Factors affecting the use of E-Learning in Saudi Arabia: An Analysis of Academics' Perspectives

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Dedication

To my beloved parents, Abdullah and Roqaya, whose love and prayers have supported me throughout my life and who have greatly inspired me to gain this desire for excellence and set high standards for myself. Despite the distance between us, I have the impression that they are constantly there to support and direct me.

For me this journey was not easy at all. I have faced so many challenges that I was about to collapse and lose hope, but I believed in myself.

The rest of my dignified family – my sisters, brothers, nephews and nieces – have also been a continuous source of motivation and inspiration throughout this research.

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Abstract

Technology plays a vital role in higher education environments. Saudi Arabia is one of the world's fastest-growing e-learning markets. This requires the use of a wide range of technological tools and platforms to enable educators to engage students in their learning. Some academic staff educated in traditional ways face challenges when using technology in their teaching. Therefore, it is essential to consider the motivational factors that might affect faculty members' adoption of e-learning tools such as the Blackboard system. Studies carried out in Arabic contexts rarely focus on motivation when examining the factors that might impact users' acceptance of technological tools. As a result, this study applied Self-Determination Theory (SDT), which addresses different types of extrinsic motivation (external regulation, introjected regulation, identified regulation, integrated regulation), and intrinsic motivation to understand the role each plays in faculty members' attitudes to e-learning. This research also applied the Technology Acceptance Model (TAM) to explore the internal factors (perceived usefulness, perceived ease of use, and attitude) and external factors (self-efficacy) that influenced the use of Blackboard among faculty members at a Saudi university.

In order to gain a deeper understanding the subject area, the relevant e-learning literature was first reviewed. Then, an exploratory study was conducted in Saudi Arabia to examine the state of e-learning in the target university and investigate the main issues relating to the adoption of the Blackboard system. The pilot study uncovered the role of external regulation in faculty members' use of the Blackboard system. The study then gathered and analysed both quantitative and qualitative data as part of the main empirical study, which allowed for triangulation.

The main research question that this study sought to address is, "Which factors do academics view as important in affecting the adoption and use of e-learning in a Saudi Arabian Higher Education institution?" Specifically, the study sought to understand the extent to which the Blackboard system was utilised and valued and the barriers involved; what TAM theory can reveal about faculty members'

perceptions to its use, and what SDT shows as regards the motivational factors involved.

The main findings of the study are: The faculty members were affected by external regulation in their use of the Blackboard system. They were also impacted by other motivational factors, such as introjected and identified regulation. In addition, from the data that were obtained, it was found that the faculty members perceived the Blackboard system as useful and easy to use. They also reported a high level of self-efficacy, although this varied depending on their experiences of using the system. Overall, the faculty members held a positive attitude towards using the Blackboard system; however, they required further training and support in finding solutions to the obstacles they faced while using it.

Table of Contents

List of Tables

List of Figures

Publications

Albazie, H. A. (2018). Advantages and challenges of integrating m-learning into Saudi Arabian universities: A literature review. *European Journal of Open Education and E-learning Studies*.

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Author's Declaration

I declare that, except where explicit reference is made to the contribution of others, that this dissertation is the result of my own work and has not been submitted for any other degree at the University of Glasgow or any other institution.

Haifa Abdullah Albazie

Signature _____

List of Abbreviations

KSA	Kingdom of Saudi Arabia
LMS	Learning Management System
MoE	Ministry of Education
MoHE	Ministry of Higher Education
SDT	Self-Determination Theory
INR	Introjected Regulation
ER	External Regulation
IM	Intrinsic Motivation
IDR	Identified Regulation
IR	Integrated Regulation
TAM	Technology Acceptance Model
SE	Self-Efficacy
PEU	Perceived Ease of Use
PU	Perceived Usefulness

Chapter 1 Introduction

1.1 Overview of Research

Educational systems constitute the backbone of any civilisation, as they broaden people's horizons and raise the standard of living for all citizens (Al-Asmari & Khan 2014). Nowadays, education is being impacted by “technologies that sustain the acquisition, processing, storage, and transmission of information anywhere when needed and enable access to this knowledge” (Eren et al., 2014, p. 2522). To ensure that users make the most of technological advances, they must acquire the skills required to employ these tools effectively (Eren et al., 2014). Technology is now widely used in higher education, where most students have access to various technological tools.

E-learning has evolved as a necessity to address the difficulties brought by the advancement of information technology (IT) and the possibility of increased access to knowledge. Technological tools have penetrated deeply into different aspects of our lives. As a result, the impacts of communication and information technology on learning are being extensively studied. Technological tools have brought considerable benefits to education, culture, economies, and societies worldwide (Amiel & Reeves, 2008; Chui et al., 2012; Turnbull et al., 2020). Innovative strategies are being researched aimed at capturing learners’ interest and creating active, individualised learning environments using various technological resources.

According to Watson and Watson (2007), the term ‘learning management system’ (LMS) refers to a method for the use of computers in education that possesses great potential and essential concepts but is frequently misunderstood and misused. LMSs are considered crucial components of e-learning in higher education as they can promote learning and make learning open, active, collaborative and lifelong (Macharia & Nyakwende 2010). Blackboard is the most popular LMS in higher education in the Kingdom of Saudi Arabia (KSA) and is, therefore, the LMS platform that this thesis investigates (Kashghari & Asseel, 2014; Mohsen & Shafeeq, 2014).

There is a widespread use of LMSs, including software packages such as Moodle and Blackboard (Mohsen & Shafeeq, 2014; Subramanian et al., 2014; Goyal & Tambe, 2015; Alokluk, 2018). Much research has indicated the many benefits for students of engaging with learning via LMSs such as Blackboard. For instance, it can overcome barriers such as large class sizes, distance between learners and instructors, and limited resources (Macharia & Nyakwende, 2010), all of which are currently impacting higher education in KSA. However, research has shown that the use of LMSs is complex, with many factors influencing its adoption by academics. Therefore, this research will be underpinned by the Technology Acceptance Model (TAM) (Davis, 1989), which is designed to uncover the factors influencing the adoption of technology; and Self-determination Theory (SDT) (Deci & Ryan, 2012), which will be used to explore the motivational factors affecting faculty members' use of technological tools, and more specifically, the Blackboard system.

This chapter will outline the research area and the issues examined in this study. After introducing the research problem, the research context will be described. The research objectives and aims will then be presented, followed by an explanation of the significance of this research. Finally, it will conclude with an overview of the thesis and a summary of each chapter.

1.2 Research Question, Aims and Objectives

Technology plays a vital role in higher education, as in any learning environment. In previous studies, many researchers have tried to understand the relationship between attitudes and outcomes for both learners and academic staff regarding the use of e-learning in higher education institutions (Fathema et al., 2015; Mohammadyari & Singh, 2015). Moreover, researchers have sought to understand how faculty members perceive e-learning and what factors influence their perceptions. This subject has attracted attention because e-learning technologies can significantly improve the learning environment in higher education (Brady et al., 2010; Aldiab et al., 2017; Kew et al., 2018; Fathema & Akanda, 2020). This is especially important in Saudi Arabia, where the use of e-learning tools is relatively new. For example, at the target university staff have only been using Blackboard for the past seven years. Saudi Arabia is a large country with a higher education

system that is growing and incorporating many changes and enhancements (Alamri, 2011; Arkorful & Abaidoo, 2014; Tashkandi & Al-Jabri, 2015).

The e-learning process is affected by many factors and forces. It is imperative for educational institutions to identify these factors so that necessary actions can be taken to improve learning procedures and experiences. With technological advancements, there are now many new tools and methods through which students' learning experiences in higher education can be altered and improved. E-learning has emerged as a key tool that can help educators provide a positive and holistic learning experience (Yang, 2013; Aljawarneh, 2020).

This study seeks to identify and examine the most critical factors influencing the adoption of the Blackboard system at a university in Saudi Arabia, as an example of a developing country. It employs TAM and SDT to gain a deeper understanding of the quantitative (questionnaire) and qualitative (interview) data collected from the staff at the university. This thesis highlights the most critical findings of the study and presents the research contribution.

The objectives of this study were achieved by using TAM and SDT. TAM enabled the researcher to understand to what extent faculty members use and activate the system and the degree to which they consider it useful in their learning environments. Also, this theory enabled the researcher to identify faculty members' attitudes, and highlight the importance of faculty members' self-efficacy when using the system. In addition, applying SDT enabled the researcher to consider different types of motivation that encourage the faculty members to use the system and the kind of motivation that helps them achieve their goals in relation to using technological tools in educational environments.

The existing evidence suggests that there is a lack of technology use among academic staff in their teaching at Saudi higher education institutions. Despite this, very little attention has been paid to the research literature on e-learning in Saudi Arabia's higher education sector. Moreover, there is no clarity about what factors affect educators' use of technology in their teaching, as many studies have been conducted from students' points of view in various educational and academic environments in many countries. The gap that this present study is trying to

address concerns the lack of research that considers motivation as an essential aspect of employing and accepting e-learning tools in higher education from faculty members' points of view. The study is significant as it examines the factors that may affect users' attitudes in higher education, where it is essential to understand the perspectives and attitudes of faculty members regarding their use of technological systems. Moreover, it examines whether use of the system was optional or mandatory, and the impact of this aspect. Another original feature of this research is the way it applies theories in the methodological and analysis stages to address the main research question.

The main research question that this study sought to address is:

> Which factors do academics view as important in affecting the adoption and use of e-learning in a Saudi Arabian Higher Education institution?

This can be broken down into the following:

1. To what extent is the Blackboard system utilised and valued by faculty members at the target university?

2. What are the barriers and challenges in the use of the Blackboard system in the target university?

3. What can TAM theory tell us about academics' perceptions on the use of the Blackboard system in the target university?

4. What can SDT tell us about the motivational factors which influence academics on the use of the Blackboard system in the target university?

1.2.1 Aims of the Study

The aim of the study is to investigate the factors affecting e-learning use, educators' perspectives on using a specific e-learning tool (Blackboard), and the elements that motivate (or discourage) use of this system. The study also

investigates faculty members' opinions regarding the kind of training they require at their university.

Based on these aims, the objectives of the research are:

1. To determine the extent to which Blackboard system is utilised by educators within KSA HE.

2. To discover the perceived value of e-learning amongst educators within KSA HE.

3. To establish if there are any barriers and challenges that impede the use of Blackboard system amongst educators within KSA HE.

4. To investigate the motivational factors which affect the use of Blackboard system amongst educators within KSA HE, through Self-Determination Theory (SDT).

5. To explore the use and adoption of Blackboard system amongst educators within KSA HE through the Technology Acceptance Model (TAM).

Previous studies have investigated how e-learning affects academic personnel at Saudi Arabian higher education institutions. However, this study aims to fill a gap in the literature by examining the influence of e-learning systems on higher education institutions. It employs questionnaires and interviews with faculty members at a Saudi University that uses an e-learning system. The next section will provide details about the context of the research.

1.3 Context of the Study

This study is based in Saudi Arabia, a large country with a significant and growing higher education system (Aljaber, 2018; Alenezi, 2020). The KSA, which occupies the majority of the Arabian Peninsula (see Figure 1), has a population of just under 36 million (UN, 2022), equal to 0.45% of the world's population. Saudi Arabia ranks number 41 in the list of countries (and dependencies) by population. Its population

density is 16 per km^2 (42 people per mi^2). The total land area is 2,149,690 km^2 (830,000 sq. miles) and 84.0 % of the population is urban (just under 30 million people lived in cities in 2020). The median age of the population is 31.8 years.

Saudi Arabia was founded as a country in 1932 and admitted to the United Nations in 1945. The current constitution was established in 1992, and it is the largest sovereign state in western Asia. Four centuries ago, the Ottomans occupied portions of the country, including the Hijaz, Asir, and al-Ahsa regions, where Turkish was the first foreign language to be taught. During World War I, the Ottoman Empire lost control of the area, and with Britain's encouragement and cooperation, Ibn Saud established KSA on September 23, 1932; this date is a Saudi national holiday. In 1938, huge oil reserves were discovered along the shore of the Arabian Gulf in the Al-Ahsa region. Under US administration, ARAMCO (Arabian American Oil Company) began a full-scale exploitation and exploration of the oil resources in 1941.

Figure 1.1 Map of Saudi Arabia (Source: World Atlas)

This study was conducted in the Jouf region, in the north-western part of the country. The region covers 139 km^2 and has a population of 35.013.414 (Statista, 2021; General Authority for Statistics Kingdom of Saudi Arabia, 2020). Sakaka City is the administrative capital of Jouf, with a population of 508,475 (Statista, 2021). The importance of Jouf stems from its strategic location as the northern gateway to Saudi Arabia, and having the largest land port in the Middle East. Historically, Jouf was an ancient route for trade and pilgrims between the Arabian Peninsula and the Levant and Egypt. The region is considered a potential touristic site due to its greenery and nature, as it is full of palm and olive trees. The region also has other major historical sites such as the Omar ibn Al-Khattab Mosque and the Marid

Palace in Dumat Al-Jandal. Given the region's historical and geographical importance, the target university was established under a decree by the Custodian of the Two Holy Mosques in 1426 AH/2005 to help develop the area as an essential pillar of KSA's renaissance efforts. As e-learning tools are relatively new to Saudi Arabia, appropriate methods must be employed to explore their use. The target university had been using the Blackboard system for just five years when the data for this research was gathered.

The Saudi Arabian education system has experienced growth in recent years as part of efforts to ensure that training becomes greener, and economically and socially focused on eliminating illiteracy amongst Saudi adults. Schooling now receives a huge proportion of state finances, accounting for 25% of total spending, considered to be the highest globally (Saudi Vision, 2030).

This study investigates the Blackboard system's current use among faculty members in developing countries, especially in Saudi Arabia's higher education institutions. In addition, to examine factors that affected the use of the Blackboard system. The context of this study is Saudi Arabia, which is described as a developing nation by the United Nations (UNDESA, 2013).

1.3.1 Arab Countries within the Wider Comparative Continuum of Global Developments in E-learning

The fast development of digital technology has led to e-learning's significant rise in popularity at institutions across the globe. Comparatively speaking, Arab nations are at an earlier stage of developing and implementing e-learning at their institutions (AbdulRazak & Ali, 2019). This section also highlights the current state of e-learning adoption across the Arab world and investigates the reasons and offers suggestions for advancing e-learning in Arab nations by examining current studies and using Saudi Vision 2030 as a pertinent framework.

Over the years, e-learning has seen tremendous advancements at universities globally. Online learning is now widely used alongside traditional classroom-based instruction due to technology's incorporation into teaching and learning. Technological advancements, globalisation and the demand for flexible learning alternatives are a few reasons for the expansion of e-learning. The advantages of

e-learning, such as improved accessibility, flexibility, and personalised learning experiences, are emphasised in several studies (Al-Fraihat, 2020; Alzahrani, 2020; Ali & Anwar, 2021).

For instance, numerous institutions in the United Kingdom have integrated online learning environments, virtual classrooms and interactive materials into their courses. Over 800,000 students were enrolled in remote learning courses in the UK in 2018–19, a 3.7% rise from the previous year, according to a study by the Higher Education Statistics Agency (HESA) (Britton et al., 2020). The governments of the United States, Canada, Australia and various countries Europe have invested heavily in e-learning platforms, infrastructure and teacher professional development. For instance, nearly 6 million students were enrolled in distant education courses in the US in the autumn of 2018, according to an analysis by the National Centre for Education Statistics (NCES) (Irwin et al., 2021). The study also reveals that more than 90% of US public colleges offer distance learning programmes.

Arab nations are still in the early stages of developing and implementing e-learning at their institutions, in contrast to global trends. The Arab Advisors Group, in Badran et al. (2019), estimated that the Arab e-learning market was worth $330 million in 2018, or about 1.1% of the worldwide e-learning industry. The research also emphasises that just eight Arab nations have established e-learning programmes, with Egypt and Saudi Arabia leading. Numerous variables contribute to this discrepancy. It continues to be difficult to access a good internet service, especially in rural regions. A lack of technological infrastructure, money and staff training in digital pedagogy also hinders e-learning programmes in Arab institutions.

The KSA's comprehensive development strategy, Saudi Vision 2030, acknowledges the value of e-learning in expanding educational options. The vision strives to raise academic standards, provide access to learning materials and foster technological advancement. As part of this strategy, the Saudi government has invested in the modernisation of its digital infrastructure, offering teacher training courses, and forming alliances with international e-learning service providers (Aljaber, 2018). To advance e-learning in the nation, the Saudi Arabian Ministry of Education has

started several projects, such as the National E-Learning Centre and the Saudi Digital Library.

Several steps should be made to hasten the development and adoption of e-learning in Arab nations. According to Britton et al. (2020), prioritising investments in digital infrastructure will ensure ubiquitous internet access and a dependable connection across all areas. University budgets should also include money for faculty training programmes that emphasise technical proficiency and e-learning pedagogy. The exchange of information and the development of skills can be facilitated by cooperation with worldwide e-learning professionals and organisations. The development of e-learning should also be supported by clear legislative frameworks that manage copyright concerns, encourage the integration of e-learning programmes into national education strategies, and more.

In conclusion, compared to their international counterparts, Arab nations are currently behind in terms of e-learning development and implementation, but within the group of Arab nations, Saudi Arabia is relatively well advanced. The Arab countries may overcome the constraints and use e-learning to improve educational opportunities, promote innovation, and support their socioeconomic progress by acknowledging their difficulties and collaborating with programmes like Saudi Vision 2030.

1.4 The Case Study of the Target University

The target university, which is situated in the northwest area of KSA, was founded in the first half of the decade of the 21st Century as the focal point for higher education as part of the ambitious and extensive plans for higher education in Saudi Arabia. The university has a number of colleges. Some, like the College of Education, were once local colleges and centres for particular specialities. A royal decree in 2007 required the attachment of all such colleges to universities throughout KSA.

The target university is a public institution in Saudi Arabia that provides a well-developed and accredited education, helps students build the necessary competencies to meet the needs of the labour market, and also provides exceptional educational and research outputs for community development. The

university is strategically important in KSA as it is working to advance knowledge and the development of human resources. It equips students with the knowledge, abilities and drive they need to comprehend and address objectives relating to regional development, and national demands for advanced planned visions, including empowering and mobilising youth. Both Saudi and international students can attend the university for free and receive financial aid. The only fee is for the Master's degree programmes.

The primary language of teaching in undergraduate medical programs, including those in medicine, dentistry, pharmacy, nursing, applied health sciences, and engineering, is English, while other courses like law, Islamic studies, and sharia are taught in Arabic. The university's Languages Department offers assistance with the English language at all levels. The institution is housed on a sizeable, cutting-edge campus that is modern and equipped with the most advanced educational technology.

1.4.1 Statistics about the University

The target university features a number of educational colleges distributed across four major cities, with multiple specialisations as follows:

Medical Sector

a. Medical School
b. Pharmacy School
c. Dentistry School
d. Nursing School
e. Applied Medical Science School

Literature Sector

a. Faculty of Arts
b. Faculty of Science and Arts (Tabragal Campus)
c. Faculty of Science and Arts (Qurayat Campus)

Engineering Sector

a. Faculty of Engineering
b. Faculty of Interior design
c. Faculty of Computer science

Humanitarian Sector

a. Faculty of Education
b. Faculty of Science
c. Faculty of Business Administration

The university has more than 1,400 faculty members distributed between the different faculties, and there were more than 17,000 students at the university this academic year (2023). They are distributed as follows: females 10,000; males 7,000.

1.5 Background of the Researcher

For the researcher, the topic of e-learning was not just the most scientific and trending topic, it was also very interesting. The decision to pursue the research question stemmed from the fact that it is highly relevant to the area the researcher works in as a lecturer; she is also the first female to work in the Department of E-learning at the target university.

