhance educational processes but use those which save their time and do not take too much effort. This is consistent with the results of Heaton-Shrestha et al. (2005), who noticed that staff prefer to keep face-to-face communication with students because using an LMS is more work. This suggests that there are other factors that may influence and shape the adoption and use of LMSs by faculty (see section 3.8 for more details); therefore, exploring the issues surrounding the use of LMS based on real world data is the focus of this research. Holm et al. (2003) highlight that the importance and usefulness of any LMS tools is determined by the way in which the tool is used in a specific course and whether it facilitates achieving the desirable course goals. Therefore, "instructors not only had to learn to use the interactive LMS tools, but also change their practice in order to facilitate students' learning with those tools" (Lonn & Teasley, 2009, p. 687).

3.7.2 The Impact of using LMS

Several studies have indicated that there is variation in the point of view of faculty members and students about the benefits of LMSs and their impact on pedagogical practices and student learning. For instance, Morgan (2003) surveyed 740 faculty across the 15 institutions of the University of Wisconsin system to investigate their use of LMSs. The findings illustrated that, while the primary use of LMSs was to facilitate administrative works, there was evidence that they had an impact on increasing interactions between academic staff and students and among students themselves. According to faculty, through the use of communication tools within LMS, the amount and quality of students' discussion increased

and thus led to better learning. Broad et al., (2004) argued that, with Web-based systems such as LMS, there is an opportunity to make the learning experience more student-learning-oriented. The findings from their study of the effectiveness of integrating an LMS in accounting students' learning supported their view that LMSs provide a range of pedagogical approaches that can be applicable in higher education. Similarly, Herse and Lee (2005) surveyed 113 optometry students at the University of New South Wales to compare their preferences for traditional lecture-based learning with their preferences when using a web-based learning tool (LMS). The results indicated that although the traditional teaching methods of lecturing was the preferred learning style, the communication aspect of LMS contributed to fostering learning communities, promoting the discussion of ideas and facilitating the self-reflection process, which may have encouraged student-based active learning methods.

In contrast, Heaton-Shrestha et al. (2005) interviewed 23 teaching staff at Kingston University in the UK to investigate the impact of using Blackboard-LMS on their teaching. This study is one of the few studies that have addressed the effectiveness and impact of using LMS on teaching practices qualitatively. Participants reported that the most valuable feature of LMS was the flexibility it affords for accessing different types of information and documents (e.g., learning resources, announcements, student coursework, module guides, and individual and group feedback to students). The LMS was not seen as a valuable tool for encouraging collaboration among students, because the discussion board and synchronous chat were the least-used tools within the system. In addition, it was found that the LMS had impacted teaching to varying degrees. The greatest impact was the rise of the overall workload of faculty and the increase in faculty-student interaction. Additionally, the LMS had to some extent altered the ways in which faculty assessed students and provided feedback; it led them to adopt alternative methods of assessment, such as peer assessment,

and increased the feedback provided to students. In contrast, the LMS did not affect overall teaching approaches, as the design of learning materials and the organization of courses remained generally unaffected by the introduction of the LMS.

On the contrary, the findings of a qualitative study by Harrington et al. (2006) with seven faculty members at a southeastern research university in the US, which sought to know how faculty use LMS tools to improve teaching and learning, revealed that participants expressed several benefits of using an LMS in teaching. Firstly, it helped faculty to reflect on their teaching practices and to know about the level of student engagement with course materials and with their peers through the use of discussion boards, email and student tracking tools. In addition, the LMS assisted faculty to organize their courses; thereby, they could cover more materials in less time, which faculty believed to be beneficial to themselves and students. The LMS also allowed class to become an ongoing phenomenon, which helped students to engage with the subject on a more prolonged level than before; thus the class time was expanded beyond the limitations of time and space. Finally, it helped faculty to promote communication between students and themselves, as well as among students.

Similarly, Polisca (2006) assessed the benefits of using WebCT-LMS to enhance independent language learning among students at Manchester University. The outcomes showed that students who used LMS not only developed better skills as language learners but also acquired more valuable transferable skills (e.g., using IT, studying skills, time management, interpersonal skills). The LMS stimulates students further to take responsibility for their own learning and learn to learn. Polisca stated that students, as they grow accustomed to LMS, become enthusiastic about using the system.

In the same vein, Leese (2009) carried out a project using LMS to encourage undergraduate students to be involved in collaborative working and out-of-class activities. The students' feedback revealed that they had gained various skills, including for participating in group work and using technology. In addition, using LMS enhanced their performance in general. As a tutor used LMS effectively to post weekly tasks, give timely feedback for each group, and make resources available on the LMS, students engaged more in collaborative learning to complete the activities. Leese argued that the LMS appeared to be the most suitable medium to facilitate the project. In another study, Costen (2009) explored to what extent using a discussion board in an LMS augmented students' learning in two core courses in a hospitality management programme in the US. The findings reflected many benefits of using LMS for the support of traditional teaching. First, the LMS produced a collaborative learning environment focused on learners instead of teachers. Second, it helped students develop a more thorough understanding of the course concepts by sharing each other's work experience through the discussion board. Moreover, it encouraged students to engage more frequently with the material posted on the LMS, where students were comfortable doing so. The study concluded that using some advanced tools such as a discussion board in LMSs can assist students' learning.

Heaton-Shrestha et al. (2009) interviewed tutors and students at Kingston University to investigate the impact of the use of Blackboard on teaching and learning. The findings indicated that students were more positive than tutors about the role of the LMS in improving their overall performance and learning experience. They reported that the LMS facilitated their access to resources, notes, tips and hints, allowed for further practice, informed them about what was going on and allowed them to track their own learning. The authors suggested that, in considering the teachers' views on the impact of LMS, it is important to note that the research was conducted at the very outset of the implementation of the LMS,

when teachers were less familiar with the system. This is consistent with a study by Limniou and Smith (2010), which showed that students had a more positive view of the use of Blackboard than teachers, as they preferred using collaborative tools and a discussion board to interact with their teacher and peers, whereas teachers used Blackboard more as a means of distributing learning materials, announcements and assessments. Both groups believed that the LMS could improve teaching and learning by creating a more motivating learning environment. The researchers noted that these differences in perspectives were related to familiarity with e-communication tools.

Moreover, Knight (2010) conducted a small-scale longitudinal study to evaluate the diverse learning strategies students used when accessing WebCT-LMS. It was found that the LMS was used as a learning tool by students who accessed LMS resources regularly through the module's duration, while the LMS was seen as a passive storage unit for resources among students who accessed LMS at the beginning or end of the module. Therefore, it can be argued that it is the responsibility of the teacher to adopt certain strategies that encourage students to access resources regularly and consistently during the lifetime of a module, and thus increase students' learning.

Findings from Heirdsfield et al.'s (2011) study support the view that an LMS could enhance creativity in teaching. In this study, 459 students and 43 faculty members at the Queensland University of Technology-Australia were surveyed, and two separate focus groups of students and faculty were conducted to investigate perceptions of both teaching and learning using Blackboard-LMS. The study showed that for the majority of students, the accessibility and flexibility associated with Blackboard was the most valuable feature of the LMS because it helped them to organize and manage their time and know their

responsibilities, making learning less daunting. Thus they were able to access course materials and know about the tasks and assignments required of them each week, as well as their due dates, which in turn increased the time they could spend studying rather than looking for these kinds of information. In addition, discussion boards and wikis were valued by around half of the students. They reported that the use of wikis developed their ability to work in teams, whereas the discussion that took place in online discussion boards contributed to their learning as they were able to think, reflect and seek assistance from their peers under the direction and stimulation from the teacher. On the other hand, faculty valued the same features of Blackboard that students did. The interactive tools of the LMS were perceived to support and extend the learning experience, although the participants indicated a need to learn how to use them. However, the use of the LMS did not change assessment methods, as they used LMS tools for formative rather than summative assessment. Thus, faculty replicated traditional assessment formats electronically.

An important result was found in an empirical study by McPhee and Söderström (2012), which was conducted to compare students' performance in two universities in Scotland and Sweden. The study showed that there were no differences in performance between campus students and distance students when both studied with access to an LMS. The researchers stated that the LMS was used effectively in this case, as both sets of students engaged in synchronous and asynchronous discussions with tutors and other students, accessed the same module syllabus and were assessed in the same manner. Lai and Savage (2013) investigated how LMSs support or hinder teaching and learning through in-depth interviews with seven faculty members and three focus groups of students at McMaster University, Canada. The findings indicated positive and negative aspects of using an LMS. First, the LMS did not encourage faculty-student contact, as both preferred face-to-face interaction during office

hours rather than using an LMS. In addition, neither faculty nor students thought of the LMS as an important tool for developing collaborative or active learning; therefore, faculty were rarely involved in online discussion. Students were less motivated to participate in discussion unless marks were allocated for participation, and many felt that online discussions lack privacy and transparency. However, both expressed the usefulness of the LMS to provide prompt feedback for students, which helped them to identify areas that they needed to improve. It also saved faculty time in terms of grading assignments and quizzes. Moreover, the LMS was useful for allowing faculty to spend more time teaching and working with students instead of taking care of administrative matters of their courses and that it enabled students to be prepared and to concentrate during lecture time because they had the materials in advance. Overall, the study concluded that both see the need for LMSs in their courses to support the teaching and learning process. In contrast, an extensive survey study by Educause (Dahlstrom et al., 2014) with 17,000 faculty and over 75,000 students in the US showed that although both groups of participants valued the LMS as an enhancement to their teaching and learning experience, few of them used the interactive features within the LMS or used the system to its full potential.

It can be observed from the studies reviewed that many examples of faculty using LMS for interactive teaching and learning emerge from case studies in which faculty are interested in using an LMS not only to increase interactive and collaborative learning among students but also to improve the student learning experience. In addition, research has suggested that although the primary use of LMSs is often to manage course materials, continued LMS use can influence teachers' practices as they learn how to efficiently guide student learning using the provided tools. Research also suggests that LMS use can help teachers change and adapt their teaching approaches to support interactive teaching and learning when they gain more

familiarity with the system. Such findings contradicted Lane's (2008) argument that the design of LMSs fosters the traditional modes of teaching and discourages teachers from using student-centred approaches to teaching. This suggests that the LMS remains a relative newcomer to the repertoire of pedagogical practice, and its position within Western universities remains somewhat ambivalent. Therefore, it seems that there is a need for further research in this area, which is the aim of this study.

3.8 Factors that Motivate Faculty to Adopt and use LMSs

According to Gautreau (2011), motivation is the key to a faculty decision of implementing and using technology in teaching. There has been a significant amount of research into the factors that encourage teachers to adopt and use educational technologies. Throughout the literature, different classifications have been put forward by researchers to categorise these factors. For example, Ely (1990, 1999), a well-known and highly cited researcher in the area of adoption and implementation of educational technologies, proposed eight main conditions that facilitate the adoption of educational technology innovations, which he specified as follows: dissatisfaction with the status quo; existence of knowledge and skills; availability of resources; availability of time; existence of rewards and incentives; participation in decision making; commitment from the institution; and leadership (Ely, 1990). In the same vein, Cox, Preston, and Cox (1999) used survey data from 72 teachers to identify the factors that motivate teachers to use ICT in teaching. These factors were making the lessons easier, more diverse, more interesting and enjoyable, and more motivating for the students. Additional factors were related to how the presentation of materials was improved, the fact that access to computers for personal use increased, teachers had greater control in the classroom, giving the teacher more prestige, and making the teacher's administration more efficient.

Another classification of these factors has been made by Mumtaz (2000), who carried out a wide-ranging review of previous research related to teachers' responses to ICT to examine what influenced teachers' use of ICT in schools. Her findings suggested that three overlapping factors affect teachers' use of ICT. These are the institution, the resources, and the teacher. Mumtaz (2000) argued that if teachers are to be successful in a technology-rich context, they require support as well as adequate facilities with associated training, supportive networks, and to be provided with sufficient time to familiarise themselves with ICT. However, despite the importance of these factors, teachers' beliefs about teaching and their technical skills had the greatest impact on their use of ICT in teaching and learning.

In further investigation of motivating factors, Drent and Meelissen (2008) distinguished between exogenous (nonmanipulative) factors and endogenous (manipulative) factors at either the school or the teacher level. In their study, Drent and Meelissen used explorative path analysis and case studies to examine factors that might influence the implementation of innovative use of ICT by Dutch teachers. The results showed several factors at the teacher level influencing the implementation of innovative ICT-use in education, such as teachers' ICT attitude, pedagogical approach, and personal entrepreneurship. School-level factors – such as accessibility to the ICT- infrastructure, support structure, work climate, and the quality of training of teachers – are necessary conditions for the use of ICT in general. However, school-level factors seem to be less important for innovative use of ICT. Drent and Meelissen (2008) asserted that the extent to which the implementation of ICT was successful depended on a dynamic process made up of a group of interrelated factors rather than the presence or absence of any particular factor.

Though these factors identified in the previous studies seem to be varied depending on the context and research strategies used, common motivation factors appeared in several studies,

such as the availability of resources, the quality of training and technical support, an existing system of rewards and incentives, personal motivation, and teachers' ICT attitude and skills. In addition, all of these studies asserted the necessity of providing facilitating conditions to ICT use by institution. However, most agree teacher-level factors seem to be more important in the actual use of ICT. Indeed, such studies provide a conceptual framework to understand factors that impact teacher usage of technology. For the purpose of this study, these factors are referred to as (a) teacher-related factors and (b) institution-related factors and are outlined below.

3.8.1 Teacher-Related Factors

Teacher related factors, are sometimes referred to as teacher characteristics, include teachers' attitudes towards technology, pedagogical beliefs, ICT competence, knowledge, and their personal initiative in using technology. Buabeng-Andoh (2012) pointed out that the uptake and use of technology is associated with teachers themselves rather than the existence of tools in the classroom. Therefore, understanding teacher-related factors that influence faculty decisions to adopt and use of the LMS into teaching is important for this study as it may clarify how faculty use the LMS in the classroom and explain its impact on teaching and learning.

3.8.1.1 Beliefs and attitude towards technology

According to Asiri et al. (2012), faculty attitude towards technology is a strong determinant for the successful implementation of the use of technology in a learning environment. The relationship between teachers' attitudes and beliefs towards technology and their actual use of these tools in teaching has been cited in numerous studies. It was found that teachers are more likely to integrate the technology into their teaching and learning practices if they have a positive attitude (Al-Gamdi & Samarji, 2016; Asiri et al., 2012; Ertmer & Ottenbreit-

Leftwich, 2010; Steel, 2009; Wozney, Venkatesh, & Abrami, 2006).

Panda and Mishra (2007) conducted a study into the attitudes of faculty members towards e-learning and to determine what encourages or hinders e-learning adoption and use in a Mega Open University in India. Data was collected from 78 faculty at the university using the survey method. The results suggested extensive use of computers by faculty led to positive attitudes towards e-learning, which in turn results in them being more prepared to adopt initiatives. Lyashenko and Malinina (2015) also conducted a survey study to understand teachers' experiences when using the LMS. The findings showed 60% of teachers have positive views and are keen to incorporate the LMS into teaching. The rest of the sample did not see the necessity in applying the LMS unless it is imposed from above. Some saw no benefit in the system or its use, as it takes the students' focus away from the subject matter. The study concluded general faculty attitude towards the LMS was positive and they considered it a valuable collaborative space, despite the difficulties they experienced when working in the LMS. In the Saudi context, Asiri et al. (2012) conducted a quantitative study with 454 faculty members in 11 public universities to determine their attitudes towards using Jusur³-LMS and to examine whether the LMS use is affected by faculty attitude, computer experience, and age. The results revealed a positive relationship between faculty members' attitudes towards the LMS and their utilization of the system, whereas computer experience and user age seemed to have less impact on the utilization of the LMS. The researchers found faculty members had positive attitudes towards the LMS, and they welcomed its introduction. It was considered by the majority as a viable teaching tool to enable them to achieve their learning goals. In addition, it was found the level of use was significantly affected by

³ An Arabic-LMS that has been developed by The National Center of e-Learning and Distance Learning, SA.

computer experience: faculty with fewer years of computer experience tended to use the LMS less frequently in their teaching practice and vice versa. However, findings also showed no significant relationship between user age and the LMS use.

A series of studies have been carried out to investigate factors that either directly or indirectly influence teachers' attitudes towards technology in general and the LMS in particular. Perceived usefulness, perceived ease of use (Davis, Bagozzi, & Warshaw, 1989), performance expectancy, effort expectancy, social influence (Venkatesh, Morris, Davis, & Davis, 2003), technology experience (Wozney et al., 2006; Panda & Mishra, 2007), self-efficacy⁴, enjoyment, learning goal orientation (Mun & Hwang, 2003), age, gender, and educational experience (Drent & Meelissen, 2008; Venkatesh et al., 2003) were among the factors reported in the literature. However, investigating the relationships between these variables and teachers' attitudes towards technology is out of the scope of this study.

3.8.1.2 Pedagogical beliefs

Another important factor that motivates teachers to adopt an educational technology in teaching is their pedagogical beliefs. According to Hammond (2011), the ways teachers use the technology is affected by their education beliefs. Ertmer and Ottenbreit-Leftwich (2010) argued it is probable that teachers with more constructivist pedagogical beliefs will use technology in the classroom to support a more student-centred approach than those who believe in a more traditional teacher-centred approach. Drent and Meelissen (2008) found that the innovative use of ICT by the teacher was influenced by having a student-centred pedagogical approach, a positive attitude towards computers, computer experience, and entrepreneurial initiatives by the teacher.

⁴ *Self-efficacy* is defined as a belief in one's own abilities to perform a given task (Mun & Hwang, 2003).

Furthermore, Lim and Chai (2008) conducted a qualitative study to explore how teachers' pedagogical beliefs impacted the implementation of computer-mediated learning. The findings indicated a significant variation in the level of online communication between students and those holding different beliefs. The study found whereas teachers with traditional pedagogical beliefs had little interaction with their students online, those with constructivist pedagogical beliefs interacted more online via, for example, online group discussions and allocation of research projects to complete using designated websites. Ertmer (2005) supports these findings and argues that teachers with teacher-centred beliefs are less likely to use technology for student-centred purposes. In other words, low-level technology use tends to be associated with teacher-centred practices, and high-level use tends to be associated with student-centred, or constructivist, practices (Becker, 1994, as cited in Ertmer, 2005). This point is important for this study, as it shows teachers' pedagogical beliefs may affect how a teacher uses the LMS and what tools have been chosen within the system.

3.8.1.3 ICT competence

Technological literacy is now considered an essential skill for contemporary teaching. This is reflected in evaluating the job performance of teachers, including the notion of using technology as one of its criteria. According to Buabeng-Andoh (2012) and Ertmer and Ottenbreit-Leftwich (2010), teachers' ICT competence is a major predictor of integrating ICT in teaching. In fact, teachers need to be comfortable with various technologies to use them in the classroom (Keengwe et al., 2008). Evidence suggests teachers who were reluctant to use technology in teaching and learning lacked technology knowledge and skills that would affect the adoption and use of such tools (Asiri et al., 2012; Fox & MacKeogh, 2003; Morgan, 2003; West et al., 2007). Ertmer and Ottenbreit-Leftwich (2010) argued lack of

knowledge and low confidence in using technology among teachers may discourage them to incorporate technology into teaching, even though teachers might believe such tools help them accomplish professional and/or personal tasks more efficiently. This view is supported by the findings of Wozney et al., (2006), which indicated that personal use of computers outside teaching activities was one of the greatest predictors of teacher use of technology in the classroom. Kidd (2010) also asserted the importance of possessing ICT skills for using technology in teaching; Kidd pointed out that while most teachers are familiar with technology, this does not necessarily equate to proficiency. Due to training that is either inadequate, too basic, too technical or too generic, most faculty members are unable to translate their personal ICT skills to teaching. In contrast, Drent and Meelissen (2008) found competence in ICT has limited impact on the innovative use of ICT. The authors argued that although ICT competence is necessary for the innovative use of ICT, other factors seem much more significant.

3.8.1.4 Knowledge

Another critical factor reported in literature to have significant impact on the use of ICT in the classroom is teacher knowledge. According to Keengwe, Onchwari, and Wachira (2008), to integrate technology into the classroom, teachers need to know the subject area, understand the learning process, and have some technological knowledge. Shelton (2014) highlighted the subject matter may determine how a lecturer will choose to teach it. Therefore, faculty need to have specific knowledge about how to use technology to support their subject. In this regard, Shulman (1986) described the knowledge that teachers need as knowledge about the subject (content knowledge [CK]), how to teach and manage a classroom (pedagogical knowledge [PK]), and pedagogy applicable to the teaching of specific content in specific contexts (pedagogical content knowledge [PCK]). However, Koehler and Mishra (2009)

argued, “teaching is a complicated practice that requires an interweaving of many kinds of specialized knowledge . . . teaching with technology is complicated further considering the challenges newer technologies present to teachers” (p. 61). Koehler and Mishra (2009) asserted that to effectively teach with technology, teachers need additional knowledge to the set Shulman (1986) described. This knowledge is referred to as technology, pedagogy, and content knowledge (TPACK). Ertmer and Ottenbreit-Leftwich (2010) emphasised the importance of possessing ICT skills by teachers; however, they argued knowing how to use technology is insufficient without the confidence to use that knowledge to support student learning. This suggests ICT skills and knowledge have a crucial role not only in faculty decision on the adoption of LMS in the classroom but on how teachers will use it in their teaching.

3.8.1.5 Personal interest and initiative

Several researchers asserted the importance of interest, curiosity, and personal entrepreneurship for the take-up and innovative use of ICT in an educational context. For instance, Rogers (2003) noted that when innovations require individuals to make a decision about whether to implement them, they are usually adopted more quickly than those adopted by an organisation. He highlighted that the diffusion of any innovation is subject to the type of adopters and innovation-decision process. Thus, Rogers categorises the adopters based on the time these individuals adopt an innovation. The categories are innovators, early adopters, early majority, late majority, and laggards. Heaton-Shrestha et al. (2005) found in their qualitative study that a minority of teaching staff mentioned personal interest and professional pride as playing a critical role in their use of the LMS. These teachers indicated they attempted to go beyond their comfort zone and challenged themselves by adopting the system. Thus, they perceived the use and integration of LMS into their teaching to be

beneficial as a learning experience for themselves as teachers and an opportunity for developing their skills. This result is consistent with the findings of the study by Drent and Meelissen (2008) that indicated personal entrepreneurs identified ways to try out ICT applications, regardless of the support offered by the school. The researchers argued personal entrepreneurs are highly motivated to develop their pedagogical skills through the initiatives they take to practise and improve their ICT knowledge outside regular class hours and by engagement in activities, which bring them into contact with other teachers or experts. These interactions are instrumental in helping teachers develop their use of ICT and bring about changes in their teaching practices. Similarly, Panda and Mishra (2007) found the top three motivators for e-learning were the personal interest in using technology; the intellectual challenge of online teaching; and sufficient provisions for technology infrastructure. However, Drent and Meelissen (2008) argued that though a positive attitude towards e-learning facilitates its adoption by individual teachers, there is a requirement to remove any barriers at the institutional level.

3.8.2 Institution-Related Factors

Several studies have reported the relationships between institutional facilities and teachers' reported use of technologies; for example, institutional support in terms of resources, infrastructure, policies, and strategies, as well as the quality of training and professional development programmes offered to teachers; the culture and expectations from administration, colleagues, and students; and the larger professional community were among the factors reported in literature to play a role in technology implementation in classrooms (Kidd, 2010; Shelton, 2014; Wozney et al., 2006). Therefore, it is important to understand the institutional factors that affect whether teachers will adopt and use ICT in their teaching. In the following sections, I discuss these factors in detail.

3.8.2.1 Institutional support

A major factor most frequently referred to in the literature that encourages faculty to adopt educational technologies for teaching and learning purposes is institutional support. This support includes clear policies that guide the use of technology for teaching and learning purposes and support the mission, vision, and goals of the institution: a system of rewards and incentives and the availability of resources and sufficient infrastructure. For example, Becker (1994) found collegiality among technology users, school support for computer activities, availability of resources for staff development, smaller class sizes, and more formal technology training were positive factors that encourage teachers to use technology in schools (as cited in Mumtaz, 2000). Kidd (2010) conducted a qualitative (auto-ethnographic) study to investigate the experiences of faculty from the University of Georgia who adopted ICT and to understand the factors that influenced their decisions during the process. The findings revealed that adopting ICT was considered stressful and difficult with little or no institution assistance; ill-defined policies regarding the use of ICT, the lack of technical support, the lack of incentives or rewards, and inadequate time and/or resources were the most significant challenges in adopting ICT among faculty members. Kidd (2010) suggested that institutional support should be provided, both by administrative teams and from other faculty to those required to adopt ICT for teaching and learning practices. In addition, offering a recognition programme would help motivate more faculty to use ICT in teaching.

Within e-learning literature, several research studies have shown the critical role of policies, incentives, and infrastructure for uptake and use of the LMSs. For instance, Maguire (2005) noticed that faculty attitude towards e-learning was affected by two main factors: intrinsic and extrinsic motivators. Intrinsic motivating factors included a personal motivation to use technology and teachers' satisfaction from teaching online, yet extrinsic motivators, or

institutional motivators, included recognition by peers, tenure, and promotion; role modelling; institution policy; infrastructure; and technical support. Maguire (2005) argued that when the necessary extrinsic and institutional factors are provided, intrinsic factors might be less influential due to social pressures from the institution, peers, students, and the community. Institutional pressures can be represented in mission statements, strategic plans, and technology augmentations, such as sufficient infrastructure. Panda and Mishra (2007) found the important motivators for e-learning were a teacher's personal interest in using technology, the intellectual challenge of online teaching, and the sufficient provision for technology infrastructure, whereas poor Internet access by students, lack of training on e-learning, and unclear institution policies on e-learning were the top three barriers of e-learning. Panda and Mishra claim that though a positive attitude towards e-learning enables individuals to take initiatives to adopt it, there is a requirement to remove any barriers at the institutional level. Buchanan, Sainter, & Saunders (2013) conducted a survey study with 114 academics at a large university in London which focused on the factors linked with teachers' use of learning technologies. Buchanan et al.'s findings indicated that institutional support such as the provision of resources and technical assistance, and the extent to which the tools were perceived as useful – along with faculty confidence in the use of Internet technology – were associated with use of online learning technology. Buchanan et al. argue that training faculty members is not enough to increase the use of learning technologies, but rather adequate investments must be made in the technical infrastructure and the support for those activities. Gautreau (2011) conducted a survey study with 42 faculty members at a public university in California. The findings revealed that the prominent factors influencing faculty decision to adopt LMS into their teaching practices were salary, responsibility, and achievement. Another important motivator was institution policy and administration. Gautreau (2011) suggested faculty need to be provided a monetary stipend to promote their

use of the LMS. In Qatar, data from Nasser, Cherif, and Romanowski's (2011) study suggested the majority of teachers welcomed the introduction and use of LMS, indicating the need for a system of rewards and incentives to encourage its successful implementation. In Saudi context, Bousbahi and Alrazgan (2015) surveyed 20 IT faculty members at KSU to investigate factors influencing them to accept the LMS using TAM. The results showed personal factors, such as motivation, concerns about workload, and the level of support received from the institution, play significant roles in the perception of the usefulness of the LMS.

3.8.2.2 Training and support

Several researchers indicated that teachers' professional development is another significant factor in successful integration of technology to teaching. It has been argued that training programmes can develop teachers' competences in ICT (Wozney et al., 2006), have an impact on their attitudes towards technology (Keengwe & Onchwari, 2008), and assist teachers in recognising how new technologies can support student learning (Dahlstrom et al., 2014; Keengwe & Onchwari, 2008; Kidd, 2010). According to Kidd (2010), it is more likely that faculty provided with practical guidance, examples, and follow-up training and support, in addition to curriculum integration strategies, would adopt the technology. In addition, data from EDUCAUSE by Dahlstrom et al. (2014) showed that the LMS-related training and support had a great influence on LMS integration. It was found that faculty were unsatisfied with the training and support they received; teachers also believed there was room for further improvement in the use of the LMS if they received more training to learn how to better use the LMS. The study suggested that faculty prefer to be able to choose training most appropriate for their needs from a range of options. Therefore, offering such opportunities may increase the use and satisfaction of the LMS (Dahlstrom et al., 2014). In this regard, Cox

et al. (1999) suggested that to convince teachers to use ICT in their teaching, training should focus on how to integrate ICT in pedagogical practices as well as the technical aspects of ICT.

Despite the importance of training and professional development programmes in the success of the adoption and the use of technology, a significant number of studies indicated the shortage of quality training programmes is one of the biggest difficulties facing teachers during their attempt to integrate and use technology. According to Koehler and Mishra (2009), many professional development programmes offer a generic approach to technology integration, which fails to take account of the diverse educational contexts in which teachers work. Kidd (2010) agreed with Koehler and Mishra (2009) and argued that to encourage faculty to adopt and use technology effectively in teaching, training related to ICT must be planned to help faculty accomplish their desired goals, to facilitate quality teaching, and to enhance student engagement in the learning process. Faculty not only need to be trained on how to use the ICT but need to know how to integrate ICT within curriculum and pedagogy, which is often non-existent because training tends to be delivered by information technology staff rather than by educational designers or faculty from the respective disciplines and areas, as argued by Kidd (2010). Similarly, Gautreau (2011) claimed faculty development programmes should focus on meeting the needs of faculty and their priorities. Teaching online using an LMS requires training that focuses on instructional design, effective online teaching strategies, and assessment options. In the same sense, Keengwe et al. (2008, p.563) suggested components of professional development programmes for effective use of technology should be a) pedagogically connected to students' learning; b) designed to offer curriculum-specific support to integrate specific applications; c) allocated sufficient time; d) sustained as an on-going process; e) associated with technical and administrative support; f) oriented towards being practical and hands-on technology sessions; g) associated by adequate

resources; h) tailored to all staff members, including newly appointed ones; i) have a built-in evaluation system; and j) continuously funded. This all suggests that if faculty are given quality training focused on the link between subject, pedagogy and technology, they may adopt and use the technology in their teaching..

3.8.2.3 Culture and Expectation Roles from Colleagues, Managers, and Wider Society

Within the literature, numerous research studies have highlighted the influence of social environment – sometimes referred to as social norms – in the adoption and use of technology for teaching and learning purposes. A social norm is defined as how much teachers feel most people important to them assume they should utilise a certain technology when teaching (Tarhini, Hone, & Liu, 2013; Venkatesh et al., 2003). According to Ertmer and Ottenbreit-Leftwich (2010), a teacher's use of ICT in the classroom is dependent on the mix of cultural, social, and organisational contexts in which the teacher lives and works. The teaching practices of any group of teachers in a particular discipline are guided by a set of norms that also identifies acceptable tools or resources that should be used. Thus, teachers adopt technology that seems compatible with the norms of a subject culture. In light of this, teachers could be motivated by peer pressure to try things they might otherwise have avoided, especially if they observed positive results.

In this regard, Heaton-Shrestha et al. (2005) found that competition among colleagues not only encouraged faculty to use the LMS but influenced their use of the system, arguing that people follow example, antagonism, and competence. The researchers also noticed technology champions played an essential role in promoting the use of the LMS, particularly among more recalcitrant teaching staff, as they gave faculty informal support through presentation from research projects regarding the use of the LMS within the university (on

using text or discussion boards or how students prefer to see information organized). This result is supported by Kidd's (2010) findings; Kidd asserted the crucial role of administration and colleagues on faculty decisions to use ICT. It was found that departmental and peer support, collaboration with academic colleagues using ICT-related innovation, and mentorship from other faculty who were skilled in ICT, were factors most likely to lead to ICT use. Nasser et al. (2011) agreed with Kidd's (2010) findings on the importance of a culture of technology in the workplace in order to promote its use in schools and argued that school vision, mission, and philosophy could impact the use of technology. Nasser et al.'s (2011) study found the champion teachers had served as role models and mentors in active use of the LMS in schools.

Shelton (2014) surveyed 795 university teachers in the United Kingdom to identify factors that influence and shape their use of technology. The findings showed expectations from colleagues, students, managers, and society were related to faculty reported use of ICT. It was found that students' expectations of using technology was a significant factor that led faculty to use technology in teaching, as mentioned by 76% of respondents. This was followed by colleagues' expectations with 70% and around 5% mentioned the influence of management. This expectation took the form of an explicit requirement (mandatory) or an implicit assumption ("the fashion or trend"). However, Shelton (2014) noticed for the minority of faculty, institutional rules or expectations required faculty to use a certain technology in ways with which they are not comfortable. Among these technologies were the LMSs; a number of teachers, despite using it frequently, did not think it had a positive impact on their teaching. This point has significance for this study, as it suggests if a teacher used the LMS as a response to administrative pressure without being convinced of its usefulness,

doing so would affect how the LMS would be used in class, as well as the choices of tools within the system.

3.8.2.4 Student Pressure

Several studies indicated that students' expectations, attitudes towards technology, and technological skills play a significant role in faculty decision to adopt and use technology and use the LMS in particular, (Dahlstrom et al., 2014; Heaton-Shrestha et al., 2005; Nasser et al., 2011). Harrington, Staffo, and Wright (2006) interviewed 7 faculty members at a major south eastern research university in the United States (U.S.) to understand what motivated faculty to use an LMS. The findings revealed several reasons why faculty were encouraged to adopt the LMS. Among these reasons was the pressure from students to have course content online. Faculty, also motivated by their desire to expand class time (24/7 access), covered more material in a single term, which proved beneficial to both faculty and students, and increased contact and communication with and among the students. Another important finding was that faculty considered institutional support of the LMS as critical in faculty use of the system. The teachers agreed that providing adequate training and support was sufficient to keep them involved in the LMS.

Similarly, the findings of Heaton-Shrestha et al. (2005) highlighted the role of pressure from below in the uptake and the use of LMS in teaching; the study indicated that pressure from students was one of the main factors to encourage the LMS use by faculty, as students expected they would be able to access modules via Blackboard. This expectation from students led faculty to use the LMS when teaching. Concomitant with these findings are those from the U.S., which revealed that faculty interest in using the LMS came more from bottom-up pressure – from students – than from above (top-down). Students wanted materials placed online, and that encouraged faculty to meet student needs by adopting the LMS (Harrington,

Staffo, & Wright, 2006). This differs from Morgan's (2003) findings, where only few faculty reported they began using the LMS to meet student request of LMS use.

In spite of students' expectations of LMS use, this demand did not necessarily transform to higher engagement levels in online learning (LMS activities), as highlighted by many researchers. For example, Herse and Lee (2005) noted that students preferred to be passive learners, because that is what they are familiar with. They also might be trained to learn this way as a consequence of a culture in high school, which is results-driven, and the requirement to achieve outstanding Higher School Certificate and University Admissions Index scores. The findings of a quantitative and qualitative study conducted by Nasser et al. (2011) to explore the factors that impact student use of the LMS in Qatar revealed a low level of student use of the LMS, which is due to several reasons. First, the lack of student interest in using the LMS is because students felt it had few features to make it more attractive or more useful than other web applications. Second is the lack of student skills needed to utilise the LMS, as the use of LMS requires more than a set of basic ICT skills. It requires users to learn some new concepts and terms that may be difficult to absorb. Another reason was associated with teachers themselves. Most teachers never asked or required students to use the system, due to the enormous amount of work involved and lack of time available to learn about the LMS. Finally, some religious and cultural reservations in local society regarding such media and Internet access discouraged student use of the LMS.

Selwyn (2009) pointed out that, in reality, the use of technology at home or at school by many young people is still rather less extensive than suggested by digital native rhetoric. Dahlstrom et al., (2014) argued that despite the durability of digital literacy students may have, this does not necessarily mean that their IT skills and experience are transferable to specific technology services and applications made available to them in education, such as the LMS; consequently, it is important that institutions do not forget about student needs

when considering training provision or user support. According to Andersen (2007), using collaborative learning applications make students more responsible for contributing to knowledge production, which many students are not enthusiastic about. This can be an obstacle to the adoption and use of such tools. Schroeder et al. (2010) pointed out that students often complained when asked to use the collaboration tools in their learning, citing workload issues as a barrier to e-learning. This suggests that student attitudes and skills are a critical factor for influencing faculty to adopt and use the LMS in teaching. This issue is important for this study, as it may determine how faculty may use the LMS in classrooms.

3.9 Theorising the Adoption and Use of LMSs

Different theories and models have been developed to address technology acceptance, diffusion, adoption, and use (e.g., Davis, Bagozzi, & Warshaw, 1989; Puentedura, 2009; Rogers, 2003). These models have been used in the literature extensively by many researchers as a framework for their studies. For example, studies by Bart et al. (2016), Buchanan et al. (2013), Tarhini, Hone, and Liu (2013), and Yi and Hwang (2003) used Technology Acceptance Model to explain and predict a user acceptance or rejection of using technology; Bennett & Bennett (2003), Kirkup and Kirkwood (2005), and West et al. (2007) adopted the diffusion of innovation theory to understand and explain the adoption of ICT in some educational settings; Aiyegbayo (2015) and Cavanaugh, Hargis, Kamali, and Soto (2013) drew upon the Substitution, Augmentation, Modification, and Redefinition Model to analyse teachers' use of technology.

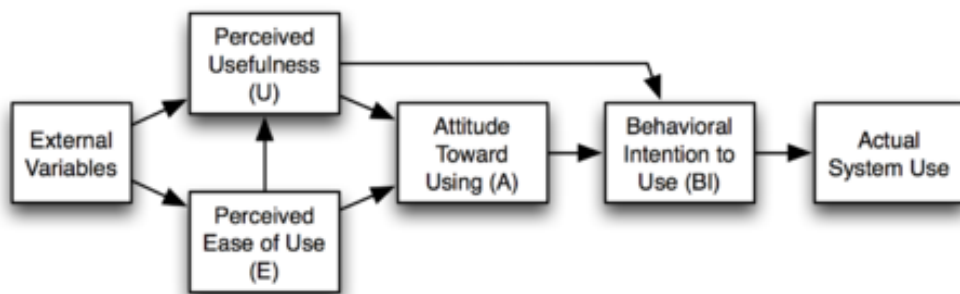
As my goal in this study was to explore the factors that encourage faculty to adopt the LMS, the difficulties they face, and how they use the system for teaching and learning purposes, these models help to understand the complexity and constraints of introducing and using technologies – particularly the LMS – by faculty members. However, they are limited to

explain how academics use technology. Therefore, I have referred to them only when they appeared relevant to my data. In the following section, I present an overview of the most relevant models.

3.9.1 Technology Acceptance Model

The Technology Acceptance Model (TAM) is a well-known and widely used model to predict user willingness to adopt a new technology and understand factors affect the use of technology (in this context, LMS). The model was developed by Davis, Bagozzi, and Warshaw (1989) taking the theory of planned behaviour theory (Ajzen & Fishbein, 1980) as their starting point. It was developed originally for the Information Technology (IT) domain but has often also been applied to educational settings. The main idea of the model is that user intention to make use of technology is directly affected by his/her attitude toward it, which in turn is influenced by two main factors: perceived usefulness and perceived ease of use (Davis et al., 1989) as shown in Figure (3). *Perceived usefulness* is defined as the belief that using a new technology would allow for performing job better, whereas, *perceived ease of use* refers to the belief that using a new technology would not require any effort (Davis et al., 1989). Thus, according to this model, teachers are more likely to adopt an LMS if they believe it will enhance the quality of teaching and assist them in performing their work better, as well as ease of use.

Figure (3): The Technology Acceptance Model, source: (Davis et al., 1989)



However, TAM is criticised for looking at the teacher as an individual and less at the context in which the teacher works. It assumes that the impact of other external factors on an individual's behaviour is fully mediated by these two beliefs of usefulness and ease of use; thus, TAM does not explicitly consider facilitating conditions, which were, in other studies and models, found to play a crucial role in the uptake of technology among faculty (Buchanan et al., 2013). Therefore, this model has been modified and extended by many researchers by including other personal and organizational factors to better explain user behaviour in regards to adopt certain technology. Despite all of these efforts, the entire family of these models are complex and there is no agreement on a comprehensive model of the factors influencing the adoption of technology; therefore, TAM remains a useful tool.

3.9.2 The Diffusion of Innovation Theory

The diffusion of innovation⁵ theory (Rogers, 2003) is a collection of theories adopted by several educational research studies to understand the use and uptake of ICT in individual and institutional levels (in studies by Bennett & Bennett, 2003; Kirkup & Kirkwood, 2005; West et al., 2007). Its main idea is that “an innovation is communicated through certain channels over time among the members of a social system” (Rogers, 2003, p. 5). This theory emphasises that four factors influence innovation diffusion: the innovation itself; a communication channel that passes on the innovation between individuals; the time needed for the innovation to be passed on; and the social structure of a society. It also includes other sub-theories, such as the innovation decision process, innovation attributes, individual innovativeness, and the rate of adoption as explained below.

⁵Innovation refers to any idea or object new to an individual or social system; in this research, the word *innovation* is used as a synonym to *technology*.

The innovation decision process theory provides a model, which allows us to understand the adoption decision process from an individual perspective (West et al., 2007). In this theory, Rogers (2003) stresses the adoption of an innovation as a process, not a single step. The steps are 1) the individual gains a basic understanding of the innovation (Knowledge stage), 2) the individual forms either a positive or negative view in regards to the innovation (Persuasion stage), 3) the individual makes a decision to adopt the innovation or not (Decision stage), 4) the individual actually uses the innovation (Implementation stage), and 5) the individual evaluates the decision to continue using the innovation (Confirmation stage). This model focuses more on adopters than non-adopters; however, it cannot explain how adopters implement the innovation.

Attributes of innovations, sometimes is referred to as *perceptions of innovation characteristics*, comprise another framework, which is used to explain the factors influencing the probability that faculty will adopt a new technology in teaching (Bennett & Bennett, 2003). Rogers (2003) identifies five main attributes of the technology affecting its adoption: (1) relative advantage (the degree of enhancement a technology offers in comparison to previous tools for performing the same task); (2) compatibility (the level to which a technology is perceived as consistent with the current values, needs, and past experiences); (3) complexity (the degree of perceived difficulty in learning and using technology); (4) trialability (the degree to which a technology can be tried and experimented prior the actual use); and (5) observability (the degree to which the result of adopting the technology is visible to others). According to Bennett and Bennett (2003), all of these technology variables influence a faculty member's response to such technologies.

In individual innovativeness theory, Rogers (2003) categorizes the adopters of innovation into five categories: innovators, early adopters, early majority, late majority, and laggards.

This classification of individuals was based on the individuals' own characteristics, which have a bearing on how ready individuals are to adopt a particular innovation (Lingard, 2007). The rate of adoption theory, however, has concentrated on the diffusion of an innovation against time within organizations, which is out of the scope of this study.