In addition, a qualitative approach had not been used for this type of study in an Arab country before, including Saudi Arabia. Those undertaking research of this nature in Arab nations do not use interviews as part of their research; they normally take a quantitative approach, with a questionnaire being used most frequently.

The importance of motivation in academia is a critical matter as it encourages and supports faculty members in their teaching environments. The researcher also believed it was important to take into account the importance of technology acceptance as well as the motivation to activate and implement the use of e-learning. It was also considered that this kind of study would encourage future researchers to consider a dialogue which integrated two models: Self-Determination Theory (SDT) and Technology Acceptance Model Theory (TAM). As

a result, it would provide a more useful study with greater intellectual sophistication.

Finally, it is necessary to understand problems related to the use of e-learning. This study would inevitably highlight the level of education and communication between both academics and the department concerned with e-learning as well as with students. Also, during the study, a significant obstacle was revealed in activating the Blackboard tools: the training topics and the time available to undergo training. Addressing these would improve academic staff's motivation and increase their productivity.

1.6 Significance of the Research

Although many studies have been undertaken in the West on people's perspectives, attitudes, and behaviour concerning computer use, relatively little research has been conducted in the in developing countries, and especially KSA. As cultural expectations vary from country to country, and according to each country's economic progress, it is essential to conduct studies that can be replicated in Saudi Arabia (Huang et al. 2019). In the higher education field, it is necessary to understand how faculty members use new technological tools such as the Blackboard system. In order to be able to provide the best recommendations for decision-makers, research should not just consider the acceptance factors that might play a role in the use of tools (e.g. by applying TAM), but also uncover the motivational factors that impact the system's users (e.g. by applying SDT).

There are few extensive studies on the adoption of e-learning in Saudi Arabia or on the essential aspects that might impact its acceptance in the country. Due to the paucity of useful empirical studies and research on e-learning adoption, little is known about user acceptability and adoption of this technology. Moreover, in Arab nations more generally there is a lack of interest among researchers in understanding the motivational factors that can influence the acceptance and use of e-learning tools such as Blackboard; as a result, this study is especially relevant for Arab countries, and the Gulf in particular because the academic situation in the Gulf is similar, and this study may contribute to many of them. In contrast, Westerners tend to better consider the perspectives and motives of academics,

especially when looking for strengths and weaknesses in practical and educational environments.

In the current era, especially after the outbreak of (COVID-19), the reliance on technology tools has become more comprehensive. It is essential to focus on obtaining spacious and sufficient information regarding adopting technology tools in academic circles inside and outside the Arab world. This requires an in-depth understanding of the factors related to the motivational factors that would support adopting technology tools more effectively and productively. Suppose we want to focus on the influencing factors. In that case, the factors related to task motivation and their elements are considered one of the most important.

Decision-makers in educational organisations demand additional research and empirical studies on the acceptability and adoption of e-learning so as to increase learning quality and efficiency. Consequently, this research investigates the adoption of e-learning, with a focus on the fundamental aspects that influence the acceptability and implementation of such technology from a TAM-based perspective. It also explores the impact of motivational factors through an SDT lens. In short, this study aims to analyse and identify the principal and crucial elements impacting the acceptance and implementation of e-learning, using Saudi Arabian higher education institutions in developing countries, and Arabic countries more generally.

1.7 Contributions

This study aims to make several contributions. Firstly, it is the first significant study on the views of faculty members in a KSA university regarding the use of the Blackboard system, taking into account both motivational factors and acceptance of the technology. Although numerous studies have indeed been undertaken worldwide, different cultures give distinct outcomes, as noted in the literature review (see sections 2.2.4 and 2.2.5). It is hoped that the findings of this study will contribute to improving the education system in Arabic countries, and KSA in particular, and enhancing the quality of student e-learning by understanding the use of modern technologies by academics.

Secondly, it is the first study in an Arabic country context such as KSA to include qualitative and quantitative approaches to understanding faculty members' attitudes and motivational factors regarding the use of the Blackboard system in their teaching, their use of computers, their experience, and their skills. This allows triangulation of the two types of data, and to derive explanations for the data. In addition, another original feature of this research is how it applies theories of both SDT and TAM in the methodological and analysis stages to address the main research question. This study's application of SDT fills a gap in the literature since the model's factors relate significantly to the participants' behaviour.

To illustrate, studying the actual use of e-learning systems in higher education is essential, as is identifying the factors that help and support their activation. Therefore, it is vital to use TAM and its main aspects related to ease of use, usefulness, attitude, and self-efficacy. This type of research is prevalent in scientific research in the Gulf and in Saudi circles. However, what distinguishes this research, in particular, is the critical consideration of SDT and its motivational factors. Moreover, it aimed to discover the impact of these factors on academics' attitudes, perceptions, and acceptance of the use of the Blackboard system. Also, each type of motive helped the researcher understand, analyse and classify the data. This study contributes to knowledge regarding the activation of e-learning systems such as Blackboard, which sheds light on an in-depth, comprehensive view that searches for the positions and perspectives of users with accuracy and depth based on the theoretical perspective from both TAM and SDT. Other research often proposes a conceptual model of TAM and considers the SDT as an external factor of TAM theory. Furthermore, this previous research was done by the use of quantitative methods alone.

Lastly, the present study is the first in KSA to focus on faculty members' perspectives and not that of students, and it focuses on the motivational factors that influence their acceptance and effective use of the system. It is hoped that the findings of this research can guide decision-makers in seeking the best ways to motivate academics in Saudi universities because this study is the first to demonstrate that autonomy was found to affect faculty members' motivation levels significantly. However, there is little discussion in the literature on how this

type of motivation can affect faculty members' acceptance of new technological tools and methods. In addition, there is currently a lack of contributions to the literature on e-learning systems, specifically the development of these systems in Saudi Arabia. This encourages researchers to investigate this field of study so that Saudi Arabian universities can benefit from the anticipated effects of the e-learning system. In addition, for all other related fields that make use of technology, such as e-learning tools in teaching and education, it is essential to consider the extent that top-down control exists in many cultural contexts about e-learning; this is important because it points to the potential importance of autonomy in e-learning acceptance more generally.

1.8 Thesis Outline

This PhD thesis consists of eight chapters, each addressing a critical issue of the research. The following sections illustrate the thesis structure, with an outline of the chapters, followed by a summary of each chapter.

Chapter 2: Literature Review – Critical Analysis of the Research Area

This chapter reviews the literature that informed the research. The section opens with an examination of studies of the higher education context in KSA. The second section addresses the studies surrounding e-learning and LMSs in higher education, analysing some of the enablers of and impediments to the adoption of educational technology. In addition, it describes the standing of faculty members in Saudi Arabia's higher education. Also, this section discusses the literature on the two fundamental theories — TAM and SDT — and explains why these theories are the best lens for the research in different stages.

Chapter 3: Research Methodology

This chapter explains and discusses the methodology and data collection methods employed in this study. Firstly, it discusses the general research design, beginning with an overview of the participants. It then presents the literature and theory underlying the design of the research instruments, such as the online questionnaire and interview. The chapter ends with a review of the evaluation criteria and the ethical considerations associated with the research.

Chapter 4: Quantitative data Analysis

The fourth chapter presents the quantitative data collected from the questionnaire distributed among faculty members and academic staff at the target university regarding the use of Learning Management Systems. It then considers the validity and reliability of this instrument. Subsequent sections discuss the statistical findings, and considers the challenges, benefits and solutions in detail. This includes a focus on the role of TAM theory in understanding users' acceptance and SDT to understand the motivational elements.

Chapter 5: Qualitative data Analysis

This chapter reports the qualitative data gathered from the interviews conducted with fourteen faculty members from various colleges at the target university regarding the use of Learning Management Systems and the decision-makers perspective of the system activation.

It explains the depth of the data collected and analysed using deductive and inductive themes. Moreover, the chapter aims to discover the more profound elements that influence faculty members using the Blackboard system that the questionnaire findings could not provide. The analysis of the deductive themes based on SDT has furthered understanding of the impact of motivational factors on faculty members' attitudes and perspectives regarding using and activating the system. Additionally, this chapter provides evidence regarding the inductive themes that increase understanding of the role of support, time, and the internet, in ensuring that faculty members fully benefit from technology in the classroom.

Chapter 6: Synthesis of the Findings

This chapter synthesises the findings from analysing both the qualitative and quantitative data. It presents the synthesis of the key findings from the quantitative and qualitative data and the similarities and differences in the data presented and analysed. The faculty members mentioned the essential findings many times: the need for more time to activate the system and the need to consider training from the standpoint of the topics covered, and the time faculty

have available. In addition, they would require more IT support as they used the system. The critical contribution of this research was discovering the power of control as an external regulation motivational factor based on SDT. Moreover, other motivational elements, such as introjected regulation, integrated regulation, and identified regulation, were identified and addressed in both data sets. Finally, the role of TAM's internal elements, perceived ease of use, perceived usefulness, and attitude were also affected the faculty members on the activation of the Blackboard system. As an external element of TAM, self-efficacy, significantly impacts their prospective and attitudes. All of the above factors affected faculty members' utilisation of the Blackboard system.

Chapter 7: Discussion

Results from both qualitative and quantitative datasets are discussed in detail in chapter seven. Also, this chapter concludes the answer to the research question, and all other objectives of this study with a summary of its main findings concerning the research question and the existing literature. It addresses the elements that influence the use and extent of the Blackboard system at the target university. It has also examined how TAM and SDT factors have influenced faculty members' acceptance and utilisation of the system. In addition, training and support are two inductive factors that influence whether or not faculty members at the target institution adopted and utilised Blackboard. This study has gathered essential evidence and information regarding the factors influencing the use of e-learning in Saudi Arabia. It not only used TAM to determine the elements influencing user acceptability of the Blackboard system but also considered the function of motivational factors.

Chapter 8: Conclusions and Further Research

This chapter summarises the study's main findings. It presents the main contributions of this research by investigating the factors that influence faculty adoption of e-learning management systems such as Blackboard at a Saudi Arabian university. Examining the actual use of e-learning systems in higher education is vital, as is understanding the elements that facilitate and support its implementation. Consequently, it is essential to employ TAM and its fundamental

components (ease of use, usefulness, attitude, and self-efficacy). This chapter also addresses the impact of these elements on the attitudes, perceptions, and acceptance of the Blackboard system among academics. Also, each motivational factor based on SDT assisted the researcher in comprehending, analysing, and categorising the data. Finally, the chapter describes the primary contributions of the study, as well as highlighting the study's limitations and making recommendations for future research and practices.

1.9 Summary

Little research has been conducted into how e-learning affects academic personnel in Arabic countries, and specifically at Saudi Arabian higher education institutions. This study fills a gap in the literature by examining the perceptions of academics regarding the influence of e-learning systems in a higher education institution in KSA, employing TAM and SDT within a mixed-methods design.

This introductory chapter has provided a summary of the research. Particular attention has been paid to the research problem at the centre of this investigation, and its objectives and main research question have been presented. An overview of the qualitative and quantitative research methods employed in this study has been provided. The chapter has also discussed the significance of the study and the reasons for conducting the research. A description was given of the study context, with details of KSA's geography and history. The next chapter delves deeper into higher education in KSA and how e-learning impacts users' acceptance and use of new technological tools, discussing the literature that forms the basis of this study.

Chapter 2 Introduction to the Literature Review

The purpose of this thesis is to generate knowledge and understanding through the investigation of the factors affecting the use e-learning in KSA's Higher Education (HE) sector. More specifically, the thesis will focus on the use of Blackboard, which is a virtual learning environment and learning management system (LMS) that allows for online teaching, learning and knowledge sharing. The aims of this thesis are to gain knowledge on the perspectives of educators within KSA HE institutions towards the use of the Blackboard system and the factors that motivate and/or challenge their use.

This chapter provides a context for the thesis research and a critical review of the relevant literature on the use of e-learning, with a focus on Blackboard Learn within educational settings within both KSA, and internationally. The chapter commences with a contextual overview of KSA education system, concluding with a discussion on KSA HE sector. Subsequently, the history of e-learning is examined, leading into a discussion on the role of e-learning within KSA education system in general, and the HE sector, with a further specific focus on LMSs and Blackboard. The final part of this chapter examines the theoretical underpinnings of this thesis, namely the Technology Acceptance Model and Self Determination Theory.

2.1 Education System in KSA

The education system in KSA has undergone huge developments and transformations in recent history. Since the 1930s when education was only available to a privileged wealthy minority, education in KSA has become a key focus for the government in the country's development (Smith & Abouammoh, 2013). A key driver has been the Ministry of Education (MoE), which was established in 1954 (Ministry of Education, 2021). In the development of KSA, scientific and cultural advancements have been a key focus, and to achieve this the government has placed huge emphasis on creating a highly qualified national workforce (Albalwi, 2017; Mitchell & Alfuraih, 2018; Albejaidi & Nair, 2019). Over the last few years, the education sector has received the largest share (almost 20%) of the government's budget, above spending on the military and health sectors (Ministry of Education, 2021), which clearly demonstrates the importance

of education to the nation. KSA has rapidly expanded its educational provision, providing free education to every KSA citizen, including both males and females, children and adults, and special educational needs provision (Alamri, 2011). Currently, female learners constitute over half of the > 6 million learners who are currently registered in KSA educational institutions (Al-Amri, 2011).

2.1.1 Higher Education in KSA

Since the 1970s there has been rapid growth and developments in HE within KSA, alongside an era of national and economic progress (Alamri, 2011). HE in KSA encompasses all education after secondary level, including college and university education; undergraduate, postgraduate, and doctoral programmes; and professional, vocational and technical courses (Ministry of Education, 2021). KSA HE is delivered on-campus face-to-face, and via online and distance learning due to the geographical landscape. However, it is essential to mention that since the start of the COVID-19 pandemic, institutions have emphasised online learning, and in many places it has been made compulsory by education departments, meaning educational institutions must adopt the use of technology tools and platforms, and work on it directly and produce solutions to ensure the continuity of education.

In the last few decades, HE provision has expanded to include more women, who now make up 60% of KSA HE students (Alkhalaf et al., 2012). Women can study at any of the main HE institutions within KSA, as well as several all-female institutions and private females' colleges (Al-Shehri, 2010). Furthermore, KSA citizens do not currently pay for HE study, and they receive a substantial bursary each month to cover living costs, with a large proportion of the national budget dedicated to HE (Ministry of Education, 2021). Moreover, KSA citizens are also financially supported by the government in terms of their tuition fees and living expenses should they choose to pursue HE studies internationally (Alkhalaf et al., 2012; Aljaber, 2018).

However, despite the rapid growth in HE, generous budget allocations, and ongoing developments to HE in KSA, there are several issues that have emerged within the system (Al-Shehri, 2010). A key issue in KSA is the continuing rise in demand due to an increasing number of learners seeking HE (Alamri, 2011).

Moreover, it is important to ensure that HE output meets the demands of the economy and workforce. Currently, there is an overproduction of graduates in certain fields, which creates difficulties for graduates to gain employment and thus increases unemployment amongst the graduate population. As it currently stands, the HE system within KSA is not adequately preparing students for future employment within KSA labour market, so the gap between HE and KSA labour market is not decreasing as planned (HRH Prince Mohammed bin Salman bin Abdulaziz, 2016). The Saudi Vision 2030 asserts that KSA graduates need to be better prepared for entering the labour market, and to achieve this, HE institutions within KSA are required to change their programmes, courses and the learning environments they offer.

2.1.1.1 Governance of Higher Education in KSA

In 1954, the MoE was established in KSA (Alamri, 2011; Pavan, 2013). Responding to concerns about the lack of education and illiteracy amongst KSA population and further concerns about the labour market being unable to meet the growing demands of the petrochemical industry, the MoE held the first education conference to identify solutions to the nation's problems (Moskovsky & Picard, 2018). It was established that the nation's social and economic issues could be addressed via HE provision for all KSA citizens, thus providing a highly educated and skilled national workforce to improve the lives of KSA citizens (Alamri, 2011). To accomplish these goals, the MoE sought to expand the capacity of existing KSA HE institutions and create new ones (Albalawi, 2007). Since its inception, the MoE has advocated the key role of HE in the social and economic development of KSA in terms of providing an educated and skilled workforce (Alamri, 2011). The MoE currently monitors changes in population growth and social changes which create increasing demands for HE within the nation (Ministry of Education, 2021).

In 1975, the Ministry of HE (MoHE) was established as an independent body to focus solely on HE. It is distinct from the MoE, which originally managed the whole educational sector in KSA. The MoHE currently presides over 25 national and 8 private institutions of HE in the country. The MoHE's responsibilities include the coordination and supervision of undergraduate and postgraduate programmes to ensure that HE institutions are addressing the goals and changing needs for

national development within the nation. Moreover, it also manages international cultural and educational operations and approves applications from KSA citizens to undertake international HE programmes.

A further authority in the governance of KSA HE is the Supreme Council of HE (SCHE), whose members include KSA Prime Minister, the King, a chairperson and the HE minister. The SCHE regulates and oversees the system of HE within KSA at state level, as well as managing HE guidelines and approaches within the perspective of national strategies and policies. The SCHE is also responsible for appointing vice-chancellors to HE institutions and creating and approving partnerships between HE institutions within KSA. However, although various public bodies govern and oversee KSA HE, institutions have a large degree of autonomy in terms of management, delivery of teaching and learning, and recruitment.

2.1.1.2 Saudi Vision and Higher Education

The Saudi Vision (2030 & 2019) places HE institutions at the heart of achieving growth and social development in terms of their key role in providing students with the necessary skills and knowledge to meet the demands of the labour market. The overall aim of Saudi Vision 2030 is to advance the capacities and skills of KSA citizens, but it is recognised that this can only be achieved by improving the programmes and courses that KSA HE institutions offer, including increasing the number and diversity of vocational courses (Saudi Vision 2030 & 2019). Saudi Vision 2030 endeavours to close the gap between the labour market and the HE system within the country by improving the skills of prospective graduates in line with the economic needs of the labour market (Saudi Vision 2030 & 2019). To achieve this, the vision clarifies the roles that HE institutes play in preparing existing students for labour market compatibility, such as reducing the number of programmes and courses that do not meet the needs of the labour market and increasing those that do (Saudi Vision 2030 & 2019). Moreover, Saudi Vision (2030) also acknowledges the role academic staff play in terms of enhancing critical thinking, innovation and creativity amongst students, and it encourages educators within HE to adapt their methods to meet the needs of students, and exploit new educational materials and techniques.

2.2 Development of E-Learning

Prior the early-mid 1980s, computers were not widely available in educational settings, and the delivery of education was teacher-led using traditional methods (Inoue, 2007). It is considered that the development of e-learning is intrinsically connected to the development and affordability of computers in the late 1980s and early 1990s (Hubackova, 2015). During this period, the first form of electronic education was devised, known as 'Computer-Based Training' (Eger & Egerova, 2013). Alongside this, there was the creation of a web-based system and the rise of the internet (Hubackova, 2015). Therefore, computers and digital technologies began to be utilised on a far greater scale within educational settings, alongside traditional methods, in order to enhance classroom-based teaching and learning. The development of online education is thought to have emerged during the mid- to late-1990s, with the rapid development of the world wide web and the use of email (Hubackova, 2015). This allowed for education providers to adopt and explore innovative ways to enhance the delivery of teaching and learning via new technologies and online platforms, such as Blackboard and Web CT (Kocur & Kosc, 2009).

The early to mid-2000s saw the rapid development of web-based and digital technologies, leading to growth in e-learning tools and access to wireless networks (Nicholson, 2007). From 2005 to 2010 there were further rapid developments in the use of digital technologies and e-learning within education, in line with the expansion and increased availability of the internet (Nicholson, 2007). This led to significant innovations, such as digital educational games, cloud computing and data storage, and the availability of e-books (Harasim, 2006). Moreover, students had access to hand-held devices, such as smart phones and tablets, which were increasingly being used for peer-to-peer and teacher-student communications (Cox, 2013; Clark & Mayer, 2016).

Over the last decade, digital technologies and e-learning tools have become more advanced, affordable, and accessible, and play an integral and innovative role in teaching and learning. Wireless technologies provide access to the internet almost anywhere at any time, meaning students can decide where to study, with students and educators also collaborating online. Digital technologies and access to the

internet has become an omnipresent aspect of daily life, which has changed how people think, learn, communicate and collaborate. In the last two years the global education system became almost entirely dependent on e-learning due to the Covid-19 pandemic, with the abrupt cessation of face-to-face learning taken as a preventative measure to stop the spread of infection (Mittelmeier & Cockayne, 2020). Covid-19 has fundamentally changed the world's education system, with educational institutions having no choice but to diversify and exploit digital and online technologies in the delivery of teaching and learning (Amiti, 2020).

2.2.1 Definitions of E-Learning

Whilst there are various synonymous terms for e-learning, such as online learning, web-based learning, technology-based learning, and computer-based learning (Friesen, 2009), the current thesis has adopted the term 'e-learning' because it encompasses the broader use of digital technologies and online platforms in the delivery of teaching and learning. Moreover, e-learning is the term most used by the MoHE within KSA, where the research for this thesis was undertaken. It is considered that the term e-learning was first utilised in the mid-1990s to describe online methods of teaching and learning, and it has subsequently become the most widespread term for the use of digital and online technologies in education (Cross et al., 2002; Friesen, 2009). The term focuses on the intersection of education with digital and online technologies (Friesen, 2009), with the 'e' relating to the electronic aspect of learning, including the use of digital technologies and virtual platforms (Haythornthwaite et al., 2016), and this is the definition employed by the present thesis

However, there are multiple definitions of e-learning across various disciplines, including the social sciences, psychology and education studies. In 2012, (Sangrà et al., 2012) reviewed the existing peer-reviewed and reputable grey literature to gain a consensus on the definition of e-learning. The review found four categories of definitions of e-learning. Firstly, technology-driven learning, which emphasises the technological aspects of e-learning. Secondly, delivery-system-oriented learning, which defines e-learning as a means of accessing knowledge, as opposed to results or achievements. Thirdly, communication-oriented learning views defines e-learning as a tool for communication, interaction and collaboration. Finally, educational-paradigm oriented learning defines e-learning as an

innovation to the existing educational paradigm. Moreover, the authors also carried out a survey with experts in the field to gain further consensus on e-learning, which it subsequently defined as "part of the new dynamic that characterises educational systems at the start of the 21st century, resulting from the merging of different disciplines, such as computer science, communication technology, and pedagogy" (Sangrà et al., 2012, p. 115).

2.2.2 Psycho-Pedagogical and Teaching Factors Concerning Effective E-Learning

Institutions that provide higher education services employ multiple approaches to evaluate and decide on the psycho-pedagogical impact of their electronic learning solutions (Rodgers, 2008). Alexander and Golja (2007) explore benchmarking among the approaches commonly used in higher education institutions which have various campuses and colleges. The authors state that benchmarking facilitates the identification and adoption of quality teaching practices which possess positive psycho-pedagogical impact. For example, this ranges from checklists of practices and principles to a more current flexible system that involves a constant flow of feedback and improvement based on the students' skills in e-learning. Moreover, institutions are influenced by the context of society, and this includes the activities of the learner and the teacher. For example, the same study by Alexander and Golja (2007) shows that awareness of the existing skills and dispositions of students demand relevant institutions focus on shaping the prospects of e-learning developments accordingly. Additionally, this study also shows e-learning enables learners to engage in online groups and combine this with their overall learning experience.

Rodgers (2008) explores year-end test grade results and how these are connected to the extent of student involvement in electronic learning throughout the academic year. The findings show that excellent online interaction is likely to affect the learners' performance positively. For example, the study found that an additional period of an hour of e-learning experience each week can increase a student's grade mark by about 1%. The article also shows a link between psycho-pedagogical learning style differences and their effect on how much students gain from e-learning. Therefore, to improve the effectiveness of learning and academic success, higher education institutions should focus on targeting the development

of e-learning teaching approaches that promote solid student engagement and the different learning approaches within the student body (Chou & Liu, 2005).

The potential for positive impact of student interaction with online programmes has been further noted. Davies & Graff (2005) argue various initiatives include an approach that promotes learner-centred learning. Thus, it can be logical to propose that the effects of online programmes should enhance learner performance. The article explores the rate of online engagement of undergraduates; their online meetings are connected to their performance at the end of the year. From the study, while intense online engagement does not result in a noteworthy higher academic success for learners who achieve passing marks, learners who underperform in their programmes are less likely to have interacted with the online programs during the academic year.

The importance of e-learning is evident in the current era, especially in higher education, and its impact on the quality and sustainability of education is clear (Bell et al., 2002). It is not possible to maintain these aspects without taking into account the importance of the motivation to use such tools, as well as encouraging faculty members to activate the use of e-learning tools in academic environments.

In conclusion, if e-teaching approaches can be identified and effectively implemented to accommodate diverse psycho-pedagogical and teaching factors of e-learning, improvements in learners' academic success will be seen in e-learning based programmes. Therefore, further studies should help enhance e-learning approaches to exploit its various components, as this will help improve the relationship between teachers and students in the e-learning process.

2.2.3 Types of E-Learning

E-learning encompasses many different categories and approaches. Some of these include formal and informal e-learning, blended and online e-learning, and synchronous and asynchronous e-learning. The sections below summarise these categories.

2.2.3.1 Formal and Informal E-Learning

Generally, formal learning relates to structured and pre-designed learning, which is facilitated and usually delivered within the context of educational institutions, and is often assessment-driven. In contrast, informal learning relates to unstructured, and sometimes unexpected learning that occurs outside the classroom and is not driven by assessment (Czerkawski, 2016). With the rise in digital technologies and modes of communication becoming an integral part of daily life, both formal and informal learning is increasingly being delivered online (Czerkawski, 2016). It is now commonplace for educational institutions to use digital technologies and online platforms to deliver formal learning, including assessment, as part of the educational process. In additional, within these networks of communication informal e-learning also takes place, which is considered to foster more self-directed learning, which then generates engagement, creativity, curiosity and problem solving (Czerkawski, 2016). Recent literature has advocated for the blending of formal and informal e-learning to create a more effective pedagogy (Ifenthaler et al., 2018; Peters & Romero 2019; Mpungose, 2020). This thesis focuses on formal e-learning.

2.2.3.2 Blended and Online E-Learning

Further categorisations of e-learning refer to blended and online e-learning. Blended e-learning relates to a hybrid approach where traditional methods of teaching and learning are combined with e-learning (Bates & Poole 2003; Garrison, 2011). Within this categorisation, online learning refers to teaching and learning that is solely delivered and undertaken online (Lakhal & Bélisle, 2020). Some higher education programmes are delivered solely online, including assessments. Other higher education institutions are adopting a blended approach to face-to-face programmes (Lakhal & Bélisle, 2020), a practice that has increased rapidly as a consequence of Covid-19. Previous research has shown that blended programmes are preferred by students, offering the benefits of both online and face-to-face education (Owston et al., 2013; Allen, 2016). This thesis focuses on the use of Blackboard system within blended learning courses.

2.2.3.3 Synchronous and Asynchronous E-Learning

Two other chief categories of e-learning are synchronous and asynchronous. Synchronous e-learning refers to learning in real-time, where educators and students communicate directly and learning takes place simultaneously (Hyder et al., 2007). The advantages of synchronous e-learning is that communication and feedback can be exchanged directly and in real-time, allowing educators and students to directly participate and respond to one another (Hrastinski, 2008; Skylar, 2009). Moreover, synchronous e-learning increases accessibility to education by removing the barrier of geographical location, allowing students to study anywhere in the world (Skylar, 2009; Amiti, 2020). In addition, synchronous learning brings students together in groups, which may be particularly beneficial for students with disabilities, or introverted students (Amiti, 2020). One disadvantage of synchronous e-learning is that the time of learning is typically pre-set, meaning that students are not afforded the flexibility of undertaking the learning in their own time (Skylar, 2009).

Contrastingly, asynchronous learning is where educators and students are not in direct real-time communication with one another (Hrastinski, 2008). This approach includes the provision of readily available teaching and learning materials, such as video/audio lectures, PowerPoint presentations, pre-recorded, and links to other forms of media as well as e-books, etc (Perveen, 2016). It also includes communication via email, and apps like Messenger and WhatsApp. A key benefit of asynchronous learning is its flexibility, allowing the learner to respond or undertake the learning in their own time, thus increasing accessibility to learning (Kocur & Kosc, 2009). Moreover, it is considered that delaying students' responses increases critical thinking and problem-solving skills, allowing them to construct a response, compared to if they had to provide a spontaneous answer (Perveen, 2016). In addition, it is thought that this type of learning reduces the pressure on students, allowing them the flexibility to work at their own pace (Perveen, 2016). Amiti (2020) claimed that a blend of synchronous and asynchronous e-learning is a more efficient pedagogy than adopting either approach alone. The way distance education is managed through the Blackboard system in the target university is asynchronous, as the process of implementation and activation does not require the presence of both faculty members and the

student in the same place or at the same time. Also, sometimes both faculty members and students would utilise the Blackboard system synchronously.

2.2.4 Advantages and Disadvantages of E-Learning

According to the existing literature, there are both advantages and disadvantages, and barriers to the effective implementation of e-learning in educational settings for students, educators and educational institutions.

2.2.4.1 Advantages of E-Learning

Existing research shows that e-learning has conferred many benefits on students, educators, educational institutions and the wider economy. E-learning synchronises the delivery of educational programmes and associated teaching and learning with modern technologies and modes of communication (Alkhalaf et al., 2012). Due to the availability and access to online connected digital technologies and devices as part of daily life, the key advantages of e-learning, reported consistently in existing research, and reviews are convenience, flexibility and accessibility (Al-Fraihat, 2020; Alzahrani, 2020; Ali & Anwar, 2021).

For students, e-learning provides increased autonomy to manage their learning better around other commitments and undertake learning at their own pace (Palvia et al., 2018; Ali & Anwar, 2021), allowing them to spend more time on their studies, including self-directed learning (Lalitha & Sreeja 2020; Logan et al., 2021). In addition, e-learning may also accommodate for differences between individual students and their various learning styles better than traditional modes of learning (Banciu et al., 2012; El-Sabagh, 2021). It may also increase access to support, guidance, course information and resources for students, and opportunities for interaction with peers and educators (Kim et al., 2005; Alenezi, 2020). Furthermore, e-learning may also reduce the additional costs incurred from on-campus educational programmes, such as travel and accommodation expenses and living costs (Loh et al., 2016). Likewise, e-learning may also grant students more choices in terms of where they choose to study, thus affording access to education on a greater scale both nationally and globally (Traxler, 2018).

The perspectives of educators on e-learning are important, because they are responsible for the delivery of teaching and learning. Whilst research into e-learning in large part focuses on the benefits to students and their learning, existing research also reports the advantages of e-learning for educators. For instance, studies show that some educators perceive that e-learning helps them to organise their teaching and learning materials and resources more effectively (Lick, 2013). Moreover, e-learning also gives educators the ability to be more innovative and creative in the delivery of teaching and learning (Venkataraman & Sivakumar, 2015). Likewise, teachers also perceive that e-learning combined with traditional classroom-based learning can enhance innovation and creativity in the classroom environment (Clark & Mayer, 2016).

For educational institutions, e-learning can reduce the costs associated with face-to-face on-campus teaching and learning, such as saving on overheads concerning buildings, utilities, furnishings, maintenance and educational materials (Lick, 2013). Moreover, e-learning resolves many issues with timetabling of educational programmes without the need for physical spaces for teaching and learning (Ellaway & Masters, 2008; Al-Qahtani & Higgins, 2013). In addition, e-learning enables educational institutions to reach greater numbers of students from anywhere in the world (Owston, 1997; Dhawan, 2020).

E-learning may also confer benefits to the wider economy, such as reduced costs of providing education virtually, and reducing overheads stemming from the provision of traditional, physical infrastructure for education (Meyer et al., 2006). In addition, there may also be indirect environmental benefits such as reducing carbon emissions due to less need for travel and use of energy sources where virtual education is provided (Somayeh et al., 2016).

2.2.4.2 Barriers to E-Learning

According to the research literature, there are also barriers and challenges in the implementation and effective use of e-learning for students, educators and educational institutions. A review of the existing literature highlighted that the key barriers to the effective implementation and delivery of e-learning are lack of support and training, inadequate infrastructure and equipment, lack of time

and capacity, and lack of knowledge and experience (Al-Busaidi & Al-Shihi, 2010; Singh & Chan, 2014; Pereira, 2015; Mirzajani et al., 2016). Based on this, users' experiences with online learning considerably impact their attitudes towards it. In addition, users with more experience may be more willing to use systems such as Blackboard, increasing the possibility of using it effectively. In turn, this may result in improved knowledge, skills, and productivity over time. Conversely, a lack of knowledge and experience can lead to stress, diminishing the desire and motivation to utilise technological tools.

Existing research reveals that lack of training is frequently reported as a barrier to the effective use of e-learning (Littlejohn & Pegler 2007; Mitchell & Geva-May, 2009: Al-Shammari & Higgins, 2015; Al Meajel & Sharadgah, 2018). A lack of technical skills and knowledge amongst educators and students also reduces the ability to deliver and participate in e-learning (Lau & Sim, 2008; Margaryan et al., 2011; Fathema et al., 2015; Martínez-Torres et al., 2015). Moreover, educators face increasing capacity issues since they already have an extremely demanding workload without the additional pressures of effectively utilising e-learning (Qwaider, 2017). Developing a coherent and efficient system of e-learning is complex and time consuming. Moreover, e-learning can be socially isolating for both students and educators (Al-Shehri, 2010). Research has shown that the absence of real-life face-to-face interaction on-campus or within an institution is a perceived disadvantage to e-learning (Alkhalaf et al., 2012).

Finally, internet speed and availability are also considered important factors in activating e-learning tools in the education environment fully and successfully. This topic has been discussed at length in previous studies (Asiri, 2012; El Zawaidy, 2014; Al-Shammari & Higgins, 2015; Al Ghamdi et al., 2016; Alaofi, 2016; Al Meajel & Sharadgah, 2018).

2.2.5 E-Learning and KSA Education System

In global terms, KSA was relatively late in adopting the internet and providing this to the general populace, even when compared to other developing countries (Alshathri, 2014). This was largely due to concerns about the impact of access to the internet on KSA's conservative culture (Alshathri, 2014). Academic institutions

were the first sectors to use the internet within the country (between 1993-1994) before it was made available to the public around 1999-2000 (Alshahrani, 2014). Subsequently, internet usage within KSA expanded rapidly, especially for educational and learning purposes. Currently, the internet has a significant role in KSA's education sector, and students can access educational materials and resources online from most locations due to the fast advancement in online technologies and the prevalent use of smartphones and tablets (Godwin-Jones, 2011). For the KSA, a country with a population spread over a vast geographical area, one of the key benefits of internet connectivity is that it provides a cost-effective means for delivering teaching and learning within KSA's geographical landscape (Alshathri, 2014).

Building digital literacy and skills is a fundamental aspect of KSA agenda. Over a decade ago in 2007, the government established the National Communication and Information Technology Plan (NCITP). The plan was to ensure that technology was used to its full potential within all areas of KSA education system (MCIT, 2005). In recent years, the MoE has committed to developing the country's digital technology infrastructure across all areas of education, providing computers and other digital technologies, and incorporating e-learning within most curriculum subjects (Alamri, 2011; Ministry of Education, 2021). Vast sums of funding have been dedicated to e-learning tools, resources and training, and several initiatives have been introduced to facilitate the use of technology in education within KSA (Ministry of Education, 2021).

Some of the current initiatives include the Tatweer Project (2007-2023), which is nationwide, supported by Vision 2030, and aimed at achieving increased integration of ICT within the curriculum. This was highlighted by Albazie (2018) where the importance of implementation of technology needs greater investment to be more effective. Another is the Digital Skills Framework, which defines ICT skills and levels of responsibility. A further initiative is the Future Skills Programme, which provides intensive training in digital technology and ensures equal participation for women and other vulnerable groups, alongside the Women Empowerment Programme in Technology. Promoting access to the internet for women, vulnerable groups and within rural areas, is a key driver in the Saudi Vision 2030 and the economic, social and political development of country. Additional

current interventions include the Digital Giving Initiative, which aims to spread digital awareness and literacy within KSA, and the Think Tech Initiative, which invests in youth creativeness and digital skills. Also, the government has provided free-of-charge access to governmental platforms for distance learning to give students and educators access to the educational process (HRH Prince Mohammed bin Salman bin Abdulaziz, 2016).

2.2.6 E-Learning and KSA HE Sector

E-learning within KSA HE institutions provides a means of distance learning for HE students (Al-Qahtani & Higgins, 2013), with many HE institutions within the country offering e-learning programmes. A key project in supporting HE institutions in implementing e-learning is the National Centre for eLearning and Distance Learning (NceDL), which is managed by the Ministry of Higher Education (MoHE). NceDL aids HE institutions in effectively implementing e-learning. Moreover, NceDL endorses the digitisation of hard-copy educational materials and textbooks (Sheerah & Goodwyn, 2016; Yamani, 2014). Under the guidance of MoE, NceDL supports the Tajseer initiative, which works to develop traditional modes of education via the use of technology within HE institutions. Moreover, NceDL designed and deliver Jusur, which a hybrid Learner Management System (LMS) provided free to KSA universities.

2.2.6.1 Benefits of E-Learning to KSA HE Sector

In recent years, HE institutions within KSA have increasingly incorporated digital and online technologies (Alharbi & Lally, 2017). These technologies and online platforms have enhanced and provided alternative and more accessible modes in the delivery of teaching and learning in HE within KSA, enabling institutions to reach more learners across the country's vast geographical landscape (Alharbi & Drew, 2014). Likewise, e-learning is considered to be a key strategy to help provide education to the rising numbers of HE students within the nation (Al-Qahtani & Higgins, 2013).

In addition, the availability of e-learning within KSA HE sector has also opened more opportunities for female students, who, due to socially conservative norms could formerly only receive face-to-face education from female educators

(Yamani, 2014). Indeed, it is considered that e-learning within KSA has also alleviated some of the challenges in the delivery of education for female students due to the lack of female educators compared to the number of female students (Mirza & Al-Abdulkareem 2011; Yamani, 2014). Likewise, e-learning allows for the delivery of education between opposite gender students and educators (Yamani, 2014; Al Mulhem, 2020). Thus, it is considered that e-learning within the KSA HE sector reduces inequalities through the provision of equal access to all students irrespective of their gender or where they live (Al-Shehri, 2010; Asiri et al., 2012; Yamani, 2014).

A further benefit of e-learning for the KSA HE sector is a reduction of costs in the provision and delivery of teaching and learning, in terms of virtual online education compared to on-campus education (Asiri et al., 2012; Yamani, 2014). Likewise, it is also considered that e-learning, in terms of distance learning, may also reduce costs for students, such as the cost of travel and accommodation. It also allows students to maintain other commitments, such as family, household and employment responsibilities, which contributes to the economic development of KSA (Asiri et al., 2012; Yamani, 2014). Moreover, it is also thought that e-learning can reduce the costs of providing HE programmes and courses to international students who want to study within KSA (Yamani, 2014; Traxler, 2018).