3.9.3 The Substitution, Augmentation, Modification, and Redefinition Model

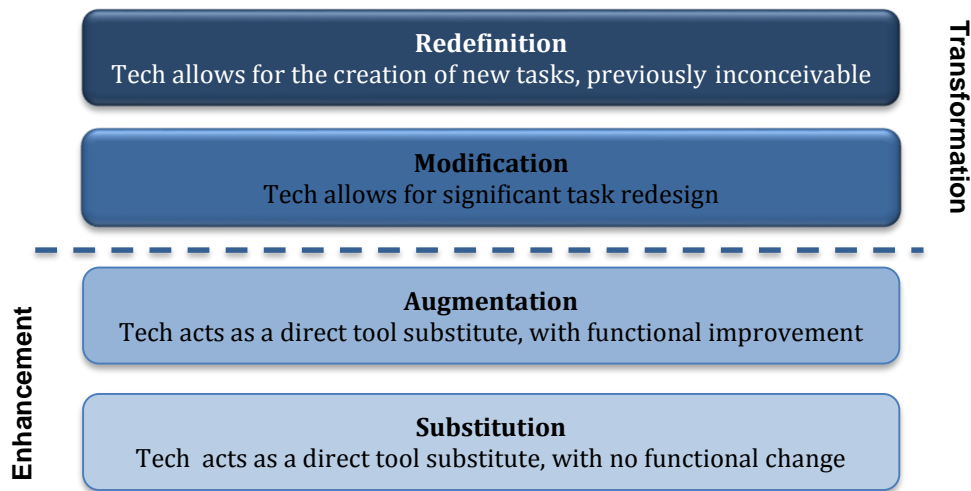
The models and theories presented above helped me to understand factors that influence faculty in adopting the LMS into teaching; however, they have little to say about how the system is being used by faculty. The Substitution, Augmentation, Modification, and Redefinition (SAMR) model (proposed by Puentedura, 2009) provides a framework for understanding how faculty integrate and progress in their use of technology for teaching and learning purposes. In addition, the SAMR model offers a way to analyse how technology might impact teaching and learning. This framework has been used in a number of studies within the context of higher education to analyse academics' use of technology (tablet devices) (Aiyegbayo, 2015; Cavanaugh, Hargis, Kamali, & Soto, 2013) and to explore the impact of technology (iPads) on pedagogy (Geer et al., 2015). However, to the researcher's knowledge, this model has not been applied in any educational research to evaluate the use of an LMS among faculty members. As this research seeks to explore how faculty use Blackboard-LMS for educational purposes and to understand faculty perspective on its impact on teaching and learning practices, the SAMR model was seen as an appropriate model.

The framework is divided into four levels of technology use for teaching and learning: substitution, augmentation, modification, and redefinition (see Figure 4). Substitution describes the use of technology to substitute existing practices with no functional change. At

this level, technology is used to perform the same task that could be accomplished without using it. This has often been termed, rather disparagingly as ‘old wine in new bottles’ (Lankshear and Knobel 2006). Augmentation occurs when technology provides some sort of functional improvement over the practice being replaced. The modification level is the first step beyond the traditional goings-on of the classroom and involves transforming the classroom, with technology being used to redesign a task in a way that isn’t possible without technology. Finally, redefinition involves introducing a completely new task that would not be possible without the technology. It is worth mentioning that at this level, students are involved in the creation of new tasks.

According to the SAMR model, the substitution and augmentation levels are classified as enhancement levels, while transformation level refers to the modification and redefinition levels. At the enhancement level, few changes will have occurred in terms of what teachers had previously done, but the teachers may be doing it more efficiently (Burden, Hopkins, Male, Martin, & Trala, 2012). Teachers at the transformation level, on the other hand, tend to create constructivist-learning opportunities, as they redesign and modify activities that previously would not have been possible or that were even inconceivable without the new technology. This does not mean there are no benefits at the enhancement level, but at this stage, the technology does not transform the existing conventional teaching and learning practices or lead to more student-centred learning. Thus, the important concept at the transformation level is the degree of student engagement and therefore affect on learning.

Figure (4): The SAMR Model (source: Puentedura, 2009, p.3).



3.10 Barriers to Adoption and Use of LMSs

In general, teaching staff are not resistant to ICTs; they are normally receptive to any tools and systems that support and improve their work (Bingimlas, 2009; Kirkup & Kirkwood, 2005). However, within any institution, it is expected that there are several obstacles and difficulties that faculty are likely to encounter while integrating new technology, which may limit their use of technology for teaching purposes. The common barriers to technology integration have been well documented in the existing literature (Bonk and Graham, 2006; Ertmer, 1999; Heaton-Shrestha et al., 2005; Kopcha, 2012; Lai and Savage, 2013; Morgan, 2003; West et al., 2007). According to Ertmer (1999), teachers' efforts to integrate technology into their classrooms are often limited by both external (first-order) and internal (second-order) barriers. External barriers refer to missing or inadequate resources, training, technical support, and time provided to teachers that relate to the context or an institutional level, while internal barriers embedded in teachers' beliefs about teaching and learning include teacher and student roles and assessment practices that relate to a personal level. Kopcha (2012) summarised barriers to technology integration in five categories after thoroughly reviewing the literature. These are: access, vision, professional development,

time, and beliefs. He pointed out that lack of access to technology including its availability without functioning properly, teachers with unclear administrative vision for using technology for teaching, teachers' beliefs about the usefulness of and difficulty associated with integrating technology, time required to learn and plan to use it, and/or training which does not relate to actual classroom practice or focuses simply on technical skills can be barriers to technology integration.

In the LMS context, Jackson and Fearon (2014), after an initial trawl for relevant literature, summarised the key challenges to LMS adoption into several categories: teacher-centred, student-related, technical, and institutional barriers (see Table 2: Barriers to LMS adoption). In the following section, I discuss these challenges that faculty may encounter while adopting and using LMSs in more detail.

Table (2): Barriers to LMS adoption (Source, Jackson and Fearon, 2014)

Barrier	Challenge	Citation
Teacher-centred	Not possessing the necessary technological skills/knowledge	Bhati, Mercer, Rankin & Thomas, 2009; Konstantinidis, Tsiatsos & Pomportsis, 2009; Lingard, 2007; O'Donoghue, 2006; Sinayigaye, 2010.
	Time/workload constraints	Corrall & Keates, 2011; Heaton-Shrestha, Edirisingha, Burke & Linsey, 2005; Kirkup & Kirkwood, 2005; Mihhailova, 2006.
	Lack of interest	Corrall & Keates, 2011; Keller, 2006; Mihhailova, 2006; Lingard, 2007.
	Concerns that technology undermines the quality of teaching	Heaton-Shrestha, Edirisingha, Burke & Linsey, 2005; Mihhailova, 2006; Sinayigaye, 2010.
Technical-related	Interoperability issues	Black, 2008; Corrall & Keates, 2011; Harris, 2005; Saumure & Shiri, 2006; Voss & Procter, 2009.
	Reliability of technology	Gray, Plaice & Hadley, 2009; Sidorko, 2009; Warburton, 2009.
	Problems with systems access-authentication, firewall and security issues	Corrall & Keates, 2011; Donaldson, 2010; Greasley, Bennett & Greasley, 2004; Mihhailova 2006; Virkus, Alemu, Demissie, Kokolari, Estrada & Yadav, 2009.
Student-related	Lack of personal interaction with the tutor	Corrall & Keates, 2011; Mihhailova, 2006; Sinayigaye, 2010.
	Information overload	McConnell, 2006.
Institutional	Lack of funding/resource constraints	Bhati, Mercer, Rankin & Thomas, 2009; Lingard, 2007; Virkus, Alemu, Demissie, Kokolari, Estrada & Yadav, 2009.
	Culture and political issues—interdepartmental rivalry, competition, territoriality, resistance to change	Black, 2008; Corrall & Keates, 2011; Hall & Zentgraf, 2010.
Managerial	Poor change management	Jackson, 2011; Pretorius, 2010; Virkus, Alemu, Demissie, Kokolari, Estrada & Yadav, 2009.
	Lack of user involvement/communication	Jackson & Philip, 2010; Pretorius, 2010; Voss & Procter, 2009.
	Unplanned/uncoordinated implementation strategies by management and policy makers	Bhati, Mercer, Rankin & Thomas, 2009; Lingard, 2007; Pretorius, 2010.
	Issues of training	Corrall & Keates, 2011.

3.10.1 Time and Workload Issues

Several studies have indicated that time and workload issues are still key barriers to LMS adoption and use by faculty members. For instance, Kidd (2010) found that with so many responsibilities and obligations on university teachers, such as teaching, research, professional development, accreditation assessments, service commitments, and meetings, faculty had no capacity to take on additional work so adopting new technologies was seen as unimportant. Another research from Kingston University (Heaton-Shrestha et al., 2005) indicated that among the factors that discourage faculty from using the LMS were its impact on overall workloads and the considerable amount of time and effort it requires for setting up course materials and/or redesigning existing ones, managing discussion boards, responding to the increased number of student emails, and giving electronic feedback to students. All of these activities take too much time and add to their workloads. O'Neill, Singh, O'Donoghue, and Cope (2004) asserted this notion, arguing that teachers spent twice as much time managing e-learning courses as they did on face-to-face learning activities. Similarly, West et al. (2007) reported that learning how to use Blackboard takes time and effort, particularly in the case of teachers with little experience with technology, which may have a significant impact on a teacher's decision whether or not to use the tool. Besides that, the LMS requires a considerable amount of time and energy for setting up a course. Thus, teachers may resist using tech as it takes time away from their actual teaching and other responsibilities that they care more about (Keengwe et al., 2008).

In contrast, there was a perception among teaching staff that Blackboard saves time in the long run after the initial investment in setting up the course (West et al., 2007). This view of LMSs as a means to save faculty time is supported in the results from Morgan's (2003) study, which revealed that although many faculty members considered LMS time consuming, other

members found it time saving, particularly in large classes, to cut down their student requests since all course documents are available in the LMS and students can get their grades through it. Thus, faculty have fewer students coming to their office and staying after class. Similarly, Lai and Savage's (2013) study, which consisted of seven in-depth interviews with leading teaching staff at McMaster University in Canada, found that LMS allows faculty to devote their time to work with students and ensure that class time is used more productively rather than in doing routine tasks. As lecture slides were posted in advance, faculty were able to foster more rich and valuable discussions without the anxiety of having to get through all the slides. In addition, online tests reduced faculty workload via automatic grading and immediate assessment of students, which gave faculty more time to provide students with essential feedback to enhance learning. Thus, LMSs improve time spent on tasks as faculty can save hours due to not having to perform administrative tasks. Furthermore, Bair and Bair (2011) pointed out that technology might reduce time spent on routine tasks such as collecting and returning assignments and enable teachers to do so electronically. However, it demands more effort in terms of providing students with electronic feedback because they have to download, add comments, track changes, and then upload papers online (Bair & Bair, 2011, p. 10). The findings of the previous research reflect a conflicting view regarding the time and effort that LMS will require to perform teaching duties and to what extent it might affect the decision the teacher makes about using the tool. These issues are relevant to this study because it shows that the impact of the LMS on teaching and learning can vary based on faculty technological skills and the differences in their classroom size.

3.10.2 Faculty Professional Development, Training, and Support

Another barrier to the use of ICT, including an LMS, that regularly comes up in the literature is the lack of effective training and professional development programmes. The results of Pelgrum's (2001) study revealed that one of the barriers to use of ICT was lack of training opportunities for teachers in the use of ICTs in a classroom environment. Several studies have suggested that training courses could be an effective way to overcome lack of technical skills among faculty and increase their adoption of LMSs. However, they indicated that aside from the need for providing teachers with specific ICT skills, pedagogical training is an important issue (Blin and Munro, 2008; Ertmer, 1999; Georgina & Olsen, 2008). For example, Morgan (2003) argued that persuading faculty to adopt an LMS requires extensive and ongoing training in the mechanics of their use for pedagogical effectiveness. In this respect, Blin and Munro (2008) conducted a survey study involving 135 academic staff at Dublin City University to explore why LMS was not fully adopted. Their findings showed that the limited uptake of more advanced functionalities in the LMS was due to the complexity of the interface as well as a lack of knowledge and necessary skills amongst the faculty, which were not properly addressed by the training and development programme offered by the university. One reason for this situation was a discrepancy between the objectives of the training sessions and the actual needs of lecturers; in addition tool-related competencies needed to be supplemented with task-related competencies in order to make the training effective.

Similarly, Georgina and Olsen (2008) pointed out that attending training workshops do not necessarily improve the technology integration skills of teachers because trainers may have different goals than teachers. They may focus on technology rather than pedagogy. According to McKenny (2005), most professional development models are based on a

behaviourist perspective and have not adopted constructivist technology integration methods. In this model, there is limited or no consideration given to demonstrating how the innovation could be implemented in the classroom.

In this regard, Ertmer (1999) argued that the effective implementation of ICT requires strategies that go beyond providing traditional training to acquire the basic technical skills. Alternatively, significant changes in professional development are required. The focus of the training should not be on the technology per se, but on how to make effective use of the technology to provide, improve, and/or assess student learning. Thus, rather than focusing on developing specific skills to use the technology, it might be more effective to link the professional development to offering a vision of how the technology can support teaching and learning.

3.10.3 Student Resistance

Another major challenge with the integration and use of LMS by faculty is related to students themselves. For example, Bonk and Graham (2006) pointed out that the lack of student involvement and participation in online discussions represents a challenge for blended learning adopters (LMS users in this case) unless it is graded. Wishart and Guy (2009) supported the point of assessing student participation in online discussions because it is a recognition of the commitment of students, which in turn may motivate students to interact more. Furthermore, Docan (2006) suggested that in learning environments that stress performance, extrinsic reinforcers, such as grades, increase the probability of student involvement in uninteresting tasks. Students would probably consider a task worth pursuing if teachers awarded marks for active participation.

On the other hand, Hughes (2005) highlighted that some students find it difficult to carry out technology-based tasks due to having limited prior experience and not have acquired the necessary skills needed to complete online tasks (as cited in Leese, 2009). In this regard, a large-scale quantitative and qualitative study by EDUCAUSE Center for Applied Research (ECAR) at the University of Wisconsin System (Morgan, 2003) found that students were far from keen about LMS and many faculty were dissuaded from using the LMS due to some problems associated with their students. These problems fell into four areas: unreliable access to computers or Internet service at home that made it difficult for students to complete tasks using an LMS and lack of technological skills and proficiency. Although students have much experience using digital technology in their everyday lives, these skills do not necessarily translate into those needed to use an LMS comfortably and effectively; students who had access to the course materials in the LMS tended not to pay as much attention in class; and student complaints about LMS that reflected their discomfort with having to access content online when they would rather have printed handouts. Thus, such issues discouraged faculty from using LMS in teaching. In the same vein, Nasser et al., (2011) pointed out that many students might consider the LMS to be boring due to the widespread use of more attractive technologies particularly mobile devices such as tablets, and smart phones. Thus, in order to engage students in future, LMS will probably need to be developed to compete with more popular technologies. Similarly, one of the key findings of more recent research by EDUCAUSE (Dahlstrom et al., 2014) was that students are still unwilling to use LMS. The researchers recommended mobile access for the LMS to overcome student resistance:

Mobile devices have become ubiquitous in the hands of students, and mobile access to student-facing enterprise systems such as the LMS are becoming more common and increasingly important. Tomorrow's digital learning environments will meet demands for anytime, anywhere access to course materials and 24/7 engagement by being mobile optimized and mobile friendly. (Dahlstrom et al., 2014, p. 23)

3.10.4 Technology-Related Factors

Faculty technical skills and technology-related factors such as the system's design, complexity, reliability, and technical support are other key issues identified as limitations to using the LMS by faculty. Bradford et al. (2007) pointed out that the Blackboard system is harder to learn than expected. West et al. (2007) supported this view, arguing that as with all new technologies or practices, it takes time and effort to learn how to use an LMS. Their findings show that faculty found it difficult to use LMS effectively to achieve their teaching objectives and to successfully integrate LMS features into their practice. Similarly, Morgan's (2003) study indicated that the LMS was too difficult to use effectively by many faculty, and their complaints were associated with a few specific tools within the system, particularly the gradebook, discussion board, and quiz tools. In addition, the findings revealed that periodic downtime, outages, and slow speed of the system dissuaded some faculty from relying on the LMS.

In this regard, the findings of a survey study carried out by Butler and Sellbom (2002) which involved 125 participants at Ball State University indicated that from a faculty perspective, reliability of technology was the most significant factor that influences their adoption and use of technology for teaching, followed by the time required to learn how to use new technologies. Butler and Sellbom (2002) argued that despite the fact that the academic culture tends to believe that training can resolve learning problems, which undoubtedly is true for some faculty and for some complex systems, faculty sometimes have a hard time learning to use things due to complex design and/or simply because things do not work the way people expect. Therefore, regardless of the training provided, it is important to provide reliable technical support services to assist faculty to solve technical problems. In addition, poor and inadequate support in terms of not correcting problems in a timely fashion or taking problems

seriously by support staff can affect faculty satisfaction with technology and limit their use (Baron & Graham, 2007; Butler & Sellbom, 2002).

West et al. (2007) and Fox and MacKeogh (2003) pointed out that faculty who had high proficiency, previous experience with technology, and an interest in Blackboard seemed to have little difficulty with learning the system, unlike those who needed time and support to learn how to use it. This view is supported by the findings of a quantitative study conducted with 454 faculty members in Saudi universities by Asiri et al. (2012), who found that faculty with many years of computer experience were more likely to integrate LMS in their teaching practice than those with less experience. Thus, it is argued that teachers make limited use of LMSs because many of them do not have the motivation, skills, or time to become experts of online systems (Morgan, 2003; West et al., 2007). These findings indicate that LMSs are not easy to use since they contain some tools which are complex to learn; this may limit teachers' choices of the tools available within the system and thereby might influence how they integrate and use an LMS.

3.10.5 Faculty Rewards, Incentives, and Administrative Support

Poor rewards, few incentives, and lack of administrative support are other obstacles to increasing the use of LMSs among faculty. For instance, the findings of Ensminger and Surry's (2002) study, which investigated faculty perceptions of factors that facilitate the implementation of online programs at the University of South Alabama, revealed that faculty rated monetary support or lack of it as one of the top five factors influencing faculty participation in instructional technologies. In contrast, D'silva (2005) found that rewards and incentives such as merit pay, stipend, and salary increases are not factors that influence faculty in the uptake of LMS, although faculty believe that rewards and incentives, if offered, might promote adoption. He argued that the faculty in his study were from an institution that

gives importance to research over teaching. According to Newland et al. (2006), 'It is still the case that in the majority of institutions, recognition and promotion is linked to research activity rather than innovative teaching developments' (p. 40).

Furthermore, Bass (2000) points out that faculty are often reluctant to restructure their courses in light of new technologies because of lack of recognition of time and effort spent in applying these tools in teaching. Faculty are sceptical that their time and effort will be rewarded, and there is little pedagogical guidance for integrating these technologies into everyday instruction (Bass, 2000, as cited in Lonn, Teasley, & Hemphill, 2007). This suggests that applying LMS tools in teaching requires a great deal of time and effort in preparing and delivering such courses, so it is important to acknowledge such time spent during tenure and salary increases.

3.10.6 Other Factors

The literature also shows that teachers' fear of losing their authority due to the introduction of new technology and their desire to maintain power and control is a significant factor in the uptake and use of LMSs. For example, Shelton (2014) points out that technology has changed the role of a teacher from that of 'knowledge gatekeeper' to a facilitator of student learning. This implies a shift in teaching from teacher-centred to student-centred approaches of learning. However, this view of learning might not reflect the role that they wish to take in their teaching. Thereby, they may see technology as a threat to their academic identity and to their authority in the classroom. This view is supported by the findings from Chao-Hsiu's (2008) study which indicated that teachers used presentation software to present course content because it enabled them to maintain control and improve classroom management. Sellinger (2001) also points out that the shift in power from the teacher to the student when

students engage in online learning is something not all teachers are comfortable doing as teachers do not have the same opportunity to follow and control student work as in face-to-face settings. This suggests that a teacher's view about how much control over the learning process is necessary may influence how, and to what extent, they will integrate and use an LMS.

3.11 Summary

This chapter presents and discusses literature that is related to my study. It begins by shedding light on the justifications for the use of technology such as LMSs in education, with a description of these systems and their potential. This is followed by a discussion of the relationship between the design of LMSs and learning theories. Later, different uses of LMSs in classrooms are discussed and the key issues affecting their adoption and use are outlined.

The literature reviewed shows diversity in the results of previous studies and contradictions in their findings. This means that there is no clear picture regarding LMSs; while some studies have suggested that an LMS was a useful educational tool for some teachers to be innovative and allowed students to be agents of their own learning and collaborate with others, other studies revealed that LMS did not offer any particular benefits.

It can be concluded from previous discussion that the motivation to introduce LMSs in education revolves around the ability of technology, including LMS, to improve education and to move towards constructivist teaching, thereby enhancing student learning. However, current teaching practices have often failed to fulfil these expectations. The literature points to a number of reasons for this failure, and emphasises the pivotal role of the teacher in achieving/ensuring the successful use of these systems to their full potential. This indicates, that in order to ensure implementation of these systems, there is a need to investigate their

educational benefits from the perception of teachers; this is especially the case in contexts where the adoption of LMS is still in its early stages, as in Saudi Arabia.

In addition, the literature reviewed shows that most previous research has been conducted in the context of developed countries which have a long tradition of using technology and of teacher involvement with it; however, there is little, if any, evidence of the benefits of these systems and their educational effects in developing countries. Therefore, an exploratory study to explore the situation in Saudi Arabia could be very useful.

A review of previous studies related to the adoption and use of LMSs in education reveals a lack of qualitative studies, since most of them use a quantitative approach that focuses on how often the system is used to perform certain tasks rather than explaining how it is used. This approach may not accurately reflect the nature of the use of these systems because it is possible for teachers to use the same tool within a system but to implement different teaching strategies; this indicates the need for further research that takes qualitative data into consideration, as this study does.

The literature on constructivist learning theories has been useful in developing my research tools, especially the interview questions, in order to understand the participants' pedagogical beliefs and their own theories of teaching and learning. Furthermore, looking at previous research on different pedagogical practices and theories and models that addressed technology adoption has helped me to interpret my findings and understand how the participants in my study were able to use the same tool but to embrace many different educational approaches.

CHAPTER 4: RESEARCH METHODOLOGY

According to Silverman (2010), methodology refers to “the choices we make about cases to study, methods of data gathering, forms of data analysing etc. in planning and executing a research study. So the methodology defines how one will go about studying any phenomenon” (p. 110). Similarly, Wellington and Szczerbinski (2007) define it as “the activity or business of choosing, reflecting upon, evaluating and justifying the methods you use” (p. 33). In the same regard, Walter (2010) describes methodology as “the theoretical lens through which the research is designed and conducted” (p.12).

Despite the slight differences in definitions of methodology among researchers according to their own disciplines and purposes, all the definitions share a common notion of the importance of justifying the approaches used to address certain research questions (Clough and Nutbrown, 2002). Therefore, the purpose of the methodology is to provide a clear explanation of the reasons and justifications behind the choice of particular methods in a certain study. Kaplan (1964) highlights other tasks of methodology in any study as “throwing light on their limitations and resources, clarifying their presuppositions and consequences” (cited in Brannen, 2004, p. 312). However, methodology cannot be true or false, but it may be more or less useful (Silverman, 2010).

In light of this, the purpose of this chapter is to provide a detailed description of the procedures followed to conduct this study. It begins by reviewing the objectives and the research questions of this study, then presents the research approach and design underpinning this research. An explanation of the mixed-methods procedure is also provided, which

includes the methods used for collecting the data and the rationale and justifications for choosing these methods, the strategy used for selecting the sample, and the methods used for analysing both the qualitative and quantitative data. Finally, ethical considerations followed in carrying out this study are outlined.

4.1 Objectives and Research Questions

This study aimed to investigate the influence of LMS on teaching and learning practices in traditional classroom environments. More specifically, it sought to explore the experience and perceptions of faculty in the use of LMS in learning and teaching practices in Saudi higher education to understand their actual use of these systems and to learn whether an LMS has changed their pedagogy. The study also aimed to explore whether the introduction of LMS is justified in terms of the benefits it can bring, especially to pedagogy. These objectives can be encapsulated in the following overarching questions:

In relation to a university in Saudi Arabia:

1. To what extent do the introduction of LMS influence pedagogies?
2. To what extent do the perceived benefits of LMS justify its introduction?

In order to address these over-arching questions I have used the following subsidiary questions to structure my investigations.

- 1) How do Saudi faculty use the LMS for teaching and learning?
 - a. What features within the LMS do faculty use most often?
 - b. For what functions and purposes do faculty choose to use LMS?
- 2) How do Saudi faculty perceive the impact and benefits of the LMS on their teaching practices and student learning?
- 3) What factors influence faculty to adopt and use LMS in their courses?
- 4) What challenges do faculty encounter while using the LMS?

4.2 Research approach

In this section, I outline the research approach that was adopted in the study and justify the reasons for choosing this approach. According to Teddie and Tashakkori (2009), the methodology that is embraced in any scientific research is embedded in the ontological and epistemological assumptions of the researcher. Wellington (2000) affirmed this view and states that researchers are influenced by their underlying ontological and epistemological positions when they are deciding which research method to use. Walter (2010) agreed with them, explaining that methodology is “the worldview lens through which the research question and the core concepts are viewed and translated into the research approach we take to the research” (p. 13). Accordingly, the researcher’s standpoint, which is guided by his/her epistemological and ontological stance, represents one of the core components for determining the research approach. Ontology refers to the “theory of being” and “our understanding of what constitutes reality and how we perceive the world around us” (Walter, 2010, p. 16), while epistemology refers to the “theory of knowledge—ways of knowing” (Walter, 2010, p.14).

In social science, the main epistemological paradigms are positivism and interpretivism. Positivism perceives social reality as external and independently observable, thus positivists see knowledge obtained through research as objective, generalisable, and replicable (Wellington, 2000). This paradigm forms the basis for quantitative studies often carried out in the natural sciences and in experimental research. Conversely, interpretivism perceives reality as subjective and socially structured. The human world is “a world of meaning in which our actions take place on the basis of shared understandings” (Walter, 2010, p. 21). So a researcher concentrates on participants’ views as well as the contexts in which these views are developed in order to understand and interpret their social reality (Cohen, Manion,

Morrison, & Bell, 2013). Therefore, this paradigm is typically associated with qualitative studies that attempt to understand social phenomena from multiple perspectives as well as the meanings and way people understand things.

Quantitative and qualitative approaches should not be seen as “rigid, distinct categories, polar opposites, or dichotomies” (Creswell, 2014, p.3). Instead, they represent different goals and both approaches have advantages and limitations, which are beyond the scope of the current study. In fact, at times, the use of one approach alone may not be sufficient to understand a research problem or to enable a researcher to answer the identified research questions, which may require a combination of quantitative and qualitative methods. Thus, instead of belonging to a particular research paradigm, I concur with Philip (1998, p. 263), who highlights that “the linkages between methods and epistemology should not be viewed as fixed and that epistemology should inform rather than dictate methodological choices” (p. 263). He argues that the research topic should play a significant role when a researcher comes to design a suitable methodology for the research, and chooses methods that fit the needs of specific research questions rather than automatically using a certain methodology because his/her epistemological position emphasises a particular approach to collecting and analysing data (Philip, 1998). In light of this, I prefer to adopt a research approach and strategy that I think is best suited to my study and its goals (Clough & Nutbrown, 2002; Teddie & Tashakkori, 2009). In this respect, Brannen (2004) points out that the aims and questions of all research investigations are different and cannot be addressed by one research approach or strategy. Thus, a study may employ a set of methods of data collection and types of analysis to address different research questions. A mixed-method approach is therefore likely to be used in many types of investigation.

The main concern of this study was to explore how Saudi faculty use the LMS in teaching and learning activities and to discover its impact (if any) on teaching practices and student learning from their point of view; since both qualitative and quantitative data were required in order to answer the research questions, I adopted a mixed methods approach. Mixed methods research refers to a class of research that involves collecting and analysing data, and integrating or combining the findings using both quantitative and qualitative methods in a single research study (Creswell, 2014). This approach has many advantages. For example, using mixed methods research helps to provide an overall understanding of a research problem (Teddie & Tashakkori, 2009). It is also considered to be a practical approach because it allows a researcher to use all methods possible to address research inquiries. In fact, such a method focuses on ‘what works’ in answering the research questions (Punch, 2009) and provides more evidence for studying a research problem than either qualitative or quantitative research alone (Creswell & Plano Clark, 2011). Another advantage for combining qualitative and quantitative methods is that the strengths of one method may compensate for the weaknesses of the other (Creswell, 2014; Teddie & Tashakkori, 2009). However, the use of a mixed methods approach requires the researcher to have skills in qualitative and quantitative methods. It also requires extensive time to collect and analyse data, and most importantly, it requires the researcher to justify the reasons for its use (Creswell & Plano Clark, 2011).

In the context of my study, the mixed methods approach was seen the most appropriate strategy to answer the main research questions for several reasons. One of the fundamental reasons is that using only one approach would not provide sufficient answers to the questions of this study; the mixed methods approach, however, can offer a clearer understanding of my research topic by integrating the strengths of the quantitative method with the strengths of the

qualitative method whilst compensating for the weaknesses in each method (Punch, 2009). For example, the quantitative method, through use of the questionnaire, provided a general picture of the context of the study, the characteristics of the respondents, their pedagogical beliefs and attitudes towards technology in general, and LMSs in particular, and an overview of the most commonly used tools within the LMS among faculty. On the other hand, the qualitative method, through the use of interviews, was the best way to obtain in-depth information about the phenomenon under study (faculty perspective of pedagogical uses of LMSs) and to bring the flexibility needed to deal with the complexity of social phenomena. In addition, I chose mixed methods to assist me as a researcher in testing the research questions while considering them from different perspectives (Punch, 2009; Teddie & Tashakkori, 2009). Data obtained from both a quantitative and a qualitative method regarding how faculty was using LMS were compared and combined to provide a more comprehensive understanding of the current use of LMSs among faculty members. Another important reason for using mixed methods is that the data obtained from the quantitative method helped in selecting the participants for follow-up in-depth qualitative investigation and in developing interview questions for the qualitative method in the second phase. This is consistent with Creswell and Plano Clark's (2011) observation that one of the main functions of using mixed methods research is sample selection, as the use of quantitative data facilitates the selection of the sample for the following qualitative phase. Another justification for using a mixed methods approach in this study is that combining both quantitative and qualitative methods would result in a more comprehensive account of the study inquiry. In this way, the quantitative results were combined with qualitative findings in order to interpret the results of the study (Bryman, 2006; Creswell & Plano Clark, 2011).

Having explained the approach underpinning this study, in the next section I will discuss my positionality in an attempt to clarify the reasons and justification behind this design and reveal any bias that I might bring to this study.

4.3 My Positionality

There are several factors that affect how the researcher chooses the methodology and methods of research that will be adopted in his/her study; these factors include their personal preferences and interests, as well as their disciplinary background (Wellington et al., 2005). Sikes (2004, p. 19) pointed out that it is essential to understand “where the researcher is coming from” relating to their philosophical positions and principal assumptions about social reality and the nature of knowledge. Therefore, I acknowledge that my beliefs, interests, and historical background influenced my choice of research topic and associated questions. So here I briefly explain my educational and professional background that have played a significant role in defining my position as a researcher in education.

My personal interest and experience in technology began early on when I was a teenager, which later led me to join the College of Education at KSU to study Computing and Education in particular. After obtaining a bachelor's degree, I worked as an IT teacher in a secondary school in Riyadh for a year. Two years later, I was appointed as a teacher assistant in the same college I graduated from. During that time, I taught the ‘Use of Computers in Education’ course, which is a compulsory course for undergraduate students at the Education College, KSU. At the same time, I enrolled in a Master's degree programme in the Curriculum and Instruction Department where I had the opportunity to study many subjects focused on adopting and implementing various technologies to facilitate the teaching and learning process and support innovative teaching methods. One of these subjects included an

introduction to the use of LMSs as a teaching tool; that was my first experience with LMSs. When I received my Master's degree, I obtained a job as lecturer, where I taught different subjects, such as teaching methods, to students, in the Department of Curriculum and Instructional Methods. In addition, I supervised many final-year students in their practical training in teaching. This gave me many opportunities to observe students closely, which inspired me to think about how to improve teaching methods to fit the needs of students in the era of technology. Doing so has led me to attend several workshops about using technologies, particularly LMS, in education.

These personal experiences and my professional career provide some of the reasons for my desire to learn more about these systems. I also admit that these experiences have given me a positive attitude towards technology and convinced me that it can offer many benefits to education if used appropriately and responsibly. Another reason is the movement in KSU towards innovation in teaching strategies; for instance, a number of workshops and seminars have been offered for faculty in order to encourage them to adopt LMS in their courses. By attending some of these workshops, I have noticed the differences in the faculty experience with the LMS and their willingness to adopt and integrate this system into their classes. These observations prompted me to begin conducting this research to learn more about faculty experiences of integrating LMS in their classrooms, how they use the system and which tools they use most frequently. I also wanted to explore their perspectives regarding the educational value of the LMS and its impact on their teaching and on student learning.

4.4 Research Design

Research design refers to how to convert research questions into projects and is closely related to the purpose of the research. According to Natalier (2010), the research questions sit at the heart of research design and “From a well-defined, clearly articulated and well-thought-out research question, the best way to approach the topic, the most appropriate data collection method and the most effective analysis techniques are likely to suggest themselves” (p. 31). Robson and McCartan (2016) agree with Natalier and assert that the design of research and the techniques chosen when conducting a particular study depend largely on the nature of the questions that the researcher seeks to answer, which means many things must be considered and taken into account before conducting any research project. Therefore, the research design is chosen to fit the purpose of the current research and to provide answers to the relevant research questions.

Scholars in the field of mixed methods research have developed several designs or typologies, based on the functions and reasons behind combining quantitative and qualitative methods (Bryman, 2006; Creswell, 2014; Creswell & Plano Clark, 2011; Teddie & Tashakkori, 2009). However, these designs are still limited and not exhaustive. According to Creswell and Plano Clark (2011), the choice of the appropriate mixed methods design depends on addressing three main aspects of the study, namely time, weighting, and how to mix both quantitative and qualitative data. The timing dimension determines when quantitative and qualitative data will be collected and used within a certain study, whether concurrently or sequentially. The weighting dimension refers to the importance and priority given to quantitative and qualitative data in answering the research questions. The mixing dimension is concerned with where and how quantitative and qualitative data will be mixed.

Accordingly, the answers to these questions determined the most appropriate design of this study, with the emphasis on the research questions being the main guide for these choices. First, since the objective of the quantitative data was to give a general picture of the research context and to facilitate the selection of participants in the interviews, the sequential design was in two stages: quantitative then qualitative data collection was chosen. Second, as the answer to the main research questions requires a deeper understanding of the views of the people and their perceptions of the phenomenon underpinning the study, priority in this study was given to the qualitative data resulting from the interviews. Finally, the integration of quantitative and qualitative data was carried out at the stage of interpretation of the research findings in order to answer key research questions.

In light of the above, since the aim of this study was to explore the perceptions and experiences of faculty members on the use of the LMS for teaching and learning purposes, I therefore adopted a sequential mixed-methods design (Creswell and Plano Clark, 2011; Teddie & Tashakkori, 2009) because I found it useful to answer my research questions. I employed different kinds of data-collection methods, namely questionnaires and in-depth semi-structured interviews, to address different and complementary aspects of my research investigation. The study was conducted sequentially using a quantitative-qualitative method. This approach was suitable for the goals of my research because of the nature of the research questions, which required going beyond the quantitative findings of the first phase by conducting a deeper investigation through the qualitative method in the second phase. The following section explains the procedures of the mixed-methods approach in detail and provides the reasons behind conducting each phase.

4.5 Mixed-Methods Procedures

A mixed-method approach can follow different procedures depending on the nature of the study under investigation (Creswell, 2014) and it requires creativity and flexibility in its construction (Teddie & Tashakkori, 2009, p.138). In the context of this study, the quantitative method, a questionnaire, was used in the first phase for collecting quantitative data in order to provide a general understanding of the research topic and get a general overview of the research context, of the most commonly used tools within the LMS among faculty members, and to identify reasons behind their use of such tools. In addition, the data from this phase, as mentioned earlier, helped in both the selection of the participants for interviews and in developing some questions in the qualitative phase. In the second phase, the qualitative method, I carried out in-depth semi-structured interviews for gathering data with the aim of understanding the research problem from the participants' perspectives and of producing results that were rich in meaning. This method was useful to give participants the opportunity to describe their teaching and learning experiences with the LMS from their own viewpoint and gain more in-depth detailed information from participants regarding the research phenomenon. Data from both methods were integrated into the analysis and interpretation phase of the results in order to answer the study questions. These two stages are discussed in detail in the following sections.

4.5.1 First Phase: quantitative data

The main aim of the first phase in this study was not to gather detailed information, but to obtain a general overview of the research context including the characteristics of the respondents, their current use of the LMS, the most used tools within the LMS, and their reasons for adopting the LMS. Therefore, I saw a questionnaire as a useful tool to achieve these aims. This view is supported by Wellington and Szczerbinski (2007), who stated that

surveys can provide answers to various questions such as *what, when, where, and how*, where the main emphasis in a questionnaire tends to be on fact finding.

The rationale for using a questionnaire in this study was to provide a general insight of the context of the study, the characteristics of the respondents, their pedagogical beliefs and attitudes towards technology in general, and LMSs in particular, and an overview of the most commonly used tools within the LMS among faculty. This method gave as many faculty members at KSU as possible an opportunity to express their views and comment on their experiences in using the LMS in their courses without being influenced by my (the researcher's) presence. Clough and Nutbrown (2002) asserted that a questionnaire allows a researcher to survey a population with the aim of establishing a broad picture of participants' views or experiences, but without the need to personally interact with them. Similarly, Cohen et al. (2013) clarified that the questionnaire is useful and widely used for collecting survey data, as it often provides numerical and structured data and can be administered in the absence of the researcher.

Another reason for using a questionnaire in this research was that it represents an economic instrument that allows for the inclusion of a large number of participants in a short period of time. In short, I found that "it offers considerable advantages in administration - it presents an even stimulus, potentially to large numbers of people simultaneously, and provides the investigator with easy (relatively easy) accumulation of data" (Walker, 1985, p.91 as cited in Wellington, 2015, p.192). Further, I think it was useful in helping me explore any valuable ideas relating to the questions being investigated, as the design of the questionnaire in this study included additional space to enable the participants to add any other points or comments not already mentioned (Appendix 4). In addition, the questionnaire was used to

help me identify participants for the next stage of the study and add some questions to those already planned in semi-structured interviews, the main method of data collection in this study.

4.5.1.1 Questionnaire Design and Structure

The questionnaire was designed according to the major themes identified from the literature I reviewed, relating to the research topic such as functionality of LMSs, faculty' pedagogical beliefs, and their attitude towards technology. It has both closed-form items and a few open-ended questions. The closed-form items included items with a 5-point Likert scale, multiple-choice as well as checklist items that helped participants provide more relevant response to the questions being asked. The use of open-ended questions allowed participants to report other points not captured within the closed questions. The rationale for choosing this kind of questionnaire in this research is that it “sets the agenda but does not presuppose the nature of the response” (Cohen et al., 2013, p. 382). Cohen et al. (2013) provide a simple rule for choosing a suitable type of questionnaire by suggesting that “the larger the size of the sample, the more structured, closed and numerical the questionnaire may have to be, and the smaller the size of the sample, the less structured, more open and word-based the questionnaire may be” (p. 381).

In light of this, the questionnaire included a brief explanation of its purpose, a statement that all information gathered would be anonymous, and the rights of participants. Participants also were given my email address if they had other questions regarding the research or if they were interested in knowing the results of the study. The questionnaire was divided into two sections. The first section asked participants factual information (colleges they are working in, academic position, years of experience) and other general questions about their teaching approach and kinds of technologies that they have used in their courses. The second section

focused on the uses of the LMS among faculty, the frequency of using specific features within the system, and the reasons for using the LMS. This section was only available for completion by those participants who indicated in the first section that they used or had used the LMS (see Appendix 4). Once the questionnaire was written, I translated it into Arabic, the main language of the research participants (see Appendix 5). Careful attention was paid to the translation to ensure the meaning was captured rather than concentrating on word-for-word translation.

4.5.1.2 A web-based questionnaire

In this section, I discuss the method chosen to distribute the questionnaire. Traditionally, questionnaires have been distributed by post; however, the spread and increased accessibility of Internet networks have provided new distribution options. The use of the Internet can offer a more efficient and faster way of distributing and collecting questionnaires compared to traditional post (Wellington, 2015). Agruma and Zollett (2007) mentioned several advantages of using web-based questionnaires such as allowing the researcher to collect data in an efficient, safe and reliable manner, empowering the researcher by enabling him/her to view data obtained from participants visually through charts, saving data in a Microsoft Excel file, minimising errors in data entry and saving the researcher time and effort.

However, Bryman (2008) highlighted that this method is not without some disadvantages, such as issues related to the sample as it reduces the chances of getting responses from individuals who do not have access to the Internet. In fact, this was not a problem for this study because I knew that within Saudi higher education institutions that faculty members use their university email as a primary means of communication within the universities and all administrative transactions are sent via official email.

Based on the above, a web-based questionnaire was employed to access the research sample and collect the required data. The rationale for choosing an online questionnaire, as mentioned earlier, was its ability to easily access widespread samples, the possibility to save time and money, and its capability to provide fast response rates (Wellington & Szczerbinski, 2007). In other words, it was the easiest way to collect a large amount of data during a short period of time.

Accordingly, an Arabic version of an online questionnaire by Google Forms, a web tool that assists the design, hosting and, collection of responses, was used in this research. It is worth mentioning that the online questionnaire design helped to manage the issue of missing data as participants were not allowed to move to another section or submit the questionnaire unless all questions were completed. A link to the final version of the Arabic questionnaire, after it had been piloted, was sent by email to all faculty members who were invited to participate in the study.

4.5.1.3 Piloting the questionnaire

Piloting is an essential stage in designing and constructing a questionnaire to check the effectiveness of the method through an assessment of its validity and reliability (Wellington & Szczerbinski, 2007). In addition, since this method, in contrast to interviews, lacks interaction, any ambiguity or lack of clarity must be removed before the distribution to the target group (Wellington, 2015). I met with my academic supervisor several times to discuss the content of the questionnaire until we reached agreement on it. After completing the initial questionnaire, I submitted it to two academic staff in the School of Education at the University of Sheffield for them to review it and offer any suggestions. A few changes were made in response to their feedback; for example, I amended the format of one question and changed the order of two items to make it clearer.

The next stage was piloting the questionnaire: I carried out a pilot with six PhD students who are Arabic native speakers studying in the UK and who had some experience of using LMS as teachers at universities. These participants first reviewed a hard copy of both versions (Arabic and English) of the questionnaire to ensure the quality and accuracy of the translation. I asked them to complete the online questionnaire in my presence. This gave me an opportunity to engage in a two-way feedback process with them, which helped reveal any ambiguity in the questions and ensure that the items were clear. There were slight changes to a few Arabic words to make them clearer as the participants found them slightly ambiguous.

4.5.1.4 Distributing the questionnaire and accessing the sample

In order to distribute the questionnaire after obtaining the approval letter to conduct the study from the University of Sheffield (see Ethical Considerations), I followed the formal procedures used in KSU when conducting field research. I sent an email explaining the purpose of my study to the Vice Rectorate for Graduate Studies and Scientific Research at KSU, who has the authority to allow the application of the study within the university, asking for permission to conduct the fieldwork activities. I also attached copy of my supervisor's letter containing the approval of the study given by the University of Sheffield.

After obtaining permission, I tried, with the help of one of my colleagues, to communicate with two secretariats of the scientific and medical department, and social sciences and humanity colleges in order to distribute the questionnaire to the faculty members. However, I did not get a response from most colleges due to their mailing list, which was not updated, so the questionnaire was distributed only to three departments. This was an evidence by receiving a very limited number of the questionnaires not exceed 12. After asking a number of questions and making personal contact with the Deanship of Scientific Research, I was

informed that the body responsible for distributing the questionnaire within the university is the Deanship of E-Transaction and Communication; they are responsible for the system used to send email to the faculty list. Consequently, I contacted them, providing the signed permission letter, a copy of the questionnaire covering letter explaining the research purpose, a link to the online questionnaire and my contact information. They then sent an email to all faculty members inviting them to participate in this study.

The first invitation to take part in the study was sent on March 5, 2015. There were only 68 responses. The literature offers several suggestions about how to avoid a low response rate to questionnaires (Bryman, 2008). Firstly, participants were told how long it should take them to complete the questionnaire and a progress indicator, within the online questionnaire, showed participants their progress through the survey. Another strategy that I followed in order to increase the response rate was the use of a follow-up email to encourage non-respondents to take part in the study. Therefore, after 12 days, I requested that a reminder email be sent. As a result, a total of 103 responses was achieved. Furthermore, I personally distributed hard copies of the questionnaire to the department secretaries and asked them to put the questionnaires in the faculty mailboxes in order to increase the response rate; that led to a further 29 responses which I later converted to an electronic version.

The entire period of collecting the data from the questionnaires took about one month, which provided sufficient time to obtain a good number of responses. The total number of responses received was 132, which was considered adequate given that participation was voluntary.

4.5.1.5 Study population and Questionnaire Sampling

This study involved all female faculty members at KSU working during the second term of the academic year 2014–2015 with a total of 2418 faculty members (Deanship of Faculty Members Affairs, 2015). According to the information requested from the Deanship of e-Learning and Communication at the university, 1303 faculty members were registered in the LMS. Only 18.8% (245) of them logged in to the LMS more than seven times during the term, whereas 81.2% (1058) logged into the system less than seven times (Aldobaikhi. A, personal communication, April 7, 2015).

Since the purpose of the questionnaire was to provide a general overview of the current use of LMS by faculty members, all female faculty members at KSU were invited to participate in this survey via email with the online questionnaire link and information sheet attached.. A total of 132 faculty members responded to the questionnaire, including 101 respondents who were Blackboard-LMS users and 31 respondents who were non-users. They were from different disciplines: 38 from science colleges, 22 from medical and health colleges, 63 from humanities colleges, 8 from community colleges and 1 did not specify.

4.5.2 Second Phase: Qualitative data

For the second phase of this study, I used semi-structured, in-depth interviews with open-ended questions to obtain more detailed information. As the main aims of this phase were to determine the participants' perceptions about the pedagogical uses of the LMS and its impact on teaching practices and student learning, semi-structured, in-depth interviews were useful for several reasons. First, this method enabled the participants to express their opinions and perceptions freely in their own words and allowed me to ask them to explain and/or justify their perceptions by providing examples to support their views. This approach is supported by Silverman (2011) and Mason (2002), who highlighted that the interview enables the

generation of rich information that cannot be gained using other methods of data collection. According to Wellington and Szczerbinski (2007), “interviewing allows a researcher to investigate and prompt things that we cannot observe. We can probe an interviewee’s thoughts, values, prejudices, perceptions, views, feelings and perspectives” (p. 81).

As I was interested in experiences and perceptions about the use of the LMS in classrooms, which is not a straightforward matter, this method gave me an opportunity to ask a number of subsidiary questions. This ensured that the topics covered by the research objectives were addressed, and it allowed the participants to present issues that they considered were important and should be given priority; the potential to explore issues in more detail justifies the choice of interviews. Another reason for the use of individual interviews, in particular, was that it allowed each participant to provide a detailed description of her own experience, including her motives for using the LMS for teaching and learning purposes and the challenges she encountered while using it. In general, interviews are seen as the most common method employed in qualitative research (Walter, 2010; Mason, 2002). Similarly, Wellington and Szczerbinski (2007, p. 81) pointed out that the “semi-structured interview is widely considered as the most valuable research method” because it can “reach the parts which other methods cannot reach” (p. 81). Another reason for my choice of semi-structured interviews, rather than structured or unstructured, is that this type of interview provides flexibility that gives the interviewer freedom to add more questions in order to achieve a clearer explanation of the topic or to change questions’ sequence depending on the participant’s responses (Cohen et al., 2013). Mason (2002) suggested that using “qualitative interviews may bring an additional dimension or may help you to approach your questions from a different angle or in greater depth and so on” (p. 66). In addition, this allows the researcher to use a predetermined list of questions and offers opportunities to gain new and

valuable points that might not have been considered previously by the researcher. Therefore, the semi-structured interview was appropriate for my research because there were some themes and issues that I wanted to explore in my study that had developed from the literature review and my research questions. Moreover, semi-structured interviews offered me an opportunity to follow up interesting responses and gave me flexibility and freedom to change the sequencing of questions and/or the amount of time and attention given to different aspects of my research topics (Robson & McCartan, 2016, p.290).

4.5.2.1 Interview Schedule

As mentioned above, I adopted a semi-structured interview approach with open-ended questions in order to obtain in-depth insights regarding the participants' perceptions on the research topic. The interviews were divided into three sections. The first part was the 'warm-up' stage, which included both closed and open questions. The goal of this stage was to break the ice by reminding the participants of the purposes and objectives of the research and to obtain factual data about them such as their demographic information and their methods of teaching in general. The second part covered the main themes of the research, namely: how faculty used LMS in their classes, their perceptions of its educational values and its influence on their teaching practices and student learning, what encouraged them to use this system in their classes, and any difficulties or challenges that they encountered while using it. The last part was the closure stage where I thanked them for their participation and welcomed any suggestions.

At the beginning of each interview, I started by introducing myself, explaining the purpose of the interview, emphasising that anonymity and confidentiality would be maintained, and requesting approval to record the interviews and take notes. This was followed by a warm-up

stage, which included both closed and open questions. In this part, I asked the participant general questions about their experience in teaching, when they started using the LMS, their general philosophy of teaching in terms of their teaching methods, and their views on the role of teacher. The participants were then asked detailed questions which focused on their experience of, and their perspective on, the use of the LMS for teaching and learning purposes, why they chose to use it in their classrooms, what challenges they encountered and any advantages or disadvantages they had experienced while using the LMS (See Appendix 6 for a full list of the interview questions).

It is worth mentioning that some of interview questions, particularly relating to how the LMS was being used, were similar to those in the questionnaire; however, the purpose of including them was to obtain a more in-depth explanation of the current situation. Additional probe questions were asked to clarify some interviewees' answers and to encourage them to provide detailed information about their experiences; these questions varied dependent on the response of the participants. At the end of the interview, I thanked them for taking part in the research, acknowledged their time and effort and expressed my appreciation for them sharing their information and views. I also welcomed any suggestions or comments related to the research topic.

It is worth mentioning that during the interviews, I used probing questions to encourage the interviewees to talk in depth about their experiences and to provide examples. I also tried to avoid using leading questions so as not to affect the interviewee's response. However, I sometimes used them to confirm my understanding of information that the interviewee had provided.

4.5.2.2 Piloting Interview Schedule

Piloting the interview is an essential stage not only to avoid any mistakes that may occur but also to indicate whether adequate responses will be obtained from interviewee (Silverman, 2010). Therefore, I discussed the interview questions with my supervisor and contacted two academic staff in the School of Education at Sheffield University to review the interview questions and provide any feedback. Based on their suggestions, I added one question, which related to the participant's views on the role of a teacher, and changed the order of few questions to make the sequence more logical.

I also conducted pilot face-to-face interviews with two Saudi academic friends currently studying at the UK, to identify any inadequacies or ambiguity in the questions in order to fit the purpose of research at this stage. I was aware that piloting the interview questions was important because the success of any interview depends to a large extent on the skills of the researcher, which includes good listening skills, visual communication ability, and dealing with the situation as needed. The pilot interviews enabled me to practise the interviewer role, develop my active listening skills, and training on how to move between different topics in a sequential and logical manner, as well as giving me a useful indication of how long the interviews might take.

4.5.2.3 Interview Sampling

According to Maykut and Morehouse (1994, p.56), “ the selection of a sampling strategy depends upon the focus of inquiry and the researcher's judgement as to which approach will yield the clearest understanding of the phenomenon under study” (cited in Wellington, 2015, p.121). In line with this, a criterion-based or purposive sample was used in the second phase of the study. This sample is appropriate for studies which involve sample units with specific

features that will address research questions (Teddlie & Yu, 2007). It entails “using or making a contact with a specific purpose in mind” (Wellington, 2015, p.117). Thus, the rationale behind choosing a purposive sample was to reach participants who could address the key research questions and enrich the research by providing in-depth information about their experience of using the LMS. Providing detailed and sufficient information to answer the research question is the main key to deciding the appropriate size (Travers, 2010).

Creswell (2014) supported this view and stated that the idea behind selecting a purposive sample is to help the researcher understand the problem and answers the research questions. Therefore, qualitative research does not require a random sample or a large number of participants, instead the decision on the number of participants depends on their ability to provide rich and detailed information that can enrich the research and address its purposes. Further, the sample could also be considered to be convenience-purposive sampling because participation in the research was voluntary so communication with participants was easy; communication was directly with the researcher without the need for a third party (Wellington, 2015).

In the context of this research, the criteria that were used for selecting the purposive sample were (a) being a female faculty member at KSU, and (b) having some experience of using LMS. The justification for choosing female faculty is due to religious and cultural reasons: as a Muslim woman, I am not allowed to interview men, who are not close relatives, face-to-face. The participants were selected from those who completed the questionnaire in the first phase and expressed a willingness to participate in the interviews. The questionnaire contains a part where those who were interested in participation can provide their contact information. It was necessary for participants in this stage to have had some experience of using the LMS.

From the responses to the questionnaire, 21 participants expressed their desire to participate in the interviews, but 6 were excluded, as they did not have the necessary LMS experience.

The 15 eligible faculty were contacted in order to schedule interviews but, of these, three could not participate either due to work pressure or special circumstances, and one did not respond to the e-mail. Consequently, 11 participants, who met the criteria, agreed to participate in an interview. I tried to select faculty members from different disciplines to get a wide range of teaching experience with the LMS, but because the participation was voluntary and based on the questionnaire responses, there were some participants from the same field. They were: two Assistant Professors and nine lecturers from different disciplines; Educational Technology, Curriculum and Instruction, Psychology, English, Media, Accounting, Computer Science and Nursing. Their experience of using the LMS in teaching was between one and four semesters. Table (3) summarises the participants' backgrounds.

Table (3): A summary of the participants' backgrounds.

Pseudonym	Academic position	Discipline	LMS experience	Teaching experience
P1	Lecturer	Education Technology	3 semesters	5 years
P2	Assistant Professor	Curriculum and Instructional	5 semesters	more than 10 years
P3	Teacher assistant	Media	3 semesters	4 years
P4	Lecturer	Education Technology	4 semesters	7 years
P5	Lecturer	Psychology	2 semesters	5 years
P6	Lecturer	Computer Science	2 semesters	6 years
P7	Associate Professor	Nursing	3 semesters	more than 10 years
P8	Lecturer	English	4 semesters	8 years
P9	Lecturer	Media	4 semesters	5 years
P10	Lecturer	Curriculum and Instructional	4 semesters	7 years
P11	Lecturer	Accounting	3 semesters	8 years

4.5.2.4 Conducting the interview

In order to arrange interviews, I contacted all the 11 faculty members who had agreed to participate either by e-mail or phone, depending on the contact information they provided me in the questionnaire, to agree a suitable time. The information sheet was also sent to each participant to give them information about the research objectives, the expected duration of the interview, what was expected of them as well as acknowledging their right to withdraw at any time and maintaining their confidentiality and anonymity at all times. Kvale (1996) asserted that the researcher should seek to create an appropriate environment that enables the respondents to feel safe to speak freely about their experiences and feelings (p. 125). Accordingly, I asked my participants to choose a date, time (during the period of the fieldwork) and place convenient to them. Ten chose to have interviews in their offices at the University because it was more comfortable and convenient for them, while only one participant preferred to hold the interview in an empty classroom because she felt it would be quieter than her own office which she shared with colleagues.

Subsequently, all the interviews took place during March and April 2015 and were held on the campus of King Saud University at the appropriate time, which was agreed upon. Each interview lasted approximately 45 to 60 minutes. Again, at the beginning of each interview, participants were given an opportunity to ask any questions regarding the study and were provided with an explanation of the purpose of the interview as well as a copy of the participant information sheet (see Appendix 2). After that, they were asked to sign the consent form (see Appendix 3). I also got permission from the participants to record the interviews. I used a digital voice recorder as well as the digital recorder on my iPhone to record each interview; this allowed me to concentrate fully during the interviews, maintain eye contact, observe body language and improve the quality and accuracy of data (Wellington, 2000). In addition, I took some notes during the interviews that were useful in

the later stages of the research during the data analysis process.

4.5.3 Quality of qualitative data

It is widely agreed that the value of any scientific research depends to a certain extent on the researcher's ability to prove the credibility of his/her findings. According to Silverman (2010), the basic criteria used to judge the quality of any scientific research are reliability and validity. These two terms are commonly used to assess the quality of findings in quantitative research; however, qualitative researchers assert that these criteria are not appropriate to evaluate qualitative research due to the difference in the nature and purpose of these two traditional approaches (Krefting, 1991).

In qualitative research, validity means that the researcher checks the accuracy of the results by employing specific procedures, whilst reliability indicates that the approach employed by the researcher is consistent across different researchers and different projects (Creswell, 2014). Hence, Agar (1986) pointed out that “a different language is needed to fit the qualitative view, one that replaces reliability and validity with such terms as credibility, accuracy of representation, and authority of the writer” (cited in Krefting, 1991, p.215). In the same vein, Lincoln and Guba (1985) and Guba and Lincoln (1994) introduced the concept of trustworthiness as an alternative criterion to assess the quality of findings in qualitative research (cited in Bryman, 2012). It incorporates four different aspects: (a) credibility, (b) transferability, (c) dependability and (d) conformability.

Credibility or truth-value is equivalent to internal validity and concerned with “how confident the researcher is with the truth of the findings based on the research design, informants, and context” (Krefting, 1991, p.215). Transferability, or applicability, is equivalent to external validity and entails the idea of whether the findings of the study are transferable to other

contexts (Miles & Huberman, 1994). Dependability, sometimes referred to as consistency in research practice, is equivalent to reliability and means that "all data is included, and that no data is lost through unreliable audio recorders or inaccurate transcribers" (Matthews & Ross, 2010, p.11). Conformability, or neutrality, is equivalent to objectivity and necessitates that the researcher can show that he/she acted in good faith (Bryman, 2012).

However, Yardley (2000) questioned these criteria and thought that they were essentially parallel to quantitative research standards that did not conform to the qualitative approach. Instead, he proposed four criteria for assessing qualitative research: (a) sensitivity to context, (b) commitment and rigour, (c) transparency and coherence, and (d) importance and impact. I agree with Yardley and think that these criteria are more appropriate to evaluate my qualitative findings because they reflect the nature of the interpretative viewpoint better. I also believe that complete neutrality is impossible because any scientific research is influenced by the researcher, starting with identifying the topic to be researched, formulating research questions and determining the design of the research. This point is asserted by Wellington (2015) through what he called the "Education Uncertainty Principle" where "the researcher influences, disturbs and affects what is being researched in the natural world, just as the physicist does in the physical universe" (p.100). Further, I found Yin's (2009) suggestion that qualitative researchers need to document all the procedures and steps of these procedures as fully possible so others can follow them (cited in Creswell, 2014, p. 203) a very useful strategy for examining the accuracy of the results.

In light of the above, and in order to achieve a high level of quality in my study, I attempted to provide a thorough description of the context of this study (Chapter 2) and demonstrated all the stages of my study in detail including: the design of the research, methods of data

collection, choosing and accessing the research sample, data analysis and interpretation procedures (Methodology Chapter). I also specified the importance of my study, its rationale and implications (Chapter 1 and 6). Moreover, I am aware of the possible influence of the researcher on the researched (Wellington, 2015), so I included a brief description of my position as a researcher (see Positionality section) and attempted to demonstrate that my personal assumptions, values and experience did not deliberately affect my research findings. Furthermore, another strategy that I have used to bring credibility to my research was through testing of the interpretation of the data with my participants, which Hammond and Wellington (2013) refer to as member checking or participant validation. Thus, I asked all participants for feedback and comments on the final draft of my findings to determine whether the participants felt that it was accurate. However, only two participants replied with their comments.

4.5.4 Data Translation

According to Nurjannah et al. (2014), translation is one of the challenges facing researchers in qualitative studies conducted in languages other than English but where the intention is to publish the results in English. In the context of this study, all the data collection methods were translated from English to Arabic, the main language in Saudi Arabia, and later the relevant quotes that were chosen for inclusion in the thesis were also translated from Arabic to English.

I undertook the translation process myself rather than using a professional translator because I was the person who interviewed the participants and transcribed the interview records. Therefore, I think I am the most appropriate person to effectively reflect nuances in the data, due to my detailed understanding of the research topic. In addition, this was in line with my

constructivist epistemology in which truth is socially constructed. Nurjannah et al., (2014) supported this view and highlighted that from the perspective of the social constructionist or interpretive approach, it is not appropriate to employ a professional translator to translate the data because it emphasises the fact that the social world influences the translator's perspective and thus shapes the way in which the data are translated and interpreted. Accordingly, translation is not considered a neutral technique of changing words from one language to another, but involves the interpretation and transmission of the meaning of two languages and is influenced by the social context. Thus, technically accurate translation does not necessarily reflect the accuracy or nuances of the original intent described in the text.

It is therefore possible to say that translation in social constructive context can be more effective when done by an individual from within the research team because the researcher is in a better position than the professional translator to be familiar with and understand the nature of the research work, including how, given the context, the data can best be translated from one language to another (pp.4-5). In the same regard, Müller (2007) states,

[It is] impossible to achieve full equivalence of meaning in translation.... and translations constantly suffer from not being able to convey the richness of connotations.... the transfer of cultural meanings, embedded in linguistic expressions, from one language to another constitutes one of the most challenging tasks of translation. For this reason, translation as the transference of meaning can always only be partial and never total (p. 207).

As the data might be lost in translation, I chose to analyse my data in Arabic and only translated the parts presented in the findings and discussion chapter. The translated data was checked with my supervisor to ensure that the meaning was clear and understandable.

4.5.5 Data Analysis

Data analysis is an essential part of any study because “data in their raw form do not speak for themselves. The messages stay hidden and need careful teasing out” (Robson & McCartan, 2016, p. 405). It is an integral part of the research cycle that should be thought

about during the design process of any investigation. As Robson and McCartan (2016) pointed out, analysis is “not an empty ritual, carried out for form’s sake between doing the study and interpreting it. Nor is it a bolt-on feature which can be safely not thought about until all the data are collected” (p.405). Further, it should start early after collecting the data because it can affect future data collection (Wellington, 2015, p.260). Jackson (2010) described data analysis as how researchers treat the data to tell the most useful story about it. It is “a test of the ability to think- to process information in a meaningful and useful manner” (Fetterman, 1998; cited in Robson & McCartan, 2016, p.462).

As previously mentioned, this study adopted a mixed-methods approach to address the research questions and included different types of data; therefore, the analyses of the quantitative and qualitative data were different. Statistical and numerical data were produced from the analysis of the quantitative approach, whereas analysis of the qualitative results considered the non-numerical data. The analysis of data took place in two phases: in the first stage I analysed the quantitative data in order to understand the characteristics of the respondents and their use of the LMS in teaching, and to identify the tools they activated within this system; this later helped me analyse and interpret the qualitative data as discussed in Chapter 5. In the following sections, I address how my data was analysed.

4.5.5.1 Quantitative Data Analysis

Quantitative data analysis is not always a straightforward process as it may involve many analytical techniques in order to get to the meaning of these data (Jackson, 2010; cited in Walter, 2010). In this study, data obtained from closed questions in the questionnaire were analysed by using the Statistical Package for Social Science SPSS 22 software which was used to perform all frequencies and percentages, while qualitative data, generated by open-

ended questions, were analysed using the same procedure as for analysing the interviews (see section 5.2.1 for a more detailed explanation on the quantitative data analysis strategy).

Since the main aim of using the questionnaire was to provide a broad picture of the research context in terms of (a) the characteristics of the participants in this study, (b) their experience and skills in the use of different technologies including LMSs, and (c) their views and use of an LMS for teaching and learning purposes, a descriptive analysis of the questionnaire data was carried out reporting frequencies and percentages without performing any statistical tests that were not required for addressing these issues. Data obtained from open questions within the questionnaire were analysed qualitatively adopting thematic analysis.

4.5.5.2 Qualitative Data Analysis

There is no single way to analyse qualitative data; however, a researcher must be clear about the purpose of the data analysis, as this will determine the type of analysis that is performed (Cohen et al., 2013). Wellington (2015) agreed on this point and emphasised that a qualitative researcher should follow general guidelines and principles to perform data analysis systematically and reflectively.

In this study, I adopted thematic analysis to analyse the data obtained from the semi-structured interviews and responses to the open questions in the questionnaire. This method was seen as an appropriate analytical method for this study that sought to explore faculty perceptions of the pedagogical uses of LMSs in their classes. I feel this method provided me, as a new researcher in qualitative research, with a more accessible way to analyse and make sense of data because the thematic analysis method did not demand a comprehensive theoretical and technological knowledge, which are necessary for other approaches of analysing qualitative data such as grounded theory and discourse analysis. Additionally, it

was a flexible method that could be conducted within different theoretical frameworks (Braun & Clarke, 2006, Robson & McCartan, 2016,).

Thematic analysis is described as “a method for identifying, analysing, and reporting patterns (themes) within data” (Braun and Clarke, 2006, p.79). According to Bryman (2008), thematic analysis is one of the most widely used methods to analyse qualitative data; however, this approach has no clear clusters of techniques or identifiable heritage compared to other qualitative analytical methods. Ryan and Bernard (2003) agreed with Bryman and pointed out that despite the widespread use of thematic analysis within the literature, there is no clear consensus about how to go about doing it. In the same vein, Braun and Clarke (2006) highlighted that “a theme captures something important about the data in relation to the research question, and represents some level of patterned response or meaning within the data set” (p.82). Similarly, Bryman (2012) defines a theme as:

A category identified by the analyst through his/her data; that relates to his/her research focus (and quite possibly the research questions); that builds on codes identified in transcripts and/or field notes; and that provides the researcher with the basis for a theoretical understanding of his or her data that can make a theoretical contribution to the literature relating to the research focus (p. 580).

In light of this, themes can be identified through the use of two different approaches. The first one is referred to as a deductive approach where a researcher generates themes from a previous theory, relevant literature and his/her own experience. Another approach is the inductive approach where themes are not predetermined and emerge from the data (Braun and Clarke, 2006).

In this study, I employed the inductive approach to generate themes and categories from the data. I believe that this approach fitted well with the aim of my study to explore the pedagogical uses of LMSs from participants’ viewpoints. In addition, it was the most

appropriate way because this study did not seek to examine any type of theory throughout all the stages of it. However, I am aware that the identification of themes might be influenced by my own experience, prior knowledge and reading, as “no researcher enters into the process with a completely blank and empty mind” (Strauss & Corbin, 1998, p. 294). This view is further supported by Braun and Clarke (2006), who state that “researchers cannot free themselves of their theoretical and epistemological commitments, and data are not coded in an epistemological vacuum” (p.84). Wellington (2000) agreed, and asserted that the emergence of themes depends completely on the researcher. I also share the view of Tuckett (2005) who argued that the analysis process can be enhanced by prior engagement with the literature, which enables researcher/s to be sensitive to more subtle features of the data (Braun and Clarke, 2006, p.86).

Having described the chosen analytical method, the following section outlines the steps I took to analyse and interpret my data.

4.5.5.3 Phases of thematic analysis

In order to understand my data and arrive at general conclusions, I followed the 6-stage guidelines for thematic analysis recommended by Braun and Clarke (2006). These stages are summarised in Table (4). Although this table suggests that the thematic analysis process is a linear process building from one stage to the next, in practice I found it to be an interactive process that required much movement between the interrelated stages. This includes returning to and rethinking what has been done in the previous stages. Ryan and Bernard (2003) asserted the importance of providing readers explicitly with the techniques used for identifying themes because it allows them to assess the researcher’s methodological choices and the validity of the analysis. Thus, I attempt here to outline what I did to understand my data.

Table (4): Phases of thematic analysis (Braun and Clarke, 2006, p 87)

Phase	Description of the process
1. Familiarising yourself with your data:	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2. Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes:	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes:	Checking the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic ‘map’ of the analysis.
5. Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells; generating clear definitions and names for each theme.
6. Producing the report:	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back the analysis to the research question and literature, producing a scholarly report of the analysis.

4.5.5.4 Data Preparation

Preparing and organising data for thematic analysis involves transcribing interviews and sorting the data information into different types depending on the source of information (Creswell, 2014, p. 197). Before applying the thematic analysis steps, I transcribed all the interviews myself. This process began immediately after all data collection had been completed. It was necessary to listen to the interviews many times, which was time-consuming but led to greater accuracy of transcription. I transcribed the data twice in handwritten notes and then edited them through Microsoft Word.

It is worth mentioning that the data was transcribed in its original language (Arabic) and only the quotes that I later presented in the thesis were translated. The rationale for this was to maintain data integrity and minimise the loss of meaning. As Larkin et al. (2007) pointed out it is more likely to lose the meaning from the participant's implicit expression when data is translated before analysis (cited in Nurjannah et al., 2014).

4.5.5.5 Themes identification

After finishing the transcription phase, I began the process of identifying themes. As mentioned above, the transcription process was time consuming and took me a while before finishing it; but it helped me to become familiar with my data. In fact, by listening to the interview recordings several times and reading the interview transcripts over and over I was able to immerse myself in the data and get an overall sense of it (Wellington, 2000). Creswell (2014) pointed out that reading through all the data provides a general understanding of the information and an opportunity to reflect on its overall meaning. According to Braun and Clarke (2006), immersion “usually involves ‘repeated reading’ of the data, and reading the data in active way- searching for meanings, patterns and so on” (p.87). In this regard, active listening enabled me to write some notes and comments while transcribing, which I thought could help later in developing ideas and generated themes from the data. This is also in line with Braun and Clarke's (2006) suggestion that it is useful to record notes and ideas for coding that may be used in the coming stages.

Following that, I started generating the initial coding from each interview. Rossman and Rallis (2012) define coding as “organizing the data by bracketing chunks (or text or image segments) and writing a word representing a category in the margins” (Creswell, 2014, pp. 197-198).

Likewise Gibbs (2007) describes coding as:

how you define what the data you are analyzing are about. It involves identifying or recording one or more passages of text or other data items such as the parts of pictures that, in some sense, exemplify the same theoretical or descriptive idea. Usually, several passages are identified and they are then linked with a name for that idea - the code. Thus all the text and so on that is about the same thing or exemplifies the same thing is coded to the same name (cited in Robson and McCartan, 2016, p.38).

At the beginning, I tried to do this manually using different coloured highlighters and sticky notes. However, I soon got lost with the significant amount of data obtained from the interviews. At that time, I heard about the Computer-Aided Qualitative Data Analysis Software (CAQDAS), particularly Nvivo 10.2.2, which is offered to students for free by the University of Sheffield. As I possess a good background in computer science, I decided to use Nvivo to help me manage my data. I am aware that this software has nothing to do with the analysis itself and its capability is limited to organising, categorising, and retrieving the data easily. According to Wellington (2015), the software “cannot do the imaginative thinking or conception of codes for the researcher” (p.273).

However, this software did provide the help/support that I needed in terms of the flexibility and speed in managing, coding and linking the data. In order to learn how to use the software, I attended two workshops offered by the University and taught myself by watching some videos on YouTube. Once I had sufficient knowledge, I imported all the transcriptions to Nvivo as internal files and gave them pseudonyms. Then I carried out coding by creating separate nodes for each segment of text that I thought interesting, important or relevant to my research inquiry. The code generation process continued and new nodes emerged every time they captured something important about the research objectives and questions. At the end of the coding process, a list of 103 codes had been produced.

The next stage was searching for possible themes. In this stage, I categorised the different codes into possible themes and allocated the relevant coded extracts to those themes (Braun & Clarke, 2006). This was done through looking at the potential relationships between codes as well as the similarities and differences between them. Sometimes a certain code was considered as a theme while other codes were combined to generate a new theme. I also used nodes hierarchy to represent the identified relationships between themes (main themes and sub-themes) (see Appendix 7). Next I reviewed my themes repeatedly, reorganised them, and checked their compatibility with the extracts attached to them until I felt satisfied that no more themes would emerge. I then defined and named the themes in order to present them to the reader. This process took time, reflection, meetings and ongoing discussions with my supervisor to produce the report appropriately and ensure it was understandable to the reader, as presented in Chapter 5.

4.6 Ethical considerations

According to Habibis (2010), ethical research is concerned with “ensuring that ethical principles and values always govern research involving humans” (p. 90). In the same vein, Wellington (2015) points out that ethical considerations should be given priority in any research project and should be adhered to at all stages of the research process until the research is presented. Accordingly, in this section, I outline the ethical issues considered in the current study.

This study was carried out in light of the ethical considerations informing social science research; in particular I followed the guidelines and rules of the University of Sheffield and of Educational Research in the UK. In this regard, I sought permission for conducting this research from the ethical committee of the University of Sheffield through the School of

Education. This included completing an ethical application where I explained the goal of my research and provided sufficient information about how I would conduct the research. After obtaining the research ethics approval letter (see Appendix 1), I contacted the Deputy of Graduate Studies and Scientific Research at King Saud University to get permission for conducting the study there, which was granted.

The next step was to get the participants' approval, which was achieved through them signing the consent form. As highlighted by Hennink, Hutter, & Bailey (2011) and Wellington (2000), one of the core principles for ethical research is respect for the participants. The implication of this principle includes treating them fairly, providing them with adequate information about the research, making their decision to participate voluntary, acknowledging their right to withdraw at any time, and maintaining their confidentiality and anonymity at all times. Consequently, I provided the participants with detailed information about the aim and purpose of the research. This information was supplemented by more details on the information sheet, which outlined the objectives of the research, the involvement required, any risks associated with the research, what would happen to the data collected, and how they could access the findings. The information sheet was attached to the email that provided the link to the online questionnaire. In addition, at the beginning of each interview, I introduced my research, welcomed any questions regarding it, and gave the interviewee a copy of this information. I also attempted to ensure that the decision to participate in this research was made without any coercion, by making involvement voluntary. I made it clear to the participants that they had the right to withdraw from the study at any time without giving a reason. Moreover, I requested the participants' permission to record the interviews on a digital recorder.

With regard to maintaining the anonymity and confidentiality of the participants, those completing the questionnaire were not required to provide their name, and the real names of the interviewees has not been used at any point in the research; pseudonyms were assigned to participants in order to protect their anonymity. Confirmation was given to the participants that any data obtained from them would be kept securely and would only be accessible to me and my supervisor, and that any recorded data would only be used for research purposes.

4.7 Summary

Having explained the design of the research and the methodology, including how both the quantitative and qualitative data were collected and analysed, I next present and discuss the findings of this research in the following section.

CHAPTER 5: ANALYSIS, FINDINGS and DISCUSSION

5.1 Introduction

The aim of this chapter is to present, analyse and discuss the findings from both quantitative and qualitative data to explore the perceptions of Saudi faculty members on the pedagogical uses of learning management systems. The findings from the quantitative and qualitative data are presented in two separate sections as discussed below. However, the questionnaire results are embedded within the discussion and interpretation of the qualitative data generated from the semi-structured interviews.

In the quantitative section, results are divided into subheadings associated with the objective of the questionnaire, which is to provide an overview of the broader context of the current research. The main research questions were addressed based on the analysis and discussion of the qualitative data (in-depth interviews) whereas the quantitative data played a supportive role. In light of this, I have organised the findings that emerged from the interviews and discussed them in themes related to the study's main questions as follows.

5.2 Quantitative Data

This section presents the analysis and results of quantitative data from this research. As mentioned earlier, the aim of the questionnaire was to provide an overview of the broader context of the current research and to understand the situation in which those individuals worked. The questionnaire also provided a general insight of how LMS had been used by faculty members and identified the reasons behind their use of the LMS that helped me to develop questions for the next phase of the research in the interviews. In addition, it assisted me to understand, explain and interpret the qualitative data resulting from the interviews, as will be discussed later in the presentation of qualitative findings.

I carried out a descriptive analysis of the questionnaire data reporting frequencies and percentages without performing any statistical tests, as these were not required for answering the research questions. One hundred and thirty-two responses were returned and analysed using SPSS 22 as described below.

5.2.1 Analysis Strategy

Statistical Package for Social Science (SPSS) 22 software was used to carry out all percentages and frequencies required for analysing closed questions in the questionnaire. The analysis process went through several steps. Firstly, as previously noted in Chapter 4, “Google Forms” software was used to distribute and receive responses to the questionnaire, which allows the user to view and open the obtained data in the form of a Microsoft Excel file. Once the data were obtained from the online questionnaire, I transferred them from Excel to SPSS. Then I coded the data and ensure that any text data was entered as numeric data, which is a suitable form for SPSS. Missing data was not a problem in this study because it was controlled by applying “required fields” embedded in the online questionnaire. After that, I used a descriptive analysis, namely frequencies and percentages, to describe the

background characteristics of the respondents and to address specific issues related to my research questions. The open questions were analysed qualitatively using the same procedures used for analysing interviews.

The following sections present the results derived from the analysis of the questionnaire as follows.

5.2.2 Respondents' characteristics

The distribution of the respondents covered almost all the colleges but one respondent did not specify. The largest group of 63 (47.7%) respondents are from humanities and social science colleges, respondents from science colleges and medical/health colleges are 38 (28.8%), 22 (16.7%) respectively, the smallest group of 8 (6.1%) are from community colleges.

In terms of participants' academic position, more than a third (48, 36.4%) of the respondents had a doctoral degree, 60 (45.5%) respondents had a Master's degree, and 24 (18.2%) of the respondents were new teaching staff who had recently graduated and held a bachelor's degree. In terms of teaching experience, the largest group of participants (56, 42.4%) had been teaching 1 to 5 years, followed by those who had been teaching for 6 to 10 years (38, 28.8%) and 34 (25.8%) for those who had been teaching for more than 10 years. Finally, those who were new and had only been teaching for less than one year accounted for (4, 3%). Table (5) presents a summary of the respondents' characteristics.

Table (5): Respondents' characteristics

		Number	Percent
Colleges			
	Science colleges	38	29
	Humanities and social science colleges	63	48
	Medical/health colleges	22	17
	Community colleges	8	6
	Other	1	1
Academic Position			
	Professor	7	5
	Associate Professor	10	8
	Assistant Professor	31	24
	Lecturer	60	46
	Teacher Assistant	24	18
Years of experience			
	Less than one year	4	3
	1-5 years	56	42
	6-10 years	38	29
	More than 10 years	34	26

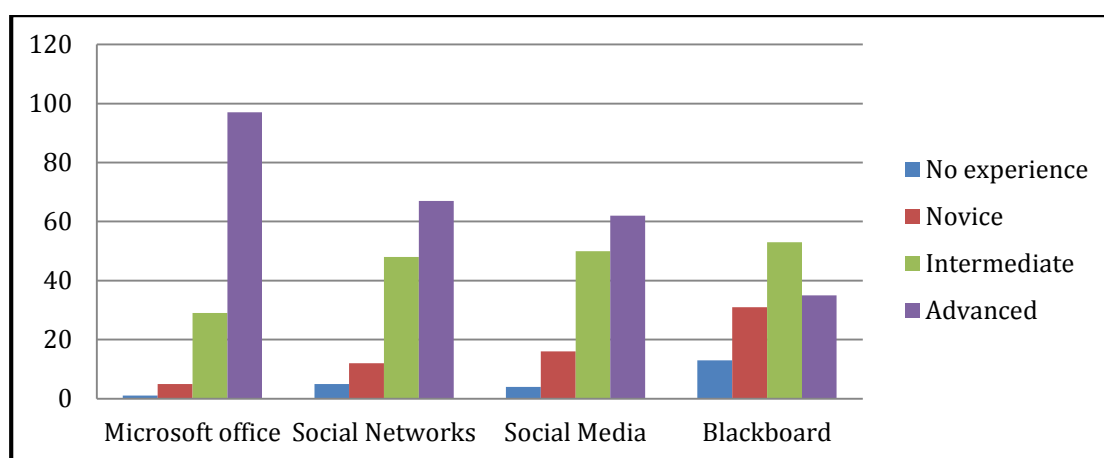
5.2.3 ICT competence and expertise with technologies

The results from the questionnaire show that the overwhelming majority 126 (95.4%) of the respondents had positive feelings about their computer proficiency, which indicated that they seem to be more familiar with technology. Respondents were also asked to assess their overall expertise with different applications and technologies such as Microsoft office, social networks sites, social media and Blackboard-LMS (see Figure 5). Although faculty expertise was varied among those applications, the majority of respondents indicated that they had at least an intermediate level and considered themselves to some extent computer literate. However, faculty rated their skills and experience in the use of LMSs lower than those in other technologies. This suggests that these systems seem more complicated or unfamiliar, which may require a higher level of technological skills for using them. Table (6) presents detailed information about faculty overall expertise with different applications.

Table (6): Respondents' expertise with technologies

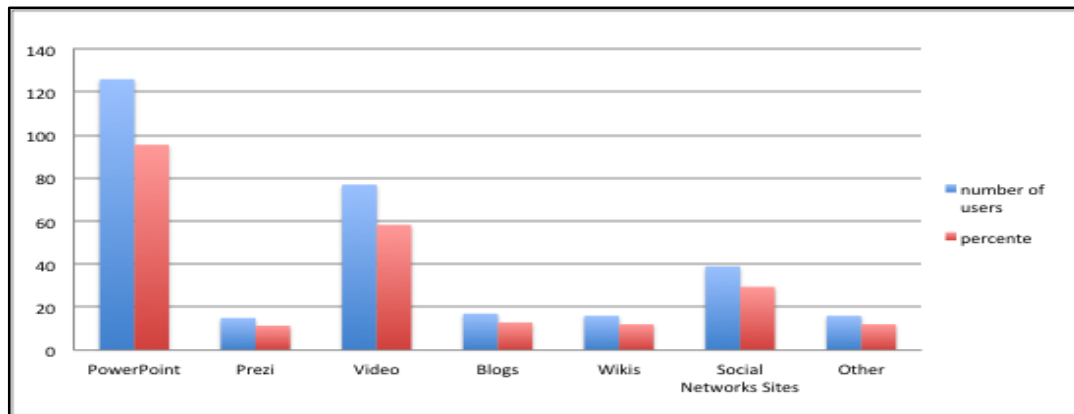
Expertise	Microsoft office	Social Networks	Social Media	Blackboard
No experience	(0.8%) 1	(3.8%) 5	(3%) 4	(9.8%) 13
Novice	(3.8%) 5	(9.1%) 12	(12.1%)16	(23.5%) 31
Intermediate	(22%) 29	(36.4%) 48	(37.9%) 50	(40.2%) 53
Advanced	(73.5%) 97	(50.8%) 67	(47%) 62	(26.5%) 35

Figure (5): Respondents' expertise with technologies



Moreover, respondents were also asked about applications that they usually used in their teaching and were given options to indicate their experience. As shown in figure (6) they reported that PowerPoint was the most used application, then videos, followed by social network sites, which were reported to be used by 29.5% of participants. Responses in the “other” included “Whatsapp, Blackboard forum and discussion board, quizzes, electronic journals, online games and Flickr”. This is in line with what they mentioned previously about their skills in the use of these tools.

Figure (6): Type of applications faculty usually use in teaching.



5.2.4 LMS use and training

Based on the questionnaire response, more than three quarters (101, 76.5%) of respondents reported that they have used Blackboard while (31, 23.5%) have not as shown in figure (7). The results also show that over half (64) of the LMS users have attended a training session or workshop on Blackboard-LMS, whereas less than half (12) of non-users of LMS did, which may point to the considerable role of training in the LMS use. However, the results suggest the existence of a disparity among the users of Blackboard about the extent of their satisfaction with the training provided to them. 37 (58%) of those who attended the workshops or training sessions were satisfied and found them effective, while the remaining (27, 42%) said the opposite. Table (7) provides detailed information on respondents' attendance and satisfaction about training.

Figure (7): The use of LMS among respondents.

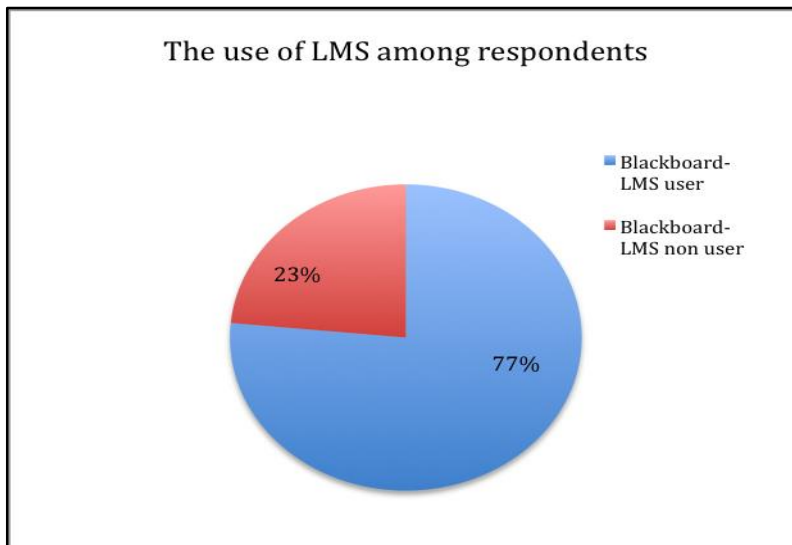


Table (7): Blackboard training * LMS user

	LMS use		Total
	Non user	User	
Blackboard training			
Yes, it was effective	3	37	40
Yes, it was so-so	6	17	23
Yes, it was poor	3	10	13
No, I would like some	16	26	42
No, I do not need it	3	11	14
Total	(23.5%) 31	(76.5%)101	(100%)132

5.2.5 Faculty experience in using LMS

Respondents' experiences in using Blackboard-LMS were varied, however it is clear from the information gathered that over half (63, 62.2%) of them are relatively new users of the LMS and their use does not exceed three semesters (see table 8 for more details). This may be reasonable when taking into consideration that Blackboard was fairly new to the faculty at the university as it was launched in 2010 while the data was collected for the purpose of this study at the beginning of 2015.

Table (8): Blackboard experience * LMS user

Blackboard experience	LMS user
Less than one semester	(20.8%) 21
1-3 semesters	(41.6%) 42
4-6 semesters	(26.7%) 27
More than 6 semesters	(10.9%) 11
Total	(100%)101

5.2.6 The utilisation of LMS among respondents

The questionnaire also sought to investigate the current use of the LMS by faculty members; in particular, how LMS was used in their courses. Do they primarily use the LMS for course administration and content delivery, for communicating with students, or as a pedagogical tool?

Participants were asked to indicate the extent of the use of LMS in their courses. Table (9) presents summary of the respondents' answers. The results show that posting syllabus was the most common use of the LMS by the faculty, with 65.3% always posting their syllabus and 12.9% often doing so. 77.2% reported that they either always or often used email to communicate with students through blackboard, 75.3% always or often made supplemental readings and course materials available online, 70.3% sent class notes to students, 68.3% sent announcement messages through Blackboard, and 56.4% used the online gradebook. Few faculty 34.7% either always or often used discussion board for promoting discussion before or after face-to-face sessions. Meanwhile, 40.6% of faculty reported that they never used the chat tool to communicate with students, 37.6% never used Blackboard to encourage students to participate in the blog or wiki, and 35.6% never administered exams or quizzes via Blackboard. Faculty use of a calendar tool was mixed, as the percentages of faculty who either always or never did were close.