2.2.6.2 Barriers to E-Learning within KSA HE Sector

In addition to the advantages of e-learning, existing research has also highlighted the disadvantages and barriers to e-learning within KSA HE. A key barrier is lack of time and capacity to effectively implement and utilise e-learning for educators and institutions (Al-Shammari & Higgins, 2015). Moreover, lack of adequate and appropriate support are also highlighted as barriers, which leads to diminished motivation amongst staff and students (Al-Shehri, 2010; Asiri et al., 2012; Al-Shammari & Higgins, 2015; Alaofi 2016). External barriers to e-learning relate to HE institutions not having the necessary infrastructure and equipment for e-learning (Algahtani et al., 2020). Wider infrastructure matters such as high-speed internet access and connectivity are also highlighted as barriers to accessing and delivering e-learning (Al Gamdi & Samarji, 2016).

Further barriers for educators include technological barriers, including lack of knowledge and skills relating to ICT in general, a fear or phobia of new technology, and resistance to change (Alqurashi, 2016). A study on the adoption of digital technologies highlighted that only 26% of educators within KSA universities were integrating technology in the delivery of teaching and learning (Alshahri, 2015). In addition, further studies by Al-Shammari (2016) highlighted a lack of skills and knowledge amongst educators; likewise, lack of training, time and capacity were noted as key barriers to adopting e-learning within KSA HE institutions. Finally, (Alanazy, 2017) indicated that the experience for academic staff of using new technology had affected their acceptance of the Blackboard system. Prior experience in using technology tools affects people positively or negatively. Interestingly, existing research that has highlighted barriers to e-learning amongst HE educators (Al Ghamdi et al., 2016) reported that female educators perceived fewer barriers to e-learning than their male counterparts.

2.2.7 Learner Management Systems (LMS) and Blackboard Portals

LMS portals are e-learning platforms that have been implemented widely by HE institutions. Common LMS applications include Blackboard, Web CT, Moodle and SAKAI (Alebaikan & Troudi, 2010). Of all the LMS platforms available, Blackboard is probably the most popular application, at least in KSA. Blackboard itself is an LMS, developed by Blackboard Inc. In sum, LMSs are software applications developed to assist in administrative activities and provide platforms to facilitate student learning.

2.2.7.1 Benefits of LMS Applications

According to the existing literature, the benefits of LMS systems include improving the quality of teaching and learning; increased access to educational materials and resources; and increased flexibility, with access anytime and anywhere (El Zawaidy, 2014). These portals are commonly used to make learning and teaching programmes and modules available and provide video conferencing and online forums such as chat and discussion (Asiri et al., 2012). They can also be used to create teaching and learning content, which educators and students are able to access anywhere, at any time, thus providing the ability to offer synchronous and asynchronous education. At the target university, the management decided that

remote learning through the Blackboard system would be largely asynchronous, since using and activating the system did not necessitate the presence of both faculty members and students in the exact location or at the same time. However, academic staff and students occasionally use the Blackboard system synchronously.

LMS tools evolve rapidly, but typically include virtual classroom management, online chat and forums for discussion, online assessment, and grading and feedback tools (Black et al., 2007; El Zawaidy, 2014).

2.2.7.2 Barriers in Effective Use of LMS Applications

Despite the benefits, existing research has also highlighted several barriers to the effective use of LMS platforms. Studies have shown that Blackboard may not be being utilised to its full potential by institutions, educators and students due a lack of skills and knowledge, especially in terms of its functions beyond basic course management and dissemination of information. These studies have indicated that educators and course providers typically do not use all the available features of LMS platforms due to a lack of knowledge, training and interest (Ertmer, 2014; Al Gamdi & Samarji, 2016; Al Meajel & Sharadgah 2018; Alanazy, 2017; Algahtani et al., 2020).

2.2.8 Blackboard Within KSA HE Institutions

Research shows that despite various initiatives and investment in Blackboard within KSA HE institutions, many institutions and educators have not fully implemented the system into the curriculum (Aljaber, 2018). A study by 117 faculty members from within one KSA university highlighted four categories of barrier in using Blackboard (Al Meajel & Sharadgah, 2018). These include technological barriers, institutional barriers, student barriers and faculty barriers. Technological and institutional barriers were ranked first, specifically in terms of internet connectivity and speed, lack of technical support and training, and lack of capacity due to heavy workloads (Al Meajel & Sharadgah 2018). Student barriers to using Blackboard include lack of skills and motivation, whereas barriers to faculty adoption include resistance to change, current teaching load, and time pressures (Al Meajel & and Sharadgah, 2018). Several studies undertaken within

KSA universities have also highlighted barriers to implementing LMSs effectively, including issues such as lack of technical support, low broadband speed, and inadequate infrastructure and maintenance (Colbran & Al-Ghreimil, 2013; El Zawaidy & Zaki, 2014; Algahtani et al., 2020). Moreover, research into KSA HE institutions has also highlighted a lack of skills and knowledge amongst staff and students, and that lack of training has presented barriers in effective use of LMSs (Colbran & Al-Ghreimil, 2013).

2.3 Theoretical Models to Analyse the Implementation, Acceptance and Use of E-Learning Technologies

There are several theoretical models and frameworks that have been developed and adapted to examine the implementation, acceptance and use of e-learning technologies. These models have also been used to explain and predict behaviours across several domains, including health and education (Davis & Venkatesh 1996; Venkatesh & Davis 2000; Ong et al., 2004; Park, 2009; Al-Gahtani, 2016, Nikou & Economides, 2017; Racero et al., 2020).

There is a gap in the existing knowledge about motivational factors that influence the adoption of new technology tools, especially from the educators' perspectives in HE. Therefore, achieving a deeper understanding of human motivational factors and technology acceptance is essential to uncover all issues that may influence faculty members in using and activating a system like Blackboard. Hence, for this study SDT was the appropriate theory to investigate the motivational factors impacting faculty members in using the system. Furthermore, TAM enabled the researcher to learn more about how the faculty members perceived the ease of using the system, along with their attitudes and degree of self-efficacy.

For this thesis, SDT and TAM were selected as appropriate models to provide theoretical frameworks for exploring the key areas of consideration in the research aims and objectives. Together, SDT and TAM are the 'theoretical lenses' used to explore the motivational factors and acceptance of e-learning and the Blackboard system amongst educators within KSA HE, and the barriers and challenges that impede the use of Blackboard amongst educators within the

sector. Therefore, the key domains of SDT and TAM underpinned the analysis for this thesis.

To illustrate, much previous research has combined TAM and SDT (Roca & Gagné, 2008; Sørebø et al., 2009; Zhou, 2016; Nikou & Economides, 2017; Racero et al., 2020), yet most have applied these theories to students, schoolteachers and the workplace. In contrast, this study aimed to investigate a deeper understanding of how faculty members in HE institutions perceived the use of e-learning tools such as Blackboard based on a consideration of motivational factors, as this has not been explored much in the literature.

2.3.1 Self-Determination Theory (SDT)

The rationale for using SDT in this thesis is that it is an important and well-established theoretical framework (see Figure 2.1 below) for the examination of motivation and behaviour (Ryan & Deci, 2020; Núñez & León, 2019; Jeno et al., 2019; Hsu et al., 2019; Chiu, 2021). SDT focuses on intrinsic and extrinsic motivation in cognitive and social development, and how sociocultural factors support or undermine an individual's own sense of volition and initiative and impact on well-being and standard of performance. According to SDT, conditions that support an individual's sense of autonomy, competence and affiliation help to facilitate voluntary participation and high standards of motivation and engagement, including high standards of performance, creativity and persistence. However, where these sociocultural conditions are not met, or are diminished by the sociocultural context, it will have a detrimental impact on individuals' well-being within that setting or environment. In sum, SDT provides a framework for gaining understanding of the sociocultural practices and structures that enhance or diminish individuals' satisfaction of needs and full functioning (Centre for Self-Determination Theory, 2022).

2.3.1.2 SDT Domains for Motivation

SDT states that performance and well-being are influenced by different types of motivation (Ryan & Deci, 2002). Autonomous motivation and controlled motivation are characterised as being engaged in an activity with a full sense of willingness, volition and choice (Deci et al., 1991). It is often considered that autonomously

regulated activities are intrinsically motivated, but under the correct conditions extrinsically motivated activities can also be autonomously motivated when engaged with vitality and authenticity (Deci et al., 2017). In practice, this means that when people have a full sense of purpose, worth, autonomy and ownership, in addition to constructive and adequate support and feedback, they are more likely to be autonomously motivated and thus perform to a higher standard (Niemiec & Ryan, 2009). By contrast, when motivation is curtailed and/or controlled via conditional rewards or power dynamics, these extrinsic focuses can result in a reduction of effort, ultimately produce short-term results and gains, and have adverse impacts on engagement and performance (Nie et al., 2015; Nikou & Economides, 2017). Finally, it is crucial to highlight that the SDT model of internalisation is not a stage theory and does not imply that individuals must inevitably progress through these stages' concerning certain behaviours. Instead, the theory outlines these forms of regulation to gauge the different ways people regulate their behaviour or group of behaviours. SDT outlines six forms of motivation across a continuum. See Figure 2.1 below, with explanations following.

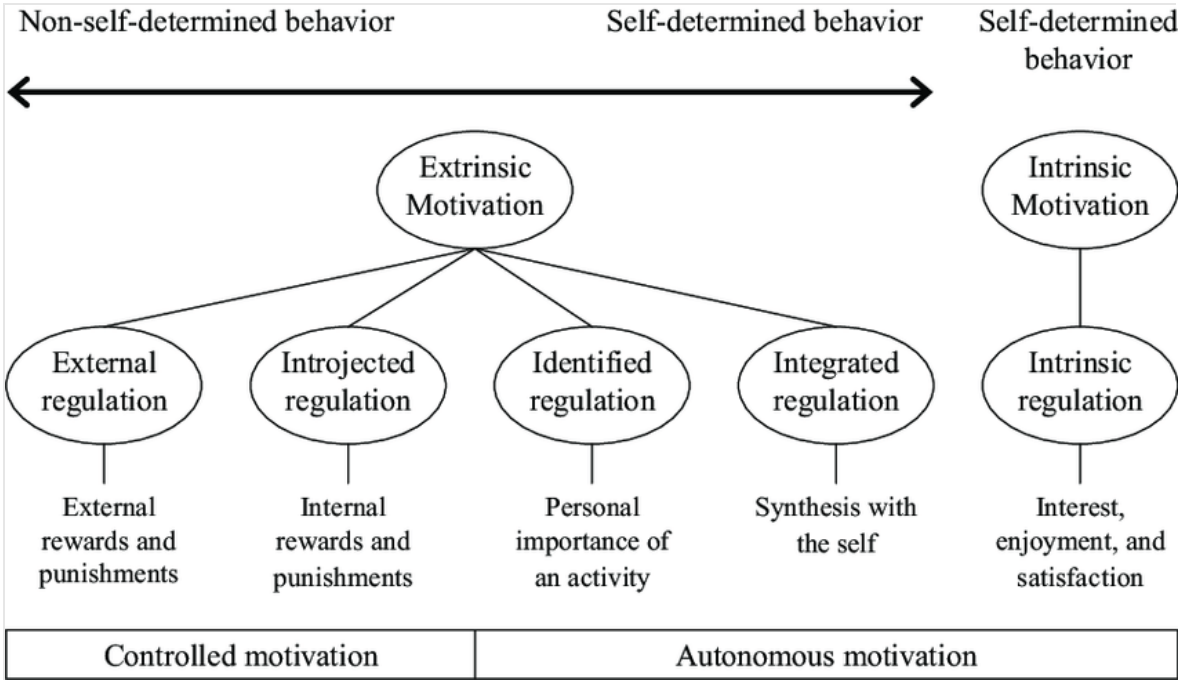

Figure 2.1 Self-Determination Theory (based on Ryan & Deci, 2000)

2.3.1.3 Intrinsic Motivation

In basic terms, intrinsic motivation (IM) relates to activities that are carried out for their own sake due to an inherent interest and/or enjoyment. Demonstrative real-life examples of IM include play, exploration, curiosity-initiated activities, sports, hobbies and professions (Ryan & Deci, 2020). IM is not related to or dependent on external pressures or incentives, but to actions performed for the sake of satisfaction and/or joy.

A meta-analysis by Taylor et al. (2014) into the benefits of IM within formal educational settings reported that IM had a significant role in educational achievement in high schools and colleges, which was consistently correlated with increased academic performance. In contrast, amotivation, which is a reduction in the motivation to initiate or persist in goal-orientation behaviour, along with a lack of intentionality (Ryan & Deci, 2020), was significantly associated with lower academic achievement (Taylor et al., 2014). Furthermore, intrinsic motivation was also strongly associated with reduced amotivation (Taylor et al., 2014). Research shows that amotivation is common in classroom settings, due to a lack of value or interest, or a lack of felt competency (Ryan & Deci, 2020).

A later study by Froiland and Worrell (2016) featuring 1,575 high school students, reported that IM was positively related to academic performance and student engagement. Likewise, in employment, people can be intrinsically motivated for parts of or all their job; research also shows that when employees have high levels of IM, they perform to a higher standard and have improved well-being (Ryan & Deci, 2020).

2.3.1.4 Extrinsic Motivation (EM)

By contrast, extrinsic motivation pertains to behaviour and activities that accomplish separable outcomes for reasons other than the inherent satisfaction from a particular behaviour or action (Ryan & Deci, 2020). Whilst there are negative factors associated with extrinsic motivation (Gerhart & Fang, 2015), according to SDT certain types of intrinsic rewards can lead to enhancement, whereas others diminish IM (Nie et al., 2015; Ryan & Deci, 2020). SDT differentiates between these different types of extrinsic motivation and rewards,

which range from low to high autonomy. These include four main types of EM: external regulation, introjected regulation, identified regulation, and integrated regulation, and these will be a significant focus in this thesis.

2.3.1.5 External Regulation (ER)

This relates to behaviours and actions that are an external kind of motivation, one that is based on rewards imposed from the outside, and/or penalties that are non-autonomous and/or controlled (Nie et al., 2015; Nikou & Economides, 2017). External regulation, where individuals perceive that their behaviour is controlled by others and contingent on rewards and/or threats, is placed at the lower end of the scale and related to low autonomy. Moreover, whilst external regulation may be a powerful motivator in certain circumstances, it reduces autonomous motivation and has an adverse impact on personal wellbeing (Niemiec & Ryan, 2009; Sørebø et al., 2009; Racero et al., 2020). In addition, the least autonomous part of the extrinsic motivation continuum of autonomy is external regulation. Individuals believe that others directly control their behaviour when it is externally governed, frequently through contingent rewards and threats. As will be shown, external control has the potential to strongly influence particular behaviours, but it frequently has unintended consequences that negatively impact autonomous motivation and wellbeing over the long term, occasionally with organisational spill-over effects.

2.3.1.6 Introjected Regulation (INR)

Introjected regulation relates to EM that has been somewhat internalised, whereby behaviour is regulated by internal rewards, such as self-esteem from success, and/or via avoidance of anxiety, shame, guilt due to failure, and/ or concern with status or recognition (Zhou, 2016; Ryan & Deci, 2020; Yu & Levesque-Bristol, 2020). In academic contexts, introjected regulation is often associated with ‘ego involvement’ whereby self-esteem is dependent upon outcomes (Ryan & Deci, 2020). Introjected regulation, as a type of extrinsic motivation, is motivated by self-control, ego-protective actions, internal rewards and punishments, and has some external incentive. For instance, someone may engage in an exercise to assuage the guilt they would feel if they did not show up for a

session. Thus, with introjected regulation, the motivation for the activity has been partially internalised, as will be shown in section (5.3.2).

2.3.1.7 Identified Regulation and Integrated Regulation (IR)

The latter two forms of EM (identified regulation and integrated regulation) relate to a more internalised form of motivation. In identified regulation, an individual consciously identifies with an activity by endorsing and/or valuing it, and thereby experiences a high level of volition and/or willingness to act (Fagan et al., 2008; de Wal et al., 2014; Ryan & Deci, 2020). Moreover, integrated regulation is the most autonomous form of EM, whereby the individual both recognises and identifies with an activity, and where the activity is congruent with the individual's other core values and interests (Pe-Than et al., 2014; Nikou & Economides, 2017; Ryan & Deci, 2020). It is considered that like IM, autonomous motivation shares the qualities of being highly volitional, with the difference being that IM is typically based on enjoyment and interest (Zhang et al., 2008; Chen & Jang, 2010). In the workplace, integrated regulation may occur when an individual has personally identified with the importance of their work and because they have internalised a rationale for acting: they become more autonomously self-regulated and able to sustain behaviours better and for longer (Roca & Gagné, 2008; Yoo et al., 2012).

2.3.1.8 Reflections on SDT as a Research Tool

It is important to understand motivations for utilising Blackboard, as this may help provide more significant insight than looking at the simple usage of the technological tools. However, not enough has been done to look into the effect of LMS through the lens of motivation. Moreover, it is essential to note that observable motivation in e-learning is due to behaviours of the academic staff and learners themselves, and the impact of sociocultural factors upon them.

Furthermore, it is paramount to comprehend motivations for utilising Blackboard, which could help provide significant insight. This research was done in part to discover the impact of the motivation factors in using Blackboard. The findings enabled the researcher to establish a perspective based on SDT to understand how Blackboard is utilised and why academics make use of it. Hence, this research

aims to fill the gap in the research area by considering the motivational factors for e-learning in higher education since issues regarding motivation remain mostly uncovered in existing research, particularly in KSA

2.3.1.9 Strengths and Limitations of SDT as a Research Tool

SDT has been successfully applied in a variety of research, across several disciplines and domains, including education, health, physical activity and sports, psychotherapy, work, management, and online and digital technologies (Senécal et al., 1995; Roca & Gagné 2008; Sørebø et al., 2009; Chen & Jang, 2010; de Wal et al., 2014; Zhou, 2016; Racero et al., 2020). The strength of SDT is that it assists the researcher in defining a holistic view of user behaviour by attempting to comprehend the social-environmental aspects that can influence user attitudes about using new technology tools such as the Blackboard system. Among educational psychologists, SDT is a widely accepted theory that explains one's motivation and performance (Ryan & Deci, 2017). An extensive dataset of faculty member and decision-maker data was used in this current study to uncover factors related to the general SDT model. The best way to understand the unexpected results was by using such a theory. In this regard, Yu and Levesque-Bristol (2020) made the following observation based on studies by Ryan & Deci (2000, 2017). "People do things because they are interesting (intrinsic motivation), congruent with their identity (integrated regulation) and identify with the value of the action (identified regulation). Or in contrast, people do things because they feel internal pressure and guilt (introjected regulation), because they are forced by other people (external regulation), or when they simply have no good reason (amotivation) — they are non-self-determined."

Despite its benefits, there are also limitations associated with the use of SDT as a research tool. It been used to find individual distinctions in human nature to record both immediate experiences and large-scale social and cultural processes (Koole et al., 2019). It is important to mention that SDT might not be able to distinguish between individual variations in the fundamental psychological demands. Examining how people differ in their psychological needs is still important since it could lead to more effective motivational strategies. Also, SDT recognises human needs as inherent (Ryan & Deci 2000). Furthermore, unlike other

learning theories, SDT defines needs at the psychological level instead of the physiological level. Similarly contentious is whether these needs are internal or external. Under SDT, it is assumed that the essential structure of human desire is apparent throughout the human developmental process. Sheldon and Schüler (2011) have questioned whether desires are acquired through learning processes, or if they are inherited.