Overall, as expected, the results indicate that the predominant use of LMS among participants was for course administration and content delivery because it offers faculty the possibility for distributing course materials, announcements, and information relating to the course easily and makes classroom management effortless. This was followed by using it for communicating with students, whereas few participants used LMS to enhance the interaction and engage students more in the learning process. This can be recognised from the fact that less than 35% of participants had used interactive tools within Blackboard such as discussion boards, wikis and blogs in their classes.

Table (9): The extent of the use of LMS among faculty

How often do you use Blackboard-LMS for	Always	Often	Someti mes	Rarely	Never
Posting syllabus.	65.3	12.9	7.9	5	8.9
Sending announcement messages.	55.4	12.9	12.9	5.9	12.9
Posting online readings and supplementary course materials (e.g. lectures, slides and notes).	60.4	14.9	12.9	3	8.9
Distributing class notes to students.	57.4	12.9	13.9	8.9	6.9
Providing multimedia materials (photos, videos, pictures).	35.6	25.7	18.8	5.9	13.9
Providing important dates via the Calendar tool.	27.7	18.8	14.9	9.9	28.7
Storing learning resources that students can access.	38.6	16.8	19.8	10.9	13.9
Promoting discussion before/after a face-to-face class session via discussion board.	20.8	13.9	26.7	11.9	26.7
Encouraging students to participate in the Blog/Wiki.	13.9	12.9	21.8	13.9	37.6
Communicating with students via the email tool.	61.4	15.8	7.9	11.9	3
Communicating with students via the chat tool.	10.9	14.9	20.8	12.9	40.6
Reducing face-to-face contact time with students.	14.9	10.9	30.7	19.8	23.8
Giving exams or quizzes.	12.9	21.8	14.9	14.9	35.6
Sending/receiving assignments.	29.7	21.8	14.9	8.9	24.8
Uploading marks onto the gradebook.	40.6	15.8	8.9	8.9	25.7

5.2.7 Reasons for LMS use

In order to understand how the LMS was being used, participants were also asked to choose the reasons for their adoption and use of LMS in their courses. The results presented in table (10) illustrate that faculty used the LMS in their courses for many different reasons. The most frequently mentioned reason by 84.2% of faculty was to access lecture notes and slides, 77.2% used Blackboard to encourage the use of technology in learning, and 72.3% used it to reiterate assignment requirements and submission deadlines. The reason least mentioned, by only 27.7%, was reminding students what was done in class.

Interestingly, 63.4% of faculty reported that they used Blackboard to promote students engagement in and beyond the classroom, 62.4% used it to provide the necessary knowledge needed to complete required task, 54.5% used Blackboard to prepare students to be independent learners, and 50.5% to facilitate group collaboration on project.

However, the high percentage of faculty who stated these reasons for the LMS use raised serious questions about the extent of these practices, especially as respondents were offered an opportunity to tick all that apply in the question. This is discussed later in the interviews findings.

Table (10): Reasons for the use of LMS

Why do you use Backboard-LMS in your course?	Percent	Frequency
Facilitate group collaboration on project.	50.5	51
Prepare students to be independent learners.	54.5	55
Promote students engagement in and beyond the classroom.	63.4	64
Benefit students with different learning styles.	47.5	48
Provide the necessary knowledge needed to complete required task.	62.4	63
Access lecture notes and slides.	84.2	85
Provide supplementary knowledge.	57.4	58
Reiterate assignment requirements and submission deadlines.	72.3	73
Remind students what was done in class.	27.7	28
Encourage the use of technology in learning.	77.2	78
Make the content more interesting by adding some multimedia related to the course.	49.5	50
Encourage students to participate in the discussion about content	41.6	42
Encourage students to enrich the course content through adding other useful resources.	39.6	40
Other	4	4

5.2.8 Perceptions towards the use of LMS in teaching and learning

To determine how participants perceived the use of Blackboard in teaching and learning, they were asked about the extent of their agreement with five statements using a five-point Likert scale, ranging from *strongly agree* to *strongly disagree* as shown in Table (11). In addition, participants were offered further opportunity to freely express their views and experiences of using the LMS in their courses via an open question free from any influence, (Item 3, Part 2 of the questionnaire). Table (12) presents respondents' comments on this question, which were classified into two themes.

The questionnaire results indicate the presence of positive attitudes to some extent among most of the respondents towards the use of Blackboard in teaching. As shown in Table 11, 77 (76%) of respondents said they believed that the use of Blackboard could enhance their teaching in general, 73 (72%) thought that students' learning could be improved by using Blackboard, while (70, 69%) viewed that Blackboard has the ability to accommodate diverse learning styles of students. Additionally, the majority of respondents (75, 74%) said they believed that Blackboard fits with their pedagogical beliefs and philosophy of teaching. Yet, their views about Blackboard being merely a digital tool and not affecting the actual teaching were mixed: 37 agreed, 36 disagreed and 28 were neutral. This raised questions about how Blackboard was being used by faculty at KSU, and about the impact of using it on their teaching, which is discussed in the qualitative section.

Table (11): Participants' perception towards the use of LMS in teaching

Statements	Agree combined	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
I think my teaching can be enhanced by using Blackboard-LMS.	77	35	42	17	5	2
I think students learning can be improved by using Blackboard-LMS.	73	31	42	24	3	1
I think Blackboard-LMS fits into my philosophy of teaching.	75	34	41	20	4	2
I think Blackboard-LMS has capacity to accommodate diverse learning styles.	70	29	41	22	6	3
I think using Blackboard does not affect actual teaching since it is just a digital tool	37	10	27	28	27	9

More than half of the comments (17 of 31) recorded by respondents in answering the open question reported positive viewpoints about Blackboard and considered it as beneficial in general, as shown in Table 12. These views on the benefits of Blackboard ranged from facilitating routine teaching practices by doing them electronically, to communicating with students, and promoting student engagement in the learning process. Furthermore, the results demonstrated that there were some negative comments concerning Blackboard which expressed the view that it was an administrative tool and not a learning instrument. However, closer examination of these negative comments indicated that seven out of 14 of them agreed about the usefulness of Blackboard, but with some reservations, such as the need for more training, lessen the teaching load of teachers, as well as suggestions to develop and improve interface of the system. This suggests that there might be other factors that influence how faculty perceive and use Blackboard in their teaching.

Table (12): Participants' comments on how they perceive Blackboard

I think that Blackboard-LMS:	
Benefits and advantages	<ul style="list-style-type: none"> • facilitates the distribution of course syllabus, discussion and sending/receiving assignments. • helps in grading exams. • assists to detect plagiarism which we are suffering a lot with students. It is also used in international universities for doing so. • saves time and effort. • increases/facilitates communication with students and among students themselves (3 comments). • facilitates teamwork in projects. • helps to engage students in discussing learning materials and to gain important skills needed for their future work (3 comments). • makes teaching and learning process more enjoyable (2 comments). • is equivalent to the importance of traditional classroom. • is an important tool and should be mandatory (2 comments). • is useful, great, good and effective.
Difficulties and challenges	<ul style="list-style-type: none"> • is useful but it requires sufficient training on how to use it or at least we need brochures explaining the mysterious and tough stuff, otherwise it would be a burden on teacher (4 comments). • is useful but its bad interface does not allow self-learning by the user so I could not use it properly (3 comments). • is slow and should be provided as an application on smart phones. • contains too many tools, which took me a long time to learn, and makes me wary of making mistakes on it in front of my students! I believe that the system is not user-friendly and it is impossible to fully use its capacity. It gives priority to technology rather than pedagogy, and its design focuses on technical aspects and not the student; therefore it is not useful for learning (2 comments). • Students are not enthusiastic about Blackboard and see it as another load (3 comments). • is just a fashion and will disappear.

5.3 Qualitative Data

This section presents the analysis and discussion of the findings obtained from the in-depth semi-structured interviews with the participants in this research. As I mentioned earlier (section 4.5.5.2), I used thematic analysis to analyse my data. These data were analysed and discussed in relation to the literature and the theoretical models of the adoption and use of technology that are discussed in (Section 3.9), namely the technology acceptance model (TAM), the diffusion of innovation theory and the SAMR model.

The role of models in this study was to support my interpretation of the research findings and to understand the motivations of participants to adopt Blackboard. I am aware that many researchers used these models as a framework for their studies, most of which were predominately survey-based. Instead, I have chosen to look at quotes and themes as I explained earlier and have drawn upon those models when they appeared to be relevant. So I used those models in a way that helped me to reflect on how faculty used LMS in their classes and to understand the factors that influenced the adoption of LMS. In particular, I found TAM and diffusion of innovation theory useful occasionally when I noted the participants were following such pattern, while SAMR helped me to think about what the participants were doing and evaluate the stage of their use of LMS in the classroom. In addition, I considered the assumptions of constructivist teaching as a way to analyse participants' perspectives of the impact of using Blackboard-LMS on teaching and learning practices and to explore whether faculty experienced a perceived change in teaching practices, leading to more student-centred pedagogies.

I also presented the relevant literature and referred to previous research into LMSs within my discussion of the data to support my interpretation of the results and to facilitate the reader's understanding. This is in line with the view of Hatch (2002) who states that, "such connections will help readers make sense of findings as they are being presented, ...enrich their understandings of what your findings mean and where they fit" (p. 231).

5.3.1 (RQ1) The use of the LMS in teaching and learning purposes

In order to understand how faculty used Blackboard to support their face-to-face classes, the interview participants were asked about the features within the system that were used most often and for what purposes they were used. The analysis of the data revealed different types of the use and implementation of Blackboard in their classes. These types have been classified into four main themes as follows: the use of Blackboard as a teaching and learning resource to access course materials and information, managing teaching routine tasks, communicating with students, and enhancing interaction and collaboration among students. These themes are presented in details in the following sections.

5.3.1.1 *Information repository*

All interview participants indicated that the ‘course document’ was the most frequently used feature in the LMS. Participants agreed that their main use of this feature was for disseminating course materials and providing supplemental readings and other external resources to students in a convenient way. They reported that they usually uploaded course resources (lecture notes, presentations, videos), the syllabus, assignments, worksheets, and other course requirements and have them available for reference. However, the purposes for using document area tools varied among the participants. In the majority of cases, participants used this feature to perform their previous practices in an easier and more convenient way. This view was clearly expressed by P3 who said, “I use Blackboard mainly to post course content. Actually, I am wondering why some teachers use Google Drive instead of Blackboard, which is supported officially by the university and has more potential.”

Similarly, P6 articulated the following when asked about the most frequently used tool within Blackboard,

I think content area is the most important thing in Blackboard because the availability of course content for students anytime enables them to access the documents whenever they want... I cannot dispense with Blackboard. I usually upload PowerPoint slides and assignments and send announcements to students; I also give online quizzes through it.

Here the informant highlighted that this kind of use was also beneficial to students as well as faculty, in terms of convenience. Likewise P11 stated:

I use Blackboard to display course content and conduct tests. I try to use Blackboard as much as possible. For instance, before each lecture, I upload its PowerPoint slides and make them available to students starting from the lecture time. Similarly, I do with homework... I created a folder for previous exams and offered examples to students. I also put project requirements on Blackboard and posted a course syllabus early there...

This type of LMS usage is not unusual, as it had already been mentioned by almost all the respondents to the questionnaire (see section 5.2.6.). Most comments during the interviews suggest that Blackboard was seen as a holding area for course materials and other supplemental resources and was considered a secure data storage space to distribute, manage, and retrieve such content and references. I also noted during the interviews that participants considered Blackboard to be an alternative to their personal page on the university website, which was usually used to make course documents available to students. Indeed, participants preferred to convert course pages in their site to Blackboard because it offered them a secure space to protect their materials and maintain more privacy in their courses (see the Intellectual Property Rights and Student Privacy sections for further discussion). In this way, Blackboard was merely a substitution tool for repeating or duplicating what teachers had previously done, but it allowed them to do it better, faster, and more efficiently. In other words, Blackboard was used to save teachers' time and simplify the routine tasks of material distribution and may minimize the need for printed materials in face-to-face sessions with

little or no improvement in their pedagogy. Such use seems consistent with a transmissive approach to teaching and could be considered an extension of the conventional teaching methods rather than constructivist approaches to learning. In fact I would argue that this use of Blackboard is not about learning at all; it is about providing access to materials. Therefore, this type of LMS use suggests that faculty were in the “substitution” stage of the SAMR model (see section 3.9.3), as there had been no change in their pedagogy.

On the other hand, few participants used Blackboard to store material for access by students to complement or support their face-to-face strategies. For example, P10 explained the following when asked about her use of Blackboard for disseminating course materials:

Actually I did not put all the content on Blackboard. I only upload materials that students need to use in some sessions when my teaching strategy will be self-learning or collaborative-learning... Indeed, my teaching method is not dominated by a single strategy, but it is variety. I try to use different strategies depending on the topics and goals of the lecture.

P9, on the other hand, stated:

I uploaded lecture presentations and references weekly. I do not like to make them available to students at the beginning of a semester due to the nature of my subject. I mean, in media, many changes occur every day; therefore, I need to amend my materials according to these changes... I usually upload each lecture in the form of a PowerPoint file, embedded in the file links to the social network sites for activists in the media. I try to include some articles and videos that support the lecture because as you know students hate routine and spoon-feeding instruction... For example, if I found a writer or academic who wrote a good article and put it in their Twitter account, I save the link and during the lecture we see the whole article and then comment on the article and discuss it with students to support their learning process.

These quotations show that those two participants, contrary to what was mentioned by most of the participating faculty and stated in the questionnaire results, used Blackboard to provide students with information that they need to be prepared to contribute to discussions with their peers and the teacher. They demonstrate how faculty considered their use of Blackboard as a dimension of their face-to-face teaching. P9 is clear that she plans her use of Blackboard and

her face-to-face teaching in tandem. It was therefore affecting how she teaches; Blackboard had become a teaching and learning tool. According to participants, Blackboard offered them opportunities to reinforce discussion in their lectures and to extend the students' time on task, which could be considered a movement toward constructivist learning. In such a way, they believed that Blackboard was a source for students to gain and develop their knowledge, which is important for learning to take place. It is worth noting that those participants had high expectations of students. They expected the students to retrieve the materials uploaded on Blackboard and to use them to prepare for class. In light of this type of use, it seems that Blackboard was seen to provide a type of functional improvement to teaching and learning practices compared to what could have been achieved without using it, which could be classified as an augmentation level of technology use, supporting learning according to the SAMR model as this model indicates that augmentation occurs when technology provides some sort of functional improvement over the practice being replaced.

In summary, these results show that the primary use of Blackboard by participants was for distributing course documents and making them available to students for their convenience. This result confirms the findings in the literature that LMSs are most often used for accessing learning materials and providing supplementary resources (Woods, Baker, & Hopper, 2004; Heaton-Shrestha et al., 2005; Schoonenboom, 2014; Garrote, 2007; Holm, Röllinghoff, & Ninck, 2003; Klobas & McGill, 2010; Lonn & Teasley, 2009).

5.3.1.2 Course management

The Blackboard system provides an integrated package of tools that enables teachers to create tests with many types of questions, to correct and automatically grade examinations, and to provide students with immediate feedback on their answers. The system also allows teachers to store questions in the questions bank for re-use in other tests. In addition, the Grade Centre feature enables teachers to collect soft copies of assignments, to provide feedback on them, and to post student grades. The analysis of the interviews data revealed that participants used grading and assessment tools to facilitate the management of their classes and to make their work easier. The level of using these tools was different among participants in this study. For the majority, the Grade Centre was frequently used and seen as one of the most valuable tools in the system, while a few of them also used the assessment tools to provide tests to students, as explained below.

5.3.1.2.1 Assessment tools

Over half (6 out of 11) of the participants indicated that they often used assessment tools to create and administer quizzes and self-assessments for students. Half of them (3 out of 6) also extended their use of assessment tools to provide online mid-term exams. For instance, P10 described her use of the system as follows:

I use Blackboard for conducting electronic tests whether mid-term exam or quizzes, delivering students' grades, returning assignments, as well as posting announcements and course requirements for students. I also use forums for encouraging students to participate in discussion... There are a lot of things that we want to do in class but we have no time due to routine things. While now collecting and returning homework with feedback is done through Blackboard. Questions and topics that were not finished in class can be completed in Blackboard. In addition, it saves my time in terms of correcting the exams.

P8, on the other hand, said: "I upload lecture materials there [on Blackboard]; I also put announcements to students, collect/return assignments, and conduct quizzes... while other exams are given in a traditional way (paper-based)." P6 used assessment tools in a similar

way and expressed the reason why, as follows: “I use online test as quizzes only because it is difficult to give midterm exam through Blackboard due to monitoring issues whereas quizzes have few marks.”

These quotations show that those participants sought to exploit the potentials of assessment tools to save their time and facilitate their work in terms of correcting and grading exams particularly when they taught a large number of students. However, some of them were still reluctant to rely completely on Blackboard in conducting quarterly tests and only used it for periodic quizzes, which is in line with 51% of the questionnaire respondents who were rarely or never giving exams or quizzes through Blackboard. This reluctance can be explained in several ways. The first might be teachers’ concern and lack of confidence in technology when it came to providing tests, either because technical problems such as technology breakdowns can occur during a testing period or because of monitoring and cheating issues, as expressed by P6 explicitly. Another reason may relate to the nature of the subject and the culture of the department, which may prevent some faculty from using such a tool. According to Ertmer and Ottenbreit-Leftwich (2010), the use of technology by teachers in the classroom is influenced by cultural and social conditions in their work environment. In each discipline, there is a set of values that guides teaching practices and determines which technology is acceptable and appropriate to use so teachers are more likely to adopt technology that is compatible with the prevailing culture in their specialties.

Regardless of that, all the participants, even those who had never used the assessment tools, expressed their desire during the interviews to experience and use them in the future. Their desire seemed to be driven by their belief in and perception of the usefulness of technology rather than any pedagogical matters. This suggests that faculty use the assessment tool

without considering its pedagogical affordance to support learners' construction of knowledge by providing quick and meaningful feedback on gaps in their knowledge (Carmean & Haefner, 2002).

In general it can be said that participants in the current study had used or at least sought to employ Blackboard for the purpose of assessment, which contradicts the result of Woods et al. (2004), who found that few faculty used Blackboard for interactive teaching or assessment purposes. This may be due to the variation in satisfaction of faculty in the two studies with the traditional ways of teaching and their concerns about students' expectations in the face-to-face setting. It seems that faculty in Woods et al.'s (2004) study were satisfied with the traditional teaching methods and expected minimum online involvement from their students. Faculty thought that students would be reluctant to any pre- or post-classroom engagement because it would add to their existing workload, thus faculty only used Blackboard for accessing course information. The time difference between those two studies may also have a role in terms of teachers' expectations regarding students' participation. It seems that participants in this study expected more involvement from students due to the widespread use of technology among them.

5.3.1.2.2 Grade centre

Most participants (9 out of 11) reported that they relied on the Grade Centre feature to provide real-time grade viewing to students and described such a tool as extremely useful for facilitating the administrative aspect of their course including collecting and returning assignments. For example, P2 described her use of Blackboard as follows: "to make course material available anytime... to add additional content, to send assignments for students and receive them, and to post students' grades; of course all of this is paperless." Likewise, P11

stated, “Sending and receiving homework are entirely done by Blackboard. All lectures were paperless.” P9, meanwhile, stated, “I use Grade Centre to deliver students’ grades because it maintains students’ privacy, as it is only accessible to students that are registered in the course.”

These comments confirmed the results of the questionnaire, which indicates that more than half of the respondents using Blackboard for facilitating their routine work as it offers them flexibility in dates and times outside the normal teaching hours. Participants appreciated the capability of Blackboard to store students’ assignments in one location so they were able to access them easily for grading and feedback. In addition, it enabled them to post grades for students as soon as they finish correcting the assignments, which lessens the delay in providing grades to students caused by having to wait until the next session. In this way, it seems that Blackboard provides them with some kind of improvement for what they were already doing, according to SAMR model.

Moreover, it appears that the willingness of the teaching staff to maintain the confidentiality of grades (as is discussed in the Student Privacy section) and their desire to reduce the volume of paper in their offices encouraged them to use Blackboard in such a way. However, the flexibility of time and place afforded by Blackboard shows that teachers are starting to expand their working in their private time and this flexibility is also an encroachment on teachers’ outside life. Nevertheless, the teachers did not acknowledge this in their comments. In light of this, it can be said that although faculty used Blackboard in a way that saved them time in terms of correcting grades, the flexibility it offered increased their workload, as discussed in section 5.3.2.4.2 Time and Effort Issues.

In short, it appears that participants used the grading tool to facilitate their existing practices (posting students' grades and collecting and returning assignments) and merely replaced them with more efficient methods in terms of cost and time. This supports Morgan (2003), who found that teaching staff adopt CMSs mainly to "manage the more mundane tasks associated with teaching" (p. 2). In addition, this result corroborates the observations of Blin and Munro (2008) and Kirkwood and Price (2014), who pointed out that what is more commonly found in practice is that technology is used to replicate or supplement traditional activities. According to the SAMR model, such use could be classified as augmentation of the current teaching practices because it adds some kind of functionality improvement to what teachers were already doing in terms of providing quick feedback.

5.3.1.3 Communication between teachers and students

Almost all participants (10 out of 11) reported that Blackboard is an effective, quick, and easy way to communicate with students because it allows them to reach each student registered in the course automatically without having to record their email manually. The analysis of the data revealed that the announcements and email features within Blackboard were one of the most frequently used tools by participants in this study. During the interview, P1 talked about her use of Blackboard to communicate with her students as follows: "It is a reliable way to tell my students when something has changed such as cancelling or postponing a lecture; when homework or new resources are available, that kind of thing."

Similarly, P4 described how she used these features in her course: "I use email when I want to send something to students and I want to guarantee 100% that it reached them... I use Announcements to inform students about the location of the exam and when test scores become available."

These comments show that participants used announcements and/or email feature mainly to facilitate communication with their students. This finding is consistent with what was apparent from the questionnaire, i.e. that Blackboard was frequently used by over 68% of respondents to send announcement messages and communicate with students via the email tool. Participants employed such features to keep in touch with their students between sessions and exchange practical information rather than using them to promote student learning. Faculty used them mostly to notify students when something had changed in the schedule or when new course materials became available. They also posted announcements to students about assignment requirements, due date reminders, or any important events and activities held at the university that they wanted students to attend.

On the other hand, participants were uneven in the degree of their dependence on Blackboard as a mean of communication with students. For example, P11, P10, and P5 reported they were completely dependent upon Blackboard to communicate with their students, which in turn reduced the number of students who came to office hours to ask routine questions, as these practical things were available through Blackboard. This was clearly expressed by P10, “I relied on it [Blackboard] as a means of communication with my students thereby they rarely come to my office asking trivial questions.” P11, on the other hand, provided more of an explanation of how she used Blackboard for the purpose of communication:

I say to my students from the beginning of the semester, each one has to activate her Blackboard account and check her accessibility to the course on the system because I won't receive any assignments by regular email; I don't give any paper tests... I never put announcements on the door of my office. I usually post them via email or announcement tools within Blackboard... Therefore, everyone has to check Blackboard because they know that it is the only means of communication between us.

P5 even suggested the following: “Eliminating mandatory office hours unless in case of the need to set a date based on the existence of inquiries from students.” In contrast, P3 spoke about her limited use of email and announcement features because she felt that students did not pay attention to them as expressed explicitly: “although I can access any student when I want by sending an email to her, the challenge remains: does a student open her email [on Blackboard]?”

These quotations show that there was a contrast in the extent of the participants’ reliance on Blackboard as a communication medium, which can be explained by the level of expectation teachers had in terms of students’ interaction and commitment to perform what is required of them. It can also be explained by the extent of the teachers’ activation of other tools in the system and whether they make it the only way to submit and receive assignments, post announcements, or provide online tests. In addition, some participants spoke about their use of other technology to communicate with students such as TAWASUL,⁶ which in turn may influence and limit the use of the system for such purpose.

In general, it appears that, in most cases, participants tend to use Blackboard to substitute the traditional tools previously used for communication purposes such as a bulletin board on the doors of their office or individual e-mail messages. However, Blackboard provided them with ease, flexibility, and convenience. Thus it can be said that the use of Blackboard as a means of communication could be considered on the substitution level in the SAMR model because it was only used to replace existing practices with no functional change.

⁶ A free SMS messaging service, offered by the university to activate communication between faculty and students.

5.3.1.4 Interaction and collaboration

Although most of the participants in this research, as mentioned earlier, used the LMS tools that are compatible with their existing teaching practices such as document tools and the grade centre features more frequently than other interactive tools that require a significant change in teaching habits, the analysis of the data revealed that the majority of them valued interactive tools and perceived them useful for teaching and learning. In fact, during the interviews over half faculty members (6 out of 11), compared with only one-third of the respondents to the questionnaire, indicated that they used Blackboard as an interaction and collaboration resource. Most participants used some of the interactive tools within the system such as discussion boards and forums while a few activated wikis, blogs, and group features. participants used discussion boards mainly to encourage collaboration among students on group projects and to promote discussion outside regular face-to-face sessions. For example, P1 used discussion boards to provide students with opportunities to exchange general information regarding the course and to support deep discussion in face-to-face sessions by asking students questions on the discussion board and inviting them to comment and discuss lecture topics with their peers, as she explained:

The basic thing I used Blackboard for was putting up weekly PowerPoint slides to students. The other thing, which I felt it was pretty good, is the use of discussion boards. I have two discussion boards: one is available for general discussion among students—you know at the beginning of the semester students are not accustomed to your teaching method, where they can buy the book, what is required for tomorrow... so they have a place to discuss with each other and I respond to them when they need help. The second forum is ad hoc to lectures. Either I put up questions before the lecture and let them start discussing it, so when they attend the lecture they will be prepared to discuss the topic deeply; or after the lecture... so the students view the answers of their colleagues and comment on each other. This way gives them an opportunity to learn from each other. I mean, not everything is to be provided by the teacher.

In this case, P1 appreciated peer learning and saw the role of teacher as a facilitator rather than the only source of information. This belief encouraged her to use the LMS to develop a constructivist-learning environment in which students actively constructed their knowledge through discussion and collaboration with peers. Thus she used discussion boards to support interaction among students and encourage them to engage in their own learning by providing students with more space for discussion and to comment on each other's ideas. By doing this, she seems to have made her face-to-face sessions more meaningful and more about course content rather than purely giving lectures and providing basic information, which is consistent with the principles of constructivist teaching (Savery & Duffy, 1995).

P10 gave another example of her use of discussion boards to enrich the learning experience of students through expanding discussion beyond class time: "There are many things that we could not do in a normal classroom time, so we did them in discussion boards as students have time to search and give their views in detail." In a similar way, P3 employed the discussion board to overcome the lack of time available for individual tuition due to the large number of students in the class, as she reported,

I used discussion boards and I feel that I meet my students there more than one-to-one tuition, particularly, with large groups where a teacher is unable to pay attention to all students. I believe that although the low level of participating in discussion boards, anyway discussion board would be an alternative space of one-to-one tuition.

These comments show that Blackboard was used to create an alternative learning environment beyond the boundaries of a traditional face-to-face setting. It allowed P10 to provide additional activities to students to engage them in the learning process in a way that is often impossible in the traditional classroom, whereas P3 used it to provide additional support for students that could improve the quality of their learning.

Furthermore, P11 valued cooperation among students and used Blackboard to encourage students to work collaboratively on their projects, as she said:

I gave students some articles in English and asked them to translate and understand them well to prepare a presentation as groups that each individual group would present to the whole class. I used Blackboard to facilitate collaboration between group members. I sent these articles to groups through “file exchange” and encouraged them to use it.

Here, Blackboard helped students work together to complete their tasks without the need to meet in person. This meant they could share ideas, communicate, and collaborate in one spot. Thus, the findings suggest that the use of discussion boards extended discussion among students beyond face-to-face sessions and promoted collaborative learning, which in turn could support student learning. This result is in line with previous research by Costen (2009) and Leese (2009), who found that using advanced tools such as a discussion board in LMSs assisted students to construct meaning and produced a collaborative learning environment focused on learners instead of teachers.

In light of the participants’ comments, it is evident that Blackboard, particularly the interactive tools, creates further opportunities for dialogue and discussion. Utilizing Blackboard tools in such a way promotes the transformation of pedagogical practices toward a social constructivist model, which in turn supports student-centred learning. This result is consistent with the argument of Bonk and Graham (2006) that VLEs can promote student-centred learning. In such cases, it can be said that the use of Blackboard has exceeded the enhancement stage and involves the modification level according to the SAMR model since Blackboard was being used to offer learning opportunities that would not be possible without it (see 3.9.3).

5.3.1.5 Summary

The findings from the questionnaire and the interviews revealed that the LMS has not been fully operated by faculty at the University and its use varied between participants. In many cases, the use of the LMS was centered around some specific tools within the system such as the content area, and the grade centre as well as communication tools to perform routine teaching tasks including dissemination of learning materials and course information, collecting and returning assignments, providing students with their examination grades and facilitating communication with students. This suggests that the LMS had been used as an ‘add-on’ to the traditional classroom settings with no significant change in teaching and learning practices. However, the study also showed some evidence for the use of LMS as an effective teaching and learning tool for promoting student interaction and engagement in the learning process. In these cases, participants attempted to integrate their face-to-face teaching with learning activities on the LMS and plan their use of LMS and face-to-face teaching in tandem, which can be described as a complement to or an enhancement of teaching and learning. Therefore, it appears that the use of the LMS at the University is still in the first two levels of the SAMR model, which is not surprising, and confirms what previous research has indicated, where the changes in teaching and learning practices due to the use of technology have been minimal or even negligible, as most of them reenact and repeat the current traditional practices in a variety of formats (Blin & Munro, 2008; Kirkwood & Price, 2005; Price & Kirkwood, 2014).

In fact, several factors contributed to the different ways in which participants in this study had used the LMS for teaching and learning purposes. A lack of experience and familiarity with the LMS was one of factors that influenced how faculty had used it in teaching as the system had only recently been introduced in the University. This was evidenced by 62% of

the questionnaire respondents and six interviewees reporting that they had no more than three semesters of experience of the LMS. Faculty unfamiliarity with the LMS was also confirmed when they talked about their need for technical and pedagogical training, as will be discussed later in section 5.3.4.3.2. Training and Professional Development Issues. As a result, participants seemed to prefer a few specific tools, which do not require high technical skills and which can be easily learned by themselves. Therefore, in most cases, participants ended up using the LMS as an addition to their teaching, or even to duplicate their face-to-face activities, without any real improvement in their existing practices. In other words, participants tended to use the LMS tools that fell within their teaching comfort zone, or those that they thought would make their jobs easier and less effort, which is consistent with the TAM model (Davis et al., 1989). Thus according to this model, participants are more likely to adopt a tool if they believe it will allow them to perform a certain task better as well as not require them any effort (see 3.9.1).

In addition, the result confirms the finding of Woods et al., (2004) which revealed that experience with the LMS is the primary factor in determining how it was used by faculty members, whether for course management or pedagogical purposes. Furthermore, the findings from the current study indicated that teachers' experiences in using the LMS corresponded with aspects of Rogers (2003) adoption model where teachers need time to become more familiar with the LMS and overcome the technical and pedagogical challenges. This suggests the vital role that training could play in developing innovative use of the LMS among faculty and highlights the importance of providing faculty with opportunities to experiment with the system as well as offering them training that is related to their needs; this is discussed in section 5.3.4.3.2.

Another important factor for the disparity in the use of LMS among participants in this study might be related to how faculty came to their decision to adopt the LMS in their classrooms. Participants who had chosen to use the LMS themselves (as mentioned by eight participants) seemed to have positive attitudes towards technology in general and the LMS particularly. Indeed, they were convinced about its usefulness regardless of their success in achieving those benefits. Therefore, they tried to use the LMS in ways that helped them to achieve their objectives. Nevertheless, the existence of positive attitudes towards technology does not guarantee its effective use by teachers unless they also possess the necessary knowledge and skills (Ertmer & Ottenbreit-Leftwich). Based on that, some participants (six interviewees and 84% questionnaire respondents) experienced some level of improvement in the efficiency of their work because LMS enabled them to perform their daily teaching tasks faster, easier and more conveniently, while others (five participants) sought to exploit the interactive tools within the system to enhance the quality of teaching and support student learning.

This issue has been highlighted in the literature where the assumptions to adopt technologies have been commonly associated with promises about the capability of technology to provide teachers with efficiency improvements in their administrative work and/or promoting pedagogies (Shelton, 2014).

Those participants who had adopted the LMS in response to requests of others, such as their head of department, colleagues or to pressure (real or perceived) from what they called 'digital native' students (as in the case of P3, P6 and P8), did not seem to be fully convinced about the potentials of LMS. As a result, their use of LMS ended up as merely an alternative to the previous tool or application that they were already using.

Before teachers used their personal website at the University to post course content but now Blackboard allows us to set exams and provide students with their grades confidentially without the need to publish grades in the hallways (P6).

I use Blackboard mainly to post course content. Actually, I am wondering why some teachers use Google Drive instead of Blackboard, which is supported officially by the University and has more potential (P3).

Therefore, it is not surprising that their teaching practices did not change, let alone improve, through using LMS in their classes as it simply served as a substitute for another tool already used, which represents the substitution level in the SAMR model.

The pattern of use of the LMS identified in this study is in line with the results from the study conducted by West et al. (2007), where some teachers started using the LMS by trying a particular tool and others to tackle a pedagogical or organisational need. However, it contradicts the Heaton-Shrestha et al., (2005) study which revealed a shift in the use of LMS by faculty from a 'bolt-on' model towards more blended approaches, where LMS-based activities supported the traditional ones rather than duplicated them. This difference in results might be due to differences in familiarity and experiences in the use of LMS between participants in the two studies. In addition, it could be related to the way of introducing the LMS in both contexts. In the study by Heaton-Shrestha et al. (2005), faculty had been required to attend training programmes offered in two phases, including both technical and pedagogical aspects necessary to the successful use of LMS. The first phase of training, delivered via open seminars at different University sites, focused on providing faculty with the basic skills of how to use the LMS and giving them the opportunity to try it out in practice. In the second phase, the focus of training was on the pedagogical aspects of the use of technology in teaching and providing online resources, and they were also offered round-the-clock support.

5.3.2 (RQ2) Faculty perceptions of the impact of LMS on teaching practices and students' learning

This section presents and discusses the findings related to participants' views regarding the impact of using LMS on teaching practices and students' learning. The analysis of the interview data revealed that the majority of participants were, in general, satisfied with their decision to utilise LMS in their courses, which is in line with the preliminary results of the questionnaire (see Table 11). Faculty interviewed cited many benefits associated with the use of LMS in their teaching and learning practices in four major themes: pedagogical improvement, enhancing student learning, strengthening their relationships with students, and supporting other teaching issues. These themes also include other sub-themes as discussed in detail in subsequent sections.

5.3.2.1 Pedagogical Improvement

Although some of the participants stated that Blackboard had not entirely changed the way they taught, most (8 of 11) believed that they had made pedagogical improvements through the use of Blackboard in their courses. They were satisfied with their decision to adopt and use Blackboard, as its use is not compulsory in face-to face classrooms. The findings of this study show that Blackboard helped some participants to improve their teaching practices in various ways. These were classified into four sub-themes: facilitating a variety of teaching strategies, enhancing the effectiveness of teaching, encouraging the application of various methods of formative and summative assessment and promoting faculty to rethink about designing course content, as explained in the following sections.

5.3.2.1.1 Variety of Teaching Methods

Several participants (5 of 11) indicated that Blackboard assisted them with utilising various teaching methods. For example, when P2 was asked about her view on the use of Blackboard in her course, she expressed that Blackboard encouraged her to adopt a more student-centred approach to teaching such as flipped classroom and discussion strategies:

Now with the spread of the modern studies that recommend flipped classroom strategy due to its effective influence on students' learning, I started to think, why do I not invest in Blackboard to make it more effective? It means that instead of uploading the content after each lecture, I uploaded it prior lecture to allow the students to be prepared for discussion in the class.

Similarly, P1 reported that Blackboard helped her to employ other teaching strategies in her class such as discussion method and collaborative learning strategy. It gave her the opportunity to include more discussion in lecture time, as the basic information and course content were available on Blackboard. She said:

We exploit the lecture time in learning discussion and worksheets instead of lecturing and dealing with small matters or routine questions, which can be accessed and easily read on Blackboard. So, I tell them [students] to refer to Blackboard.

Here we can see that both participants felt uncomfortable with lecturing and were eager to improve their pedagogy. They realized the need for innovations in teaching strategies, particularly the transition from teacher-centred to student-centred strategies. They believed that Blackboard could facilitate that and allow more time in class for teaching and learning. The previous quotations also show how using Blackboard helped participants experiment with new ways of teaching in which the technology suggests a new pedagogy to them. They considered that Blackboard has helped them adopt teaching strategies that focus on the student's active participation in the learning process through interaction with the learning material, discussion with peers during class time, reflection to aid understanding rather than just being information-recipients; which is one of the important principles of constructivist

teaching (Gensburg & Herman, 2009).

This finding is consistent with Lai and Savage's (2013) results at McMaster University in Canada in that although traditional lectures were still the most significant mode of teaching at university, Blackboard motivated some teachers to rethink their teaching styles to make lectures meaningful and worthwhile. In addition, this finding supports what Morgan (2003) highlighted where there was evidence that the use of LMS had changed teaching practices of some faculty although most of them were sceptical about the extent to which LMS influenced their teaching methods and improved pedagogy. Morgan argues "most faculty members come to e-learning by using a LMS. It is their starting point, and it becomes the focus of a lot of their thinking about how to teach well" (p.71). This was indicated by the qualitative study of Heaton-Shrestha et al. (2005) at Kingston University in the UK, which found that despite the fact that many teaching staff did not use the LMS deliberately to change their teaching methods or develop more student-centred approaches for teaching, the employment of LMS led to a relative change in their teaching styles.

5.3.2.1.2 Teaching Effectiveness

The analysis of data obtained from the interviews revealed that almost all participants thought that the use of Blackboard has a positive impact on the quality of teaching. Many participants reported that using Blackboard in their classrooms enhanced their teaching effectiveness. For instance, they expressed that it assisted them in better meeting their students' needs by reviewing the students' posts and other contributions to the Blackboard discussion boards. In this way, faculty learned more about their students' strengths and weaknesses, as P10 said: "The students' responses to their colleagues in the Forum drew my attention to things I did not notice before".

P1 added:

It is possible to know, for example, the student's understanding from the questions she asks her peers [on Blackboard], this help me to realize if she had not understood well. So, I may revise and repeat the explanation of this part and give them more examples and learning activities in next lecture.

Here those participants show how witnessing discussion online gave them insight into students' misunderstandings and difficulties. They benefitted from reading students' responses to each other in discussion boards to develop their plans for upcoming face-to-face sessions. In this way, Blackboard provides them with useful feedback regarding issues students struggled with, which might enhance the teacher's role as a facilitator to student learning, according to constructivist theory of learning. This finding supports Van Soest et al.'s (2000) result where online forums help teachers to explore issues of students' difficulties.

Furthermore, many participants found that Blackboard increased the quality of their teaching by giving them an opportunity to reflect on their teaching to better achieve course objectives and reconsider which parts of the curriculum are best suited to Blackboard, as P4 explained:

Having everything organized within Blackboard increased the reflectivity in my teaching and gave me opportunity to further improvement... I feel Blackboard gives me suggestions for additional things that I can do in the next semester. Each semester I find a feature within Blackboard that could be used in a specific way to achieve the desired goals that were not adequately achieved in the last semester.

Here, in contrast to the ephemeral nature of traditional classroom interaction, Blackboard allows faculty members to reflect on their professional practice and question their prevailing one because it can capture interaction, a point also found by Harrington et al. (2006). So they themselves have observed this and helped themselves to become reflective practitioners, which has been argued to be a key aspect of good teaching (Biggs, 1996). Cox et al. (1999) confirmed this concept, saying that teachers need to reflect on their current professional

practice to bring about change and improve their teaching using ICT.

On the other hand, according to some participants, Blackboard allowed them to create a learning environment that focus on active engagement of students in their learning process as P2 mentioned:

When we discuss a topic in the class, I ask them [students] to give their viewpoints and reflect on it in online discussion. If I feel the discussion did not adequately cover, then we have to go back in the class to discuss it more. When one of the students asks a question regarding a topic that they already did a task about it, I did not answer the question and I asked them to search for the answer and discuss it again. It means that we get the chance to save our time in the class, resume our plan that we work on and at the same time we discuss the student's question online.

This quote shows that Blackboard has made a quite dramatic impact on P2's teaching as she has attempted to encourage learning beyond the classroom. In this example, P2 sought to encourage her students to be active learners by posting a question and asking the students to reflect on it either online or even during the lecture. It is clear that this participant cares about her teaching. She believed in the value of discussion for learning that she liked her students to arrive at meaning by actively participating in their learning process as well as following her guidance, which is a basic principle of constructivism (Mayes & de Freitas, 2004). In such a way, her role was to facilitate student learning rather than spoon-feeding them.

Blackboard was used in this case to create a learning environment that supports learners to reflect on the content learned, which is a main principle of constructivist teaching (Savery & Duffy, 2001). Thus, participants' perspectives suggest that Blackboard enhanced teaching effectiveness through the use of interactive features within Blackboard. As online discussions gave them an opportunity to engage their students in the learning process beyond traditional classrooms, they were able to observe issues students struggled with and reflect on their practices, which improved their teaching.

5.3.2.1.3 Assessment

The participants' views on the benefits of LMS and its impact on the student assessment process has shown several paradoxes. In most cases, the impact of using Blackboard on the assessment process was limited and centred on the modality of exams, submitting and returning assignments, and providing feedback electronically instead of in hard copy. By doing so, faculty attempted to save their time and effort in performing routine tasks and invested such time for doing other teaching and learning tasks. For instance, P4 said, “I use Blackboard for giving electronic tests whether midterm test or quizzes because it serves me in grading process.... Thus I have extra time to do other things like following-up group and individual activities”.

It is clear that automatic assessments through the tests, surveys, and pool facilities of Blackboard encouraged faculty to replace paper-based exams with electronic ones. During the interviews, all participants—even those who had not made use of online tests yet—clearly valued the automatic grading feature of students' exams and considered it very useful for reducing their workload and saving time, particularly in large classes, which confirms the findings of previous studies (Heaton-Shrestha et al., 2005; Lia & Savage, 2013). By this, participants believed that they would be able to spend time preparing and following-up other learning activities, which in turn might improve the quality of teaching.

In contrast, about a third of participants only used online tests for periodic quizzes and preferred to conduct midterm tests the traditional way (on paper), as P7 articulated: “I only use quizzes while a mid-term test is conducted on paper.” This difference in participants' view and practices might be related to the prevailing culture about assessment paradigms in some departments, which might be a reason not to apply the electronic tests. Another reason

could be associated with faculty concerns about the reliability of the system, which was discussed in section 5.3.4.2.2. Regarding to the electronic submission of assignments, participants expressed that Blackboard made this process easier for both teachers and students. As P2 stated:

Submitting and returning homework became paperless through Blackboard. It also helped all of us; I mean tasks that students uploaded always exist online, so I can read them whenever I want. Students can also get their grades plus feedback easily. Thus, they benefit more compared to the previous practice when hanging students' grades on walls.

The flexibility of being able to access students' work on Blackboard anywhere and anytime with the advantage, the elimination of the storage of hundreds of assignment papers, and the ability to provide students quick feedback, which is usually delayed in traditional teaching practices, were considered significant factors that motivated faculty to shift towards this method. However, this evidence indeed does not reflect a move towards more involvement of students in their assessment process, as participants are still modelling traditional assessment methods in electronic form.

On the other hand, Blackboard has encouraged few participants to apply various methods of formative and summative assessment. For instance, P11 exploited quizzes to provide self-assessments to her students. As she described:

Blackboard gave me options for student assessment and opportunities for creativity in teaching. . . . At the end of each chapter, I give students a self-assessment through Blackboard. It is a test without grades, but a girl can know her level, and she can see the right answers at the end of the test. Each student has unlimited trials.

In contrast, P10 used discussion boards to apply a peer-review method of assessing her students. She says, "It assists me in providing a peer-assessment in which students can benefit from each other. I ask them to respond, comment and evaluate each other."

These participants seem to be unsatisfied with the traditional practices of evaluating students, and they acknowledged how Blackboard facilitates the use of alternative methods of assessing students such as self-assessment and peer-assessment. In this regard, those participants used the online quizzes to provide self-assessments in which students can test themselves when they are ready and make as many attempts as needed. Thus, Blackboard offers a safe learning environment for students where it can be accurately reflected their performance without fear of losing grades. It also provides guidance for both teachers and students. On the one hand, self-assessment gives students opportunities to reflect on and evaluate their learning and identifies knowledge gaps, which may motivate further improvement. On the other hand, it can highlight areas that students find difficult and which teachers can then cover in more depth during face-to-face sessions.

In addition, some participants used discussion boards to engage students in the assessment process by asking them to evaluate their peers and provide them with feedback, which is one of the core skills required by the labour market at present. In this way, the peer-assessment practice created a collaborative learning environment through the exchange of ideas so that students could get more insight into their work to promote development and improvement. It also emphasizes the students' role in their learning and lessens the power relation between teachers and students. Thus, students learn that assessment is not something done to them but an integral part of how they learn and improve. It can be argued that this change towards the use of different assessment methods fully corresponds to the shift in higher education literature from the emphasis on teacher performance to focus on student learning.

Moreover, some participants reported that using Blackboard increased the credibility and clarity of the assessment process in two related ways. First, having the assessment criteria available on Blackboard at all times makes the evaluating process clear to students. As P1 stated: “I put tasks and the criteria of assessment on Blackboard.” Thus, students can know what is expected from them and how teachers will evaluate their work. In this way, Blackboard acts as a safeguard against losing or forgetting assessment criteria that may occur when a student receives a hardcopy. Second, the use of the Grade Centre tool to post students’ grades and feedback increased the transparency of the grading process (see the Transparency section for more details).

Furthermore, some participants spoke about how Blackboard allowed them to know the amount of work and effort carried out by the student through the use of tracking tools. As P8 said, “It offers additional opportunities for assessing students. . . . I can keep an eye on them, conduct online quizzes, and put up topics for discussion.”

Thus, being able to track students allowed faculty to better deal with issues related to participation in online activities, as they could easily know who were involved or not. In such cases, it appears that the teacher was seeking to create learning opportunities that reflected the principles of constructivist learning. However, these principles emphasising the importance of involving students have been neglected in the assessment process since all the power remains in the hands of the teacher, the only person who makes all the choices when evaluating. Rogers (2004) emphasised the importance of aligning assessments with pedagogical purpose and learning tasks. In light of this, faculty need to reconsider the process of student assessment and invite the students to participate fully in this process.

5.3.2.1.4 Design of Course Materials

The majority of participants felt that using Blackboard had not affected the design of their course materials as they still uploaded their existing materials without changing them. However, few (2 of 11) affirmed that Blackboard encouraged them to think about redesigning course content by adding new activities and providing additional materials to extend students' learning outside the classroom, as P10 said:

It did not entirely alter my teaching method, however, it affected the design of my course and the distribution of lessons over the semester. For instance, I might decide one part of my course works better in Blackboard instead of in-class. This is because Blackboard allows learning discussion on the discussion boards.

Similarly, P2 stated:

When I find, for example, some features within Blackboard that allow me to communicate with students outside the classroom. Of course this makes me consider it when designing certain educational activities.

These quotations show evidence that Blackboard made a slight impact on the design of course materials. Only two participants reconsidered the selection of the parts of the curriculum best suited to Blackboard and developed new Blackboard-based activities. This finding is consistent with Heaton–Shrestha et al.'s (2005) findings in that only a few faculty members had commenced to develop and redesign learning materials for LMS-based units. It seems that integrating LMS into teaching and learning is a challenge for most faculty members. Bair & Bair (2011) and Lai and Savage (2013) pointed out that incorporating blended learning requires teachers to rethink course design and manage different modes of teaching (on-line and in-class) to guide and support student learning.

It appears that few participants were aware about the LMS design that may influence their pedagogy. It also indicates a need for professional development programmes that emphasise the pedagogical aspects of teaching and learning with LMS rather than focusing on its

features and tools to increase faculty understanding of diverse modes of teaching in blended-learning environments.

5.3.2.2 Student learning

The findings of the study indicate that integrating the LMS with traditional face-to-face teaching (blended learning context) helps to enhance students' learning experiences and facilitate their engagement in the learning process according to faculty interviewed. During the interviews, faculty members frequently referred to students. Therefore, it is worth mentioning that the view gathered about students throughout this thesis represents the point of view of my research participants. In this regard, my participants cited several benefits related to LMS in four sub-themes: helping students prepare for the lecture and concentrate during class time, reinforcing their engagement both in and outside of class, helping students to develop some basic skills, and providing immediate feedback needed to enhance student learning. These issues are discussed in the following sections.

5.3.2.2.1 Preparedness and Concentration

Several participants (six out of 11) believed that using Blackboard in their course helped to enhance students' learning and deepen their understanding of subjects. They expressed the view that the flexibility to access course information and materials anytime and anywhere from Blackboard has enabled students to be more prepared to concentrate more during lectures and thereby learn better⁷. As P1 explained, "When a student obtains the material required for a lecture in advance through LMS and most importantly reads it before she comes to class, she will be more prepared for the lecture." P11 confirmed this opinion when she was asked about how Blackboard can support students' learning and stated, "It assists students because they have a copy of everything they needed to be quite ready for lectures such as lecture slides and examples of tutorials".

⁷ According to the view of my participants.

These quotations demonstrate that the participants value student reading before lectures, which is a conventional practice. In light of this, the teachers appreciated the ability of Blackboard to facilitate learning by making course materials available ahead of time so students could access them when convenient and review the material several times before coming to class. In this way, they are more likely to make better use of their time and study at a time suitable for them. In addition, it could increase time on the task that is necessary for learning to occur (Lai and Savage, 2013). As a result, students can interact with the content effectively, which may lead to valuable discussion during class as seen by faculty. Caruso (2006) emphasised the benefit of flexibility and accessibility of course materials on LMSs that would permit students to study according to their schedule, which students perceived to be a plus for having an LMS. This result also corroborated with Morgan's (2003) finding that faculty perceived that putting up course materials in advance helps students to pay more attention and learn better in class. Similarly, P4 suggested that being able to access course materials allows students to concentrate in class: "The availability of all references and tasks on Blackboard 24/7 helped students to concentrate in class instead of taking notes about what had been said or wasting time in writing task requirements".

For the research participants, the ease of accessing course content on Blackboard allowed students to focus more during the lectures because they do not have to copy the lecture slides verbatim in class, as everything was available on Blackboard. This may also have reduced the students' sense of anxiety and tension and make them more confident. Thus, they not only could better understand but also may enhance in-depth learning. Indeed, participants believed that the availability of course resources on Blackboard encourages pre-engagement with course materials, which allows students to achieve better participation and meaningful discussion in the lecture.

Although the participants understood how students could benefit from having course materials and lecture notes in advance, they emphasised that students themselves play a significant role in achieving meaningful engagement by adhering to their duties. As P1 explained, “if students do [read material] and are eager to learn”, the classroom can be more rewarding. This finding confirms what was found in a previous study (Lai & Savage, 2013) that LMS helped students to focus on learning and understanding the material instead of becoming “scribes“ because they were able to get the course content in advance provided on LMS.

5.3.2.2.2 Student Engagement

Over half the research participants (seven out of 11) reported that using Blackboard in their courses, in particular the discussion boards and content area, has positively influenced student engagement and increased overall involvement in class and even outside class time, which in turn enhanced students’ learning. For instance, P2 stated:

A student can access course content such as presentation slides any time and from anywhere. I mean she can access videos and content that I presented in the lecture any time not only in class time. The student also participates with her classmates in online discussion of course-related topics and adds her reflection on that through discussion boards. As the participation in online discussion is graded, everyone can benefit from each other. This without any doubt increases the learning level.

This opinion was also verified by P10: “Through online discussion students learn from each other. They benefit from seeing the answers of their colleagues and the relevant comments from the teacher. So this improves their understanding. I felt it [Blackboard] is wonderful in promoting learning”. P8 expressed a similar view: “On a discussion board, if I asked a question, a student would answer it. Then other students would post their answers as well. Thus, students can see different viewpoints in the discussion, So they learn”.

These participants valued the student interactivity and saw it as beneficial to learning. They attempted to employ constructivist teaching that placed students in the heart of the learning process and allowed them to assert their crucial role in constructing their own meaning. They also appreciated the ability of Blackboard to enable learning in new spaces and at times outside class hours. They invested in what Blackboard offers, which is the capacity to study in different time and space. Therefore, they used LMS as scaffolding to assist students to achieve their level of potential development, providing them with learning resources and facilitating discussion and interaction with peers and a self-reflection process. Indeed, participants realised that giving students opportunities to interact with course content and providing a space for discussion outside the real time and physical space of the classroom is an effective way to foster student participation and involvement in various activities which the constructivist teaching emphasizes (Savery & Duffy, 1995).

This was emphasised by Zhu (2006), who stated that online discussions offer students opportunities to express their views, analyse their peers' opinions, and reflect on their learning, which are essential to promote their cognitive development. Through discussion boards, students were able to express their thoughts, exchange ideas, analyse peers' comments, collaborate with each other, and reflect on their learning, thereby becoming active learners, which is a core principle of constructivist teaching (Mayes & de Freitas, 2004). In addition, having students' work and lecturer's comments visible to other students in discussion boards may help students to develop thinking skills and reconstruct their knowledge, which is essential to enhance learning⁸.

Furthermore, P1 agreed with her colleagues that Blackboard supported students' learning by facilitating interaction among students through discussion boards. She reported:

⁸ According to the view of my participants.

Lecture time is very short, and I hardly give students the theoretical part and only one activity. However, students now have a chance for discussion at any time through the discussion board. Students have their own thoughts and plenty of time available to them to search, provide evidence, and add links or photos to support their opinion. . . . For example, in the lecture about designing and producing videos, I usually give my students external links to educational sites of how to produce your own video and other sites for pictures and sounds. Most of them are free trials. So, I used the discussion board to post several links to these sites. I was surprised that students added other links that I had no idea about. I feel Blackboard makes students more engaged in creating content and contributing to their learning.

P1 used the discussion board to expand class time and encourage students to be active learners by posting questions and asking students to comment on them by searching and supporting their answers with evidence. Additionally, sending links to videos and asking students to watch them and reflect on them has motivated students to participate in creating content and made them more interested in learning. In this way, she created a motivating learning environment where students were able to engage in their learning process effectively.

However, only two participants raised concerns with the low level of student engagement in the online discussion. P3 said:

Students' participation in the discussion board and forums was not at the level we wanted, but I think it is still an alternative space for one-to-one tuition. Sometimes teachers have high expectations from students but they deal with this matter as it is just a post for getting a grade. So they end up copying and pasting two or three words from someplace.

Likewise, P11 stated:

Participating in online discussion was not part of the assessment process and there were no grades for that because using it was a quick and improvised idea. I did not plan for doing that. . . . The students also did not like the idea and did not interact with others in the discussion board much. This is the problem that I need to solve. I think grading student contributions in the online discussion might tackle the problem of little interaction.

These participants blamed students and saw the lack of interest and low level of involvement among them as one of the challenges they faced while using LMS, as discussed in Section

5.3.4.1 Student Reluctance. Additionally, their views about the level of student engagement in online discussion might have been related to the teaching strategies employed by each teacher, their level of interaction with what students were asking and their expectations from their students. According to Zhu (2006), encouragement by the teacher, discussion facilitation and providing of incentives may all affect the level of student engagement in electronic activities. Klobas and McGill (2010) also pointed out that the active participation of both the teacher and the student is an essential component in order to benefit from LMSs. Their findings revealed that despite the significant impact of student's engagement and interaction on the benefits gained from the system, teachers' involvement to guide appropriate use had played a greater role in influencing the benefits students received from using LMS. Here, participants who experienced high levels of student engagement referred to the idea of assessing electronic interaction, which probably is a motivating factor to those students to participate on Blackboard activities (Molesworth, 2004; Keller 2005). Lai and Savage (2013) further supported this idea and suggested that students were more likely to feel motivated to participate in forums if there were marks allocated for participation. So, faculty members were able to encourage them by drawing on conventional assessment methods and valuing individual efforts and contributions.

According to McKenzie and Murphy (2000), students may not contribute to or visit the discussion board if their contributions are not assessed. Therefore, grades seem to be a key motivation for students to participate in online discussion because this is an appreciation of their time and effort, particularly in a formal learning situation. It is the nature of the prevailing relationship between teachers and students, which they can never escape, that a teacher leads and assesses and students learn and are assessed. Thus, faculty can assess students' interaction and reflect on how they learn with and from each other. This is not

possible when students speak to each other in the classroom or is much less easy than assessing a written discussion. So, it seems that Blackboard was a useful tool for engaging students in learning discussions particularly by assigning marks for online participation.

It is worth mentioning that students should be assessed upon the quality of their posts based on predefined criteria rather than the number of posts; otherwise students will focus on posting more but with lower quality. However, identifying the extent of the quality of online discussion is beyond the scope of this study.

5.3.2.2.3 Skills Development

Fewer than half of the research participants indicated that Blackboard helps students to develop some essential skills, such as ICT skills, self-reliance, self-regulation, critical thinking, and/or time management skills. P1 illustrated this perception: “It improves IT skills of my students who will graduate as teachers. They without doubt will need these skills to teach a new generation who are more familiar with technology”. Similarly, P2 added, “My students are specialised in computer education; they have to know how to use Blackboard. So I use it because I want them to run the experiment of using it”.

Here, those participants believed that using Blackboard with traditional face-to-face classrooms has helped students to improve their ICT skills, mostly in the case of courses in which the use or knowledge of ICT was an important learning outcome. While others thought that the online activities provide opportunities for students to improve their critical thinking through engagement in the peer-review process, as P10 indicated:

One of the advantages of Blackboard is that it facilitates peer review learning process and allows the students to benefit from each other. . . . I usually ask them to respond, evaluate and comment on each other’s work, which definitely improves their skills.

This lecturer encouraged her students to participate in online discussion and post their thoughts and reflections. In this way, students had opportunities to share, negotiate, and reflect on their understanding as a way of constructing meaning, which demonstrated constructivist principles as espoused by Savery and Duffy (1995). Through discussion boards, P10 claimed she was able to engage her students in online learning activities that required higher-order thinking, such as analysis and evaluation. According to Rogers (2004), the ability to analyse and provide arguments is central to critical thinking. This is further supported by Lyndon & Hale (2014), who state that students' critical thinking skills can be developed by using some online activities through forums where students can learn from each other by participating in a learning discussion of multiple perspectives.

Moreover, from the participants' viewpoint having all aspects of the course centralised in one platform anytime assists students to be independent learners and promotes their self-regulation skills as P5 articulated, "Students can easily access it anytime, anywhere.... It [Blackboard] helps students to acquire several skills such as time management, independent learning and increase their motivation for learning". They saw the flexibility in accessing course materials as beneficial in helping students to manage their time effectively, as they can study at a time that is suitable for them. This allows students to learn and absorb materials independently and allows for self-regulated learning as seen by faculty. This finding supports the results of previous research on the flexibility and accessibility of learning materials on LMSs that provides students with opportunities to learn independently, develop self-regulated skills, and enhance their inquiry skills by searching for new information and knowledge (Al-Ani, 2013; Paechter & Maier, 2010). However, the development of students' inquiry skills was not identified in this study.

Furthermore, P1 was the only participant who pointed to teamwork skills in her interview: “Students learn how to work collaboratively; activities that need extra time can be done online outside class time through Blackboard.” This participant perceived that Blackboard could foster collaborative learning by facilitating communication among students and giving them an alternative space for exchanging their ideas and files through discussion boards, groups, and other features within Blackboard. In this way, students can learn how to work collaboratively, which is crucial for preparing them for the job market.

5.3.2.2.4 Feedback

During the interviews participants spoke about the positive role of Blackboard in increasing the feedback they provided to students on their work, which is important to promote the quality of student learning. That is to say, students get more immediate and precise feedback from teachers than they might receive if they were not using Blackboard. This feedback, from a constructivist perspective, is crucial for students to reflect on and acquire new information necessary to develop the meaning of knowledge. For example, P3 stated, “Blackboard affected the feedback provided to students. It has become faster and more accurate compared with face-to-face or written comments”.

P10 added:

Students’ work has improved because Blackboard enabled me to give them timely and comprehensive feedback. . . . There is a discussion board dedicated for projects where students upload their work in each stage of a project and get detailed comments on it. Then they upload the new version and get new feedback and so on.

Both of these participants were able to supply immediate and constructive feedback to students through Blackboard. According to them, students do not have to wait until the next lecture time to receive answers to their questions or feedback on their work because teachers can speed up the delivery of feedback by using email, grade centre, and discussion board features within Blackboard. This way, each student can receive individual comments via

email and can check the grade centre for the submitted assignments. In addition, the discussion board provides an extra space for teachers to post constructive feedback on students' work during each stage of a project outside class time. Thus, participants believed that students benefit from both the general feedback for group work and specific comments on their individual tasks for improving their subsequent performance on projects. This is consistent with the claim of Hattie and Timperley (2007), who emphasised the importance of giving students quick feedback after the completion of a learning task to be effective, as these comments can contribute to improving the performance of students in the future and positively affect the quality of their learning. Similarly, the findings of the study by Heaton-Shrestha et al. (2005) support this point and revealed that LMS had an impact on how the teachers marked students' work and gave them feedback.

Moreover, when asked how Blackboard had affected her class, P11 said she had experienced several advantages of using electronic feedback rather than handwritten comments:

It made a big difference. . . . I liked the grade centre feature on Blackboard when I was a student and found it very helpful. Therefore I am eager to use it to provide my students with feedback on their work, whether it is positive or negative. I gave each one the score and explained where there were mistakes. . . . Thus the student would know exactly why there were deductions and learn from them. . . . Previously, when a student handed in homework as a hard copy, the feedback was written on the paper and sometimes the teacher did not return it to a student. So the student did not benefit from feedback. On the contrary, through Blackboard a student can access homework and view feedback on work whenever she wants to.

This participant emphasised how Blackboard acted as a safeguard against loss and took account of the possibility of teacher or student fallibility. By using Blackboard, the teacher ensures that students can get constructive, timely, and meaningful feedback on their work, which helps them to progress and fosters their learning. The grade centre enables students to see model answers along with their marked work, which makes it easy for students to follow and understand their errors. In addition to giving students information on their mistakes, this feedback suggests what they could do to improve. In this way, students will be able to correct

misunderstandings and modify their learning strategies if needed. This result agrees with findings in the previous study by Limniou and Smith (2010), which found that students perceived discussion board and assessment tools to be the most useful VLE components because they could evaluate their knowledge easily by receiving quick feedback from their tutors.

Furthermore, the increase in the quality of feedback provided to students was addressed by

P10:

Blackboard could support students' learning by offering responses and feedback from a teacher any time even outside class. . . . My comments on student work in class would differ from the feedback provided through Blackboard, where I can see the work precisely and think before answering.

P10 seemed to care about her students and appreciated the capability of Blackboard to overcome the limitation of time available to the teacher in a traditional face-to-face class to provide feedback properly to each individual student, particularly with a large class. Blackboard gave her thinking space beyond the class time to revise her comments before posting them and enabled students to do the same, which had a positive impact on the quality of feedback from the teacher's and students' posts.

5.3.2.3 Relationship with Students

The teaching and learning process implies interaction between teachers and students, and any change in the nature of this relationship may affect teaching practices. During the interviews, participants reported that Blackboard had influenced several aspects of their relationship with students in four key themes: increased communication, office visits, transparency, and student privacy, as explained below.

5.3.2.3.1 Increased Communication

A majority of the interviewees reported that Blackboard increased their communication with their students and that they considered it to be the most valuable aspect of using Blackboard in their teaching. For example, P10 spoke frankly:

I feel the most prominent value of Blackboard is its capability to facilitate the communication process. I am able to communicate with my students in one place, especially as everything is presented in one platform and all students are registered automatically.

Similarly, P9 added: “Blackboard supports us a lot for communicating with students in an expeditious manner, in a collective manner, and in a very organised way”.

These quotes show that participants considered the ability to use one means to reach the entire class as an important factor in increasing their communication with students. Blackboard created an alternative space for academics to contact their students beyond class time in a unique way. They can upload course materials, announce important information, post students’ grades and feedback, exchange emails, and ask questions from the same system. Indeed, Blackboard allowed them to reach their students in an easy, fast, and convenient way. Using several features within LMS, such as the announcements, discussion boards, and email tools, participants were able to contact all of the students registered in the class in a convenient way, instead of emailing or contacting the students individually. In addition, Blackboard saves academics time and effort because it provides them with lists of students’ email addresses and links them to their class automatically. Therefore, faculty do not have to record students’ emails themselves as they usually do when using other applications. LMS’s email list will also be updated automatically when a new student registers or a student moves from one section to another. This encouraged the faculty to use the LMS, as P4 illustrated:

I used to use a wiki. I was using “PBWORKS”, which is a free public page—it is possible to specialise it for educational purposes. However, for recording my students, I inserted them manually cell-by-cell at the beginning of each semester. Later, when I learned about the ability of Blackboard and its e-mail facility for linking students in each section directly, I decided to use it.

Moreover, participants were able to contact their students even prior to the first lecture, which is not easily done outside of the LMS, as P6 emphasised: “Unlike the blog [which she used before], I can contact my students before the first lecture and they can access the course site on Blackboard directly when they registered”. This participant seemed keen to stay connected with her students and appreciate Blackboard’s capability to facilitate the communication process at the beginning of the semester, which in turn helps her to build a clear and strong relationship with the students. This result confirms the findings of previous research (Morgan, 2003; Heaton-Shrestha et al, 2005) in which LMS use was found to increase faculty–student communication.

Although much of this communication appears to be unidirectional from faculty to students, some participants have used Blackboard to facilitate communication and cooperation among students. As P2 said, “it increases interaction between students outside class time. I can communicate with any student at any time. From my point of view this would strengthen the relationship between us”. Here, it is clear that the participant appreciated Blackboard’s ability to enable students to interact outside of class, especially in Saudi culture, where female students cannot stay up late at the university. Thus, Blackboard provides a secure environment for students to communicate together outside class. Faculty can keep students connected through discussion boards and group tools. They can start a thread via a discussion board, after which students can engage in online discussions (see Student Engagement section for more details). In this way, Blackboard plays a significant role in increasing communication among students.

Overall, we can see that the participants used various tools within the LMS to increase communication between them and their students, which in turn could improve their relationships and thereby enhance students' learning experience.

5.3.2.3.2 Office Visits

The faculty members were required to assign at least two weekly office hours for their students per course. These hours are allocated to supporting students in different aspects of the course. Students usually come to hand in assignments and ask questions regarding exam dates, task due dates, their scores or justifications for them, and rarely seek explanations for difficult concepts in a subject. However, due to the use of Blackboard, some faculty indicated that they had fewer office visitors. As P10 stated:

Blackboard has a significant impact on the way of communicating with students because we entirely relied on it. Students do not even need to come in during office hours. They send their tasks, comments, questions, and whatever either by email or via the discussion board.

P11 said:

I rely on Blackboard for communicating with students. I say to my students from the beginning of the semester, "All of you must activate Blackboard, I will not receive any assignments via email, and all exams will be conducted electronically through Blackboard". I do not put any announcements on the bulletin board outside my office because it will be on Blackboard.

These excerpts demonstrate that faculty reliance on Blackboard as a means of communication has affected how they communicate with students and may lead to change in their teaching practices. For instance, Blackboard has lessened the face-to-face communication that takes place during office hours. This decrease in the number of students who come in at office hours is likely to be related to several reasons: the availability of course materials and important information in advance, electronic submissions of assignments, online discussion and chat, automated grading of exams, and electronic feedback. In this way, all routine

practices can be performed through Blackboard in a convenient way. In a similar way, Heaton-Shrestha et al. (2005) found that the LMS had reduced students' office visits to get learning materials and hand-outs or ask routine questions because these all became available on the LMS. Therefore, reliance on Blackboard to communicate with students seems to have minimises the need for office hours. Some even saw mandatory office hours as a waste of time because they must be present in the office at this time, instead of doing other work. They suggested cancelling the office hours unless there was a need. As P5 said, "Regarding office hours, I think they should be cancelled unless a student requests help; then, we can define a date to meet".

Thus, we can see that participants who had experienced a reduced volume of office visits seemed to rely entirely on Blackboard as a primary means of communication. However, participants expressed different rates of reliance on Blackboard as a communication means. Some used more than one mediator to communicate with students, while a few preferred the traditional method of office hours or email. For instance, P3 stated, "When I started using Blackboard, I felt that I had become more connected with my students. Even though I was using other means to stay connected with them, such as 'WhatsApp' groups, Blackboard is my primary means for communication". Likewise, P9 commented, "If I want to inform them that I have a training session or workshop, I use SMS or 'WhatsApp' messages. But, when I want to send files, lecture notes, exam times, or required tasks, I use Blackboard". In contrast, P7 said, "Personally, I prefer face-to-face communication through office hours. I also use email and a 'WhatsApp' group because they are easier and faster for getting short notifications".

As these quotations show, many participants perceived Blackboard as their primary means of communication with their students. Even though some faculty might use other mediators such

as a “WhatsApp” group to contact their students, this application seems to be used for exchanging casual or practical information, such as cancellations of a lecture, changes to a lecture’s time or location, or informing students about upcoming events, whereas Blackboard was used as a formal means to post and exchange academic materials and information. This may be related to responsibility and accountability, which were discussed in section 5.3.2.4.1.

According to participants, Blackboard has changed the nature of communication between faculty and students in a positive way. It can save faculty time, as the basic information is located there and routine work can be done through Blackboard. Indeed, this change in the ways of communicating may reflect a kind of change in teaching practices as well, due to the utilisation of LMS.

5.3.2.3.3 Transparency

Almost all faculty interviewed indicated that their use of LMS allowed more transparency and clarity between them and their students. The increase in transparency was due to the use of several LMS features such as the Content Area, Grade Centre, and Safe Assign tools. These tools help to clarify the responsibilities and obligations of both the student and teacher, and reduce the conflicts that could arise as a result of the ambiguity in how grades have been divided. P9 pointed out this issue: “It is great when you put materials and other stuff on Blackboard, so students will not come to ask for them. . . . It is better to have all duties and obligations clear there”. Likewise, P10 said, “Everything has been documented on Blackboard. I mean, when I have uploaded the course syllabus, certain tasks, and anything else, students cannot come to argue that they did not know about it”.

It is clear that having all course-related materials available on Blackboard makes the course objectives and processes more visible to students. Thus, students will know what is expected from them. Gilbert, Morton, and Rowley (2007) emphasised this point, stating that within

technology-supported learning activities it is important to make students and teachers aware of the roles expected of them. Therefore, Blackboard acts as a learning contract between academics and their students, so that both are clear about their responsibilities and duties. This may minimise the excuses created by students to avoid performing what is required from them. Blackboard can also be used as a reference to provide evidence if students complain, which is further discussed in the Responsibility and Accountability section.

In addition, the utilisation of the Grade Centre tool led to greater transparency regarding the grade breakdown and helped to provide justifications for any deductions occurring in their marks, as P2 explained:

I cannot say there is only one valuable tool but I think that there are more tools that are integrated with each other. In general, tools that enable the uploading of course materials and submitting marks to the students are very important. . . . Students can easily get their marks plus feedback so that they can benefit from them, instead of hanging them on the wall as before. For instance, today one student came to ask me about her mark in presentation and why I gave her less than what she expected, even though I commented on her work and gave her feedback in that time. So, I told her I remember that I gave you feedback but she said she did not exactly remember the mistakes. Then, I told her, “I will give you feedback through Blackboard to be able to see it”. I think Blackboard would be good to avoid this in the future.

The above quote shows that, in contrast to the traditional practice of providing students with their grades at the end of the semester, Blackboard allows teachers to post students’ grades for assignments, quizzes, exams, and all other assessed work throughout the semester. Therefore, students can know their grades early—as soon as they are posted—and check them at any time throughout the semester, which can inform them about their progress and lead to further improvement. Furthermore, students were able to learn their strengths and weaknesses through feedback provided by the teacher via Blackboard. In this way, students would become more satisfied with their grades because they would know about their mistakes, which may reduce the number of students who come to the teacher’s office seeking

justification for their grades. Thus, the use of Grade Center increases the clarity of the grading process and enhances the level of trust between the student and the teacher, which will strengthen the relationship between them. These results are in agreement with Morgan's (2003) findings, which showed that faculty made extensive use of the LMS to increase transparency within their courses.

Moreover, participants expressed that the ability to track students' contributions through the use of group features in the LMS increased transparency. As P11 articulated, "The group feature is very helpful; I can know who is contributing and who is not". Here, we can see that Blackboard allows teachers to monitor group work and see the contribution of each individual. Doing so can reduce the conflicts that may occur between students. In addition, this may open the door for students to learn how to negotiate and work collaboratively in a team, which are essential for preparing students to compete in the job market. Although monitoring student contributions seems to promote a power relationship between the teacher and students, the faculty felt that it increased transparency and enhanced trust and honesty with the students, which may reflect positively on the students' learning.

5.3.2.3.4 Students' Privacy

Around a third of participants (4 out of 11) valued the capability of Blackboard to deliver students' marks privately online in a secure environment, as Blackboard's design enables a student who is enrolled in a Blackboard course to see only his/her own grades via a 'My Grades' view. Thus, faculty were able to protect student privacy and maintain confidentiality of grades through the use of 'Grade Center'. As P11 stated:

I like in Blackboard the point of allowing a student to see her grades only. I do not have to print students' grades and display them on the noticeboard outside my office where students can see each other's grades.

P9 added, “A thing that is very distinctive in Blackboard is “Grade Center”. Whenever you tried to keep confidentiality of grades you could not, while Blackboard does.” Similarly, P8 believed that Blackboard could address this and provide more privileges than other tools she experienced before, as she explained:

Each staff has a page on the university site and on this page it is possible to put the course content and questions for students. You also can communicate with them via email but Blackboard offered extra things. It enabled us to give online tests and maintain students privacy.

Here we see technology as challenging aspects of students’ and teachers’ conduct. It brings into focus the powers and privileges of teachers to share information about students. Many faculty in a seemingly unquestioning way regard putting students grades on the notice board and sharing that information as a normal practice in their teaching. However, Blackboard challenges this procedure and thus adjusts the whole relationship between faculty and students. Participants’ comments suggested they perceived benefits from Blackboard in terms of achieving students’ rights to privacy, building trust, and strengthening confident relationships with students. It changes the relationship to a more respectful one, giving students more privacy and dignity. Through ‘Grade Center’ within Blackboard, faculty members are able to distribute students’ grades without encroachment of their rights. This finding is consistent with the request of more than 700 students at the University of Cambridge to obtain their permission before posting their results publicly (Gil, The Guardian, 2015). Students felt uncomfortable with this practice, which fosters a culture of grade shaming and might affect well-being. It is interesting that academics referred to this issue in a current study, which may be explained by the quality of relationships that they want with their students. It also reflects increasing awareness among faculty members about students’ rights.

In addition, the importance of delivering grades to students in a secure and confidential environment was highlighted in Morgan's (2003) study, which indicated that academics' awareness about federal student privacy regulations encouraged them to adopt LMS throughout The University of Wisconsin System as an easy way to achieve this. Generally, participants in this study see Blackboard as beneficial to protecting student privacy, in particular the confidentiality of student marks.

5.3.2.4 Other Issues

This theme addresses other benefits of using LMS in their teaching that participants referred to frequently during the interviews. They came under two main headings: responsibility and accountability, and time and effort, as discussed in detail below.

5.3.2.4.1 Responsibility and Accountability

Almost all participants felt that Blackboard had supported students to be more responsible for their own learning and kept them up to date because all materials (lecture slides, task requirements, assignment deadlines, exam times) are placed clearly there. For instance, P4 said:

It gives a student a kind of responsibility. . . . Sometimes I cannot attend to a class because I have another work outside the university. So I post lecture requirements for students and open a discussion board to discuss the question and receive their posts. . . . As long as I use Blackboard, course files are presented and assignment deadlines are specified; students feel a kind of responsibility, as there is no chance of neglect.

Similarly, P6 added:

It is very convenient to me and to the students. When I was using a blog, I had to give them the link of the course blog, but now I do not have to do that because they can see all their courses when they log into Blackboard. It is not my responsibility to tell them that. . . . it also supports students' learning because it allows a student who missed a lecture to follow us easily because everything is set up there. . . . I mean, there is an online presence for each subject, and it is worth the effort. Students can easily access it and know exam dates and task due dates.

From the participants viewpoint Blackboard has introduced students to a new learning experience in which they are more responsible for their learning process rather than depending on teachers as they used to in high schools. It offers them opportunities to learn and absorb material independently and keeps them up to date with their course, thereby promoting self-learning. Even students who have missed lectures are able to catch up in their own time. In addition, it serves to make students more accountable for whatever the teacher posts on Blackboard, so there is no excuse for not doing tasks. The participants articulated this benefit differently; for example, P3 stated:

I actually changed a lot after I started using Blackboard. I feel that I have an official reference that I can refer to when needed. I always tell my students that all documents are already posted on Blackboard. . . . For example, when students ask, “What should we do?” I tell them to go to Blackboard and they will find a guide, syllabus, resources, and even the criteria of the assessment there. It has become a reference that we all can access. Thus I would not be unfair with anyone.

P10 stated, “It is also useful in the administrative aspect. As I told you, ‘documentation.’ I mean, all stuff is documented clearly on Blackboard, even the submitted assignments. Therefore, I feel that my class management has become easy”. P9 suggested:

I tell the students from the beginning of the semester, “look at Blackboard, You are responsible for checking it because all stuff and information related to the course is going to be there, so you cannot come and tell me ‘I did not see it’ or ‘I did not read it’”.

Thus students have the responsibility to continuously check Blackboard for whatever is posted there and meet their obligations. Teachers can use Blackboard to verify that all possible guidance has been given. In this way it acts as a kind of insurance policy for teachers; they can demonstrate the support they have given. Archived material makes them feel they can demonstrate professional care. On the one hand, they say it is about giving students responsibility, and on the other hand, they say it shows that the teachers have been responsible too. Interestingly, these examples show how written documentation is seen as an

authority, as credible evidence of something having happened and contracts being met. It is as if Blackboard displays some kind of learning contract, particularly in the context of this study, as students in most Saudi higher education institutions rely to a great extent on teachers to provide them with information.

5.3.2.4.2 Time and Effort Issues

Almost all participants reported that, although using Blackboard at the beginning may take a considerable amount of time and effort in terms of preparing course materials, it ultimately saves their time and effort in the long-term as they can reuse these materials later in following semesters, as P1 stated:

In my view, when I prepare course materials for this semester, in the next semesters everything will be ready and exists to be used. It means that there may be a few efforts at the beginning but it is easier in future. This gives me a chance for providing additional activities and better assessment of students.

P11 added:

Definitely, it increased my workload at the beginning while setting up course materials. I mean the first semester will take a lot of effort. However, later I can use the existing materials and I also have a chance to develop other things.

Here the participants show how using Blackboard might save their time and effort in the future as course materials, assignments, and resources are created and they just upload them when needed in a few minutes. According to participants, the ability to transfer courses between semesters gave them extra time to provide other activities and develop better assessment methods instead of repeating the same actions, which was a sign of improvement in their teaching. In this sense, faculty invested upfront, which offered them opportunities for pedagogical improvement. This result is in agreement with those obtained by Lai and Savage (2013), who found that LMS allows faculty to devote their time to working with students rather than constantly adjusting course logistics.

In addition, having more time encouraged some participants to explore new features within LMS that they never tried before because of the time required either to learn or perform certain types of work. As P2 mentioned:

One of the advantages [of Blackboard] is that the course would be ready online, including materials, tasks, and assignments. This is important for the teacher and saves them time in the future... so I plan to use Blackboard-Wiki to facilitate project work, as I can enter, monitor, and give student feedback.

In this way, Blackboard reduced time spent on certain types of work and enabled faculty to invest in improving their teaching practices, as they stated. For instance, they were able to employ new interactive tools such as wikis, forums, and discussion boards to support discussion and group work, which is a step towards a more student-centred approach to teaching. Moreover, Blackboard also saved teachers classroom time that was usually wasted as a result of performing routine tasks, like distributing hard copies of materials to students, collecting and returning assignments, and answering routine questions from students, as addressed by P10:

It saved time. The simplest example is the process of delivering assignments and comments. Rather than wasting class time in doing such tasks, we uploaded them on Blackboard. It also saves time wasted in marking paper-based exams.

This shows how Blackboard allows teachers to devote class time to learning rather than routine work. Participants were able to provide online quizzes and exams and mark them electronically, and they reported that such tools “save a teacher time in terms of preparing and correcting tests” (P10), which usually takes a long time, especially with a large number of students. As Lai and Savage (2013) found, online tests reduced workload via automatic grading and immediate assessment of students. It also gave teachers more time to provide students with instant feedback, which was important for improving their learning, as discussed in the Feedback section. Indeed, participants were satisfied with using Blackboard, and they found it useful for facilitating course management because it helped them to be

more organized and use their time effectively. As P3 explained:

I feel it facilitates my work; actually I admit that I am a messy person. I think if I do not use Blackboard, I will lose control of everything. I feel it helped a lot with regard to discussion board and mailing lists of students. I also wish to provide tests through it.

In this way, Blackboard helped faculty to perform their duties easily since everything is organized and routine matters take them little time. It also allowed them to communicate with students easily through various ways such as discussion board, forums and email.

On the other hand, some participants reported that using Blackboard has increased overall workload and consumed time. For example, P10 who has used the LMS, particularly discussion boards, intensively in her course said:

It [discussion board] takes extra time; this is the problem that the individual adds excessive workload by using Blackboard, especially when I used it for communicating with students. Yes it is nice and useful, but you cannot answer large number of students who seek frequent feedback on their works before submitted their final projects.

Likewise, when I asked P7 if Blackboard affected her time, she commented:

Sometimes I receive more than 40 emails from students. I try to answer, but if you had five sections with a number of students in each one, it would be difficult to respond to them.

In contrast to the previous perception of Blackboard as a timesaver, those participants considered it to be time-consuming because it required intensive time and effort in terms of responding to students and providing them with feedback via email or discussion boards. With a large number of students in classes, a teaching staff with a full load of 14-16 credits and no assistant teacher would find it difficult to provide instant and continuous responses to students' inquiries. These findings are in line with those obtained by Heaton-Shrestha et al. (2005), who found that managing discussion boards and responding to students' emails were

among regular activities that academics felt added to their workloads. Bair and Bair (2011) point out that technology may reduce time spent on tasks such as collecting and returning assignments electronically. However, it demands more effort in terms of providing students feedback, e.g., having to download, add comments, track changes and then, upload papers online (Bair & Bair, 2011, p. 10). Thus, it seems that the time issue is a relative matter and may be related to types of LMS use. Thereby, it can be said that the investment in faculty time that the LMS demanded could influence their decisions about how to use the system.

Furthermore, faculty also realized that this large workload would be temporary, occur only at the beginning of Blackboard use during setup of the course materials, and eventually lessen with long-term use. This is in agreement with the findings of West et al's (2006) study, in which faculty acknowledged how LMS could save them time after their initial investment in setting up the course. This could explain their belief that Blackboard was a timesaver, which was discussed earlier. In addition, familiarization with the LMS and technical competence seem to be important influences on academics' views of whether the system could be burdensome or not. As P8 articulated, "If you are familiar with Blackboard, it won't add extra workload." Thus, faculty who had IT skills and an interest in Blackboard seemed to have little difficulty with learning the system, unlike those who needed time and support to learn how to use it (Fox & MacKeogh 2003). However, participants continued to use Blackboard in their courses despite the increase in workload, and they attempted to manage this increase by setting some rules and applying several techniques. Like P2 said:

Of course using Blackboard adds another workload to me. However it depends on how do I manage my time. For example, I always say to my students that I will check Blackboard once or twice a week. So if you [a student] ask a question, do not expect answering at the same day, I may respond at a weekend or at the middle of a week.

However, P4 suggested another strategy: "I cannot answer each student, but I provide a summary of the questions focusing on the key issues." This shows that the benefits teachers

gained while using Blackboard outweighed the overload of work. These benefits were likely to be worth the time invested in monitoring online discussions or responding to emails. Therefore, the teachers attempted to develop some strategies to tackle this issue by setting clear guidelines from the beginning about the frequency of their access and responses to students' questions, particularly in online discussions.

Overall, it can be said that on the one hand, Blackboard helps faculty sustain their professional responsibility to manage resources and fosters behaviour in teachers that makes them regard themselves as resource managers and content curators. On the other hand, there is also evidence of movement towards more student-centred approaches to teaching due to the use of Blackboard, as explained above.

5.3.2.5 Summary

The findings of this study indicate variations in the impact of LMS on teaching practices according to participants' views. However, in general, participants had positive attitudes towards LMSs and perceived multiple benefits of these systems in the teaching and learning process. Almost all agreed that the LMS added significant value to their classes regardless of the rationale and objectives for using it, which varied from individual to individual. There were four major perceived benefits: pedagogical improvement, enhancing student learning, strengthening relationships between faculty and students, and supporting other teaching issues. According to participants, LMS helped them to apply a variety of teaching strategies, enhanced the quality of teaching, and encouraged some to apply various methods of formative and summative assessment and to rethink their learning materials. Participants also appreciated the ability of LMS to help students to be prepared for lectures and to concentrate during class time, to reinforce students' engagement both in and outside of class, to assist students to develop some basic skills, and to enable the provision of immediate feedback

needed to enhance student learning. Furthermore, it was seen to be useful for maintaining transparency, protecting students' privacy, and clarifying students' responsibility. However, in the context of this study the greatest benefit for most participants was the ability of Blackboard to enhance communication with students and reduce faculty workload by saving time and effort. A few (4 interviewees) considered that the usefulness of LMS lies in its capability to provide a diverse learning environment enriching the learning experience of the student beyond the limits of time and space.