2.3.2 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) sits within the category of theoretical models that aim to understand how attitudes are formed towards new technology (see Figure 2). TAM, developed by Davis (1989), stems from the Theory of Reasoned Action (Ajzen, 1985; 1988; 1991), as a means of examining acceptance of ICT systems and technologies, particularly computer usage (Lai, 2017). The initial TAM was comprised of three domains: Perceived Usefulness (PU), Perceived Ease of Use (PEOU), and Attitude (Davis, 1989). PU is the subjective likelihood that use of a system or technology will improve output, whereas PEOU is the expectation of the degree of effort needed to use a system or technology. Venkatesh and Davis (1996, 2000) successively found that PU and PEOU were direct influencers of behavioural intention.

Attitude has been one of the most prominent social and psychological concepts used to explain behaviour as regards technology use (Ajzen & Fishbein, 1977; Ajzen et al., 2018). People are more likely to have a favourable view of technology if they perceive it to be both significant and personally meaningful (Celik & Yesilyurt, 2013). Also, attitudes are viewed as a behavioural disposition, and faculty members' attitudes are a significant factor in whether any implementation to integrate technology into teaching methods is successful (Asiri et al., 2012). Faculty who are comfortable with technology, and are prepared to overcome challenges, are more likely to have a positive attitude towards it (Mouakket & Bettayeb, 2015; Fathema et al., 2015).

As a result, assessing users' attitudes is critical to understanding their actions. Also, attitude can indicate the likelihood of engaging in a specific behaviour . It is therefore more likely to be accepted by faculty members who hold a positive

attitude. Attitudes can be better understood by looking at what people believe and value. Users' beliefs refer to the likelihood that an e-learning system will have specific features, whereas values stand for whether or not these features are essential (Ajzen, 2018; Alanazy, 2017; Celik,2013; Schwarz, 2007; Tatli et al., 2019).

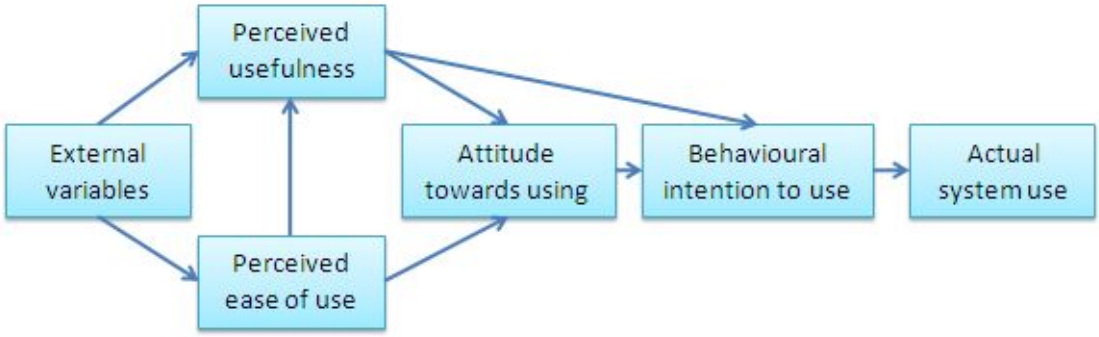

Figure 2.2. Technology Acceptance Model (TAM 1) (Davis, 1986, 1989)

2.3.2.1 Strengths of TAM as a Research Tool

TAM is a research tool that has been extensively used as a theoretical framework in several empirical studies (e.g., Stoel & Lee, 2003; Flavián & Gurrea, 2007). It is considered to be one of the most significant and commonly applied theories for demonstrating acceptance of information systems, and for assessing attitudes towards and use of different technologies and systems amongst various stakeholders including students and educators (Venkatesh & Davis, 2000). Moreover, TAM has also been adapted for use in other disciplines such as health and other areas of education (Venkatesh & Davis 2000; Liu et al., 2009; Alharbi & Drew, 2014; Selevičienė & Burkšaitienė, 2015). Additionally, TAM has also been utilised in studies investigating perceptions and attitudes towards learning management systems, including Blackboard.

As TAM has been revised extensively over a number of years, it has high validity and reliability and is a robust theoretical framework for assessing the determining factors in the successful, or unsuccessful, implementation of technologies and systems (Brangier & Hammes-Adelé, 2011). A recent systematic review by Granić and Marangunić (2019), which provided an overview of evidence from 71 previous studies into TAM applications in the field of learning and teaching between 2003 and 2018, found TAM to be a credible model for facilitating assessment of a diverse

range of learning new technologies. Moreover, the review claimed that PU and PEOU had been proven to be precursors influencing the acceptance of the use of learning with technologies. Additionally, other studies have shown that TAM is a highly reliable tool and can be used within different contexts to increase knowledge and understanding on attitudes towards, and use of, technologies; and in respect of behavioural intentions towards the use of technologies and systems (Chen & Chao, 2011; Asiri et al., 2012; Selevičienė & Burkšaitienė, 2015).

2.3.2.2 TAM Limitations

Whilst TAM confers several benefits as a research tool, there are also limitations reported in the literature. A key critique is that there are gaps in knowledge on the proposed links between attitude towards use, intentions to use, and actual usages of technologies and systems, which are complex and difficult to measure (Bagozzi, 2007). The intention-behaviour link is criticised as it treats behaviour as the ultimate outcome and does not adequately consider other intermediatory factors and influences, and how the behaviour is sustained (Venkatesh & Davis, 2000). In addition, behavioural intentions may also be influenced by a multitude of internal and external psychological, behavioural, environmental, socioeconomic, and sociocultural factors, which affect acceptance and use of technologies (Flavián & Gurrea 2007; Bagozzi 2007). A further critique is the gaps in knowledge and understanding on being able to recognise and accept a behaviour as favourable, but not being motivated to act out that behaviour (Bagozzi, 2007). Finally, TAM is criticised for failing to account for individuals' feelings and views towards particular technologies and their use beyond PEOU and PU (Brewer & Hunter, 2006; Willis, 2008).

2.3.2.3 TAM Rationale

TAM is one of the most popular theoretical models that has been developed to gain knowledge and understanding on attitudes towards and use of new technologies, encompassing effective features of other behavioural models. Moreover, TAM is a reputable, tested, valid and reliable theoretical framework for assessing technology and systems use, and more specifically the use of LMS platforms such as Blackboard. In addition, TAM has been proven to be suitable for collecting data from similar populations as those targeted in this thesis, i.e.,

educators. Furthermore, a systematic review of many studies over the last two decades found that whilst there is a growing tome of research using TAM to examine the use of technologies in learning, findings are mixed and there are still gaps in the existing research (Granić & Marangunić, 2019). A primary gap includes a lack of generalisability — a limitation in many studies (Fathema et al., 2015; Ibrahim et al., 2017; Lemay et al., 2018; Lo et al., 2012; Lorenzo et al., 2013; Sek et al., 2010; Yeou, 2016). It has also been recommended that research should be undertaken within HE and university settings (Jamil, 2017; Lemay et al., 2018) and with educators (Baharin et al., 2015). The current thesis aims to generate knowledge relating to these gaps in the research.

2.3.2.4 Self-Efficacy and TAM

Self-efficacy (SE) is also an important conceptual domain in relation to the research undertaken for this thesis. It is a concept that was originally proposed by Bandura (Bandura & Walters, 1977; Bandura 1997) as a key domain within Social Cognitive Theory. SE is defined as an individual's belief in their ability to succeed in a specific situation or accomplish a specific task (Chen et al., 2011). The concept of self-esteem has similar properties, but SE refers more to an individual's emotional evaluation of their ability to achieve a certain goal or task and self-belief to do so (Yokoyama, 2019). In practical terms, high SE increases motivation to learn or carry out an activity or behaviour, which in turn results in better achievement and performance because the individual believes they can achieve a certain goal (Sánchez & Hueros, 2010). SE refers to an individual's judgment of their capability to perform a specific task (Bandura, 1982).

Many studies consider SE a key 'external' factor for TAM. A meta-analysis carried out by Abdullah and Ward (2016) that reviewed 107 e-learning adoption studies that have extended TAM systematically, found that the first and most commonly used external factor of TAM was SE.

For example, the better a person's computer SE, they more they are willing to utilise computers (Compeau & Higgins, 1995). This shows that users who have higher e-learning SE are more likely to use e-learning, while users who have lower e-learning SE may avoid using it (Fathema et al., 2015; Chen et al., 2011). Previous

research has also shown that SE significantly impacts how learners view the perceived ease of use of e-learning technologies or systems. Because of all these findings, it was important for this study to consider faculty members' SE towards using Blackboard.

2.3.2.5 Self-Efficacy in the Research Literature

The concept of academic SE has been explored within various studies as part of the existing research (Sánchez & Hueros, 2010; Chen et al., 2011; Holden & Rada, 2011; Chen & Tseng, 2012; Motaghian et al., 2013; Fathema et al., 2015; Chang, et al., 2017; Hatlevik et al., 2018; Alanazy, 2017). Also, Hosseini (2014) showed that SE is considered an important factor that influences ability in sharing knowledge in e-learning systems.

A previous extensive review of the literature by Alqurashi (2016) also examined the role of SE in online learning environments. The review reported that computer SE has a significant impact on student satisfaction with online environments, and intention to undertake further studies. Additionally, internet SE predicted student performance and satisfaction. However, LMS SE was found to have no impact on full online education, but did have an impact on blended education (a combination of traditional and online learning). However, Alqurashi (2016) concluded that there were gaps in the research on the role of SE in online learning, with mixed results highlighting the need for more research to understand the nature of the relationship between SE and online learning.

Recent empirical research by Sulaymani (2022) investigated the effects of previous experience and SE on the acceptance of e-learning platforms among N=265 secondary school students within KSA. Data were analysed using TAM as a theoretical framework. Results showed that students' SE was strongly influenced by previous experience in using a particular technology within an e-learning environment. Moreover, the study found that the TAM domain PEOU strongly influenced students' acceptance of e-learning platforms, alongside social influences, with stronger effects observed among female students.

Previous empirical research by Hatlevik and Hatlevik (2018) examined the relationship between N=1,158 teachers' ICT SE for educational purposes, collegial

collaboration, lack of facilitation and the use of ICT in teaching practice within 166 Norwegian schools. Results indicated that teachers' SE in using ICT within their teaching role was correlated with use of ICT in teaching and general ICT SE. Moreover, results showed that collegial collaboration between teachers had a positive association with the use of ICT in teaching practice.

Another previous empirical study by Holden and Rada (2011) examined the influence of perceived usability and technology SE on N=99 US high school teachers' technology acceptance. The study used TAM as a theoretical framework to represent how teachers accept and use technologies. Another study by Chen and Tseng (2012), with TAM used as its theoretical framework, investigated factors influencing teachers' intentions to use web-based e-learning for in-service training. It found that perceived usefulness and perceived ease of use significantly correlated with internet SE and motivation to use the web.

Furthermore, it has been shown that perceived self-efficacy has a huge impact on users' acceptance of technology tools. For instance, Fathema et al. (2015) investigated why faculty members do not activate the system to its full capability, and found that the factor that significantly affect faculty attitudes towards LMSs usage was perceived self-efficacy. This research focuses on faculty members' use in a higher education setting, which has not been explored much in the literature. This explains why this research focuses on how faculty members' perceived self-efficacy influences their acceptance of the Blackboard system.

To summarise, self-efficacy in online learning is seen as a key factor in academic achievement. For instance, educational systems need to pinpoint the elements that influence a successful teaching process and learning environment in a virtual environment and its related difficulties to lay the foundation for successful distance learning education. The current study attempted to offer a clear explanation regarding the role of self-efficacy in technology tool acceptance. Also, it evaluates the importance of self-efficacy in successful virtual education based on the currently available evidence.

2.4 Summary

This chapter has provided a literature review pertinent to the research objectives. It began by describing the current state of higher education in Saudi Arabia. This includes a summary of the most pressing concerns affecting higher education in KSA. , as research suggests that e-learning is frequently viewed as a tool to address these challenges. This chapter also examined the function of LMSs in e-learning planning and delivery. The evaluation of learning and LMSs revealed that internal and external factors influence opinions of e-learning usage. This section also addressed e-learning and LMS enablers and obstacles. The chapter also reviewed the status of female academic staff in Saudi Arabia, revealing that few studies involving female academic staff and learning management systems (LMSs) have been undertaken in Saudi Arabian universities.

The literature research has uncovered a variety of characteristics that influence faculty members' uptake of learning. These include the emergence of e-learning in KSA to address current difficulties in higher education. Due to its emphasis on the internal and external factors that influence technology adoption, Self-Determination Theory by Ryan and Deci (Ryan & Deci, 2000) and the Technology Acceptance Model by Davis (Davis, 1989), served as the foundations for this research, since adoption of the Blackboard system is influenced by a wide range of such factors .

Chapter 3 Methodology and Data Collection Methods

3.1 Introduction

This study investigates and identifies the most important factors that can influence the adoption of a Blackboard system in a Saudi university , as an example in a developing nation. Quantitative (questionnaire) and qualitative (interview) data were collected from faculty members and decision-makers, with the study aiming to investigate the factors that affect the use of the Blackboard system, such as attitude, self-efficacy, self-determination, ease of use and perceived usefulness. Furthermore, it seeks to examine the factors that affect faculty members' attitude towards the use of Blackboard, based on the Technology Acceptance Model (TAM) and Self-Determination Theory (SDT). The research also aims to identify relationships between academics' attitude and other factors when they use Blackboard, and their perceptions about the training they would require from the university in order to use the system more effectively. By identifying these relationships, the researcher can determine faculty members' attitudes , and the motivation factors which impact their use of the Blackboard system.

The focus of this chapter is on providing a clear, detailed description of the research methodology applied in this study. Firstly, the chapter outlines how the sections were designed and how the study is underpinned by TAM, which was originally put forward by Davis (1989) and SDT, put forward by Ryan and Deci (Ryan & Deci, 2020).

This chapter begins by outlining the details of the research question, as well as how TAM and SDT were used in order to explore these questions. The chapter will then discuss the research design, why it was chosen, and how it is suitable given the research question. It follows with an overview of the participants in the target university and the importance of that university as an emerging educational institution in Saudi Arabia, and its adoption of the Blackboard system as an e-learning tool. This adoption is important because it will meet the goals of Saudi's Vision 2030 by enabling technology in higher education and enhancing learning environments through all available sources (Saudi Vision, 2030; Mitchell & Alfuraih, 2018; Moshashai et al., 2018).

3.2 Research Questions

This chapter describes the methodology used in this research, as well as the data collection methods. These are aimed at answering the main research question, which is:

> Which factors do academics view as important in affecting the adoption and use of e-learning in a Saudi Arabian Higher Education institution?

This can be broken down into the following:

1. To what extent is the Blackboard system utilised and valued by faculty members at the target university?

2. What are the barriers and challenges in the use of the Blackboard system in the target university?

3. What can TAM theory tell us about academics' perceptions on the use of the Blackboard system in the target university?

4. What can SDT tell us about the motivational factors which influence academics on the use of the Blackboard system in the target university?

3.3 The Aim of the Study

This study aims to investigate the factors affecting the use of e-learning, educators' perspectives on the use of a specific e-learning tool (Blackboard), and the elements that motivate or challenge them in using this system. The study will also investigate faculty members' opinions on the kind of training they require at their university to use Blackboard. Based on this aim, the objectives of the research are:

1. To determine the extent to which Blackboard system is utilised by educators within KSA HE.

2. To discover the perceived value of e-learning amongst educators within KSA HE.

3. To establish if there are any barriers and challenges that impede the use of Blackboard system amongst educators within KSA HE.

4. To investigate the motivational factors which affect the use of Blackboard system amongst educators within KSA HE, through Self-Determination Theory (SDT).

5. To explore the use and adoption of Blackboard system amongst educators within KSA HE through the Technology Acceptance Model (TAM).

3.4 Research Design

This section describes the methodology used in the research and the rationale for the research approach. The researcher's experience of working within universities in Saudi Arabia, and experiencing the introduction of new technologies and e-learning, led to an interest in this topic especially because educators' use of, and attitudes towards technology vary and are sometimes at odds with those of students who often prefer technology over traditional teaching methods. Furthermore, it was important to discover whether perspectives differ between decision makers and faculty members.

The two main paradigmatic approaches to research are positivism and interpretivism (Creswell, 2014). According to Bryman (2016), positivism is a viewpoint that encourages using the methods from the natural sciences to investigate social realities, and usually requires the testing of pre-determined hypotheses. However, because positivism is based on the natural sciences, there is little opportunity for interpretation or variations in context, or perspectives on reality and human experiences, making it less appropriate for conducting social science and educational research (Bryman, 2012). Therefore, interpretivism is usually viewed as being more appropriate for analysing social concepts such as teaching and learning because it enables social experience and human action to be interpreted (Creswell, 2014). Furthermore, "it is the job of the social scientist

to gain access to people's 'common sense thinking' and hence to interpret their actions and their social world from their point of view" (Bryman, 2012, p. 31).

Overall, while there are advantages and disadvantages to positivism and interpretivism, and in this study it was decided to adopt a mixed methods approach, being underpinned by pragmatism. This entailed using a questionnaire and interviews to form an in-depth yet broad examination using a case study approach involving a higher institution in Saudi Arabia.

Johnson and Onwuegbuzie (2004) highlight the importance of pragmatism as an attractive philosophical partner to mixed methods research (MMR), and they recommend adopting this philosophical paradigm as a framework for designing and conducting MMR. This is because using a pragmatic approach to research allows the combining of several methodologies using a pluralist perspective, which mitigates the issues that arise from specific methodologies (Onwuegbuzie & Leech, 2005). Furthermore, Morgan (2014) explains that there is a link between pragmatism and MMR that involves both quantitative and qualitative data: pragmatism focuses on a holistic understanding and why research is conducted in a certain way, rather than on how it is conducted. For this reason it should also be noted that there is no reason to limit researchers to either of these traditional paradigms —it is possible to gain the best of both (Reinhardt & Cook, 1979). Likewise, Denzin et al. (2005) reiterate that "mixed methodologies may make perfect sense within each paradigm" (p. 200). Relevant to mixed methods, the idea of triangulation was introduced by Campbell and Fiske (1959) in an article that refers to 'multi-plus operationalism', which uses several methods as part of a process of validation.

3.4.1 Inductive and Deductive Research

Bryman (2012) explains that when conducting research, the researcher can feel that it is necessary to choose between an inductive and a deductive approach; however, Blackstone (2018) argues that using a mix of both is entirely acceptable. To clarify, a deductive approach means taking hypotheses and theories that already exist and then applying them (Bryman, 2012); consequently, a deductive approach has been used for some of the approach in this research using the concept of self-efficacy and the theoretical frameworks of SDT and TAM . On the

other hand, an inductive approach allows for the development of theory based on the data collected (Bryman, 2012). Accordingly, an Inductive approach has also been used to analyse semi-structured interviews in order to gather in-depth perspectives, explore tangents and generate new ideas.

3.4.2 Mixed Methods Research

This research study has used a mixed methods design. First, both qualitative and quantitative research are key characteristics of social research. "Qualitative research is a research strategy that usually emphasizes words rather than quantification in the collection and analysis of data" (Bryman, 2012, p. 380). On the other hand, quantitative methods need "the imposition of predetermined formats on the social world" (Bryman, 2012, p. 403), usually through testing hypotheses. An alternative is MMR, which is where "a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g., use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purposes of breadth and depth of understanding and corroboration" (Johnson et al., 2007, p. 123).

All research methods possess advantages and disadvantages, and these must be carefully considered when conducting a research study. Qualitative research allows rich data to be gained — an exploration of the social experiences of the participants as well as supporting the researcher's aim of understanding the social world from the participants' perspective. A qualitative approach can involve semi-structured or unstructured interviews, or focus groups, which are aimed at gaining a deep understanding of what is going on. Conversely, quantitative research uses techniques aimed at gaining details that are expressed through numbers, such as closed questionnaires (Neuman, 2013).

Furthermore, this research also involved a case study approach utilising qualitative and qualitative methods. To illustrate, this thesis identifies a specific case regarding using the Blackboard system in the target university. This can be stated as a case that can be limited or described in terms of particular parameters. This study considers a case study approach because it uses the target university faculty members to look at the questions of interest in HE in Arabic countries. Creswell (2014) states, "For a case study, the intent is to develop an in-depth

understanding of a case or an issue, and researchers collect as many types of data as possible to develop this understanding" (p. 505). In addition, Neuman (2013) explains that "a study that combines both tends to be richer and more comprehensive" (p. 167). Since the research methodology of this study follows a mixed methods approach, the specific methods chosen for this research were a quantitative questionnaire and qualitative interviews for a pilot study, followed by a similar mixed methods approach for the main study.

Quantitative research typically relies on collecting numerical data that can be assigned as values to variables to test predetermined hypotheses (Creswell et al., 2011; Christensen et al., 2014; Schoonenboom & Johnson, 2017). Using deductive reasoning, quantitative research attempts to reach conclusions based on accepting or rejecting the hypotheses, because "In quantitative research, it is assumed that cognition and behaviour are highly predictable and explainable" (Christensen et al., 2014). The use of quantitative research enables the researcher to attempt to generalise the findings from the sample to represent the whole population by reporting statistically significant testing. In addition, an important aspect of research is that the method should match the research problem. Mixed methods research uses a collection of designs or approaches (quantitative and qualitative) for gathering, analysing, interpreting, and reporting data in practical studies (Clark et al., 2008).

After careful consideration of the research objectives, a mixed methods approach for the research design seemed more appropriate than using a solely qualitative or quantitative approach. Qualitative research is appropriate for capturing the detailed perspectives, experiences and opinions of participants, but it produces soft data and subjective data (Creswell, 2014). On the other hand, quantitative research produces highly reliable quantifiable and measurable data, but fails to capture the perspectives of the participants (Creswell, 2014). However, if both approaches are used within the same study, they provide the advantage of complementing each other. Quantitative research methods focus on the examination of the causal relationships between research variables in a highly structured environment (Venkatesh et al., 2013), and a questionnaire is a good example of a quantitative research method (Saunders et al., 2019). Qualitative research methods focus on supplying insight and in-depth knowledge about certain

variables; a good example of such method is a semi-structured interview (Saunders et al., 2019). A questionnaire and semi-structured interviews were used for obtaining data that fits the study; together they provide clear and sufficient meaning concerning the research question and objectives.

In addition, the specific mixed method design featured a two-phase sequential explanatory strategy, often referred to as a QUAN -> QUAL study, involving the collection and analysis of quantitative data in phase one, with the collection and analysis of qualitative data in phase two. This sequential explanatory design is beneficial to this type of study (one researcher) since the two methods can be conducted in separate phases, with only one type of data gathered in each phase. Another advantage of this method is the straightforwardness of the design due to clear, distinct stages (Terrell, 2012). The qualitative phase needed only a relatively small number of participants to explain portions of the quantitative results (Creswell et al., 2007; Terrell, 2012).

Furthermore, researchers frequently combine qualitative and quantitative research techniques using a triangulation approach; therefore, a synthesis of this data took place, and is detailed in Chapter 6. A triangulation protocol to integrate qualitative and quantitative data can reveal findings that need further interpretation. Triangulation is the integration of several ways to produce a 'whole which is larger than the sum of the parts' and so provide a complete picture. A triangulation methodology can also increase the reliability of results and determine whether data are complementary, contradictory, or if they converge (dissonance).

"Combining qualitative and quantitative research and data can ensure triangulation" (Neuman, 2013, p. 150). Schwandt (2015) explains that "Triangulation is a means of checking the integrity of the inferences one draws. It can involve the use of multiple data sources, multiple investigators, multiple theoretical perspectives, and/or multiple methods" (p. 298). Cohen et al. (2017) state that besides ensuring an instrument measures what it is supposed to, its validity can be ensured through the researcher trying to be objective and attempting triangulation. Guion et al. (2011) describe methodological triangulation, which has been used in this study, and it involves using qualitative

as well as quantitative methods, which allows the data obtained to be compared to check whether the results are similar.

3.4.3 Cultural Context of Research

There is no right or wrong answer in research, especially in education and the humanities, as regards attitudes and perspectives on motivation. In addition, there are always factors that influence the answers of participants and the responses the researcher obtains. In this research, when attempting to explain the results of the theory related to SDT, several issues were encountered due to the unexpected convergence of the various statements of the four specific categories of the theory. Therefore, it was necessary to look in more depth at these results and consider other methods of analysis.

Research outcomes documented elsewhere have prompted reflection on survey returns and their implications for the work. There are socio-cultural factors implicated in how people from Middle Eastern backgrounds may approach participation in questionnaires, interviews and other forms of data collection. Benstead (2018) argues that there is evidence of respondents tending to default to perceptions of the intended outcomes of the research enquiry. Consequently, there is a need to adopt a more nuanced and context-sensitive stance on data collection and its relationship to research in the Arab world. Benstead's argument may thus explain why the findings of this study and the returning of data might not meet expectations or assumptions. Also, the initial expectations of the researcher were not met because the outcomes for each SDT category seemed very similar when first analysed.

Benstead (2018) notes that researchers working in Middle Eastern countries are adopting increasingly sophisticated approaches to weighting for refusal rates in data collection, particularly among populations with comparatively limited formal education. This is not a phenomenon limited to the Middle East, as identified by Benstead (2018) and others, including Calvo et al. (2019). The latter researchers noted that this is not a consistent or uniform factor. Instead, and similarly to Benstead (2018), it is suggested that there are relationships between socioeconomic background, level of education, and a tendency to self-apply bias

with respect to the assumption of the researchers' preferred outcomes. The implication is that there is a power relationship at play, and that this may have a moderating effect on both research articulation and the truthfulness of responses given (Calvo et al., 2019). The same researchers, though, emphasise that this is not automatic or inevitable for survey respondents.

Gengler et al. (2021), researching in the national context of Qatar, suggest that "generalized attitudes toward surveys affect respondents' willingness to participate both alone and in combination with surveys' objective attributes" (p. 115). The same report also notes a difference in attitude to qualitative data collection involvement between those with an Arab cultural heritage and those without (Gengler et al., 2021). The research evidence here is that while non-Arabs may focus on issues such as the time burden of responding to a survey request and to the cognitive effort required to do so, those of Arab heritage tend to be cautious about surveys and similar research methods as a tool in themselves, and about the possible end uses of the data captured: this impacts on participation and truthfulness (Gengler et al, 2021).

The cultural context for this study suggests that the results obtained in the questionnaire inquiry were explicable in these terms. The conclusion is this: caution towards being surveyed and yielding to a perceived power imbalance to meet supposed research intentions are all factors to consider. At the same time, a number of respondents seemed to talk freely, particularly during the interviews, about the difficulties they faced with e-learning, and some of the power struggles associated with it. This underlines the importance of using interviews as part of a qualitative approach, and not only using questionnaires as part of a qualitative approach.

3.4.4 Justification for Case Study Research

This research includes a case study, since the focus is an emerging Saudi university that introduced e-learning only nine years ago, the same time this research began. Examining e-learning in this university using a case study approach has allowed in-depth data to be collected, providing unique and important in-sights into the adoption of e-learning in Saudi universities in locations outside large cities. In

addition, as there are few studies dealing with this topic in the same study population, the research fills a gap in this area.

The focus of a case study is on "developing an in-depth understanding of a case, such as an event, activity, or process. In education, this often includes a study of an individual or several individuals, such as students or teachers" (Creswell, 2014). Furthermore, Yin (2014) describes the reason for doing a case study thus: " … because you want to understand a real-world case and assume that such an understanding is likely to involve important contextual conditions pertinent to your case" (p. 16). In addition, using different methods as part of case study research provides a clearer picture of what is happening and allows a wider range of issues to be examined (Yin, 2011). Added to that, using several sources, in this case educators and decision makers, ensures several perspectives are considered. However, while there are clear advantages to conducting a case study, it is not possible to generalise the findings based on only one setting, although beneficial information can be obtained which could form the basis of future research or used to inform policy (Yin, 2013). For this study, the context of the target university in KSA meant that socio-cultural factors that impact how people from Middle Eastern backgrounds view the integration of new technology needed to be taken into account.

3.5 Data Collection Methods

3.5.1 Pilot Study

Prior to the main study, a pilot study was carried out. A mixed-methods approach was used in this pilot study, as well as in the main study. Using both qualitative and quantitative methods means that the advantages of both can be combined, and their limitations minimised, as explained above.

3.5.1.1 Quantitative Element: Questionnaire Piloted

For the pilot study, a questionnaire was distributed to 25 educators at the target university. The researcher used personal contacts to find people willing to complete the pilot questionnaire. In order to ensure that a balanced mix of male and female educators was included, faculty members from different colleges were

selected, and the Dean of Education from both the male and female campuses were asked for the contact details of additional members of staff if needed.

The participants completed the questionnaire online. They were asked to give feedback on the questionnaire, for example if any questions or words that were unclear, or any suggestions for improvements. The questionnaire was, therefore, amended based on this feedback; the amended version used in the main study can be found in Appendix 1. Regarding the amendments, there was a change in some of the statements on each section of the questionnaire in order to avoid repetition, so the sentences were made clearer for the reader in Arabic. In regard to TAM, another external factor was added — self-efficacy — because this supports this study in forming a relationship between faculty members' attitudes and the use of the Blackboard system. For example, in the questionnaire items they were asked about the ease of use of the English version of the Blackboard system and how much they were satisfied with using it; most of the participants mentioned that there was no need to use that version as the Arabic one is sufficient. Also, based on the analysis of the pilot study data, a change was made regarding the relationship between the participants' background and demographic features, and their use of the Blackboard system. In addition, it was decided to add more questions on each section based on the participants' feedback to the open-ended questions in the pilot study stage.

To illustrate, changes to the interview questions were as follows: 1- Add questions in the interview with 'decision-makers' about the challenges, solutions, and their plan to develop and facilitate the success of using the Blackboard system in the university. 2- Ask the faculty members about their future expectation regarding using Blackboard. 3- All interview questions will have follow-up questions to give the participants the right to express their thoughts and opinions. Furthermore, 4- create two versions of the interview questions: one for faculty and one for decision-makers.

In addition, changes to the questionnaire were as follows: 1- The researcher added questions regarding how many years they had been in academia, which college they are working at, and how many years they had been using e-learning.

Moreover, the main change in the main study questionnaire was adding self-efficacy as an external factor to the TAM section.

3.5.1.2 Qualitative Element: Interviews Piloted

After the required number of completed questionnaires was returned, the researcher interviewed five of the educators. This was achieved using a semi-structured interview format, and an interview guide with open-ended questions. A semi-structured interview design was used to provide some structure to ensure that the research questions were addressed, but it also provided flexibility so that particular areas of interest could be explored in more detail. Based on the pilot study, a few of the questions in the interview guide were amended; for example, the questions on their attitudes and perspectives on the use of Blackboard system and its tools was changed to include what they were asked to do in their teaching.

3.5.2 Main Study

The method used in the main study was implemented in two stages, beginning with the questionnaire that was distributed to faculty members (with 200 participants / respondents) at the target university, followed by semi-structured interviews with both faculty members and decision makers at the university (14 participants).

3.5.2.1 Questionnaire

The questionnaire was designed and developed starting with the pilot study to test all of the questions and statements, and to obtain feedback from the pilot participants, as described above. Cohen (2013) explains that the development of questionnaires "involves identifying the items for inclusion on the questionnaire, writing and piloting the questionnaire, and making the final adjustments" (p. 120). By using web-based surveys, the researcher could ensure that the questionnaire was convenient for the respondents to use, and it also allowed for more respondents to be reached within a short time (Blackstone, 2018). Moreover, the use of a survey enabled the researcher to understand the participants' perspectives through an analysis of their behavioural, descriptive or preferential characteristics. By collecting data correctly, the researcher attempted to make

sure that the information gathered addressed all the research questions in the study (Creswell et al., 2011). One of the advantages of web surveys is the ability to store all information on a database and to conveniently access and save it as Excel data.

The questionnaire was created using Google Docs, which allowed the researcher to design it and create a link to share it with participants. This software tool served the following functions: 1) building and web-posting the online survey form, 2) automatically uploading participant responses to a web server, and 3) performing some descriptive analysis of data.

The questionnaire was divided into seven sections, and these were placed in the following order (See Table 3.1).

1. Demographic questions and background information.

2. Blackboard functionalities.

3. Challenges with the use of Blackboard.

4. Benefits that support the use Blackboard.

5. Solutions to facilitate educators' use of e-learning.

6. Faculty Members' perceptions of the Blackboard system in the university (using TAM theory ideas).

7. Motivation in using Blackboard (using questions based on SDT).

Variable	Questionnaire Items
1- Demographic information of participants	**1**: 1,2,3,4,5,6,7,8,9,10,11,12,13, 14
2- Blackboard functionalities.	**2**: 1,2,3,4,5,6,7,8,9
3- Challenges with the use of e-learning	**3**: 1,2,3,4,5,6,7,8,9
4- Benefits that encourage the use of e-learning	**4**: 1,2,3,4,5,6
5- Solutions to facilitate educators' use of e-learning	**5**: 1,2,3,4,5,6
6- Faculty members' perceptions of e-learning based on TAM	**6**: (1): 1,2,3,4,5 (2): 1,2,3,4 (3): 1,2,3,4,5 (4): 1,2,3,3,4,5
7- Motivation for the use of e-learning	**7**: 1,2,3,4,5,6,7,8

Table 3.1 The Questionnaire Instrument

The questionnaire includes a combination of statements with tick boxes and Likert scale options with a five point scale from 'Always' to 'Never'. In addition, all of the questionnaire sections end with open-ended questions to give all the participants the option to express their thoughts and opinions (see Appendix,1).

The questionnaire was sent to all faculty members (around 1,702 individuals); 200 faculty members responded and participated in the questionnaire. The questionnaire, along with an information sheet (see Appendix 5) was sent to them using the University's platform (Tayseer), and they were asked to participate by completing the questionnaire via Google Docs. The link to the questionnaire was sent to the participants via the Blackboard system, and an invitation from the Deanship of E-Learning at the University was sent to all colleges. This was the only way to send the questionnaire because the topic of the study is related to the E-learning Department, and this is the process and the required protocol for dealing with the distribution of a questionnaire at the university. It should be noted that as the invitation was from the Deanship, this is likely to have influenced the participants to complete the questionnaire, although it was made clear that their responses would be kept confidential. The link was open to participants for three months, and every two weeks the researcher sent a reminder to encourage the staff to participate in completing the questionnaire.

All of the questionnaire sections were designed by the researcher, and only the sixth and seventh sections were adopted from other researchers in order to ensure the quality of the theoretical questions' items, discussed in the section immediately below.

3.5.2.2 Faculty Members' Perceptions of E-learning Based on TAM Theory

The sixth section focuses on the critical considerations around using TAM and its factors. This section was created by adopting TAM from Fathema et al. (2015), then designing the questions based on the use of the Blackboard system at the target university, starting with how useful it was perceived to be, and how easy to use. Then attitude was added, which is the propensity to behave consistently. Favouring or disagreeing in relation to a given phenomenon can be described as an attitude (Al-alak & Alnawas, 2011; Hussein, 2017). Attitude can also be defined as a collection of trends and emotions that influence a person's decisions regarding people, objects or ideas. According to Teo et al. (2011) it is necessary to research attitude, since it predicts the response of a person to an object. One of the principles on which TAM is based, as discussed in the literature review chapter, is that a technology's perceived utility is dependent on its ease of use

(Davis, 1989). The last section of the faculty members' perceptions of the Blackboard system is about self-efficacy. Self-efficacy refers to beliefs that enable people to be capable of planning and regulating, so that they can carry out the actions essential for achieving the required goals (Bandura, 2006).

3.5.2.3 Motivation for the Use of E-learning

The last section of the questionnaire is related to SDT as a framework for the questions, as this is the most influential model in contemporary behavioural science; moreover, SDT enables researchers to better understand the factors that promote human motivation. The researcher designed the questionnaire based on an academic questionnaire called Academic Self-Regulation Questionnaire (SRQ-A) found at:

http://selfdeterminationtheory.org/self-regulation-questionnaires/#toc-main-questionnaire

(*Self-Regulation Questionnaires (SRQ)*, n.d.), which give access to different questionnaires in regard to self-regulation and self-determination. Ryan and Deci (2000) developed the model for such questionnaires. The questionnaire explores why the respondent engages in a form (or method of) conduct, and then gives several potential explanations for which of the various types of regulations or intentions have been pre-selected. To make sure that the change suited to the use of the Blackboard system in higher education was addressed, the questions were adapted to the context of using e-learning technologies in teaching. Two items that relate to each in the four categories of motivation/regulation: Intrinsic Motivation, Identified Regulation, Introjected Regulation, and External Regulation.

3.5.3 Interviews

Semi-structured interviews with open-ended questions were used to gather in-depth data. This interview format provided some structure to ensure that the research questions could be addressed, but also allowed for some flexibility so that particular areas of interest could be explored in more detail. Berner-Rodoreda et al. (2020), state that "Compared to unstructured interviews, the

interviewer has a greater say in focusing the conversation on issues that he or she deems important in relation to the research project" (p. 21). Furthermore, care was taken not to ask leading questions. Cohen et al. (2017), describe a leading question as "one which makes assumptions about interviewees or 'puts words into their mouths', where the question influences the answer, perhaps illegitimately" (p. 251).

All of the male participants who agreed to take part were interviewed via telephone, whereas female participants were interviewed face-to-face at the university. In qualitative approaches, the telephone as a data collection tool does not need to be consigned as a second-rate tool. Instead, researchers can view the telephone interview as a first-choice alternative. Also, as Lewis-Beck et al. (2003) explain, "In preparing for data collection, the researcher should give thought to the likely circumstances of participants, their possible value systems, and social worlds" (p. 63).

An interview schedule was designed to guide the questions asked during the interviews, and where necessary further questions were asked in response to noteworthy replies (Bryman, 2012). The interview questions can be found in Appendix 2. The interviews were audio-recorded and fully transcribed before in-depth coding was performed, as described in the section on thematic analysis.

The participants were from different departments, and their details and information regarding their age, gender and specialisation, and their characteristics, are presented in Table 3.2.

Participants	Gender	Major	Position	Years of Experience
P.1	M	E-learning	Co-Professor	22 years
P.2	F	Computer and Info sciences	Assistant Professor	8 years
P.3	M	E-learning	Assistant Professor	7 years
P.4	M	Psychology	Assistant Professor	2 years in target university - (13 in total)
P.5	F	Education	Assistant Professor	14 years
P.6	F	English Language	Lecturer	10 years
P.7	F	English Language	Lecturer	10 years
P.8	M	Psychology	Assistant Professor	7 years
P.9	F	Curricula and teaching method	Assistant Professor	5 years
P.10	F	Early Childhood	Assistant Professor	5 years
P.11	F	Special Education	Lecturer	9 years
P.12	F	Accounting	Assistant Professor	3 years
P.13	F	Electrical Engineering	Assistant Professor	5 years
P.14	F	Special Education	Teaching Assistant	4 years

Table 3.2 Participants' Characteristics

There were basic questions for both of the categories as follows:

1 – Demographic information.

2 – The participant's years of teaching in the university and their experience with the Blackboard system.

The following is a list of the main areas discussed based on the interview questions for decision makers:

1 – The development of the use of the Blackboard system.