This suggests that participants believed that the LMS is compatible with many teaching philosophies and can support different teaching methods. This is also clear in the questionnaire (see Table 11) where 74% of respondents said they believe that the LMS fits with their pedagogical beliefs and philosophy of teaching. On one hand, participants felt that Blackboard was beneficial in supporting a traditional teaching approach and improving its quality by facilitating routine teaching tasks, flexibility in delivering educational content and course information, clarity in task requirements and deadlines, correcting exams and facilitating communication with students, which gave faculty extra time to provide other learning activities and develop better assessment methods instead of repeating the same actions.

Having everything organised within Blackboard increased the reflectivity in my teaching and gave me opportunity to improve further... I feel Blackboard gives me suggestions for additional things that I can do in the next semester. Each semester I find a feature within Blackboard that could be used in a specific way to achieve the desired goals that were not adequately achieved in the last semester (P4).

On the other hand, Blackboard seemed to be helpful to other faculty to promote constructivist learning and student-centred approaches to teaching, by providing learning opportunities that enhance student engagement in discussion, negotiation and self-reflection as well as

providing immediate and cumulative feedback and developing some of the basic skills required in the labour market, as discussed earlier.

A lecture period is very short, and I only had time to give students the theory and one activity. However, students now have the chance to engage in a learning discussion at any time through the discussion board. Students have their own thoughts and plenty of time available to them to search, provide evidence, and add links or photos to support their opinion (P1).

Students' work has improved because Blackboard enabled me to give them timely and comprehensive feedback. . . . There is a discussion board dedicated to projects where students upload their work at each stage of a project and get detailed comments on it. Then they upload the new version and get new feedback and so on (P10).

These views support what was highlighted by other researchers (Morgan, 2003; Georgouli et al., 2008) where LMSs are neutral tools and their importance is determined by how the teacher uses them in teaching and learning activities.

In contrast, the study suggests that these positive views of the participants did not usually translate into practice as most of them were not using the LMS to its full potential (see 5.3.1), which may be attributed to several factors (see 5.3.3). In addition, this might be a result of the many tasks on teacher's shoulders that impacts on the time available to use additional tools, and thus may limit innovation in teaching with technology (Kidd, 2010) which suggests that the time issue is a significant factor influencing the type of LMS use. Thereby, it can be said that the investment of faculty time demanded by the LMS could influence their decisions about how to use the system.

It [discussion board] takes extra time; the problem is that using Blackboard added an excessive amount to my workload, especially when I used it for communicating with students. Yes, it is nice and useful, but you cannot reply to a large number of students who seek frequent feedback on their work before submitting their final projects. (P10)

Benson et al. (2011) pointed out that although a variety of factors might influence the adoption of technologies by faculty members, most of them try to achieve some benefits from embracing these tools to support learning and teaching, including the improvement of

efficiency. Evidence from the study also suggests that even though the LMS had not completely changed traditional teaching methods, and even helps faculty sustain their professional responsibility to manage resources and fosters behaviour that makes them regard themselves as resource managers and content curators, there were slight signs of a shift towards more student-centred approach to teaching due to the use of some tools within the LMS.

One of the advantages [of Blackboard] is that the course would be ready online, including materials, tasks, and assignments. This is important for the teacher and saves them time in the future... so I plan to use Wiki within Blackboard to facilitate project work, as I can enter the system, monitor progress, and give the students feedback. (p2)

I argue that as Blackboard might reduce time spent on certain types of work and enable faculty to invest in improving their teaching practices, they would be able to employ new interactive tools such as wikis, forums, and discussion boards to support discussion and group work, which is a step towards a more student-centred approach to teaching.

5.3.3 (RQ3) Factors Encouraging Faculty to Uptake and Use an LMS

Findings from this study suggested that the majority of the research participants have positive attitudes towards technology that motivated them to adopt a learning management system in their teaching. During the interviews, participants reported various reasons to use LMS in their classes. The analysis of the data revealed that most of them started using Blackboard as a result to one or more of these factors: an influence from their pedagogical beliefs, a recommendation from colleagues, pressure from administration, keeping up with the university aims and vision, pressure from the digital natives, personal initiative and interest, protection of intellectual property rights, expressing academic identity as teachers, pedagogical reasons and/or as a solution to practical issues, as discussed below.

5.3.3.1 Faculty Pedagogical Beliefs

During the interviews, I noticed that participants' pedagogical beliefs and attitudes towards technologies in general and the LMS particularly seems to be a significant driver for adopting and using the LMS in their classrooms, even though they did not say so explicitly. Almost all participants were unsatisfied with the current situation of teaching methods prevailing in the university and criticized the traditional teaching approaches that focus on delivering information and lectures only. The majority of participants believed that their role as teachers must be facilitators and guide for student learning rather than being spoon-feeders. This matter was expressed clearly when they were talking about their typical teaching approaches in face-to-face settings as it can be seen in the following comments.

In each lecture we have specific goals that we are trying to achieve and assuming that I will guide students to fulfill these objectives as much as possible. Therefore, I tried to achieve these by formulating the topic as a problem, or in the form of specific questions through collaborative learning, or by projects. I usually use wikis, blogs and normal email to do so, but when I learned about Blackboard and what it could provide me, I preferred to use it instead of those tools (P11).

The role of the teacher in our college is a guide to students' learning; we focus on active learning approaches as opposed to passive learning. We try to teach students through small groups, discussion, case studies and role players. I think Blackboard made it possible to engage students effectively in their learning process even outside the boundaries of classes, at homes, streets or anywhere else. I mean it increases accessibility, availability and interaction (P7).

It seems that those participants held the same teaching philosophy and were influenced by the constructivist theory of learning. They attempted to employ student-centred approaches to learning that place students in the heart of the learning process and assert their crucial roles in constructing their own meaning. This agreement among participants on the proposed role of teachers may be due to the updated reforms and the rapid development in Saudi higher education sector generally and KSU in particular, which calls towards innovations in teaching strategies through the employment of more student-centred approaches to learning as opposed to those focusing on the teacher. In this sense, the University had offered many training courses and number of seminars to the faculty members about active learning strategies. So those participants sought to use some tools and applications to help them engaging students in learning as evidenced by the use of wikis and blogs to support communication and interaction between them and the students and among the students themselves. They also felt that the LMS has the same potential or even more, which could help them achieve their goals. In light of this it appears that those participants perceived LMS as the nucleus or the means that would help them to do their job as guide through the flexibility, accessibility, availability and interaction affordances it offers. They viewed it as a mediator that allowed them to create a motivating learning environment for students to be active learners, the principle which the constructivist teaching emphasises upon (Savery & Duffy, 1995).

By doing so, their role as teachers became facilitators for students' learning as the focus was on enhancing active engagement of students in their learning instead of just providing information (Selwyn, 2007). As evidenced by what P5 said:

I think that Blackboard supports and complements the traditional classroom, especially as it is often, most subjects contain some topics that require more discussion whether before or after the class time. Sometimes the time of the lecture does not allow for sufficient discussion while LMS give us a second chance through the online forum where students are able to write a short summary based on their prior readings. By Blackboard, it is possible to ask questions and everyone shows her point of view. Contrary to the prevailing traditional approaches, which focuses on instructing and providing information, there are more discussion and debate between students. I expect that the LMS can facilitate and develop the educational process a lot.

In the same vein, P1 added:

The teacher has to be a student oriented so that she helps the student to learn from herself ... I feel that Blackboard has the potentials and features that I need ... as you know, class time is only 50 minutes and this is not enough for providing learning activities and discussions while Blackboard offers an alternative online space for doing that.

These comments indicated that participants were aware about the interactive features within Blackboard and they were convinced about their benefits. In most cases, they claimed Blackboard was being used to facilitate constructivist teaching, regardless of whether their actual practices are consistent with their rhetoric, which is in line with Lonn and Teasley's (2008) assertion:

LMS are providing tools for the kinds of active online engagement preferred by today's generation of students, such as discussion tools, chat rooms, wikis, and blogs. These tools provide opportunities for using LMS that are consistent with constructivist approaches to learning rather than simple transmission of knowledge models... However, for this shift to occur both faculty and students will need to recognize the opportunities provided by the system and use them to innovate teaching and learning practices. (p.1)

In contrast, P3 was the only participant who was not fully convinced of the importance of Blackboard despite her agreement with others on the philosophy of teaching, as she said:

My role as a teacher is supposed to be more than just filling information, it is presumed to put the students in the educational context and develop their skills through the intensification of readings and learning activities. But regrettably, the dream is bigger than reality ... I think we just give no more than information because students themselves... even the readings that we are asking them to do, we find that they do not do it... I mean, I put there [Blackboard] many materials and things which I used in lectures, but I was surprised that they did not read what I have uploaded.

Such comment refers indirectly to the lack of satisfaction about the system, so we find P3 blamed the students for not performing their duties as what was expected from them, ignoring (consciously or unconsciously) her fundamental role in promoting students' engagement in their learning, which may result from the lack of teaching experience with an LMS and/or lack of commitment to what is required from her as a teacher to use the LMS effectively such as updating reading lists, linking online activities to those that provided in the classroom, a quick response to students' questions and giving them instant feedback. Lyndon and Hale (2014) highlighted this point and arguing the commitment from both teachers and students to participate in online activities is a prerequisite for the successful use of LMSs. Based on that, it can be said that some faculty might use LMS as an attempt to stay with the others such as colleagues or as response to the expectations from a wider academic society without being fully convinced about technology, in such a way they ended up using LMS as a duplicate of what they were already doing, as shown earlier, in the contradiction in her rhetoric and actual practices.

Regardless of how the LMS was being used by participants in this study, it seems that the pedagogical beliefs of faculty along with their attitudes towards technologies played an important role for encouraging the use of LMS for teaching purposes, which reflected previous research where the likelihood of the use of technology in the classrooms would increase when teachers held constructivist pedagogical beliefs (Ertmer & Ottenbreit-Leftwich, 2010; Drent & Meelissen, 2008).

5.3.3.2 Recommendations from Colleagues

Around half of the interviewees mentioned that peer recommendations were the primary reason that they began to use a learning management system in their teaching. During the interviews, participants frequently cited the role of colleagues in introducing them to the Blackboard system and providing them with a brief explanation of its potential and advantages. This significantly persuaded faculty to start using the system, as P6 explicitly expressed:

What really motivated me to use Blackboard were my colleagues. When you chatted with someone and said I use such and such in Blackboard and I find it beneficial, this would encourage you, at least, to try out these tools. I mean, listening to people leads you to learn and benefit more.

P11 concurred with P6 and believed that colleagues from the same working environment have a considerable role in promoting the use of technology in general and Blackboard in particular:

Certainly, some of my colleagues had a major role in my use of Blackboard; for example, the lecturer [name] helped me a lot to learn many things in Blackboard, which I could not learn by myself. Indeed, she showed me how to do this and that alongside other teachers in my department who were keen to learn about it [Blackboard] and share their knowledge with us.

Such quotes show that having colleagues in the same department who are enthusiastic about the LMS could create a kind of motivation among the rest of the faculty members to use the system, which Venkatesh et al., (2003) referred to as the influence of social norms in the adoption and use of technology. This finding supports what was pointed out by Ertmer and Ottenbreit-Leftwich (2010) that expectations from colleagues could play a crucial role in motivating teachers to try things that they would not do otherwise.

Although this factor seems to have been a positive incentive to activate Blackboard, in fact, it might act as indirect pressure on them to use the system without being fully convinced or satisfied, considering the spread of a competitive culture prevailing among faculty members

inside the University. This issue was mentioned by Shelton (2014), who found that although an LMS was one of the most frequently used technologies within universities, many teachers said they used it without being convinced of its positive effect on teaching and learning, but they did so for other reasons, including expectations of their colleagues and the wider academic community. This, in turn, could affect how faculty members use Blackboard and might influence the quality of the tools that are activated, as described in section 5.3.1.

On the other hand, there were some cases in which peers had a negative role in stimulating the use of technology, especially Blackboard. For instance, P5 spoke about the negative comments from some colleagues and her lack of knowledge about the system, which were considered obstacles in her use of certain tools within Blackboard:

When you know someone who uses Blackboard very well, you would say to yourself I could do the same, so you start. Unfortunately, no one in my department uses Blackboard. I do not know anyone who was able to give me support. . . . However, I do not deny the support provided by the Deanship of Electronic Transactions⁹ when I asked them about a specific feature. They usually responded but sometimes their explanation was not clear to me; therefore, I stopped using this tool.

Here P5 emphasized the crucial role of colleagues in the uptake and use of Blackboard. In other words, having colleagues who use Blackboard could stimulate other faculty members to try it out and give them the opportunity to ask questions and exchange experiences in order to activate their use, bearing in mind that people are usually motivated to learn by example, antagonism and competition. On the contrary, the absence of competition and participation may hinder the use of Blackboard among faculty. This result confirms previous findings (D'Silva, 2005; Heaton-Shrestha et al., 2005; Morgan, 2003) on the vital role of colleagues in promoting the adoption and use of Blackboard among faculty. It also sheds light on the importance of keeping up with colleagues in shaping the decision of some faculty members

⁹ The unit is responsible for providing support and training to faculty in teaching and learning with technology.

about Blackboard usage, which was in line with Rogers' (2003) adoption model (see 3.9.2). He states that in order for the individual to adopt an innovation, s/he begins to gather information about it and colleagues are one of the most important sources of this knowledge see 3.9.2.

Overall, the study reveals that peers in the same working environment significantly influence faculty members' decision to use Blackboard. This might be considered a positive factor for uptake and use of the system, taking into account the culture of competition among faculty within the University. However, it might act as a pressure that could affect faculty use of the system or even prevent or deter its use.

5.3.3.3 Administrative Pressure

As mentioned earlier in section 2.5, the use of Blackboard by faculty is not compulsory and not included in the annual academic performance review. Faculty can choose whatever technologies they want, although they are generally encouraged by the University to adopt an LMS. During the interviews, participants rarely referred to administrative or departmental pressure as a reason that triggered their first use of LMS. Only two participants began using Blackboard in response to a request from administrators such as the Dean of College or Head of Department, as P6 articulated: "Frankly, I started using Blackboard because the university requires that from us. I mean the Head of the Department requested LMS use from all members, so we did." P8 indirectly mentioned administrative pressure, saying, "Everyone in my department is using Blackboard; all members in the college activate it, I do not know about other colleges, but here each one uses Blackboard. It is an essential part of teaching."

Those participants seemed to be less comfortable with the LMS and used it as a result of the

request from their departments. In fact, the administrative pressure that those participants spoke about can be explained by the nature of their discipline. On the one hand, the College of Computer Science, which P6 belongs to, is supposed to be the initiator of the use of learning management systems inside the University. The college used to use a private web page that offered many services such as course materials, announcements for students and other services that somewhat resembled those provided by Blackboard. Thus, the administrators of the college may have preferred transitioning to Blackboard to take advantage of its potential and to unify the University's efforts to spread the culture of e-learning, as discussed in Chapter 2.

Another reason that might push the administration to put pressure on faculty in the IT department to activate the LMS may be related to faculty preference to choose different tools or applications that are more useful to reduce their time and workload and easier to use than Blackboard. This point is consistent with the results of Bousbahi and Alrazgan (2015) which indicated that most IT faculty members at KSU seemed to be uncomfortable with the LMS and thought it would increase their teaching load as it required more time and effort. This highlights the important role of departments in implementing university policy, such as engaging with or blocking the use of new technologies like LMS (Shelton, 2014).

On the other hand, the administrative pressure could be related to colleges' endeavours to achieve academic accreditation, which the University in general seeks to. In addition, the English language factor may play a role in putting pressure on faculty in the Department of English (as in the case of P8) because they can access adequate support from the official website of Blackboard and other online English resources compared to their colleagues in other departments. In addition, they would be able to take full advantage of the tools provided by the system, especially a plagiarism detection tool, which is less effective in supporting the

Arabic language. It also seems that there are prevailing norms within the English department to use some specific tools that are compatible with their specialised needs, which undoubtedly guide their teaching practices (Ertmer & Ottenbreit-Leftwich, 2010).

5.3.3.4 Institution Aims and Vision

During the interviews, participants frequently referred to the University's vision and reputation as a reason that triggered them to use an LMS. King Saud University (KSU) is considered a pioneer higher education institution in Saudi Arabia and one of the leading universities in the world (Shanghai Academic Ranking of World Universities, 2016). The University's vision statement states that "to be a world-class university and a leader in developing Saudi Arabia's knowledge society" through the creation of a conducive environment for learning and creativity, optimum use of technologies and effective international partnership (KSU, 2016). This vision emphasises the crucial roles of technologies and contemporary methods of teaching and learning for developing the educational process. The University's vision and aims indirectly influenced faculty decisions about adoption and use of Blackboard in their teaching, as P10 reported:

The university's orientation is supporting the use of technologies to take advantage of them to enhance education. Therefore, they launched Blackboard for introducing new methods in teaching and learning, such as blended learning and other, through the use of these platforms.

P9 has a similar view and stated: "the university is interested in developing the education process. They consider learning technologies essential for supporting teaching and learning processes. They try to provide teaching staff and students what they need". These quotes show that participants recognised the University's keenness to sustain its reputation that has been reached globally by employing new technologies including an LMS. Consequently, their decision to use an LMS stemmed from their desire for keeping abreast of the ongoing

changes and improvements in teaching and learning processes at the University. Kopcha (2012) supports this point and states that when there is a strong administrative vision for the use of technology, the likelihood of faculty using the technology would increase to keep up with these efforts to support that vision. This in turn suggests that participants perceive an LMS as a tool that could pave the way for improving teaching and learning. Indeed, faculty perceptions of an LMS might be also related to the international impact of studying abroad because many participants in this study had graduated from international universities. They seem convinced of the fact that LMS was a part of university life as they already experienced during their studying. This is evident in P11's comments: "because it is authorized and recommended from the university as well as it is used in the U.S. universities; so I feel that this is the formal way of teaching; thus I adopt it"

In contrast, P3 has a different opinion regarding the introducing of an LMS and the role of the university and colleges. She stated:

I think it is a ticklish thing to talk about this issue because I feel that introducing Blackboard at the university was not based on a clear strategy to improve teaching and learning. It is just an attempt to . . . you know that phrase: keeping up with Joneses. What I want to say is, it is an attempt to be with others, no more In terms of the university choice of Blackboard as a main technology, I think it's good and sufficient. It is also a formal system that has been used around the world and most universities use such system. But for us at the college of [college X] I do not think we have a clear strategy.

P3 was unclear about the university's plan and strategies for introducing an LMS. Sometimes she sees it as merely an attempt to keep up with others whereas in other times she considers it as a good and useful tool. This conflicted perception about an LMS and the University's role in the adoption of an LMS might be related to a lack of awareness and shortage of information available to faculty in some colleges or departments in terms of presenting the system and clarifying the University's vision in this regard. This in turn may be one of the

challenges that hinder the use of this system as will be discussed in administrative support section. Kidd (2010) asserted this point and found that little or no institutional support and unclear policy regarding the use of ICT were among the most significant factors that influence the use of technology by faculty.

In short, it can be said that the University's aims and faculty's desire to keep up with change in the higher education sector was one of the motivating factors for adopting and using Blackboard. However, not to unite these efforts by some colleges and deficiencies in providing the necessary support may be a hindrance to the adoption of these systems by faculty.

5.3.3.5 Pressure From the Digital Generation

During the interviews, many participants mentioned the role of students in their decision to use an LMS. This pressure was expressed in various ways. For instance, some believed that the current generation of students has high technological skills, therefore faculty sought to address students' needs by employing an LMS in their classrooms, which was pointed out by Asiri et al. (2012) that the possibility of faculty integrating LMS into their teaching would increase if they thought it would meet their own needs or students' demands. As P2 indicated:

As you know, today's students became 'digital natives', which means that they do not want to rely on papers or hardcopy books. Therefore, we need to use means of technologies, including Blackboard, which they love to make their learning process more interesting.

Similarly, P9 added: "The world today is in a major development. Students learn from everywhere and technology surrounds them. So we have to add whatever they want" Such comments illustrate that participants were influenced by the prevailing assumptions about the current generation as "digital natives"; the term which is commonly used to describe young

people who have grown up with technology all their lives and are assumed to possess high technical skills (Helsper & Eynon, 2010; Prensky, 2001).

Those participants seem to believe in an increasing and unavoidable role of technology in students' everyday lives and felt that they have to use it because students expected them to use technology, too. They also held perceptions that the use of an LMS could cater to the needs of today's students who they assumed, are mostly technological knowledgeable. This suggests that faculty use of Blackboard might connect to their beliefs about students' willingness and ability to use technology. Therefore they attempted to keep up with technology and reached students' expectation of the higher education institutions to be digitally mediated. In other words, participants appear to be cognisant of students' desires and aspirations, therefore they sought to provide them with a technology-rich learning environment.

However, this view conflicted with what some participants reported about what seemed to be reluctance from students to use Blackboard as discussed in section 5.3.4.1. The inconsistent views about IT skills of students and their willingness to use technology in their learning might be associated with a disparity in digital skills among students and their compatibility with teachers' expectations. Some faculty may have had high expectations of the students, but students might not be as proficient as they expected. According to Selwyn (2009), contrary to the prevailing myth and to what the digital native rhetoric would propose, in reality, the use of technology among many young people is still limited both at home and at school. Helsper and Eynon (2010) agree with Selwyn, noting that most of the supporters of the concept of "digital natives" tend to allocate broad attributes to the whole generation assuming they are experts with technology. In addition, research conducted by EDUCAUSE

CENTER in 2014 supports the notion that students' IT skills and experiences do not necessarily transfer to specific technology services and applications put in place for students to use, such as the LMS, despite the durability of digital literacy that students may have (Dahlstrom, Brooks, & Bichsel, 2014). I am aware that what Selwyn, Helsper and Eynon, and Dahlstrom et al. pointed out relied on research that was more than five years ago, and today's students might be more experienced in the use of technology, which indicates the need to research whether this remains the case.

It is worth mentioning that there were implicit comments in the interviews about the role students play in encouraging other faculty members, particularly those who have not used Blackboard, to adopt an LMS in their courses, as P1 mentioned: "a lot of students like it and said to me that they were surprised because they never used this system till now, although they are in their 2nd or 3rd year" Such a comment suggests that, in some cases, students who have taken courses with LMS might see some benefits of it and then demand it from other faculty members, sometimes in other departments or schools. This result differs from Morgan's (2003) findings, where only 3.15% faculty reported that they were motivated to use LMS by their students. This seems to be related to the difference in the timing of the two studies. In Morgan's study, faculty reported that their students were far from keen about LMS because of the difficulty in accessing the system or internet, whereas faculty in this study did not express any concern about infrastructure problems or accessibility to the Internet. In contrast, this finding is in line with those of Harrington et al., (2006), which indicated that faculty interest in using the LMS came more from bottom-up pressure from students than from above since students wanted their learning materials to be placed online.

Overall, it can be said that participants' perceptions about the current "digital generation" were reflected in their decision to use an LMS in their teaching and could be considered as a motivation for their adoption of LMS.

5.3.3.6 Personal Interest and Initiative

The study revealed that personal interest and initiative played a considerable role in motivating participants to use Blackboard. For instance, P9 expressed that her curiosity to learn about this sort of technology and how it would benefit her classes was a major factor to take up and use Blackboard:

I would say that regarding my use of an LMS, my department did not encourage me but I learned about Blackboard fortuitously from a distributed leaflet in the corridors of the university. I just wanted to know what it can do and what it might be good for.

This view was shared by P10, who referred to her personal interest and personality type as a crucial factor for adoption of LMS as she commented:

Definitely, my tendency for using Blackboard was due to a personal motivation and peers' recommendations. As I told you before, when I heard about Blackboard, I attended one of the training sessions offered for faculty and I felt no benefit from attending such sessions except what I have learned briefly about its features. But because I am curious about technology and how it works, I entered the system and tried out its tools to know how they would benefit my students and me. This was the motivation to use Blackboard.

Such quotations indicate that those participants were excited about new things and were enthused to try new technology and learn how it would benefit them in teaching; therefore they sought to challenge themselves by adopting an LMS. In fact, despite the difficulties they faced at the beginning of their attempts to learn about this system, their personal interest and initiative seem to play an important role in their use of the LMS. Rogers' (2003) in his diffusion of innovation theory divided individuals in adopting an innovation as being adopter categories. This classification was based on the time these individuals adopt and use an

innovation. The categories are: innovators, early adopters, early majority, late majority, and laggards. This suggested that those participants appear to be early adaptors of technology, at least, in their department although I do not agree with this division mentioned by Rogers of seeing those who do not use technology in a negative way since many teachers often act out based on their beliefs of what are the best pedagogy. This finding supports what was found in previous studies (Drent & Meelissen, 2008; Heaton-Shrestha et al., 2005) on the impact of personal initiative and curiosity on the innovative use of educational technologies including an LMS as well as on overcoming institutional difficulties that may hinder their use.

On the other hand, the initiative of using Blackboard might be related to other factors like the level of self-efficacy in respect of technology and how faculty perceive their competence in ICT, as P1 mentioned: “I use it [Blackboard] as a result of a personal desire because I am a specialist in computer and educational technology. I had some experience during my Master’s study; thus, I can easily learn Blackboard...”

This response suggests that the way individuals viewed themselves and technology and their beliefs about their competence in ICT skills seem to affect their adoption and use of technology. This result confirms previous findings of Buchanan et al. (2013), who indicated that self-efficacy was positively associated with the use of learning technology by academic faculty. Those faculty members who have high levels of self-efficacy with respect to technologies are more likely to accept their use in practice. According to Wozney, Venkatesh, and Aprami (2006), the possibility to use technology would increase if teachers believe they have sufficient technical skills and value the benefits associated with technology. In light of this, it can be said that personal interest seems to be a crucial factor for encouraging the use of an LMS among faculty. This factor appears to be associated with

other factors such as personalities of individuals and their beliefs about their competence in ICT skills.

5.3.3.7 Expressing Academic Identity as Teachers

The findings revealed that one of the reasons that led to using an LMS was faculty's attempt to express an academic identity as teachers through the effective use of technology. Some participants believe that using technology has become an essential part of teaching performance and an expression of a teacher's identity. For instance, P2 believed that using technology would help to fulfil teaching duties as a facilitator, as stated:

Now, without any doubt all agree that a teacher must be a guide more than a teacher; teaching should be student-centred. We have to provide opportunities for students to learn themselves and we just guide them. Technology is the nucleus that we can say it is the means that helps us to be facilitators as teachers.

In contrast, P4 was more concerned about her image as a teacher in front of students and how students would view her. She stated:

I am convinced if I do not use Blackboard now... what I would to say is people now use Blackboard on their mobiles. Certainly, if I did not use it in my labs and lectures, I would be outdated. I have to use this platform because I think it simulates students' thinking. Students are now using everything electronically and if I did not do the same thing, it means I would be a traditional teacher and I would not progress.

These quotes show that both participants have had aspirations and notions of the kind of teachers they desire to be. P2 views the teacher's role as a guide for student learning and she thinks an LMS could help her to achieve this goal, whereas P4 was concerned about being 'up-to-date' and being a modern teacher who corresponded to the students' thinking and aspirations instead of being a traditional teacher. Both felt they have to use technology because it has become a fundamental part of teaching at the university. In addition, they thought they have to follow up the improvements in their professional area as well as the

changes in the field of educational technology. Indeed, this sense of identity seems to be influenced by the expectations of the academic community in respect of changes in higher education associated with technology, including an LMS. In light of this, it appears that participants' decisions for taking up and using an LMS were derived by how they view themselves as teachers and how they want to be seen by others. According to Vahvasantanen et al., (2008) the concept of professional identity has usually been related to a teacher's self-image, based on the belief that concepts or images of the self are determinative of the way people develop as teachers. This suggests that some participants perceived the LMS as an opportunity leading to developing themselves as facilitators or mentors for student learning. In contrast, LMS is being used by other faculty, even those who believe that it does not benefit teaching, just because they view it as 'faddish' and felt like it had less kudos, which Cox et al., (1999) referred to as giving faculty more prestige.

Research elsewhere has highlighted that university teachers may view the imposition of technology and new roles associated with it as a threat to their identities as teachers in terms of their authority, and they may be reluctant to use it (Bakioglu & Hacifazlioglu, 2007; Shelton, 2014). However, participants in this study did not mention such a concern. This might be because an LMS is introduced as a professional choice rather than a result of managerial force. Another reason might be due to the way in which faculty used Blackboard in their teaching, which in turn strengthened the authority of the teachers and sustained the hierarchical relationship with students. (See Responsibilities and Accountability section).

5.3.3.8 *Intellectual Property Rights*

Intellectual property rights is a set of rights that protect new ideas, products and creations resulting from human thought and creativity (Korn, 2005, p.9). Mehrpouyan and Razavi (2014) identify it as “a broad term that refers to the legal protection available in relation to certain property that is intangible that can be created by individuals” (p.273). Although there are clear regulations regarding intellectual property rights, the Internet revolution and technological developments have brought many challenges and increased the risk of copyright infringement. In fact, many faculty seem to be unaware about copyright infringement particularly associated with digital content; for example, many do not know that, although it is common practice, it is not allowed to put any PDF articles on Blackboard.

During the interviews few participants (N=2) were concerned about intellectual property and copyright issues and expressed that their decision to use the Blackboard LMS was driven by their desire to protect their learning materials. For instance, P5 clearly spoke about how the promise of Blackboard to protect her own content motivated her to start using Blackboard:

I was using my personal webpage on the university’s website and I had to put the materials on the site. Actually, I am opposed to just anyone being able to access course materials because you do not know how they would use them. Thus, Blackboard was the best option for me.

P6 concurred with P5’s view and found the authentication process that Blackboard provides to be comforting: “The most important advantage of Blackboard is its privacy and its protection of course content from being accessed by others apart from those registered in the course. This is a very nice feature.” Thus, both participants valued the ability of Blackboard to grant access to the course material only to students registered in the course, and they felt more comfortable because it provided a kind of protection they were looking for. This result is inconsistent with D’Silva’s (2005) findings in that the majority of faculty were less concerned about ownership of online content created by them and rated this factor as

affecting their uptake of LMS at a “low” to “medium” degree. This difference may be due to lack of awareness of intellectual property rights in Saudi Arabia, especially the digital materials as well as the lack of policies within Saudi universities that address this matter (Alebaikan, 2010).

However, other participants had an opposite view and believe that the LMS limits their communication with the outside world. They felt that it was important to share course content and make it available to everybody, as in the case of P2, who wanted to share her material with others beyond her students. She said:

I wish that the content I put on Blackboard would be shown publicly. . . . The only thing that makes me sometimes reconsider Blackboard use is the limited access to course material for the public. This is very annoying and makes one hesitate to use Blackboard and think about using another place where all might benefit from it.

Here we can see that P2 considered the closed nature of Blackboard an obstacle to continuing her use of Blackboard. This finding supports Morgan’s (2003) observation that the use of LMS among faculty members would be reduced occasionally due to their desire to share aspects of their course with a wider audience. The conflicting views about the limited access to Blackboard materials among faculty could be explained in a number of ways. First, it might be related to their concern about the intellectual property rights of materials created and developed by faculty, as there is a lack of awareness about intellectual property right issues in online materials in Saudi Arabia, and policies in this area are still in a state of development (Alebaikan, 2010). Thereby, these participants believed Blackboard protects their intellectual property rights so others could not use their own materials without their consent. Second, it have been associated with the ways in which faculty would use Blackboard in their courses. For example, some academics thought Blackboard helped them to make a sense of community in their courses, while others believed part of their role as

academics was to create and share knowledge with a wider audience and saw Blackboard as limiting the collaboration they would like to have.

Indeed, participants' concerns about copyright protection were less cited as a reason for using LMS. However, few participants valued the capacity of Blackboard to provide a password-protected environment to protect their own intellectual property rights and considered this to be a factor that encouraged their uptake of the LMS.

5.3.3.9 Pedagogical Reasons

Many participants in this study chose to use an LMS to solve some specific teaching challenges. The pedagogical reasons behind their use of Blackboard were varied. For example, P2, who is a specialist in curriculum and teaching methods, spoke about her desire to accommodate different learning styles and diversify her teaching methods, along with her belief about the capability of the system to support teaching and learning, which was the main motivation that led her to use Blackboard in her classes:

I have several reasons. . . . There are beneficial advantages that I want to benefit from. Also my students are specialized in computer education, so they have to know how to use Blackboard. I want them to run the experiment for using it. I make a great effort to verify the learning resources as much as I can, whether it is text, audio or visual. I use different teaching methods in my classes, including discussion, critical readings of some scientific papers and watching videos for writing the reflection. I do my best to conduct teamwork for the students to exchange their viewpoints. . . . I think Blackboard helps me a lot to do so.

This participant was aware of the tools provided by Blackboard and thought that it fits with different pedagogical approaches; therefore she was keen to use the system with her students. Considering that her students were specializing in teaching methods and technology education, she wanted to be a role model for them in the diversification of teaching methods

and the employment of technology in teaching. Indeed, learning by example and by direct experience was a motivating factor for the use of Blackboard by P2. In addition, P2 appears to have the necessary knowledge to teach with technology, which may be linked to the nature of their work in teachers' education programmes as asserted by Koehler and Mishra (2009) who stated that "teaching is a complicated practice that requires an interweaving of many kinds of specialized knowledge ... teaching with technology is complicated further considering the challenges newer technologies present to teachers" (p.61). They refer to these multiple knowledge as technology, pedagogy and content knowledge (TPACK).

Similarly, P1 had a positive attitude towards the LMS and stated that the ability of Blackboard to facilitate and manage group work encouraged her to use the system, as she said:

Because it facilitates group work, I feel working online within groups is good, where you can see each student's work. In the meantime, you avoid the usual problems that occur among students when they are working in groups, such as I did this while so-and-so did that and these kinds of stories.

P1 valued collaborative learning and sought to facilitate students' work through projects; therefore, she chose to use Blackboard. She attempted to provide fairness in assessing students, as she would be able to see each student's contribution to the group work. In a similar way, increasing the integrity and credibility of the assessment process—along with other factors—motivated other faculty to start using an LMS, as P5 articulated: "The second reason for using it is the presence of a plagiarism detection tool that makes the correction of assignments easier and more reliable." Likewise, P8 added:

One of the reasons is because it helped me discover plagiarism though I forget the program name which shows you the percentage of text copied from other resources. So, Blackboard helped me a lot in the correction process without having to put text in Google to see the similarities as I used to do before. . . . Also, because of other benefits that I can gain from it, such as testing my students online, posting announcements and lectures—in short, it is well-organized, easier and a time saver.

It appears that participants' willingness to solve issues related to student assessment in terms of copying other work without mentioning references, citation problems and paraphrasing skills was a factor behind faculty members' decision to uptake and use Blackboard. They saw Blackboard as a means to provide a kind of justice in the evaluation process and make it more credible and reliable. However, their decision might have been motivated by their desire to maintain power and control over students because Blackboard allowed an opportunity for teachers to monitor students, in ways that were not possible without it. Generally speaking, there was evidence that participants chose to use Blackboard to solve some pedagogical issues they faced in their teaching; while others seemed to participate simply because it seemed to be the 'done thing'. In most cases, faculty started to adopt a particular feature or two of the tools which they felt would benefit them in teaching.

5.3.3.10 Solution to Practical Issues

The findings of this study indicate that many participants started using an LMS to address specific issues that were arising in their teaching. Most of these issues related to efficiency and time management challenges. Many interviewees reported that the capability of Blackboard to enable them to conduct online tests and quizzes, facilitate communication with students, and solve problems encountered when using other technologies motivated them to use Blackboard, as explained in the following sections.

5.3.3.10.1 Online Testing

Faculty desire to reduce time spent on correcting students' exams and offering many quizzes to students has been identified as a significant factor for using an LMS. For example, P4 indicated that assessment tools within Blackboard were a catalyst for starting the use of Blackboard in her courses. She said, "Firstly I began use Blackboard to do online tests

because I do not want to waste time correcting them myself. Later I knew other advantages in detail when I use it”.

Likewise, P11 has had the same motivation and stressed the issue of time management as the reason for her use of the system as a mediator for providing electronic tests. P11 said, “Personally I started using Blackboard to save time, saving time in electronic marking of exams . . . saving time when I can add additional resources and students can access them any time, rather than giving them as handouts”.

These comments demonstrate that participants sought to reduce their workloads and save time in managing some of the administrative tasks associated with running a class, particularly in large classes, through the employment of an LMS. They clearly valued the assessment tools within the system and considered the automatic grading feature a motivational factor for using Blackboard. This suggests that faculty decision to use an LMS had nothing to do with pedagogy, rather it was about solving practical issues regarding time and effort. That is to say that faculty were motivated to use the LMS because they believed it would assist them to perform their work better and more easily, which aligns closely with TAM (Davis, 1989). This emphasizes the fact that perceived usefulness and ease of use are two factors that affect the intention of teachers to use technology (see 3.9.1).

This result is in line with Morgan’s (2003) findings in that the need for an online testing and secure gradebook has been a significant driving factor in LMS adoption at the University of Wisconsin. Despite the fact that the use of Blackboard was initially motivated by taking advantage of electronic tests that saved time, there was some evidence to suggest that when faculty became more familiar with Blackboard, they started thinking about using it for pedagogical reasons such as facilitating the use of different assessment methods like self- and peer-assessment (see Assessment section).

5.3.3.10.2 Communication with Students

Almost all participants reported that the desire to communicate with students in a convenient way was the primary motivation for adoption of the LMS. They acknowledged the accessibility afforded by Blackboard for all students enrolled in a class to access what is available there. In addition, the majority of participants felt it guarantees the delivery of information for an entire class with minimal effort and without being bound by the limits of time and space. This issue was clearly expressed by P1 when she was asked about factors encouraging her to use an LMS, “because it facilitates teacher–student communication at anytime and anywhere: 24 hours, at home or university, by smart phone or iPad. . .”

Similarly, P5 stated:

The first reason is it’s convenient for accessing all students. For example, when I was a student and a teacher would not attend a lecture due to some circumstance, we did not know that till lecture time. If she wants to send us something, she has to give it to the class in person. But now I am sure that whatever I sent or posted arrived to students by the push of a button.

Both participants emphasized that the ease that Blackboard provided to communicate with their students was the reason behind their use of an LMS. Although most of the participants, as they mentioned during the interviews, were using more than one means for communication such as e-mail, WhatsApp groups, and/or SMS messages via “TAWASUL” service, the LMS provided faculty an especially convenient way to reach all students without having to enter their data personally. For example, they found the LMS e-mail function more convenient than an e-mail distribution list because it operates from within the LMS application. That is to say, they did not have to ask students for personal information such as mobile numbers or e-mail addresses for adding them to the class list manually. In addition, students were easily notified if a change is made to the scheduling of courses. Indeed, they found it more convenient compared to other communication means. This perceived ease of use and perceived

usefulness of Blackboard encouraged participants to adopt it as a substitute for previous methods of communication, which is consistent with the TAM model (Davis et al., 1989) see 3.9.1.

In light of this, it can be said that most participants were more concerned about facilitating communication with students in a convenient way rather than using Blackboard to enhance communication between students themselves. This may indicate that the use of Blackboard is unchanged from other tools or applications that were used previously. This suggests that they were seeking to save time and effort rather than to provide a new dimension of communicating that is possible to gain through the use of discussion boards, blogs, wikis, and other interactive tools within the system. Indeed, this emphasises that participants sought to gain more efficiency and solve time-management issues, which were highlighted in previous studies (West, 2007; Morgan, 2003).

5.3.3.10.3 Solving Problems Encountered When Using Other Technologies

Over half of the research participants indicated that they started using an LMS to solve issues encountered when using other tools. Most of the issues were again associated with increasing efficiency and meeting time management challenges. For instance, some faculty were particularly interested in the “all-in-one” feature that Blackboard offered, as P2 described:

In general, through the available means, I as a teacher need just one environment; I do not want several environments to communicate with my students. I do not want to enter environment number one, then environment number two, and then environment number three to correct assignments, another time to communicate with the students, and other times to send information to the students. I just want one environment with one user name and one password to login and be able to communicate with the students from A to Z; that is the number one [reason].

P10 concurred with P2's view and added:

Previously, I used more than one tool to do different things. For example, I was using Wiki and Hotmail or any another e-mail service provider; I mean, this made me "dispersant" and lose my focus on one thing. Then I knew that all of these tools are available within Blackboard, meaning one platform to perform all things such as facilitating online discussion, sending and receiving assignments, communicating through e-mail, electronic testing and grading, and privacy in students' grades.

Here, those participants made remarks that are consistent with Rogers' theory of attributes of innovation (2003), demonstrating that the degree of enhancement a technology offers—compared to previous tools used for performing the same task—and its compatibility with faculty needs and past experiences are among the key features of the technology that influence its adoption. P10 and P2 acknowledged the comprehensiveness of an LMS that provide faculty several tools within one platform to perform different tasks simply without using multiple applications. This acted as a strong motivation to adopt and use an LMS, particularly when compared with the limitation of other tools and packages to perform only specific tasks. The comprehensiveness of LMS as a motive for adoption is inconsistent with the findings of Heaton et al., (2005), who indicated that the limitations of LMS in relation to particular tasks was a barrier to staff embracing the LMS. In fact, many participants felt that classroom management could be easily done through Blackboard in terms of automatic grading, communication with students, and providing them with course content by using one user name and password. This suggests that teachers' desires to facilitate their work and save time was a catalyst for them to use Blackboard rather than pedagogical concerns.

Furthermore, other participants chose use an LMS to achieve more benefits than those provided through previously used tools, as P6 mentioned:

I was using a blog in my module and I think Blackboard to some extent looks like blogs; but it offers me additional options such as online exams. It is also more convenience because I do not have to give students the module's link as it appears to them directly when they logged in the LMS.

P6, like others, addressed the convenience that Blackboard offered in terms of time and effort and additional advantages of Blackboard that facilitated classroom management. This may indicate that faculty want to use an LMS irrespective of what it may or may not do to their teaching. Such cases might be attributed to a lack of knowledge of how Blackboard could support learning and teaching activities. Haines (2015) asserted that keeping abreast of new technologies and opportunities they offer is a challenge for teachers. He argued that an integral part of teachers' competence is the ability to identify the potential of these technologies and how they can support learning in the classroom. This in turn emphasises the importance of taking techno-pedagogical skills into consideration in faculty training programmes.

5.3.3.11 Summary

Overall findings from the study highlight various factors encouraging the use of LMS among faculty members including their pedagogical beliefs and attitudes towards technology, the influence of colleagues, pressure from administration, institutional aims and vision, pressure from those who they perceived to be the 'digital natives', personal initiative and interest, intellectual property rights issues, expressing academic identity as teachers, pedagogical reasons and/or other practical issues. These identified factors are similar to those found in the literature review namely: teacher-related factors and contextual factors.

The study indicates that many participants in this study started using the LMS in their courses for a variety of purposes but not pedagogical reasons. For some, the ultimate goal was to facilitate classroom management and make it easier, faster and more efficient through the use of document tools, grade centre and announcement features, whereas a few attempted to improve and develop teaching practices and enhance student learning by adopting more interactive tools within the LMS such as discussion boards, wikis and group feature. Price &

Kirkwood (2014) refer to this in their observation that teachers usually pay more attention to ‘what works’.

One of the important drivers for me using Blackboard is it being a virtual space for storage, an area that can be accessible from anywhere. It is pretty much similar to Dropbox but it is much better. It is also officially accredited by the University, it allows me to communicate with my students directly because it serves as a database of student information, including their names and numbers; so it saves me a lot of effort (P3).