2 - Common problems faculty members face using Blackboard

3- The most beneficial solutions and guidance that can help overcome the difficulties faced by faculty members.

4 - Future aspirations regarding the use of the Blackboard system.

The following is a list of the main areas discussed based on the interview questions for faculty members:

1 - The development of the use of the Blackboard system and their perspective regarding its status.

2 - How they see the Blackboard system improves the quality of education at target University.

3 - The challenges they face while activating the system and how these problem can be solved.

4 - Factors that motivates you as a lecturer to use Blackboard tools in your education

5 - Their comments about the training they received.

They were then asked if they wanted to add any more information and any recommendations.

3.5.3.1 Research Sample, Participants and Procedure for Questionnaires

The target population for this study was decision makers and faculty members from four departments within the College of Education at the target university, Saudi Arabia: 1 – The Science College, 2 – The Health College, 3 – The Social Science College, and 4 – The Community College. In addition, each college has its own departments or branches. The participants were both male and female academics, based on their positions, be they Professor, Associate Professor, Assistant Professor, Lecturer (Master's degree holders), or Graduate Teacher Assistant (Bachelor's degree holders). At the time of this information was accessed (November 2019), the university database showed that the total number of potential participants was 1,702 faculty members, all of whom were working at the university. Among the 1,702 were 1,014 males and 688 females. A total of 372 of the faculty members were outside of Saudi Arabia pursuing academic study. They were either studying a for Master's or a PhD degree, and because of that they were excluded from the study as they did not receive the questionnaire link from the Graduate Studies Committee responsible for coordinating the publication of the questionnaire link.

200 questionnaires were completed and returned after distribution (as explained above). As Creswell et al. (2011) state, "The sample size needed for a rigorous quantitative study is typically quite large. The sample needs to be large enough to meet the requirements of statistical tests" (p. 175). Following the return of the questionnaires, potential participants for interviews were approached based on their differing demographics and experience to ensure that the sample was multidisciplinary, and they varied according to nationality, age and experience, cultural background and experiences. In this way, purposive sampling was used to "intentionally select individuals and sites to learn or understand the central phenomenon. The standard used in choosing sites and their participants is whether they are 'information rich'" (Patton, 1990, p. 169). Fourteen participants were interviewed (11 educators and 3 decision makers), not including the pilot study.

3.5.3.2 Researcher's Role in the Interviews

Key to a successful interview is the interviewer's ability (Wengraf, 2001). During the interviews, the researcher aimed to help the participants to elicit more in-

depth answers and to express themselves in a way that they could say what they wanted in the way they felt most confident. For example, participants were always asked, “Can you provide an example?”, “Can you tell me more?” and, “How does this affect your work or use of the Blackboard experience?” The researcher attempted to encourage participants to share their ideas and point of view as they wanted so as not to influence their responses. Even if they took a lot of time to say what they wanted, this allowed the researcher to gain more in-depth information, as explained by Neill (2013). The structure of the interview was explained at the beginning of the interviews, with participants being asked to read and sign the consent form, as well as being asked whether they had any questions.

Attempts were made to address any possible negative consequences of the interviews by following Gillham (2005), whose work has established guidelines that allow the researcher to conduct compelling and effective interviews. First of all, Gillham (2005) suggests ensuring that the interview participant feels confident and secure. This is achieved by providing the participants with a quiet, relaxed and private place to conduct the interview. Therefore, to help ensure participants were comfortable with the environment, the (in-person) interview sites were located in the university. Secondly, the researcher attempted to build a relationship with the participants so that any anxiety or hostility could be addressed (Neill, 2013). Thirdly, during the interview, the researcher tried to clarify the research issues if necessary (Gillham, 2005).

There was a constructive beginning involving the issues around learning management systems (LMSs). The initial questions asked of the interviewees prompted them to discuss themselves and their backgrounds. The participants were also advised about the key issues that would be discussed (Harrell & Bradley, 2009). By starting in this way, the researcher gave the time and opportunity for the participant to share information that led on to the main topic and provided more chances to explore the key questions. The researcher encouraged the discussion of topics and issues that could later be put to decision-makers regarding the most crucial matters, as well as those points emerging during interviews with faculty members.

3.6 Ethics

Ethical approval was obtained from the College of Social Sciences, University of Glasgow (College Ethics Committee for Non-Clinical Research Involving Human Subjects Application No: 400170193) (See Appendix 4). Since this research deals with human participants a number of ethical issues were given consideration. For example, consent was sought from the target university to conduct the study, and then permission obtained from the Education Department to contact educators at the university (See Appendix 3). The participants were asked to sign an informed consent form (See Appendix 6), having explained the purpose of the research and informing the participants that their participation is voluntary and that they may withdraw at any time by providing the information sheet (See Appendix 5). They were assured that their identities would be kept anonymous (code numbers have been used for the participants), and that the information from the study would be kept in a secure location (in a password-protected file on the researcher's computer).

3.7 Approach to Quantitative Analysis

3.7.1 Quantitative Analysis and Descriptive Statistics

Statistical analysis of the 200 questionnaires was conducted using Statistical Package for Social Sciences (SPSS) software. Totals, percentages and proportions were used to answer sections and questions (1-7) and these have been displayed as a graph as part of the descriptive analysis. Regarding sections six and seven, a deeper descriptive analysis was done to enable the researcher to determine, with confidence, which factors are most important, which factors can be overlooked, and how each one influences the other.

3.7.1.1 The Questionnaire SPSS: Reliability

Reliability refers to the "reliable and secure existence of a research method" (Paler-Calmorin and Calmorin, 2007). To check the reliability of this study, Cronbach's Alpha (Cronbach, 1951) was used. This is frequently used to measure the internal accuracy of testing methods (Cronbach, 1951). Cronbach's Alpha was calculated for each scale to ensure the item's internal consistency.

Scale	Number of items	Cronbach's Alpha
Blackboard Functionalities	9	0.753
Challenges of Blackboard Use	9	0.864
Benefits of Blackboard Use	6	0.904
Solutions to E-learning Use	6	0.765
Perceived Ease of Use	5	0.747
Perceived Usefulness	4	0.954
Attitude	5	0.826
Self-Efficacy	5	0.839
Motivation	8	0.744

Table 3.3 Questionnaire Cronbach's Alpha Value

Regarding Bland and Altman (1997), who stated that reliable questionnaires providing consistent information include the calculation of the coefficient alpha (Cronbach's Alpha). Reliability is the degree to which an assessment consistently measures whatever it is measuring. Using Cronbach's alpha, the reliability coefficient values were high and acceptable, based on the criterion 0.70 (Bonett & Wright, 2014). All of the scales were higher than 0.73.

3.7.2 Approach to Qualitative Data Analysis

The first stage of the analysis was transcription and translation of the interviews, with the main focus for the study involving the production of a full English version of the interviews. The translation stage takes time because it is important to make

sure that the data does not lose its meaning and the value of the Arabic language data and most of the participants' responses. The researcher and the supervisors agreed to translate 5 complete transcripts from Arabic to English, with the remainder analysed in Arabic, and only relevant passages translated. This would enhance the credibility of the analysed data with the themes and features identified when analysing, as well as to present some interviews in English to facilitate the communication of ideas between the researcher and supervisors. Furthermore, 9 of the interviews were analysed in the original Arabic language, because "translation is an interpretive process and not merely a direct message transfer from a source language to a target language" (Al_Amer, 2016, p. 150). Thus, conducting the analysis in the original language ensured that the meaning was not lost and that the cultural nuances and terminology remained intact (Smith et al., 2008; Van Nes et al., 2010).

In addition, it was necessary to apply the inter-rater reliability and calculate Cohen's Kappa using SPSS on one of the interviews. The researcher and supervisors analysed and coded the themes for both inductive and deductive analysis for one of the interview transcripts. In this way, the supervisors were able to ensure that the researcher captured the right themes from the right data because the supervisors asked the researcher to clarify the meaning of specific words and sentences and the reasons for choosing the data for specific themes.

3.7.3 Method of Thematic Analysis

Thematic analysis is "a method for systematically identifying, organizing, and offering insight into patterns of meaning (themes) across a data set. Through focusing on meaning across a data set, thematic analysis allows the researcher to see and make sense of collective or shared meanings and experiences" (Braun & Clarke, 2012, p. 57).

The thematic analysis process is appropriate for the examination of data in order to extract information to determine the relationship between variables and compare different evidence sets that are relevant to different situations in the same study. Thematic analysis enables both inductive and deductive methodologies to be used. A hybrid approach to thematic analysis has been used

in this study by searching for both data-driven codes and theory-driven codes. This involved combining an inductive and a deductive approach to analyse the data obtained. The inductive aspect of the data analysis involves searching for codes in the participants' responses (Saldaña & Omasta, 2017), whereas the deductive approach involves applying the aforementioned models to the data collected (Self-Determination Theory and TAM). Guidelines on thematic analysis from a data-driven perspective are provided by Braun and Clarke (2012). This involves the following six stages for the inductive part of the data analysis based on (Braun & Clarke, 2012):

1) Familiarising oneself with the data

This requires being fully immersed in the interview data and reading the interview transcripts over and over, making notes on them and focusing on interesting points for analysis.

2) Generating initial codes

Systematic analysis of the data was undertaken by examining it to discover and identify codes. The data was highlighted and underlined until a list of codes was produced. In some cases, the codes were combined to provide an overarching code, and in other cases one code fitted into several categories.

3) Searching for themes

After the codes were generated they were examined to search for themes related to the research questions, as advised by Braun and Clarke (2012). This process involved taking similar codes and overlapping data, categorising them into themes or sub-themes, then exploring different combinations until clarity was achieved. The themes were written into a table with the data on each theme organised under the relevant heading.

4) Reviewing possible themes

The themes from the previous stage were checked to make sure the data extracted accurately reflected the themes they were placed under; some of the data was thus moved or merged until a complete dataset with themes was achieved.

5) Defining themes

All of the themes were placed under a descriptive but succinct heading and checked to ensure they matched and could be properly related to the research question. Then, extracts that best reflected the corresponding theme were chosen for further analysis, according to their relevance, and linked to the research question and similarity to the literature.

6) Producing the findings

The themes were laid out in a clear order to aid presentation of the findings, which could then be written up and analysed (Braun & Clarke, 2012). The final analysis pertains to writing out the stories told, these being the product of prolonged data immersion, deep thinking and reflection (Braun & Clarke, 2012).

Thematic analysis, as described by Braun and Clarke (2012) involves an inductive approach to generating themes from the data. However, according to Xu and Zammit (2020), it is also helpful to approach data analysis from a deductive perspective by taking into account prior theories, even in regard to qualitative data; this is called a hybrid approach. This is also described by Fereday and Muir-Cochrane (2006) as a form of analysis guided by the initial codes but not confined by them; that is, inductive codes can be assigned to sections of the data that present a new theme, whereas deductive codes can be applied to relate the data to theory. Hence, the method used in applying the data analysis of this study — a thematic analysis approach — involved codes that were both theory-driven and data-driven. Thematic analysis is used widely in healthcare, psychology and beyond as a qualitative analytical method. However, the procedure for analysing data, especially in the education sector, are often shown with few details.

Regarding Xu and Zammit (2020), special attention has been paid to thematic analysis' inductive and deductive coding and theme development. Using a bottom-up and top-down strategy for the identification of themes, codes were driven both by data itself (inductive coding), and by theories (deductive coding) that can be used to construct codes (DeCuir-Gunby et al., 2010).A combination of inductive and deductive coding reveals a balanced, all-encompassing perspective of the data.

Crabtree & Miller (1999) describe the use of a deductive approach to coding based on theory, which involves applying another person's theoretical framework(s) to the coding process. Thus, the data has been examined to look for codes that align with SDT and TAM. Moreover, it is essential to mention that there was less evidence of TAM theory in the qualitative data in terms of perceived usefulness and perceived ease of use, or where this was present, it was better captured by SDT or inductive themes. However, the 'attitude' part of TAM was strongly present in the qualitative data. An example of deductive coding being applied to SDT is shown below in Table 3.4.

3.7.4.1 Deductive Codebook: Coding template/manual

1. The code label or name. 2. The definition. 3. Example.

Code	Label	Definition: these were based on (Ryan et al., 2020) as source	Example
1	External Regulation	Concerns behaviours driven by externally imposed rewards and punishments, and is a form of motivation typically experienced as controlled and non-autonomous.	1. Staff assessments increase the pressure on them. 2. When more students thanked me and praised the content and my lecture, they felt the difference or sensed the interaction.
2	Introjected regulation	Concerns extrinsic motivation that has been partially internalized; behaviour is regulated by the internal rewards of self-esteem for success and by avoidance of anxiety, shame, or guilt for failure.	1. If the students expressed that the professor has positively interacted with, it is a motivating point.
3	Identified regulation	The person consciously identifies with, or personally endorses, the value of an activity, and thus experiences a relatively high degree of volition willingness to act.	1. Support my educational method by that tool and significantly support the interaction with my students.

Table 3.4 Deductive Codebook

The Table above is an example of a deductive codebook related to Self-Determination (examples from P.4 interview), and definitions were taken directly from Ryan et al. (2020, p. 61).

3.7.4.2 Intercoder Reliability (ICR)

The inter-coder agreement was tested, which is essential if one researcher is doing the coding to ensure that that the data is coded honestly and accurately (Campbell et al., 2013). In other words, another coder should be able to find the same codes, and in this way intercoder reliability is tested and attained (Campbell et al., 2013). For this reason, Cohen's Kappa was applied to check for ICR using SPSS software. This was done by working with the PhD supervisor and agreeing to code one of the interviews. According to O'Connor and Joffe (2020), if the ICR is concerned with enhancing the coding framework, it is critical to assess reliability at the coding level in order to identify any codes that may need refining. Also, the use of Cohen's Kappa can support the coding process from several other aspects by ensuring it is conducted systemically, and by improving communicability and transparency.

This peer was chosen due to having experience of teaching within a higher education setting and being a PhD supervisor. Together, they conducted an initial reading of the transcript and underlined the points (codes) they found to be important and of interest. It was confirmed that these points were also discovered by the researcher and included in their list of codes. There were only minor differences in the coding. After discussing this and noting the importance of various types of motivation, the researcher's codes were used.

As part of the interpretation of the qualitative data gathered during the study, the researcher and the supervisor then applied Cohen's Kappa as a test to one of the interview transcripts translated into English. Campbell et al. (2013) claim "It is acceptable to assess intercoder reliability on a sample of the texts to be analyzed," (p. 300).

1 –The results have been interpreted based on the most commonly used statistical tests of ICR, as the results need to be presented on a scale between −1 to +1, with figures closer to 1 indicating greater correspondence. (Neuendorf, 2002) explains

the ‘rules of thumb’ that remain for interpreting ICR values, noted as ICR figures over 0.9 are accepted by everyone; 0.8 is considered acceptable by the majority, but there is substantial debate about figures below that 0.8. Researchers always rely on the recommendation of Landis and Koch (1977) to consider results below 0 as unfavourable, between 0 and 0.20 as weak, 0.21 to 0.60 as moderate, 0.61 to 0.80 as substantial, and 0.81 to 1 as virtually perfect agreement.

In this test, the measure of agreement for Kappa was = .812 which means that it is (0.81 to 1 as nearly) which is in close agreement (see Table 5).

Symmetric Measures

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Measure of Agreement	Kappa	.812	.098	5.901	.000
N of Valid Cases		25			

Table 3.5 The kappa values based on SDT analysis themes

3.8 Summary

This chapter discussed an appropriate methodology for this thesis. A mixed method approach was identified as a suitable research strategy for answering the research question, and the research methodology was designed to identify the essential aspects that influence the adoption of e-learning in Saudi Arabia’s universities. This chapter has highlighted the design followed by this research to meet the research aim and objectives. As mentioned above, data was collected using different techniques such as questionnaires and interviews. This chapter concluded with a brief discussion of the evaluation criteria for the research’s credibility. The next chapter presents the quantitative findings.

Chapter 4 Quantitative Findings

4.1 Introduction

This chapter presents the findings derived from analysing the quantitative data collected via a questionnaire in relation to the use of the Blackboard system by faculty members at a Saudi University. 200 completed questionnaires were obtained. The questionnaire was designed to answer the research questions.

The chapter starts with a reliability analysis. The second section is about the demographic information, followed an analysis of the use of Blackboard functions. To accomplish the purpose of this chapter, it was essential to consider the findings related to the motivational factors based on SDT. The last section is related to TAM factors regarding the use of the Blackboard system and to what extent the faculty members perceived the system's usefulness and ease of use.

4.2. Demographic information

4.2.1 Age

The frequency distribution of the 200 participants' ages is presented in Figure 4.1.

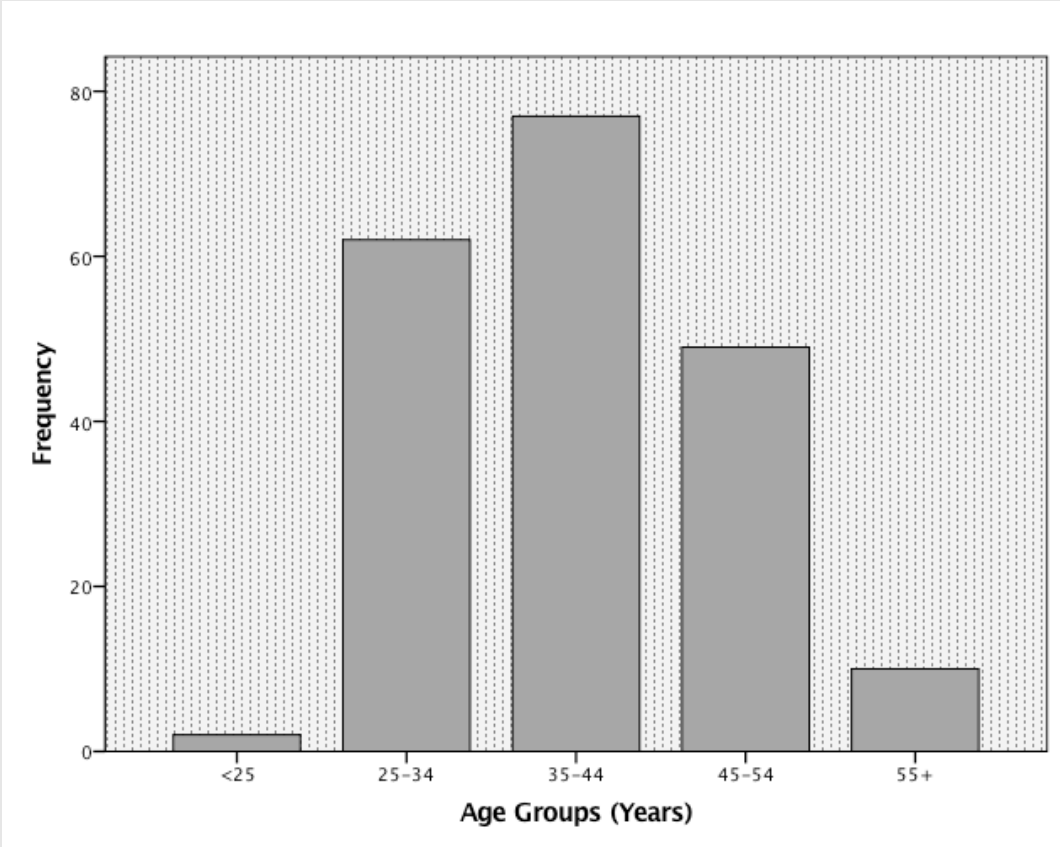

Figure 4.1 Age groups of respondents (n = 200)

The results from 200 responses show that the largest age group (38.5%) was the 35-44 year-old group, followed by the 25-34 year-old group (31%), and the 45-54 year-old group (24.5%). Considerably fewer faculty members were aged 55 or above (5%). The number of participants aged below 25 was 2 (1%). Thus, about 94% of the participants fell into the 25-54 age group. This is in line with administrative records regarding employees in the overall Saudi Arabian labour market in 2018, which show that the majority of employees were aged between 25 and 49 years.