Almost all participants believed that the use of this system, or at least some of its tools, would lead to them doing their jobs better, more effectively and with less effort, which is consistent with the TAM model. Hence, it seems that the choice of tools that they used in their teaching was based on a comparison of the potential benefits versus the cost in terms of time and effort. Whenever a tool required a greater effort and time, it was less likely to be used by faculty. In addition, it appears that most of the participants were aware of the time required to learn how to use the LMS tools, but few had taken into account the time needed to prepare learning materials and re-plan online activities in conjunction with face-to-face teaching activities; this is supported by what the participants said about the impact of using Blackboard on designing their course materials, as discussed in section 5.3.2.1.4.

Apart from how participants used the LMS, the interview findings suggest that many faculty were satisfied about their decision to use the LMS in their classes instead of other technologies available to them. This preference did not necessarily mean achieving pedagogical benefits or improvements in their teaching and learning practices, but it reflects their desire to work with the tools that the University has formally provided as long as support is available when needed. This fit with the results of the O'Rourke et al. (2015) study which revealed that teachers, contrary to the expectations, were satisfied in general with the LMS and chose to continue using it, even if other options were available, as long they were provided with adequate support.

5.3.4 (RQ4) The Difficulties of Using an LMS

One of the questions addressed in this study concerned the difficulties and challenges faced by faculty while using the learning management system. Faculty interviewed reported several challenges experienced during their use of the LMS in their teaching. The identified challenges were associated with three themes: a reluctance from the students, technical issues related to an LMS design, and administrative support in terms of technical support, training and professional development programs as well as policy of incentives and rewards. These issues are discussed in the following sections.

5.3.4.1 *Students' Reluctance*

One of the most common difficulties cited by faculty interviewed was student reluctance and unwillingness to use the LMS. It is worth mentioning that most students have no previous experience with, or sufficient knowledge of Blackboard, because using an LMS as part of teaching in a traditional classroom at the university has not been compulsory and has only been introduced to the university recently. During the interviews, more than half of participants mentioned that students were to some extent resistant to use Blackboard¹⁰. They expressed several forms of such resistance from students. The following comments exemplified some of these perceptions. For instance, P11 reported:

Students did not like the idea of participating in the discussion board; therefore, they did not care about it. It is difficult to encourage students to participate in a thing that they do not like. I need to solve this problem, maybe by assigning grades for participation in discussion.

¹⁰ This is the perspective of faculty.

Whereas P7 said:

I think the biggest difficulty is if the students did not care or do not have sufficient awareness. I mean, some of them rarely enter Blackboard or check their e-mail or may not use it at all. I tell them 'try to check them regularly, because you will find many announcements and workshops and other things that you need'. We try to motivate and encourage them to enter Blackboard.

P1 added:

Beside technical difficulties, the students themselves! I wish the students could recognise its value and benefits. At first there were objections from students; for example, shall we do this and that. But when they start using it, they recognise its benefits and overcome these matters. I mean it has become easy to deal with it.

These quotes show that participants considered the low level of involvement in Blackboard activities, such as online discussion, as an important form of students' resistance. In addition, they deemed students' carelessness and lack of interest regarding Blackboard as another type of resistance. Indeed, it is clear that those participants were aware of students' unwillingness to use Blackboard and hoped to find solutions. This resistance can be interpreted in several ways. First, students might see an LMS as a burden in terms of checking their e-mail regularly, accessing course materials frequently, and participating in discussion boards. This suggests that students' reluctance was associated with their fear of an increasing number of tasks they have to do without taking this effort into account in the assessment process. In this respect, some participants, as in the case of P11, sought to minimise students' reluctance toward participating in Blackboard activities by using grades as a catalyst for participation. This issue has been underlined within the literature by several researchers. For example, Reeve (2001), as cited in Docan (2006), mentioned that extrinsic motivation such as grades and rewards can make an uninteresting task seem suddenly worth pursuing. Furthermore, Wishart and Guy (2009) supported assessing student participation in online discussions because it is recognition of the commitment

of students, which in turn may motivate students to interact more. By doing so, using extrinsic motivation such as grades might increase students' acceptance of Blackboard and thereby enhance the participation level in its online activities. Lyndon & Hale (2014) highlighted the importance of maintaining confidentiality and anonymity in encouraging student to participate and engage in online discussion. However, participants in this study appear to be unaware of these issues and their potential impact on student participation in online activities.

Another reason for students' reluctance might be related to their lack of knowledge about the potentials of an LMS and how it can support learning. This asserts the need to boost students' awareness of Blackboard. P3 suggested a promotional campaign to introduce Blackboard to students in an attractive way. As P3 stated: "I hope there would be an introductory and promotional campaign for the use of Blackboard by students, particularly on smartphones, telling them that Blackboard is not a bad thing; it is not an additional burden".

Finally, students' resistance to Blackboard could result from being incompatible with the demands of the current generation in terms of flexibility and speed of access to the service from a mobile device¹¹. This issue was clearly expressed by P3 as she explained:

I think students have a kind of resistance to using Blackboard because it is not an application that can be downloaded to their phones. A student needs to use a PC whereas a lot of girls mainly use smartphones. Therefore, if there were a possibility to move Blackboard into a smartphone, it would increase students' use of the system.

¹¹ You can get Blackboard as App. However, this application was not available at the time of the study.

Such a comment indicates that the reluctance of students to use Blackboard may return to the difficulty of access to the system by portable devices, which are in their hands. Nasser et al., (2011) affirmed that the widespread use of more attractive technologies, particularly mobile devices such as tablets and smart phones, might influence students' views of LMS. Therefore, any such system needs to be adapted to keep pace with those popular technologies if it is to be used by future students. This suggests the importance of transforming Blackboard into an application on smartphones to reduce the resistance of students and increase their acceptance of an LMS. This finding supports the results of Dahlstrom et al. (2014), who recommend mobile access for the LMS to overcome the resistance. Dahlstrom et al. (2014) stated:

Mobile devices have become ubiquitous in the hands of students, and mobile access to student-facing enterprise systems such as the LMS are becoming more common and increasingly important. Tomorrow's digital learning environments will meet demands for anytime, anywhere access to course materials and 24/7 engagement by being mobile optimized and mobile friendly. (p.23)

In short, it can be said that although most participants felt that students were not enthusiastic about Blackboard and they may pose a challenge to using it, they at the same time seem to be convinced that the digital generation requires the employment of such systems in teaching and this reluctance might be reduced when students become more familiar with Blackboard (see Pressure From the Digital Generation). This result is partly consistent with Morgan's study of more than 14 years ago (2003), when it was found that students were far from keen about LMS use. However, the result of his study which indicated that students' attitudes towards LMS discouraged faculty from using LMS in their teaching has not been referred to by participants in this study.

5.3.4.2 *Technical Issues Related to an LMS*

Although participants appreciate the capability of LMS to support teaching and learning in general, they have raised some concerns regarding an LMS itself. The faculty interviewed reported two challenges that affected the confidence of faculty to rely on the system or even acted as a deterrent for using it. These challenges were categorised in two sub-themes: the difficulty and complexity of Blackboard, and reliability of the system due to breakdown issues as explained below.

5.3.4.2.1 Complexity of Blackboard-LMS

The findings show that the complexity of Blackboard and sometimes the difficulty of using some of its tools was one of the challenges facing faculty. Few participants (three out of 11) complained about the complex design of Blackboard's interface and described it as 'not user-friendly'. For example, when P3 was asked about the difficulties she faced when using Blackboard, P3 stated:

The large numbers of tools that are very similar to each other make it very confusing for me. For instance, to me 'creating an item' or 'adding a file' is actually the same thing. I feel it is just a repetition of the tools. . . . Another thing is the difficulties when editing the content because some tools are disabled; for example, I tried to include YouTube video within Blackboard but it has not been turned into either an interactive link that can be opened in a new window or tab or even a video clip that can be viewed directly through Blackboard. I mean, it remained as inactive text¹² while if I put a link to video in WhatsApp application; it remains a link and opens directly. Thus, students need to copy the link and then paste it in Internet Explorer to be able to open the video. . . . it is necessary to bear in mind that most faculty members are ordinary users who have no technical background.

¹² See figure (8) and (9).

Figure (8): A screen shot from an LMS illustrates what P3 means by an inactive link to YouTube.

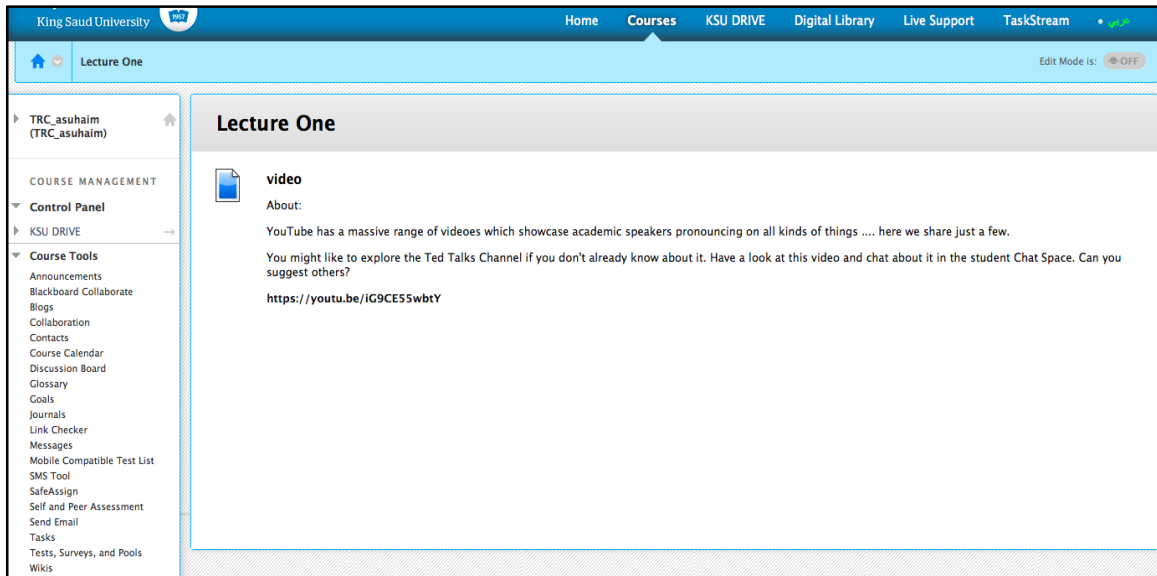
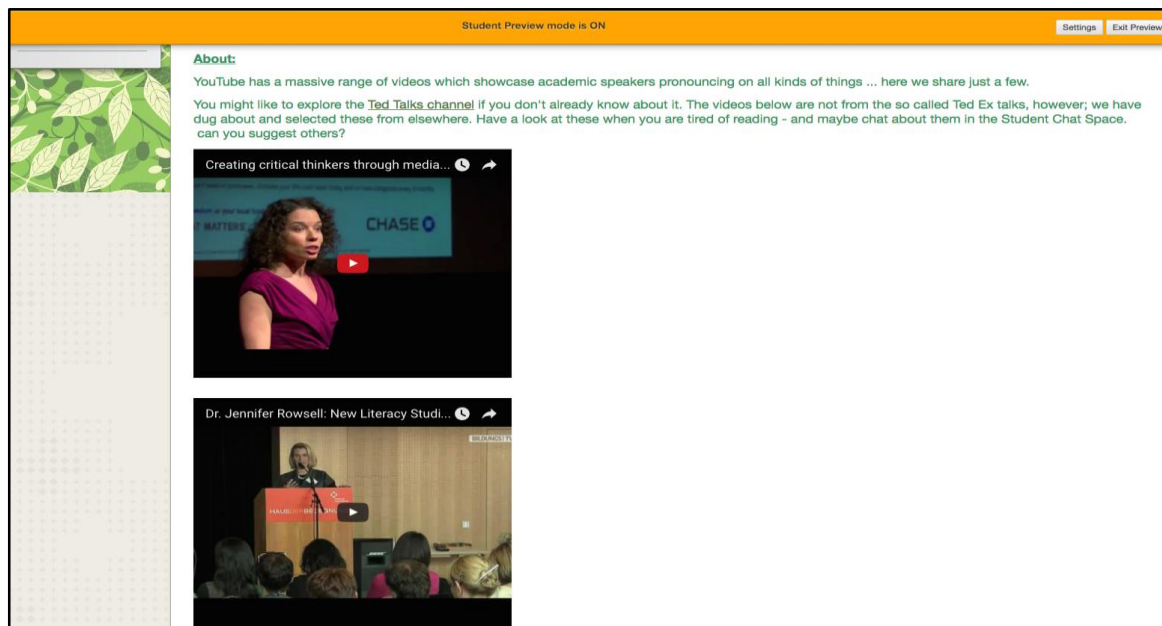


Figure (9): A screen shot from an LMS illustrates what it should look like to students.



P3 discussed the complicated interface of Blackboard, particularly for those who do not have high technological skills. These difficulties are represented in the presence of great similarities in the functions of some of the tools in editing the content area, such as the creation of elements, files, and video. In addition, P3 referred to some problems

related to the mechanism of uploading educational videos from YouTube¹³, which was different from what participants are familiar with when working with other technologies such as WhatsApp application. In fact, for participants, the incompatibility of some tools within LMS with their past experiences, as well as the perceived difficulty in using them, appeared to be an obstacle to the use of those tools; this corresponds with Rogers' (2003) theory on the role of faculty perceptions about attributes of innovations on their willingness to adopt them in teaching (see section 3.9.2 The Diffusion of Innovation Theory). It also supports the view that technological characteristics influence faculty members' response to these technologies (Bennett and Bennett, 2003).

This result was not surprising as a number of research studies has indicated that many faculty members thought some functionalities within an LMS were complicated and confusing (Bousbahi and Alrazgan, 2015; O'Rourke et al., 2015). According to Wheeler (2015), the poor design of LMSs, the difficulty in their use, and navigation issues cause a lot of frustration for students and faculty alike, which leads to their avoidance. Bradford et al. (2007) and West et al. (2007) supported this view, arguing that an LMS is harder to learn and takes time and effort to learn how to use it. This suggests that such difficulties could not only lead to using some tools within Blackboard inaccurately, but could also influence users' choices of tools to use in their classes. For instance, less complex tools probably attract some faculty towards adoption and learning how to use them by themselves whereas more complex ones present an obstacle to faculty for using them. This was evident in this study based on the frequent use by many faculty members of some LMS features, such as document area and communication tools, (see table 9) due to being easy to use; this is also in

¹³ The LMS does allow faculty to upload video from YouTube through Mash-ups. However, this feature was hidden from users during the period of conducting this study.

line with the TAM where teachers are more likely to use LMS tools that they believe will be easy and simple to use.

This issue was also highlighted by P5, who described how the complexity and difficulty of Blackboard affected her adoption of the system:

It was not clear at all in terms of seeing what students will exactly see. For example, when I was trying to upload the course content, I had to ask students about what they saw in the course site. It was the only way to know how content would appear to students. Therefore, I decided not to use this tool.

P5 asserted the lack of clarity of some of the tools in the Blackboard. This ambiguity and lack of clarity in how to use such tools within Blackboard might be related to the complexity of the system itself, or it could be attributed to unavailability to access some tools within Blackboard to faculty as they were hidden from IT administrators and/or sometimes it might be related to the lack of knowledge of faculty and their need for training to learn how to use its tools. This is clear in the case of P5, who wanted to see a student view. In fact, the LMS does allow faculty to switch to ‘student view’ in some versions but this tool was not available in Blackboard version used in the University during the data collection period, which means that it was possible only by editing mode (Elghnam. M, personal communication, March 30, 2017)¹⁴.

Furthermore, sometimes the difficulty of the system from the viewpoint of participants in this study might be due to lack of familiarity with system. This may be linked to the issue of faculty fears of making mistakes when trying a specific tool, which in turn may prevent them from using new tools as they believed that any error in their use would affect their image as teachers in front of students, which was confirmed by P9: “It is difficult to try using something that I do not know how to use

¹⁴ A technical support staff.

it. You know, it is a sensitive point when a thing is sent to students by mistake during my attempts to work out how to use some tools”. This point was affirmed by Rogers (2003) who identified five main attributes of the technology affecting its adoption (see section 3.9.2 The Diffusion of Innovation Theory) including perceived trialability where technology can be tried and tested prior to its actual use.

On the other hand, the majority of participants were more satisfied with Blackboard’s design and described it as relatively well-designed and easy to use. For instance, P9 stated, “Despite that I have not attended any training sessions in Blackboard, its interface is clear”. This comment implies that some participants find Blackboard easy to use whereas others find it difficult. Faculty perceptions about the difficulties of Blackboard vary from individual to individual based on their competence of ICT skills. Despite the differences of some participants views about the complexity of Blackboard, it seems that complaints concentrated on just some specific areas and tools within Blackboard that were difficult to learn and use by the faculty themselves, and this might influence their adoption of Blackboard overall in their courses.

5.3.4.2.2 Reliability Concerns

Some participants in this study raised concerns about the reliability of Blackboard and whether it would work when needed. Periodic downtime, outages, system hanging, and not running properly were expressed as some of the challenges faculty faced in using Blackboard. For example, P10 said:

Sometimes I face problems with Blackboard such as periodic downtime and outages due to system maintenance from the University. This disrupts our work, particularly if I rely on it. Students also cannot access to Blackboard to do their tasks. Such breakdowns would affect all of us.

Similarly, P6 stated, “Occasionally it does not run properly. This happened once when I was creating an exam where texts transformed to symbols and I could not

understand it. Therefore, I had to remember the button's position to save the exam". Both participants addressed the unreliability of Blackboard in terms of periodic downtime, software malfunctions, and problems resulting from improperly working as a significant challenge they faced. P10 considered the frequent interruptions in the accessibility of Blackboard as one of the main problems that bothered her, especially if she wanted to rely on it heavily in teaching. P6 was referring to the appearance of strange symbols that she could not understand because the system was not running properly. So she had to use her own method of remembering how to save this work. This suggests that unreliability of an LMS was a significant factor that might discourage faculty for adopting it or using Blackboard in a limited way. This result supports the findings of Butler and Sellbom (2002) who pointed out that from a faculty perspective, reliability was the most significant factor to using technology for teaching. A majority of their faculty selected this factor as a crucial factor that influenced their adoption of technology.

On the other hand, some participants expressed concern about the availability of Internet for all students and the quality of Internet connection. As P8 pointed out:

The problem is not from Blackboard itself. It is related to Internet connectivity. Sometimes a student may have to submit her homework at a specific time and due to the disruption in the Internet service, she loses the opportunity for on-time submission. . . . Sometimes I have to give them a second chance or receive the assignment as a hardcopy.

P8 highlighted how the lack of Internet accessibility disrupted her plan for how she intended to use Blackboard. This finding is congruent with the result of Morgan (2003) that revealed that faculty members were not enthusiastic about using the LMS because of some problems related to students such as the difficulty in accessing computers or Internet service from home that make it difficult for students to

complete LMS-based activities, suggesting that the issue of Internet availability for all students might be a reason for the limited use of Blackboard by faculty and it could influence how faculty adopt and use the system in their teaching.

Overall, participants indicated how technological issues might influence their use of Blackboard. Therefore, it appears that there is a need to offer regular maintenance and support to minimise these issues that faculty might face during their work with technology.

5.3.4.3 Administrative Support

The findings of this study revealed that there were differences in participants' perceptions regarding the administrative support provided to them and the extent to which that was an obstacle to their use of an LMS in teaching. Faculty interviewed perceived the administrative support in various ways but they can be summarised into three sub-themes: the accessibility of reliable technical support, training and professional development issues, and a clear policy of rewards and incentives. These themes are presented and discussed in the following sections.

5.3.4.3.1 Technical Support

During the interviews, the majority of participants (nine out of 11) seemed to be generally satisfied with the technical support they received. They agreed that they received fast responses when requesting any kind of technical support. This agreement among most participants appears to be related to the efforts of the university administration in spreading the culture of e-learning, which is represented by the presence of two units responsible for providing technical support to faculty members. The first unit is Electronic Transactions and Communications (ETC) Deanship, which provides a helpdesk, troubleshooting, and other technical assistance

that faculty need to use technologies in general. The second unit is E-learning Deanship, which offers particular support in using e-learning applications such as Blackboard to provide an electronic environment that supports teaching and learning processes. Both units offer different means of support via phone, e-mail, and online chat for faculty members to facilitate the efficient use of technologies. However, faculty interviewed argued about the mechanism for providing the most trusted support. For example, P11 expressed her satisfaction about support service via e-mail by saying, “Frankly, we have pretty good technical support. I remember a time when I sent an e-mail to the Technical Support unit and they immediately responded on the same day and the problem was solved”. P7 concurred with P11 and added, “I faced some difficulties in converting some videos to another format and ETC helped me a lot. What I need to do is either just send an e-mail or book an appointment whenever I need help in anything” Whereas P1 stated, “Usually there are some technical problems such as Internet disruption and problems in a username and password. However, we have very good technical support and most of the problems are solved through a telephone call”.

These quotes implied that participants were satisfied with the level of technological support provided to them particularly through telephone and e-mail services. They described such support as rapid and adequate. However, only two participants raised concerns about the poor support provided through the online chat tool within Blackboard. For instance, P3, who has been using Blackboard for less than 2 years, pointed out that it was not available 24 hours a day, seven days a week, as it is supposed to be: “A lot of services have not been activated yet, such as the online chat. I always request it but I never find answers even in work time, which is supposed to

be 24 hours a day, seven days a week” Similarly, P4 reported:

I do not usually receive immediate response from online chat, whereas a telephone call gives me an instant answer. . . . I mean, if I were at the university, I would use the phone service, whilst if I were outside the university, I would use the online chat.

The variation in participants views reflects a kind of dissatisfaction with the support provided via online chat, which may be attributed to the difference in the time of requesting the service or the frequency of use by individuals. Another explanation for these results could be related to the faculty’s familiarity with an LMS as recent adopters might seek extensive support, particularly the online services, compared to those who have more experience with the system. This was exemplified by the comment of P2 who has been using LMS for more than 3 years:

We have excellent support. For example, when you enter a Blackboard page, there is a link for technical support and you can choose the type of communication that you want (phone or online). I always use online chat and its advantage is that you receive an instant answer for your question at the same moment. Sometimes they may ask you to provide your phone number and contact you later via phone if the problem was not solved.

Thus, it can be said that most participants seem to be generally satisfied with the technical support they received from the University excluding some reservations on the online support. This result differs from the findings of a study by Butler and Sellbom (2002), who indicated that a large percentage of faculty were dissatisfied with the institutional support provided. They described it as poor and inadequate support in terms of not correcting problems in a timely fashion or taking them seriously by support staff.

This suggests the considerable role that institutional and technical support plays in motivating faculty to use the LMS in their classes. Supporting this point are the

results of Bousbahi and Alrazgan's (2015) study in the Saudi context, which revealed a significant relationship between the institutional support, motivation and perceived usefulness of the system among faculty. Similarly, O'Rourke et al. (2015) found that faculty preferred to continue using the LMS, even with the availability of other technological options, as long as they received appropriate support. In light of this, it is clear that technical support indeed influences faculty in the uptake and use of Blackboard to a great extent. For the majority of faculty in this study it was a motivation factor for adopting and using an LMS in their classes.

5.3.4.3.2 Training and professional development issues

During the period of data collection and interviews, the university began to set up e-learning and information technology units in its various colleges to be channels between colleges and the Deanship of E-Learning and the ETC Deanship. The aim of these units is to serve as training centres for faculty members on the use of various technologies offered by the Deanship, including Blackboard. Some of these units were active at that time, while many were under development. However, most of interviewed faculty raised several concerns related to the professional development programmes and training provided for adopting and using LMS, which supported what respondents reported in the questionnaire (see 5.2.4). These issues are discussed below.

5.3.4.3.2.1 *Schedule*

The findings show that most participants considered the professional development and training, like workshops and demos, valuable to improve their skills in using LMS for teaching and learning purposes. However, few of them were partaking in such training opportunities due to inappropriate scheduling. Indeed, participants were

upset about the schedule of training and described it as a hindrance to attend and take advantage of them. For example, P9 reported dissatisfaction with the training time by saying: “Unfortunately, most of the workshops in Blackboard were held simultaneously with our lecture time, and this bothers us”. P7 concurred with P9 and stated: “many sessions are offered but the problem was on timing”.

Those quotes show that the enrolment at training sessions has not been available at different times and many were not able to participate in, and attend these workshops because of the inconvenient time of training and its inconsistency with faculty lectures. Therefore, faculty lost the opportunity to benefit from them. The issue of the availability of time has been affirmed by Ely (1990) as one of the eight most important conditions to facilitate the adoption of educational technological innovations, arguing that teachers need time to train, practise new materials and review their teaching plans. On the other hand, inappropriate time of training might influence faculty use of an LMS and make it limited to specific tools. This issue was clearly articulated by P5 who stated:

My use of Blackboard was limited to sending e-mails to students and attachments. This was the only thing that I easily knew. I also tried to upload course materials and syllabi but I could not. I felt that I need to attend training and there were some; but I could not go because their time was inconvenient to me.

Similarly, P6 added, “Training would improve my skills if it were available at an appropriate time. Most often it is at an inconvenient time, therefore I have learnt on my own”. These quotes imply that faculty need to feel confident about using LMS before they can bring it into their classrooms, which is in line with what many researchers have pointed out about the importance of teachers possessing the competence to use educational technologies efficiently (Ely, 1990; West et al., 2007).

Therefore, those participants were seeking training of LMS for improving their skills. However, the inconvenient time of training sessions during lectures had led some faculty to stop using LMS or limiting the use of certain tools whereas others, especially those with high technological skills, resorted to learning the tools on their own. According to Keengwe et al. (2008), the effects of technical training are less than desirable due to lack of time available, financial support and direct connection between training content and pedagogy. This indicates the importance of providing convenient training sessions to faculty as it may influence the way of adoption and use of LMS.

5.3.4.3.2.2 Quality of training content

The findings of this study also reveal that the content of training offered to faculty was a challenge to uptake and use an LMS in teaching. Although many participants considered training as valuable for improving their skills, some did not take part in such training opportunities or merely attended once because they were dissatisfied with sessions they or their colleagues had experienced. They described them as superficial, merely providing basic information and rarely meeting their needs, as P10 articulated:

I attended one training session but I felt it was shallow and I frankly did not get any benefit. It was just a brief description of the definition of Blackboard and a presentation of its tools. It did not focus on a specific tool and explain its function deeply and how it could be useful in teaching and learning.

Similarly, P11 added:

The university offers training sessions but usually they are superficial and do not cover deep things. . . sometimes I need to know how to use a specific tool before a training date; therefore, I have to learn it on my own or ask my colleagues who have experienced such a tool.

These quotes show that both participants, like many other faculty, complained about inappropriate training because each of them had different needs and expectations that were not met by these training sessions. As a result, many had to learn to cope with this situation with their own effort. It seems that individuals who have a good level of technical skills had tried to learn to use Blackboard themselves by experimenting, looking for other supplementary materials both digital and paper, or asking for help from colleagues who have experience with this system, while less skilled faculty had limited their use of LMS to some tools that did not require a high level of skills.

In fact, for participants, attending such training programmes did not necessarily improve faculty skills and/or change teaching practices as a result of the use of LMS. This is also supported by the results of a number of studies which revealed that many traditional technology-training programmes have focused on developing teachers' IT skills but have neglected aspects related to how technology is used to facilitate students' learning so they do not help teachers make qualitative changes in teaching and learning practices (Blin & Munro, 2008; Cox et al., 1999; Ertmer, 1999; Lonn & Teasley, 2009).

An important reason behind this problem might be the incompatibility between the content of training and the actual needs of faculty, as was indicated by the comments of the participants. Another reason could be related to the trainers themselves, many of whom were from an IT background with no teaching experience, which meant that the trainers may have focussed on the technology itself rather than providing examples to advise faculty on its pedagogical use. They might perceive technology as something else to be done with little understanding of its educational power. This

finding is in line with those in Kidd's (2010) study which found that when technology support services came from information technology personnel, faculty felt it did not assist them in the process of technology adoption or support their endeavours to use technology to facilitate the teaching and learning process because IT staff often lack basic knowledge of teaching practices, students' needs or knowledge of curricula. This, in fact, emphasises the importance of providing faculty with knowledge of technology along with knowledge of how to use this technology to facilitate student learning (Ertmer & Ottenbreit-Leftwich, 2010; Koehler & Mishra, 2009).

This notion has been highlighted by Ertmer (1999) who states that:

It is not training in the technology but training in how to leverage the technology to provide, increase, improve, and/or assess student learning ... Thus, rather than focusing on technology per se, professional development experience might be more effectively linked to new visions for teaching and learning, made possible with technology, rather than the development of user proficiency in the operation of specific software and hardware (p. 59).

Therefore, it seems that there is a need for appropriate training programmes that address both technological and pedagogical aspects in teaching with technology to increase the effective use of LMS in the classroom and convince faculty of its value.

5.3.4.3.2.3 Lack of Supplementary Materials

Over half of the interviewees complained about a lack of supportive materials addressing how to use Blackboard tools, whether in printed form such as leaflets and guidebooks, or online resources such as videos or PDF files. As P2 mentioned:

Sometimes I do not have time to enrol in training or a workshop; therefore, I hope there would always be online material about how to use Blackboard, such as videos explaining the use of a specific tool, such as a wiki within Blackboard or even a PDF file showing step by step how to do this.

P9 had the same view: “I wish there would be a handbook explaining all Blackboard tools. This would suit me more because training sessions sometimes do not cover what I need or they may be held at the same time of my lectures”. Again those participants affirmed the issues of the availability of time and workload as reasons for not attending such workshops. They were looking for alternative means of training like supplementary materials for developing their LMS skills and overcoming the difficulties in how to employ its tools in teaching practices. This reflected a lack and inadequacy of assistance material available to faculty within the colleges although some have pointed out that those materials were provided if requested from the Deanship of e-Learning.

On the other hand, some participants who were briefed on such materials critiqued their weakness and described them as unhelpful. For instance, P4 was upset about those references and said:

The guidebook that I had seen provides unrealistic examples. It sometimes displays the tools without giving examples of how to use each one. I mean, if you were busy and did not find examples that are easy to follow, this would discourage you to use some tools. In contrast, if you found examples of how to provide online tests or how to assess students in discussion boards, you would use it more.

P11 added:

I do not feel that the university provided sufficient resources because we need more explanation. I mean, they gave us a very simple and superficial video, but we want a booklet with clear instruction via pictures and steps. Ok, we do not need pictures, but at least clear and sufficient steps; this thing is what we need. . . . I find it difficult to learn how everything works. For example, the groups feature, I cannot use it although I tried to learn how . . . It is true that there are good forums for explaining Blackboard but sometimes I try to apply some mentioned way and when I get to a certain stage I stop because I am not be able to understand what they said. There are more than one site I have tried and one of them was named Blackboard learn or something like this.

Such quotes indicate that some participants seemed unhappy about the support provided to them as they found it did not reflect their needs and expectations and this

in turn may be a hindrance for using some tools within the system. Apart from that, some participants tried to overcome this situation by learning on their own. They were looking for online materials and training by using the Internet due to insufficient resources available to them. Although this strategy might be good and useful, it sometimes did not provide faculty with what they needed because every university uses different parts of Blackboard and some tools are not available. This suggests that there is a difference between what exists in online help, manuals, etc and what is actually available to faculty, as in the case of P11, who found it difficult to understand how to employ a specific tool in teaching, suggesting that providing supplementary materials for training such as leaflets, guidebooks, and online resources, is essential but not enough to overcome the difficulties different faculty might face with LMS.

Overall, it can be said that inappropriate time of training sessions, poor content that focused on technological rather than pedagogical aspects of technology to support teaching and learning and insufficient online training materials appear to be barriers for effective use of Blackboard. Based on that, it seems that there is a need for professional development programmes that are relevant to the current needs of faculty to support them in using LMS. The results also indicate a lack of resources available on the Internet, especially in Arabic language, as well as a lack of online training sessions that participants considered important to develop their skills. This result confirms what the data from EDUCAUSE Centre indicated that faculty members prefer to have diverse training opportunities through which they can opt for what is best for them that in turn could increase the better use of the LMS (Dahlstrom et al., 2014).

5.3.4.3.3 Academic Rewards and Incentives

The majority of participants expressed dissatisfaction with the system of rewards and incentives regarding the use of educational technologies, and such feelings might affect their actual use of LMS. For example, P4 considered the absence of recognition from the Head of Department about the time and effort spent using Blackboard in teaching, and a lack of any material incentive, as barriers for adopting the system. She stated:

The administrative support, as far as I know, was not effective at all in my department. There were no initiatives or stimulation or anything. There was no acknowledgement when using Blackboard nor any accountability for non-use. . . Regarding incentives, I remember once when the Deanship of E-learning sent me a questionnaire about Blackboard and asked me if I had any suggestions for further development of the LMS because I am one of the top 50 users of Blackboard at the university [Ironically]... So this may discourage other faculty to adopt or use Blackboard, unless if we received something that would encourage us and show that someone actually cares.

Similarly, P5 believed that the allowances system was unclear and confirmed P4's view that the presence of incentives would promote the use of LMS, as mentioned:

I have no idea about incentives regarding Blackboard but I hear that a teacher is entitled to a 'computer allowance' if she activates her site on the university's website. I am one of those who do not get the allowance because I have not completed my site yet. At present I use Blackboard particularly for the purpose of communicating with students, however, I never hear about any incentives for that.

Such perceptions indicate that the lack of incentives and unclear policy about rewards and allowances for using technologies such as Blackboard in teaching represented a significant obstacle to their adoption and use by the faculty interviewed. Sometimes due to lack of incentives, faculty might limit use to course delivery and communication with students, as discussed earlier in section 5.3.1. In fact, those participants seemed to be aware about the requirements of teaching in blended context in terms of time and effort, starting from the preparation stage to the ongoing work

during the semester. They realised that using Blackboard in traditional face-to-face classes would increase the overall workload, especially in the short term. Therefore, they expected some sort of acknowledgement or reward for such work, either in a material or moral form, as they thought that this would motivate them to use LMS more. The results of research by O'Rourke et al. (2015) demonstrated that faculty had a keen desire for the time and effort it takes to work with LMS to be recognised. This is consistent with the findings of Nasser et al., (2011) which revealed that the majority of faculty welcomed the LMS but indicated the need for a system of rewards and incentives to encourage its successful implementation. The reason for this perception amongst the interviewed faculty may be due to the fact that the LMS is relatively new to most of them and is still uncommon in the traditional campus-based teaching prevalent in Saudi society.

In the same vein, P7 suggested that giving a faculty member a reduced workload for a preparatory period when they start using the LMS could motivate them and give them extra time for further development in its use by participating in training programmes. She made the following point: "For me I wish there was part-time teaching load in the preparation period, I think that would also be a chance to attend training workshops". This is evidence that faculty consider that ignoring the additional work resulting from the using an LMS in the overall teaching load may represent an obstacle to the system being used to its full potential. Sometimes this may go further, leading to other problems such as lack of time to attend training programmes. This result supports the findings of Ensminger & Surry (2002) who reported that faculty rated the availability of monetary support as one of the top five factors influencing faculty participating in educational technologies. However, it is quite contrary to findings from D'silva's

(2005) study that indicated that rewards and incentives such as merit pay, stipend and salary increases are not a factor that influence faculty in the uptake of LMS. This result could be due to that faculty members who took part in the D'silva study were from a research-based institution that primarily rewards faculty based on their research and scholarship output; consequently, they do not expect any merit pay or salary increase based on their uptake and use of LMS.

In summary, it is clear that administrative support including technical support, training and workshops and rewards and incentives all appear to be significant factors that influence the use of LMS by some faculty either in a positive or a negative way. This confirms what Ertmer (1999) had already highlighted, that inadequate resources, support, time and training provided to teachers can limit any technological-integration effort.

5.3.4.4 Summary

Generally speaking, the findings from this study reveal that participants' perceptions about the difficulties of LMS varied from individual to individual based on their expectations, experiences and competence in ICT skills. However, there were three common challenges that participants faced while using it. These were: the students' reluctance to use the system, some problems related to the LMS itself such as the difficulty of its interface and its reliability, and the lack of administrative support in terms of the inadequacy of training programmes and a lack of a system of incentives and rewards. This indicates that regardless of the reasons that prompted faculty to use LMS, many participants in this study were dissatisfied or not confident with the LMS which to some extent hindered its use in teaching activities. According to participants such difficulties limited their dependence and trust on LMS, which in turn either

directly or indirectly affected their actual use of the system for teaching and learning purposes. In fact, those challenges not only led to using some tools within Blackboard inaccurately, but also influenced the choice of teaching tools. This was evident in the study from the frequent use of some LMS features such as the document area and the communication tools by the majority of participants (see 5.3.1). Thus, it seems that the perceived ease of use was a significant factor influencing the adoption and use of LMS tools, which is consistent with TAM (see 2.9.1), indicating that faculty were more likely to use LMS tools that they believed would be easy and effortless. These findings are also in line with what Ertmer (1999) described as first-order barriers for effective integration of technology, or what have usually been referred to as extrinsic or institutional-related obstacles. She states that:

For teachers to use technology well, multiple types of support are needed... including professional (help in planning for uses and acquisitions; time to plan for and implement innovative uses), technical (training in how to use new hardware and software, on-demand help when problems occur, low-level system maintenance) and instructional (demonstrations or advice on how to incorporate into instruction) (p.56-57).

In contrast to the findings of Butler and Sellbom (2002) which reported that faculty complained about the lack of technical support provided and considered this as a barrier to using educational technology, the results of this study indicated that most participants were satisfied with the support provided to them, and felt that it was available when needed, despite some concerns raised by a few participants about Internet problems. This perception may be due to the availability of sufficient infrastructure resulting from the relocation of the female students' campus to new buildings that have been well equipped, along with the efforts of the University represented by both ETC Deanship and E-learning Deanship to provide support in using e-learning applications such as Blackboard and other technical assistance that

faculty may need to use technologies in general.

However, the findings revealed a lack of appropriate training according to the participants' perspective, which represented a significant challenge regarding effective use of LMS for most of them (see Training and Professional Development issues). This confirms findings of previous research (Blin & Munro, 2008; Cox et al., 1999; Keengwe et al., 2008; Lonn & Teasley, 2009) and suggests a need for training programmes based on the current needs of faculty that take both technical and pedagogical aspects into consideration. These programmes should pay particular attention to how technology can be used to facilitate students' learning rather than just acquiring technical skills as most of the participants (see 5.2.3) already had a good level of IT skills and aspired to have more pedagogical training programmes. This issue was underlined by Ermer (1999) many years ago, arguing that the relative importance of both technical and pedagogical support in technology integration in teaching tends to change as a result of teacher development. In the early stages, greater technical support is needed but over time, this need will decrease and teachers' demands for pedagogical and professional support may increase in order to use technology in a way that promotes student learning.

It is clear, therefore, that if the training is to have a lasting impact, faculty need something beyond what is currently provided. They should be offered training and professional development programmes that are relevant to their current levels and needs as well as being given incentives and rewards to encourage effective use of the LMS and facilitate the move from the substitution level to one that enhances and transforms teaching and learning with technology.

CHAPTER 6: CONCLUSION

6.1 Introduction

This study aimed to investigate the influence of LMS on teaching and learning practices in traditional classroom environments. More specifically, it sought to explore the experience and perceptions of faculty regarding the use of LMS for learning and teaching in Saudi higher education in order to understand their actual use of these systems, and to learn whether the introduction of LMS is justified in terms of the benefits it can bring, especially to pedagogy. A mixed methods design, that employed questionnaire and in-depth semi-structured interviews, was used to implement my research investigation. In the preceding chapter, I presented and discussed the findings of this study that are related to the subsidiary questions and which helped answer key research questions. This chapter aims to summarise and crystallise the main findings of this research and link them with the main research questions; and provides further reflection on the research findings. It also discusses the contributions of this study, its implications and recommendations, limitations of the study as well as providing suggestions for future research. I will begin by providing answers to the two overarching research questions, that I presented in Chapter One.

6.2 Research Question 1

To what extent do the introduction of LMS influence pedagogies?

The findings of this study revealed that the use of LMS had not entirely changed the way faculty taught, as the traditional lecture was still the most significant mode of teaching. They also showed that LMS was used by most faculty to replicate their existing teaching practices

or, at best, to support these practices. In other words, the ultimate goal of introducing the LMS into their classes was to do things better, more easily and more efficiently, suggesting that the impact of the LMS on pedagogy was limited to the functional improvement of practices according to the SAMR model (Puentedura, 2009). This result was not surprising and was consistent with the findings of previous studies on the use of ICT in higher education which indicate the failure of technology to make radical changes to education and suggest that its role is often still to duplicate or support current learning activities (Blin & Munro, 2008; Kirkwood & Price, 2014).

However, the study has provided evidence where the use of LMS had brought some improvement in teaching although the nature of the improvement varied between individuals. It was found that the LMS assisted many faculty to make lectures more meaningful and worthwhile but only led a few to make any related changes to their pedagogy. As has been mentioned in the preceding chapter, almost all participants felt that the LMS added significant value to their classes in some ways. The study identified three positive effects on pedagogy of using an LMS; these were associated with teaching strategies, quality of teaching, and the methods of student assessment, as explained below.

First, it was found that LMS helped some faculty to implement a variety of teaching strategies and even encouraged them to adopt teaching methods that focus on the active participation of student in the learning process. By using the interactive features within LMS, such as discussion boards and wiki, faculty were able to create a learning environment that focuses on the active engagement of students in their learning through interaction with the learning material, discussion with peers outside class time, and opportunities for reflection to aid understanding rather than just being information-recipients. Therefore, the LMS allowed learning to take place beyond the boundaries of the classroom. This change to more

constructivist learning and student-centred approaches to teaching was demonstrated by the attempts of faculty to use the flipped classroom, discussion, and collaborative learning strategies. Kirkwood and Price (2014) referred to this type of enhancement as ‘qualitative change in learning’, where technology is being used to promote reflection on learning and deeper engagement and to enrich understanding. Herse and Lee (2005) and Costen (2009) observed a similar result in their studies where they found that using some advanced tools within LMS, such as discussion boards, produced a collaborative learning environment focused on learners instead of teachers. Morgan (2003) goes further and argues “most faculty members come to blended learning by using an LMS. It is their starting point, and it becomes the focus of a lot of their thinking about how to teach well” (p.71).

Second, the study indicated that the greatest impact of the LMS on teaching was the improvement in the quality of teaching and enhancement of its effectiveness. Faculty felt that the LMS provided them with an opportunity to reflect on their teaching and question their current practices to better achieve course objectives as opposed to the ephemeral nature of the traditional classroom. Viewing student comments and their posts in online discussion via LMS also helped faculty to develop their plans for upcoming face-to-face classes by giving them useful feedback regarding the issues students struggled with. Moreover, the flexibility in delivering educational content and course information, as well as automatic marking of exams, facilitated routine teaching tasks and increased the efficacy of teaching; this, in turn, gave faculty more time to spend on preparing other learning activities and developing better assessment methods instead of wasting time on administrative tasks. Making materials and information about the course available to students in advance also enabled faculty to spend most of the classroom time on teaching and educational discussion instead of answering routine questions, which often were not related to the core of the subject, and thus more learning was achieved. So, even if the LMS did not lead to radical change in teaching

strategies, it did contribute to the development of current practices and allow faculty to rethink learning tasks, which would not have been possible without it (SAMR, 2009). This result is broadly consistent with other studies that show the positive role of ICT in improving teaching efficiency and time management (Morgan, 2003; Shelton, 2014).

Finally, findings of the study showed that the impact of using the LMS on the assessment process was limited to the modality of exams and the process for submitting and returning assignments and providing feedback. However, the LMS did encourage a few faculty to apply alternative ways of assessing students such as self-assessment and peer-assessment. They used the online quizzes feature to provide self-assessments which allow students to test themselves whenever and as often as it suits them, while discussion boards were used to engage students in the assessment process by asking them to evaluate their peers and provide them with feedback. This result describes for the first time, to my knowledge, the positive role of the LMS, especially discussion boards, in engaging students in the assessment process and the use of new assessment methods. It appears to be a noteworthy improvement in current practices and a positive shift towards constructivist approaches.

The study also highlighted that any disparity in the impact and improvement in pedagogy resulted from the reasons or motivation of faculty to use LMS. It showed that when the motivation for using the LMS was based on pedagogical need and belief, faculty planned their face-to-face teaching strategies in tandem with LMS activities. In this way, LMS added a virtual dimension to their classes in which its activities and materials were a continuation of students' learning beyond the time and space limitations of the classroom. By contrast, the influence of LMS on pedagogy has been minimal to the functional improvement or even absent from faculty members who were driven by their belief in and perception of the usefulness of technology rather than any pedagogical matters, and/or as a result of pressure

from others such as students, administrators like head of department, or even colleagues without being fully convinced of its importance. Kidd (2010) argued that with so many responsibilities and obligations on university teachers, faculty do not have sufficient time to take on additional tasks and therefore considered the adoption of technological innovation as less important. So, they ended up using technology (LMS) as a substitute to what they were already doing.

Furthermore, the study identified other factors that possibly influenced how faculty used LMS and which might have limited its effectiveness. These were the reluctance of students, concerns regarding the complexity of the LMS interface and its reliability, incentives regarding the use of educational technologies, and the need for effective training to improve faculty IT skills and address their lack of knowledge of how to use technology in their teaching (see section 5.3.4). This disparity in the influence of Blackboard on teaching from one individual to another seems to refute Lane's (2008) argument that the highly structured nature of Blackboard-LMS may discourage creativity in pedagogy and encourage traditional modes of teaching. Instead, it supports what Georgouli et al., (2008) and Morgan (2003) have pointed out, where LMS is just a collection of tools - no more and no less - and that the way those tools are used and adopted by faculty is what determines their educational value.

In summary, it is possible to say that with the LMS there is an opportunity to improve pedagogy since it might reduce time spent on routine teaching tasks, giving faculty extra time to do other things such as preparing and following up other learning activities. This, in turn, could improve the quality of teaching and may lead to employing new interactive tools within the system such as wikis, forums, and discussion boards to facilitate discussion, reflection and group work among students. In such a way, LMS could offer/provide opportunities for more student-centred approaches to learning. Yet the study suggests that much remains to be

done to bring about the desired change in pedagogy because it is not the introduction of an LMS that will make the difference, rather how it is being used. Therefore, the identified difficulties must be taken into account if we are to achieve the potential benefits.

6.3 Research Question 2

To what extent do the perceived benefits of LMS justify its introduction?

Kirkwood and Price (2005) argued that the use of technology is costly in terms of the financial investment required by institutions to provide infrastructure, equipment and technical support personnel. This cost also extends to the personal investment by teachers and students in the use of technology for teaching. Therefore, there are ongoing concerns about the effectiveness of technology in improving teaching and learning. Based on the findings from my study, I will now assess the impact of LMS on traditional classroom environments, particularly the extent to which the LMS was effective for teaching and learning according to opinions of faculty.

The findings of this study suggested that the majority of faculty had a positive attitude towards LMS and most of them were generally satisfied about their decision to adopt it in their face-to-face classrooms. They were of the opinion that LMS could bring many benefits to them and/or to their students. The perceived benefits of using LMS related to three areas: pedagogical improvement, enhancement of student learning, and strengthening relationships between faculty and students. These benefits will be explained below.

In terms of pedagogy, faculty felt that the use of LMS helped them to develop their teaching approach and improve its quality. The data indicated that this improvement resulted from the opportunities offered by the LMS to reflect on teaching practices, facilitate classroom management, and save time and effort. The ability to distribute course materials and

information, return students' work, and access students' grades via LMS reduced time spent on course management and performing routine teaching tasks, which, in turn, gave faculty extra time to provide other learning activities and develop better assessment methods; doing this instead of repeating the same actions could be considered a sign of improvement in their teaching. This result supports those obtained by Lai and Savage (2013), who found that LMS allowed faculty to devote their time to working with students rather than constantly adjusting course logistics. In addition, the availability of materials to be used again in the future, and the ability to transfer courses between semesters, saved faculty time and thereby encouraged some to employ new interactive tools such as wikis, forums, and discussion boards to support learning discussion and group work among students, which could be considered as a significant improvement in pedagogy.

With regards to student learning, faculty reported that the LMS was useful in increasing the time students could spend on tasks, promoting student engagement within and outside class time, developing some key skills for students, and providing immediate feedback to improve learning. They indicated that the flexibility and accessibility afforded by the LMS allowed them to make course content and information available ahead of time and in a convenient way. This was seen as beneficial for encouraging pre-engagement with course materials and achieving better participation and meaningful discussion in the class. This is in line with the result of Lai and Savage (2013), which showed that the LMS increased the time students spent on tasks and helped students to focus on learning and understanding the material instead of trying to copy the lecture slides in class. In addition, the communication and collaboration tools within LMS facilitated students' engagement in their learning and enabled learning in new spaces outside the classroom.

With respect to relationships between faculty and students, almost all faculty believed that LMS provided a secure environment for them to communicate with their students beyond class time in a convenient way and allowed more transparency and clarity in learning objectives and the grading process. They also indicated that the LMS was useful to protect the privacy of students' marks through the use of the 'Grade Center' feature.

An interesting and important finding of this study is that LMS was seen as beneficial in maintaining the authority of teachers and tracking students' work. It served as a kind of insurance policy for faculty to verify that all guidance has been given and to hold students accountable for any negligence in their responsibilities, which suggests that the use of the LMS strengthened the power of teachers within their classes. This finding is consistent with the ICT literature where teachers are more likely to welcome technology as long as it does not affect their authority inside the classroom or require radical change in their practices (Chao-Hsiu, 2008; Sellinger, 2001; Shelton, 2014).

Despite the perceived benefits of LMS as expressed by faculty during discussion, a deeper look at data showed that these perceptions were not reflected in the actual practices of many of them. Both qualitative and quantitative findings showed that the use of LMS centered on certain tools such as content area, announcement, and gradebook, with few attempting to use the interactive tools such as discussion boards and wikis. The study identified some factors that greatly affected this limited use of the system. These factors were: the belief of faculty in the importance of technology and its usefulness along with a lack of knowledge of how to employ it pedagogically, a desire to keeping up with colleagues, responding to pressure from administrative staff or the wider academic community, inappropriate training programmes for the needs of faculty, concerns related to technology and its reliability, student reluctance, and lack of administrative support in terms of incentives and rewards.

Most of these findings are in line with the literature. Koehler and Mishra (2009) argued, “teaching is a complicated practice that requires an interweaving of many kinds of specialized knowledge . . . teaching with technology is complicated further considering the challenges newer technologies present to teachers” (p. 61). Ertmer and Ottenbreit-Leftwich (2010) emphasised that teachers' possession of technical skills are insufficient without the knowledge of how technology can be used to facilitate student learning. With regards to training, numerous studies have indicated its significance in successful integration of technology, including LMS, to teaching (Dahlstrom et al., 2014; Keengwe & Onchwari, 2008; Kidd, 2010; Wozney et al., 2006). Gautreau (2011) suggested faculty need to be provided with financial reward to promote their use of the LMS. Similarly, findings from the study by Nasser et al. (2011) suggested that the majority of teachers welcomed the introduction and use of LMS, but indicating the need for a system of rewards and incentives to encourage its successful implementation. In contrast to the results of previous studies on the role of students in encouraging faculty to implement LMS (Harrington et al., 2006; Heaton-Shrestha et al., 2005), the results of this study have shown that students’ reluctance was one of the difficulties that limited the use of LMS by faculty. This may be due to the fact that the LMS was still unfamiliar to them because its implementation in the University was only in its early stages.

Overall, the study suggests that although faculty did not use the LMS properly to its full potential, they believed that LMS helped them to achieve many benefits for teaching and learning. These benefits are expected to increase when they become more familiar with the system and when the difficulties they face are resolved.

6.4 Further Reflection

In the previous sections, the main research questions have been answered; this section provides further reflection on the findings from this study regarding issues emerging from the literature and related to the Saudi context. The study asserts that LMSs have the potential to enrich teaching and learning in Saudi higher education institutions, especially in light of the expectation that their role will increase within universities and of the speed with which e-learning applications are spreading in Saudi Arabia. The majority of participants in this study expressed positive attitudes about their experience of using LMS and identified several benefits in terms of improving the quality of teaching, supporting students' engagement and learning, and increasing communication with students. This is in agreement with the arguments in the literature that LMSs can make teaching more efficient, provide opportunities for innovation in teaching and learning and enrich student learning (Chang, 2008; Coates et al., 2005; Heirdsfield et al., 2011; Lonn & Teasley, 2009; Morgan, 2003). In this regard, participants indicated that making learning materials accessible for students in good time before the class was useful in helping students to be prepared for, and to be better focused during, the lecture as well as enabling them to spend time on learning instead of looking for references or information required in their courses. This finding is in line with previous research, which indicated that the flexibility in access to, and availability of, resources provided an opportunity to learn and absorb material independently and allowed students to study at a time that suited them, which was considered as a particular benefit of LMS from the students' perspective (Caruso, 2006; Lai & Savage, 2013; Lonn & Teasley, 2009; Paechter and Maier, 2010). The study also indicated that the use of interactive tools within the LMS helped faculty to apply learning and teaching strategies that focused on the active role of student in learning, expanded learning beyond classroom boundaries, and allowed students to exchange ideas and views, develop essential skills and interact with each

other; these all support the efforts of higher education institutions towards the transformation to active learning models in their traditional learning environment. This finding also supports the view of West et al. (2007) that LMSs can help educators to adopt more creative ways of teaching. It also agrees with Lyndon & Hale's (2014) findings in which online forums via LMS were perceived useful in providing students with opportunities to learn from each other, building critical thinking and improving higher learning skills through peer and teacher review.

The participants in the study were all women teaching in a gender-segregated university, as required by Saudi culture (see Chapter Two). No differences in their experience or views of LMS were identified; instead, what I found broadly corresponds with the findings of research conducted with male and female participants in mixed gender contexts, such as Heaton-Shrestha et al. (2005), Heirdsfield et al. (2011), and Morgan (2003). It is also evident that there was diversity in the experience and views in the use of LMS by faculty who participated in this study within KSU. The study provides a varying picture of the different ways LMS was used in the classroom, with a few participants developing some excellent practice whilst many simply used it in a familiar and traditional way to repeat their normal practice. These differences in how LMS was adopted and used in the classroom by participants may be due to their varying levels of familiarity with the system. As stated in Chapter Two, many higher education institutions in Saudi Arabia require their new faculty members to complete their postgraduate study at one of the leading international universities. Therefore, participants' experience and perceptions of LMSs and their benefits to education might be influenced by their studying abroad, as more than half of them graduated from universities in the U.S. and the UK. Those graduates seem to be more open to LMS and considered it a part of learning experience.

Furthermore, Buabeng-Andoh's (2012) observation that providing technology is not enough to guarantee its successful use by teachers is supported by this study as it is evident in many cases that participants' views have not always been reflected in their actual practice. The study identified some factors that hinder the effective use of LMS among participants (see Section 5.3.4), most of which were similar to factors frequently addressed within the literature. For instance, the findings show that inappropriate training in terms of time, content, or mismatch with actual need, unclear policies for the use of ICT, a lack of a system for rewards and incentives, and inadequate real-time technical support, were all significant challenges in the effective use of LMS in the classroom; this broadly agrees with research by Ermer (1999), Keengwe et al. (2008), Nasser et al. (2011), and O'Rourke et al. (2015).

With regard to the controversy in the literature about students' technical skills and expertise in an educational setting, participants in this study indicated that students themselves were one of the barriers to using Blackboard and that there is a need to improve student knowledge and skills with respect to LMS. This is in line with Selwyn's (2009) and Helsper and Eynon's (2010) observations that many of the students' uses of technology are limited to home rather than education, which refutes the prevailing myth that students are digital natives and technology experts. That is to say, young people, as has been observed by Selwyn (2009) and Helsper and Eynon (2010), should not be defined as digital experts simply according to their age. This is also in line with the findings by the EDUCAUSE CENTER in 2014 which supports the notion that students' IT skills and experiences do not necessarily transfer to specific technology services and applications put in place for them to use, such as the LMS, despite the digital literacy that they may have (Dahlstrom, Brooks, & Bichsel, 2014).

Based on information gathered regarding the experience and views of the research participants, the study suggests ways to better integrate LMS into teaching at universities in

Saudi Arabia and provides some examples of good practice that could be used as guidelines for KSU faculty to enable them to take advantage of the tools available within the LMS to improve pedagogy and facilitate student learning, as will be discussed in Section 6.6. In turn, it is hoped that this study can make a positive contribution to the attempts being made by higher education institutions in Saudi Arabia, which aspire to introduce these systems.

6.5 Contributions to Knowledge

This study aimed to investigate the influence of LMS on teaching and learning practices in traditional classroom environments. More specifically, it sought to explore the experience and perceptions of faculty regarding the use of LMS for learning and teaching in Saudi higher education in order to understand their actual use of these systems and to learn whether the introduction of LMS is justified in terms of the benefits it can bring, especially to pedagogy. It claims to make a significant contribution to the literature in the LMS field, as there appears to be very little published research in this area. It has been argued that more research is needed to investigate the impact of LMS on teaching and learning in higher education institutions (Coates et al., 2005; O'Rourke et al., 2015), so this study responds to this need.

Furthermore, this study used a mixed-method approach, in which the weight was on qualitative data, which constitutes another contribution to the new and limited field of qualitative educational research in Saudi Arabia. In addition, as mentioned earlier, most of the previous studies in the LMSs field were conducted in the context of developed countries, with, to the best of my knowledge, little research in Saudi Arabia or similar contexts. Therefore, this study adds to the literature relating to developing countries. The results of this study also provide recommendations to enhance the learning process, especially in contexts, such as Saudi Arabia, that are still in the early stages of adoption and use of these systems in education.

The study also offers the following contributions to the literature in the field of ICT in education:

- LMS can be used effectively to improve pedagogy. The study shows evidence of the opportunities offered by the LMS to faculty members to reflect on their teaching practices, to facilitate classroom management, to save time and effort, and thus invest their time in improving learning activities and developing better assessment methods rather than repeating the same routine tasks.
- Student time invested in learning can be improved by the use of an LMS in combination with appropriate pedagogy.
- The findings from the study challenge some of the prevailing practices in teaching related to sharing students' information and highlight the role of LMS for achieving students' right to privacy, in particular the confidentiality of marks.
- The study points to a new and potentially controversial use of the LMS by some faculty members as an instrument of accountability and for strengthening teacher authority within the classroom. This opens the door to further research into the extent to which the system is used to monitor students rather than to support teaching and learning.

It is also clear that the results of this study cannot be generalised; it was conducted at a particular university and with only a small voluntary sample (11 participants in interviews), which makes generalisations impossible. However, the purpose of the study was not to make any generalized claims but to gain a deeper understanding of the impact of LMS use on pedagogy and the educational benefits it provided from the point of view of faculty members. Therefore, findings from this study could be beneficial to other higher education institutions in similar contexts, particularly those who are still in the

early stages of adoption and use of LMS.

In the following section, I discuss the implications and recommendations for the effective use of LMS in Saudi higher education.

6.6 Implications and Recommendations

With the increasing interest in the use of e-learning applications in higher education institutions in Saudi Arabia, as well as the expectation of greater use of LMSs within universities in order to accommodate the wider range of learning styles and needs of students, providing insights and strategies that promote good teaching practices using these systems is very important. Investigating the experience and perceptions of faculty regarding the educational value of LMS, it is hoped that this study might assist in achieving the desired goals from implementing LMS in Saudi universities. In fact, the findings derived from this study could be useful for several stakeholders in Saudi higher education. Firstly, the information about motivation and challenges related to the use of LMS provides decision-makers and administrators at universities with insights that could aid in developing ICT policy and providing the support needed to improve the use of LMS in the future. In this regard, a clear educational policy at university level regarding the use of technology in the classroom, including LMSs, is necessary to encourage their use by teaching staff. It is evident that there is a lack of awareness among faculty about these policies and how they link with the universities' aims and vision to support the development of a culture of e-learning sought by higher education institutions in Saudi Arabia. Faculty also should be offered motivation to employ LMS in their teaching. The study recommends that consideration should be given to financial incentives and rewards such as merit pay, bonuses and salary increases in order to encourage the use of LMSs. In addition, the findings revealed that the utilisation of LMS needs time and effort as well as appropriate technical skills. Given the current teaching load

and the fact that there is no teaching assistant in the classroom, faculty do not have time to develop the knowledge and skills necessary to use LMS effectively. It is therefore suggested that teaching load should be reduced to allow faculty to attend training programmes in the period during which the LMS is being introduced. It is also recommended that attendance on these programmes is mandatory to encourage and support the use of the system to its full potential. Moreover, concerns about the reliability of the LMS and access to technical support when needed were identified as barriers to the use of LMS. Therefore, regular maintenance of LMS is crucial, and immediate technical support should be provided to faculty to ensure that any technical problems which may occur during their lectures will be solved.

With regard to students, the university administration should consider new strategies to support and encourage their involvement, such as conducting awareness campaigns about the potential of LMS for improving their learning experience, such as distributing brochures and leaflets at all university facilities to explain the system, providing training workshops on how to use it, and providing the necessary technical support. Certainly faculty should take opportunities in class to raise awareness of how to access resources and use the tools provided. The University should also take into account the availability of Internet access in all university buildings and the access to computer laboratories throughout the day in order to facilitate students' use of the system. The results also showed that in order to reduce students' resistance to LMS and increase their acceptance of the system, it should be provided in the form of an application that can be uploaded on mobile devices to suit the needs of students.

Staff training and professional development programmes also have a major role in the successful implementation of LMS, as highlighted in this study. Therefore, these programmes should be directly relevant to the current needs of faculty. The findings of this study suggested important areas that should be taken into account when planning and designing

such programmes at universities. Therefore, I argue that local tailored support based on the real needs of faculty members, as opposed to a generic programme, seems to be essential to help faculty adopt an LMS effectively. The focus of these programmes should pay particular attention to the pedagogical aspects of teaching and learning with LMS rather than focusing on its features and tools, and to how the technology can be used to facilitate students' learning in order to increase faculty understanding of diverse modes of teaching in blended-learning environments. The requirement to present effective pedagogical models suggests the value of cooperation with educators in the field of educational technology in the provision of such training. It is also recommended to establish special venues within the departments and hold periodic meetings in which faculty from the same discipline can come together and exchange their experiences of LMS.

As training influences how LMS is adopted and used, it is recommended to provide faculty with suitable time for attending training sessions and make the system available for them to try out and practice before they actually start using it. It is also important to provide faculty with a variety of training opportunities so that they can choose the options that suit them best as this, in turn, can lead to improved use of the LMS. Undoubtedly, for the training to have a lasting impact, faculty need something to supplement any face-to-face training and, indeed, the LMS could be used to provide this. Within the LMS there is a blog facility for all staff to use as well as a discussion board, which could be used for the purpose of training and the exchange of experiences between the staff. Besides that, offering online materials would enable faculty to develop more in-depth skills required to employ LMS. A further possible advantage of online resources is that they may overcome some of the time issues faculty face when adopting new technologies.

For academic staff, the findings of the study present some examples of good practice for using the LMS and highlight some of the ways in which the LMS is useful in teaching and learning. The results confirmed that these benefits could be achieved only if combined with appropriate pedagogy, in which the planning of learning activities both inside and outside the classroom is done in tandem. So, it is recommended that specialised units be established within each college to design electronic courses and provide support to faculty in preparing learning materials and re-plan online activities in conjunction with face-to-face teaching activities. In addition, providing faculty with opportunities to experiment with the system as well as inviting faculty experienced in the use of LMS to talk about their experiences would help to encourage and develop innovative use of LMS. The study also recommends that faculty should fully engage in LMS by employing the interactive tools within the system, such as wiki, forums and discussion boards and that they should make a commitment to encourage/support student participation in order to enhance students' interaction in the learning process. Learning activities on LMS should be designed to allow reflection, exchange dialogue and learning discussion, and encourage collaboration between students. In order to motivate students to take part in these activities, especially in the early stages of using these systems, it may be useful to make on-line participation an element of the assessment.

6.7 Limitations of the Study

First of all, this study was limited to members of the faculty at King Saud University, the oldest and largest university in Saudi Arabia. The results may have been different if there had been time and resources available to extend the study to other universities in the country. However, given the limitations of time and resources available for the study, a convenient sample was chosen rather than drawing the sample from other universities in other cities.

Additionally, the study was conducted within the timeframe set for me as a postgraduate student. These restrictions had an impact on the time spent on fieldwork and the choice of data collection methods. The study was limited to teachers' perceptions based on the interviews with the participants. It would be beneficial, as a next stage of the research, to observe teaching and learning activities, the LMS site, and the way LMS is used in and out of the classroom to reach a better understanding of how LMS influences pedagogy rather than simply relying on what the participants say.

There were also some limitations in the research sample and the theoretical framework that must be acknowledged. In terms of the research sample, its size was relatively small. Despite this, I have collected quite rich data, but having more people involved may provide a greater diversity of viewpoints, and I would be able to generalize my findings more. In addition, it would be interesting to involve faculty from other disciplines, because they might be using other parts of the LMS. I did my best to select participants from different disciplines to gain a wide range of teaching experience with the LMS; however, some participants were from the same specialization/field, which may not reflect the views of the majority of teachers and may limit the results to perceptions of a particular group in certain disciplines. The interviews were also limited to faculty members using the LMS; this may not reflect the perception of non-LMS users. Therefore, involving non-LMS users would be interesting, as it would allow me to understand their point of view and compare them with those who did use the LMS.

Moreover, the study was limited to female faculty because some religious and cultural restrictions made it difficult for me to interview male faculty; the inclusion of only female faculty could lead to bias in the results. However, 132 faculty members participated in the questionnaire, and 11 faculty members were interviewed, which is considered an adequate sample to create confidence in the quality of the findings. Future research could replicate the

study with male faculty to compare their experiences and views with those identified in this study. Furthermore, the study was limited to faculty perception, and it would be beneficial to expand the research sample and involve students, as this would allow me to explore students' experiences of being taught using LMS and whether their perceptions match those of teachers. Similarly, it would be interesting to ask administrators in e-learning units and technicians in the LMS about the decisions they made regarding this system to gain more of an understanding of how this influences teachers' views.

With regard to the theoretical framework, this study used different models to support the data analysis process. It has to be acknowledged that the way in which these models were applied was limited to supporting my interpretation of the research findings rather than relying on them and using them to shape the data analysis more closely.

Another limitation of the current study was that my findings might have been affected by my potential bias as a researcher. However, there can be no totally objective research, as every scientific inquiry begins with some kind of interest. This interest can be expressed in the form of a proposition, a problem to investigate, or a question to be answered. As Wellington, Bathmaker, Hunt, McCulloch, and Sikes (2005) emphasize:

It is impossible to take the researcher out of any type of research or of any stage of the research process. The biography of researchers, how and where they are socially positioned, the consequent perspectives they hold and the assumptions which inform the sense they make of the world, have implications for their research interests, how they frame research questions, the paradigms, methodologies and methods they prefer, and the styles that they adopt when writing up their research (p. 21).

Therefore, to diminish this effect I explained my positionality in this project and how it plays a vital role in the design of the current study (see section 4.3). Furthermore, to reduce subjectivity in the interpretation and to increase the credibility of my research, I tested the interpretation of the data with my participants, which Hammond and Wellington (2013) refer to as member checking or participant validation.

I also acknowledged that being an insider researcher and a member of the teaching staff at the university may influence the participants' responses and their objectivity during the interviews and consequently may affect the quality of data generated. However, I believe that being a part of the culture in which the study took place had a positive impact on my study, as it allowed me to understand the interaction between the participants and their work environment and helped me to interpret them within the context in which they occurred. In addition, sharing the same powerful position provided a level of trust and honesty and increased participants' willingness to share their experience and provide detailed information both formally and informally.

Finally, although there is a wide range of LMSs available, this study is limited to the Blackboard-LMS. Further studies could be conducted to explore the effectiveness of other systems and to identify teachers' perceptions of them. Despite these constraints, this study adds to the limited Arab literature on the use of LMSs in education. The findings contribute toward the clarification of some of the issues related to the effectiveness of these systems and their impact on teaching and learning.

6.8 Suggestions for Further Research

As stated earlier, there is a lack of research in the field of LMSs in Arabic literature, specifically in Saudi Arabia, so there are a number of areas in which further research would be valuable. One particular recommendation is to conduct research to explore students' experience and perceptions of LMSs and how such systems might influence student learning. It is also suggested, given that LMS is relatively new for Saudi universities, that this study is repeated in the future to investigate whether there are any changes in the faculty perceptions, their attitudes and their skills. In addition, it is recommended to conduct further studies focusing on course content and on evaluating learning activities in class and online, which

would enrich the debate about the impact of LMS on the traditional campus-based learning environment.

Many of the findings from this study could lend themselves to further research and investigation. For instance, it was found that the interactive features within LMS (discussion boards in particular) played a positive role in enhancing student participation in the learning process. However, since the evaluation of the quality of students' posts within these interactive tools was not within the scope of this study, future research is required to evaluate the effects of using these tools on student learning. Another emerging theme in this study was the use of the LMS by some participants as a way to express their academic identity as teachers. This area seems to be interesting for future research to examine the extent to which there is a relationship between the use of technology and academic identity. Moreover, this study only explored faculty experience and perceptions of the impact of LMS on teaching and learning; further research could expand on this to investigate students' views on the influence of LMS on learning and examine the differences between faculty and students' views.

6.9 Concluding Remarks

The study explored the experience and perceptions of Saudi faculty regarding the educational value of LMSs, more specifically, the influence of the introduction of LMS on pedagogy. The findings offer an insight into how LMS is being used by faculty to support traditional classroom activity, the factors that encouraged them to use LMS, and the perceived benefits and challenges of using LMS, which helped to understand the effect of LMS on teaching practices and student learning. It is hoped that the findings from the study will assist universities in general, and Saudi universities in particular, to understand the issues surrounding the adoption of LMS in order to improve its effective use in the future.

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Appendices

Appendix 1: Research ethics approval letter



24/01/2015

Ashwag Binsuhaim
School of Education

Dear Ashwag

PROJECT TITLE: Faculty Perceptions of the Educational Values of Learning Management Systems (LMs)
APPLICATION: Reference Number 002186

On behalf of the University ethics reviewers who reviewed your project, I am pleased to inform you that on 22/01/2015 the above-named project was **approved** on ethics grounds, on the basis that you will adhere to the following documentation that you submitted for ethics review:

- University research ethics application form 002186 (dated 03/01/2015).
- Participant information sheet 003909 (07/12/2014)
- Participant consent form 003885 (05/12/2014)

If during the course of the project you need to [deviate significantly from the above-approved documentation](#) please inform me since written approval will be required.

Yours sincerely

Professor Daniel Goodley
Ethics Administrator
School of Education

Appendix 2: Participant Information Sheet

Research Project Title: Faculty Perceptions of the Educational Values of Learning Management Systems (LMS)

You are being invited to take part in a research project. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully. Ask me if there is anything that is not clear or if you would like more information.

In this study, I seek to explore faculty experiences and perceptions of the educational values of Learning Management Systems (LMSs), to understand academics' actual use of these systems and to identify the kinds of learning that the faculty uses the LMS to support. The study also aims to investigate the impact of LMSs on teaching and learning practices. This research will be conducted in two phases. The first phase depends on a questionnaire whilst the second phase requires using interviews for data collection. The duration of data collection is approximately 4 months from February 2015 to May 2015.

Your participation is meaningful as this study proposes to contribute to the growing body of research in the area of Learning Management Systems adoption and integration in Higher Education institutions. It is hoped that this work will help to provide ways to better integrate this technology into courses at universities. Moreover, the findings are likely to be valuable to different stakeholders in education, including educational planners, decision makers, and teachers through providing them with insight/recommendations about the potential uses of LMS.

Participation is completely voluntary. If you do decide to take part you will be given this information sheet to keep (and be asked to sign a consent form) and you have the right to withdraw from this research at any time without any explanation.

You might be involved in this research two times according to the phases of the research and according to the research sample. Participation in this research will require you completing

the questionnaire in the first phase and you may be asked to participate in an interview in the second phase. Each interview may take between 60 to 90 minutes, as it requires answering open-ended questions, while the questionnaire may take 30 minutes to answer its questions. It is expected that you will give clear answers and support your answers with relevant examples. The interview will be audio recorded, transcribed, and coded for analysis purposes. No one outside the project will be allowed access to the original recordings.

All the information gathered during data collection will be kept strictly confidential. Your name will not be associated with any report, publication, or summaries derived from the data. Pseudonyms will be given to all of the participants in this research.

If you are interested in receiving the results of this study after I have completed the analysis and write-up, I will be happy to share it with you. For any further information or explanation, please contact me via the following telephone number or email address:

Ashwag Bin Suhaim

Tel: 966503265441

Email: ashwag.ss@hotmail.com, aabinsuhaim2@sheffield.ac.uk

Thank you for your Participation.

Appendix 3: Participant Consent Form

Title of Research Project:

Faculty Perceptions of the Educational Values of Learning Management Systems (LMS)

Name of Researcher:

Ashwag Bin Suhaim

Participant Identification Number for this project:

Please initial box

1. I confirm that I have read and understand the information sheet dated *[insert date]* explaining the above research project and I have had the opportunity to ask questions about the project.
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason and without there being any negative consequences. In addition, should I not wish to answer any particular question or questions, I am free to decline.
3. I understand that my responses will be kept strictly confidential. I give permission for members of the research team to have access to my anonymised responses. I understand that my name will not be linked with the research materials, and I will not be identified or identifiable in the report or reports that result from the research.
4. I agree to take part in the above research project.

Name of Participant

Date

Signature

Researcher

Date

Signature

To be signed and dated in presence of the participant

Copies:

Once this has been signed by all parties the participant should receive a copy of the signed and dated participant consent form and information sheet. A copy of the signed and dated consent form should be placed in the project's main record, which must be kept in a secure location.

Appendix 4: Questionnaire

(A) Part one: General information

1. What school or college are you primarily affiliated with? Please select one.

<input type="radio"/> Science colleges.	<input type="radio"/> Humanities colleges.
<input type="radio"/> Medical/health colleges.	<input type="radio"/> Community colleges.
<input type="radio"/> Other	

2. What is your academic position?

<input type="radio"/> Professor	<input type="radio"/> Associate Professor
<input type="radio"/> Assistant Professor	<input type="radio"/> Lecturer
<input type="radio"/> Teacher assistant	<input type="radio"/> Other

3. How long have you taught at the university?

<input type="radio"/> Less than one year	<input type="radio"/> 1-5 years
<input type="radio"/> 6-10 years	<input type="radio"/> More than 10 years

4. Which statement best describes your feeling about computer proficiency? Please select one.

- I cannot live without computers.
- I am comfortable with a computer and I find it useful.
- I am barely starting out and I find it interesting.
- I am anxious around computers and I feel bad about how little I know.
- I do not use computers and do not feel I need them.
- Other

5. How do you assess your overall expertise with the following?

a. Microsoft office (Word, PowerPoint ...)	<input type="radio"/> No experience	<input type="radio"/> Novice	<input type="radio"/> Intermediate	<input type="radio"/> Advanced
b. Social Networks Sites (Twitter, Facebook ...)	<input type="radio"/> No experience	<input type="radio"/> Novice	<input type="radio"/> Intermediate	<input type="radio"/> Advanced
c. Social Media (YouTube, Blogs, Wikis, ...)	<input type="radio"/> No experience	<input type="radio"/> Novice	<input type="radio"/> Intermediate	<input type="radio"/> Advanced
d. Blackboard- Learning Management System.	<input type="radio"/> No experience	<input type="radio"/> Novice	<input type="radio"/> Intermediate	<input type="radio"/> Advanced
e. Other application/ software (please specify):	<input type="radio"/> No experience	<input type="radio"/> Novice	<input type="radio"/> Intermediate	<input type="radio"/> Advanced

6. What kind of tools have you usually used in your teaching? Check all that apply.

<input type="checkbox"/> PowerPoint
<input type="checkbox"/> Prezi
<input type="checkbox"/> Video
<input type="checkbox"/> Blogs
<input type="checkbox"/> Wikis
<input type="checkbox"/> Social Networks Sites (Twitter, Facebook ...)
<input type="checkbox"/> Other (please specify):

7. Have you received any training in using these tools for teaching?

<input type="checkbox"/> Yes, it was effective.	<input type="checkbox"/> No, I would like some.
<input type="checkbox"/> Yes, it was so-so.	<input type="checkbox"/> No, I do not need it.
<input type="checkbox"/> Yes, it was poor.	

8. Have you attended any training session or workshop on Blackboard-LMS?

<input type="checkbox"/> Yes, it was effective.	<input type="checkbox"/> No, I would like some.
<input type="checkbox"/> Yes, it was so-so.	<input type="checkbox"/> No, I do not want it.
<input type="checkbox"/> Yes, it was poor.	

9. Have you used Blackboard-LMS on your courses?

<input type="checkbox"/> Never	<input type="checkbox"/> Rarely	<input type="checkbox"/> In some of my teaching	<input type="checkbox"/> In all teaching I do
--------------------------------	---------------------------------	---	---

10. (A) If Yes, how long have you been using the Blackboard-LMS in your courses?

<input type="checkbox"/> Less than one semester	<input type="checkbox"/> 1 - 3 semesters
<input type="checkbox"/> 4-6 semesters	<input type="checkbox"/> More than 6 semesters

(B) If No, why not?

11. To what extent do you agree with the following statements?

	Statements	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	My teaching style relies on explicit teaching through lectures and teacher-led demonstrations.					
2	My teaching focuses on student investigation.					
3	My teaching emphasizes group work.					
4	I involve students in the decision-making about their learning.					
5	I develop my teaching around students' interests.					
6	I use technology as much as I can to accommodate students' needs in the 21 st century.					
7	I like to pass on expertise about my subject so students can learn from my experience.					
8	I show films a lot.					
9	I give lectures a lot.					
10	I like students taking notes in lectures.					
11	I prefer to measure student learning through scored tests.					
12	I prefer to assess student learning through group projects.					
13	I prefer to assess student learning through student portfolio.					
14	I prefer to assess student learning through class participation.					
15	I prefer to assess student learning through written assignments.					
16	I prefer to assess student learning through non-written work such as producing video.					
17	I think my teaching can be enhanced by using Blackboard-LMS.					
18	I think students learning can be improved by using Blackboard-LMS.					
19	I think Blackboard-LMS fits into my philosophy of teaching.					
20	I think Blackboard-LMS has capacity to accommodate diverse learning styles.					
21	I think using Blackboard does not affect actual teaching since it is just a digital tool.					

* Note: If you use Blackboard-LMS please complete section (B), if Not go to (C).

(B) Part two: Blackboard-LMS information

1. How often do you use Blackboard-LMS for?

	Statements	Always	Often	Sometimes	Rarely	Never
1	Posting syllabus.					
2	Sending announcement messages.					
3	Posting online readings and supplementary course materials (e.g. lectures, slides and notes).					
4	Distributing class notes to students.					
5	Providing multimedia materials (photos, videos, pictures).					
6	Providing important dates via the Calendar tool.					
7	Storing learning resources that students can access.					
8	Promoting discussion before/after a face-to-face class session via discussion board.					
9	Encouraging students to participate in the Blog/Wiki.					
10	Communicating with students via the email tool.					
11	Communicating with students via the chat tool.					
12	Reducing face-to-face contact time with students.					
13	Giving exams or quizzes.					
14	Sending/receiving assignments.					
15	Uploading marks onto the gradebook.					
16	Other (please specify):					

2. Why do you use Blackboard-LMS in your course? Check all that apply.

<input type="checkbox"/> Facilitate group collaboration on project.
<input type="checkbox"/> Prepare students to be independent learners.
<input type="checkbox"/> Promote students engagement in and beyond the classroom.
<input type="checkbox"/> Benefit students with different learning styles.
<input type="checkbox"/> Provide the necessary knowledge needed to complete required task.
<input type="checkbox"/> Access lecture notes and slides.
<input type="checkbox"/> Provide supplementary knowledge.
<input type="checkbox"/> Reiterate assignment requirements and submission deadlines.
<input type="checkbox"/> Remind students what was done in class.
<input type="checkbox"/> Encourage the use of technology in learning.
<input type="checkbox"/> Make the content more interesting by adding some multimedia related to the course.
<input type="checkbox"/> Encourage students to participate in the discussion about content
<input type="checkbox"/> Encourage students to enrich the course content through adding other useful resources.
<input type="checkbox"/> Other (please specify):

3. I feel that Blackboard-LMS is

.....
.....
.....
.....
.....
.....

(C) If you are willing to be interviewed please include your contact information below:

Name:
Phone:
Email:

Thank you for your time in completing this questionnaire.

Note: During data collection, the questionnaire was distributed in the Arabic language.

Appendix 5: The Arabic Version of the online Questionnaire



وجهة نظر أعضاء هيئة التدريس بجامعة الملك سعود حول نظام إدارة التعلم البلاكبود Black Board وفوائده التعليمية

حفظها الله

سعادة عضو هيئة التدريس

السلام عليكم ورحمة الله وبركاته

تقوم الباحثة بإجراء دراسة بعنوان " وجهة نظر أعضاء هيئة التدريس بجامعة الملك سعود حول نظام إدارة التعلم البلاك بود وفوائده التعليمية". ويهدف هذا الاستبيان إلى معرفة واقع استخدام أعضاء هيئة التدريس بجامعة الملك سعود لنظام إدارة التعلم البلاك بود وماهي أنواع التعلم التي يتم استخدام هذا النظام لدعمها.

ونظرا لأهمية رأيكم فإن الباحثة تأمل من سعادتكم التكرم بالإجابة على فقرات الاستبيان مع العلم بأن البيانات ستكون سرية ولن تستخدم إلا لأغراض الدراسة والبحث العلمي فقط.

شاكرا لكم تعاونكم والله

يحفظكم.

Required *

الجزء الأول - بيانات عامة

* الكلية:

الكليات العلمية.

الكليات الإنسانية.

الكليات الصحية/ الطبية.

كليات المجتمع.

Other

Appendix 6: Interview Questions

Part one: General Questions

- Could you please describe your teaching approach?
- What do you think the role of a teacher?
- In your opinion, why the LMS has been introduced to the University?
- What is your view on the use of the LMS for supplement face-to-face classroom?
- Do you think LMS fits into your teaching approach? If yes, how? If no, why?
- What are the reasons for your LMS adoption?
- Have you changed your teaching methods due to the adoption of LMS?
- Are you convinced about the usefulness of LMS?

Part two: faculty perception

- Describe ways in which you have used the LMS in your course.
- What do you think using LMS is valuable for? E.g.
 - Improving student learning.
 - Access material any time from any location.
 - Save my time.
 - Communicate with students.
- Do you think the use of the LMS can enhance your teaching effectiveness? How?
- Which tool(s) do you think is the most useful for teaching? Why?
 - Do you use the communication, collaboration or assessment tools?
- How do you prefer to communicate with students? Why?
- Do you think the use of the LMS can enhance students learning?
 - How do you think LMS could be used to better facilitate student learning?
 - How do you think LMS could accommodate diverse learning styles? E.g.
 - Opportunities for students to work at own pace.
 - Course material on a wide variety of formats.
 - Use additional materials.

Part three: LMS impact

- Have LMS-based activities duplicated or complemented face-to-face ones?
- What areas of teaching that have been influenced by using LMS? E.g.
 - Design of materials.
 - Assessment and feedback.
 - Communication and interaction with students.

Part four: Challenges

- Which difficulties do you face while integrating the LMS into your course?
- What are the advantages/disadvantages of using LMS in your course, from your point-of-view? Why?
 - Explain the positive and negative issues.
- Is there something that you would like to do that you currently cannot or don't know how to do? Can you give me an example?
- What is your view of the future of LMS in KSU?

Do you have any other comments that you want to add about LMS?

Appendix 7: Example of Coding Process using Nvivo

The screenshot displays the Nvivo software interface. At the top, the menu bar includes options like Home, File, Edit, Create, Data, Analyze, Query, Explore, Layout, View, Window, and Help. The system tray shows the date and time as Sat 3:00 PM.

The left sidebar contains a project tree with the following structure:

- SOURCES
 - internals
 - internals
 - Externals
 - Memos
 - NODES
 - Node Matrices
 - CLASSIFICATIONS
 - COLLECTIONS
 - Sets
 - Memo Links
 - Annotations
 - QUERIES

The central table lists sources with columns for Name, Sources, Created On, Modified By, and Modified On. The source 'inappropriate training time' is highlighted in blue.

Name	Sources	Created On	Modified By	Modified On
technical support	9	Oct 11, 2015, 3:4...	AB	Dec 9, 2015, 11:4...
online chat	2	Oct 18, 2015, 12:...	AB	Oct 19, 2015, 12:...
technical problems	2	Oct 21, 2015, 11:...	AB	Nov 3, 2015, 1:05...
time consuming	2	Nov 3, 2015, 12:5...	AB	Dec 9, 2015, 11:5...
time to learn	7	Oct 12, 2015, 1:0...	AB	Dec 9, 2015, 11:2...
training	11	Oct 11, 2015, 6:0...	AB	Dec 9, 2015, 11:5...
inappropriate traini...	6	Oct 19, 2015, 10:...	AB	Dec 9, 2015, 11:2...
intensive training	1	Oct 20, 2015, 1:3...	AB	Oct 20, 2015, 1:3...
online materials	4	Oct 16, 2015, 1:2...	AB	Dec 9, 2015, 11:2...
other materials	3	Oct 22, 2015, 2:1...	AB	Nov 3, 2015, 12:5...
compulsory vs optional	3	Oct 14, 2015, 2:5...	AB	Oct 20, 2015, 2:0...
concerns	4	Oct 12, 2015, 1:1...	AB	Nov 2, 2015, 1:53...
conviction and belief...	6	Oct 11, 2015, 6:2...	AB	Nov 3, 2015, 1:11...
copy and right	1	Dec 9, 2015, 11:4...	AB	Dec 9, 2015, 12:0...
level of interaction or...	2	Oct 13, 2015, 3:1...	AB	Nov 2, 2015, 2:43...
out of date	2	Oct 14, 2015, 2:5...	AB	Oct 18, 2015, 12:...
inappropriate training time				

The right sidebar shows a reference list with two entries:

- internals\internals\interview9 with sara**
2 references coded, 2.34% coverage
Reference 1: 1.54% coverage
- Reference 2: 0.80% coverage

Below the reference list, there is a text preview in Arabic:

تم تطوير المهارات مقتصروا دايمًا دورات لكن زي ما قلت لك اوقاتنا جدا غير ملائمة
 الياكورد شي جميل واتوقع ان مستقبه يتكون اجمل
 طبعًا الياكورد يعني لاسف احبنا تزامن مع اوقات محاضراتنا وهذا شي مضيقنا. طبعًا