4.2.2 Gender

The gender composition of the participants is shown in Figure 4.2.

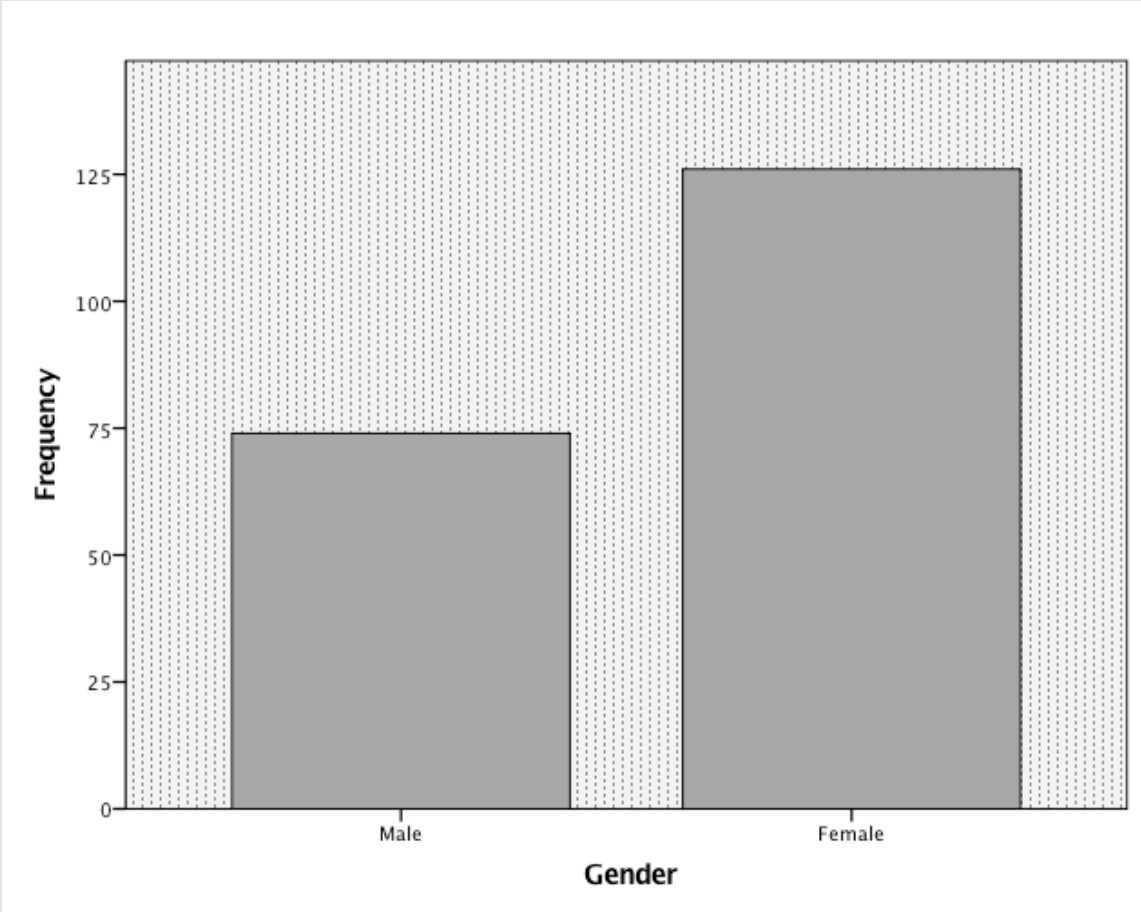

Figure 4.2 Gender of respondents (n = 200)

The above figure shows that 63% of respondents were female and 37% were male. This result reflects the trend for women to dominate the higher education sector in Saudi Arabia. Based on the KSA 2030 vision, many jobs and specialities are now available to women in higher education and the Ministry of Education in Saudi Arabia. In the past, such jobs were not available to females; they tended to be offered to males or non-Saudis. According to the Education at a Glance 2017 OECD Indicators, "More women in Saudi Arabia are entering tertiary education, although current levels are still low. In 2015, 46% of new entrants into tertiary education were women compared with an OECD average of 54%.". We are now seeing a revolution in education and all aspects of the job market in Saudi Arabia. This situation is expected to contribute to long-term improvements and is part of achieving the 2030 Vision.

4.2.3 Nationality

The break-down of the 200 participants into Saudi or non-Saudi citizens is presented in Table 4.2.

	Number of Participants	Percent (%)
Non-Saudi	104	52.0
Saudi	96	48.0
Total	200	100

Table 4.1 Nationality of the participants

The participants in this research were asked to indicate their nationalities. Non-Saudis (52%) were marginally higher in number than Saudis (48%). Jobs which require higher skills are generally performed by expatriates. Foreign workers tend to have further teaching qualifications and more modern methods of teaching than Saudi nationals. However, a major transformation is underway aimed at upgrading the skills of Saudis through 'Saudisation' programmes that are intended to reduce the dominance of non-Saudis, even in such specialised jobs as teaching. These initiatives explain the very small difference between the two groups. Over time, the education system is expected to improve further and enable Saudi faculty members to be more aware of new technological trends, thereby reducing the country's reliance on non-Saudis.

4.2.4 Academic Qualifications

The academic qualifications of the 200 participants are shown in Tables 4.2.

Academic Degree	Number of Participants	Percent (%)
Bachelor's	11	5.5
Master's	52	26
Doctoral	137	68.5
Total	200	100

Table 4.2 Highest qualification of participants

The participants were asked about their level of education. Most participants (68.5%) held doctorates, while only 5.5% held bachelor's degrees, and 26% held master's degrees. This reflects the general trend in academia for jobs to require qualifications higher than master's level. This can be seen in Figure 4.3 below.

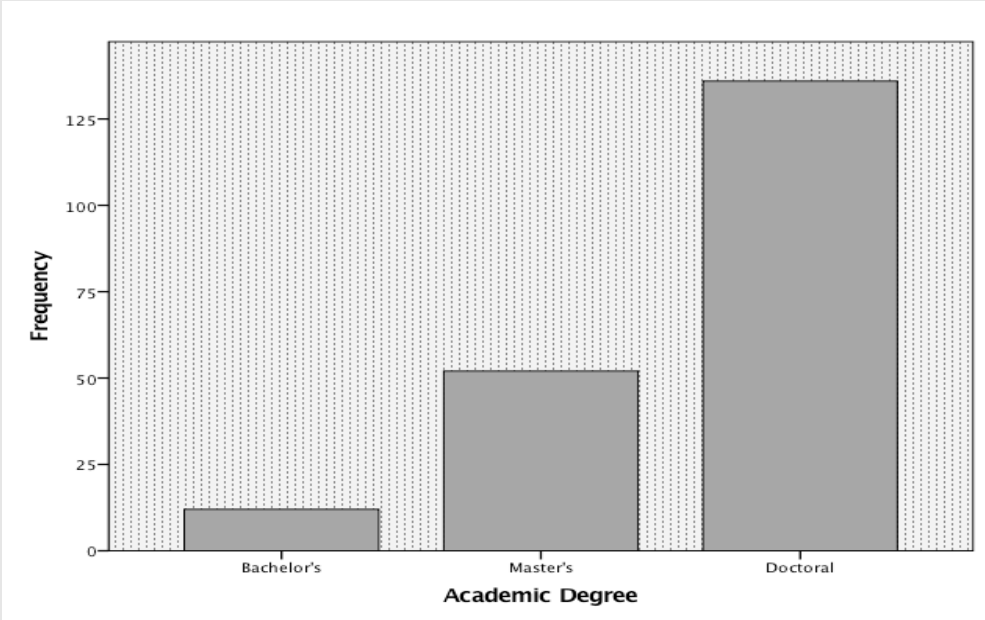

Figure 4.3 Highest academic qualification

4.2.5 Position

The academic positions of the 200 participants are shown in Table 4.4.

	Number of Participants	Percent (%)
Professor	8	4
Associate Professor	15	7.5
Assistant Professor	114	57
Lecturer	37	18.5
Teaching Assistant	21	10.5
English Teacher	5	2.5
Total	200	100

Table 4.3 Distribution of participants by academic rank

The participants were asked about their academic position. Usually, a higher academic qualification leads to a higher position in the academic world. Those with doctoral degrees can hope to start as lecturers or assistant professors. Among the 200 participants, about 57% were assistant professors, and about 18.5% were lecturers. The frequencies of associate professor and professor were about 7.5% and about 4%, respectively. Only 8 of the 200 participants were professors. These data must be interpreted with caution, given the low number of professors among the study participants. It may be due to the fact that professors often lack the time or are less willing to participate in questionnaires. There were, however, 21 teaching assistants; these individuals are often master's degree holders enrolled as PhD students. Therefore we might expect faculty members of a higher academic rank to be more ready to engage in e-learning as they are likely to have encountered the use of the technology during their learning and teaching experiences. Also, their attitudes regarding the role of technology in supporting

communication with other colleagues and students might be more positive than among those with lower academic qualifications.

4.2.6 Completion of Master's Degree

In this section, the participants were asked to clarify whether they had obtained a master's degree in Saudi Arabia or abroad. The locations of the participants' master's study are indicated in Table 5. The purpose of obtaining this information was to uncover whether or not study location affected participants' previous experience of using technological tools in their studies. Faculty members who have completed their academic studies abroad tend to use many more technological platforms than those who have studied in Saudi Arabia, as the latter still tend to use traditional ways, unless their specialisation specifically requires more modern methods.

	Number of Participants	Percent (%)
Saudi Arabia	54	27.0
Abroad	135	67.5
Not holding a master's degree	9	5.5
Total	200	100

Table 4.4 Distribution of participants in terms of location of master's degree study

As shown in the table above, 67.5% of the participants completed their master's degree studies outside of Saudi Arabia, while 27% stayed within KSA to pursue their master's degrees. The remaining 5.5% had not yet completed their master's studies. Reading this result together with nationality frequencies shown in Table 4.2, it can be seen that most of the 135 participants who obtained their master's degrees abroad were non-Saudis. Similarly, most of the respondents who held doctoral degrees obtained them overseas, as shown in Table 4.6. Hence, most are likely to have used technological tools.

4.2.7 Completion of Highest Academic Degree

	Number of Participants	Percent (%)
Saudi Arabia	22	11.0
Abroad	115	57.5
Not Holding a Doctoral Degree	63	31.5
Total	200	100

Table 4.5 Distribution of participants by completion of doctoral degree in Saudi Arabia or abroad

The participants were also asked about the location of their doctoral studies to uncover whether pursuing a doctorate inside or outside of Saudi Arabia affects the level of LMS use. The number of participants who did not hold doctoral degrees was 63 (31.5%), and the total number of completed doctorates was 137 (68.5%). Of the latter, 11% of the participants completed their doctoral degrees in Saudi Arabia, while 57.5% completed theirs outside the country. Unsurprisingly, the number of participants who completed their master's degree was higher (189) than the number of participants who completed their PhD studies (137).

4.2.8 Duration of Teaching Experience at the Target University

The amount of teaching experience at the target university varied significantly among the 200 participants, as is evident from Figure 4.4.

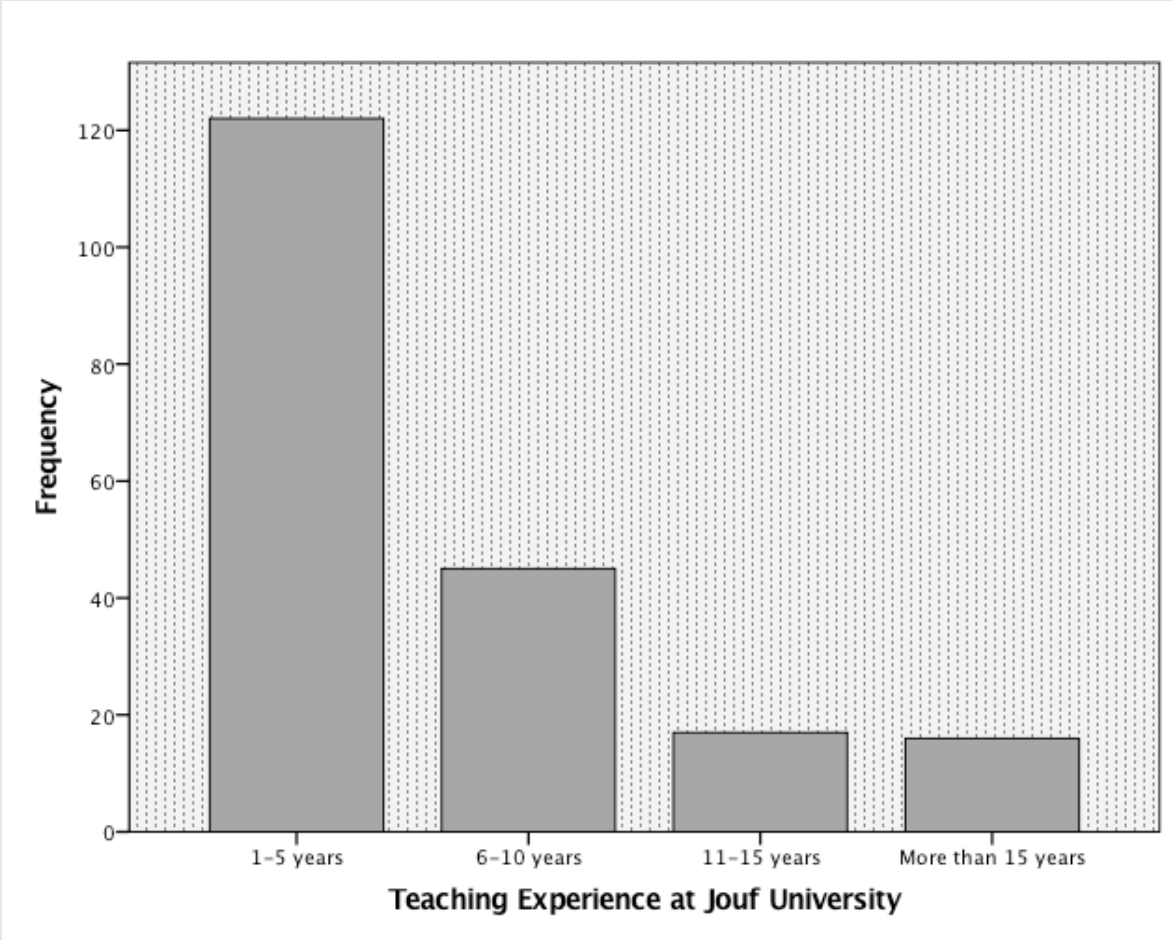

Figure 4.4 Respondents' teaching experience at the target university (n = 200)

The majority of participants (122) had 5 years or less experience of teaching at the target university. The next largest group (45) had between 6 and 10 years of experience, followed by 17 with 11-15 years, and 16 with more than 15 years.

This finding suggests that there were many academic staff who were newly hired at the target university. These people may have been working as teachers in schools before obtaining a master's degree that would make them eligible to work at the university. Another possible reason for the large number of inexperienced teachers is that the university was expanding due to the addition of more colleges

and specialisations, which requires more faculty members. Moreover, every year there are scholarship students who graduate abroad and return to their previous jobs or start new jobs. Since 2010, the number of scholarships has been increasing in Saudi Arabia. This all contributes to explaining why the 1-5 years of experience group was the largest. This data is useful for identifying whether different levels of teaching experience may be related to LMS use, given that less experience often equates to lower salaries, less confidence, and less job security.

4.2.9 Number of Courses Taught Each Year

The frequencies relating to the number of courses taught each year by the 200 participants are presented in Figure 5. Among the participants, by far the largest group (43%) taught 4-6 courses. The next largest group, around half the size, taught 1-3 courses; followed by the group teaching 7-9 courses (around 20-25% each); and, lastly, there was a group teaching over nine courses (12.5%). Although it may appear that teaching more courses provides greater and varied opportunities for the participants to use Blackboard in different ways, too many courses can increase staff workload to the extent that the faculty concerned are not able to focus on using Blackboard.

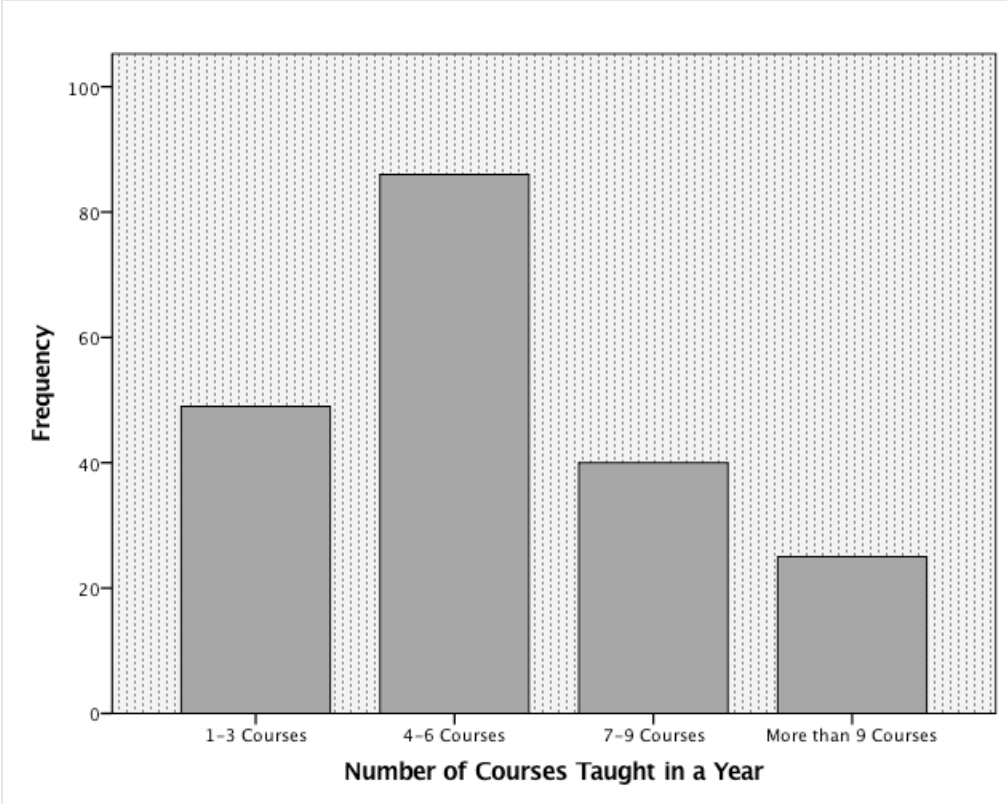

Figure 4.5 Number of courses respondents teach in a year (n = 200)

4.2.10 College

The participants were also asked to indicate which colleges they taught at. Figure 4.6 shows the distribution of the participants among the different colleges. The largest group of participants (35) was in the College of Education, followed by 32 in Science, 30 in Science and Arts at Tabrjal, 22 in Applied Medical Sciences, and 20 in Arts. Very few worked in those colleges covering business management, computer and information sciences, engineering, medicine or pharmacy. The lowest number of participants worked in dentistry (1) and medicine (2). This information demonstrates that the more one's specialisation is theoretical and related to the humanities, the more frequent one's use of technology. Similarly, the more one's specialisation is practical and relies on science and laboratories, the less use one has to use Blackboard and its tools. This explains the low participation of scientific departments in studies related to the use of technological tools. This data gives an in-depth picture of how Blackboard tools were adopted in different colleges and departments of each discipline.

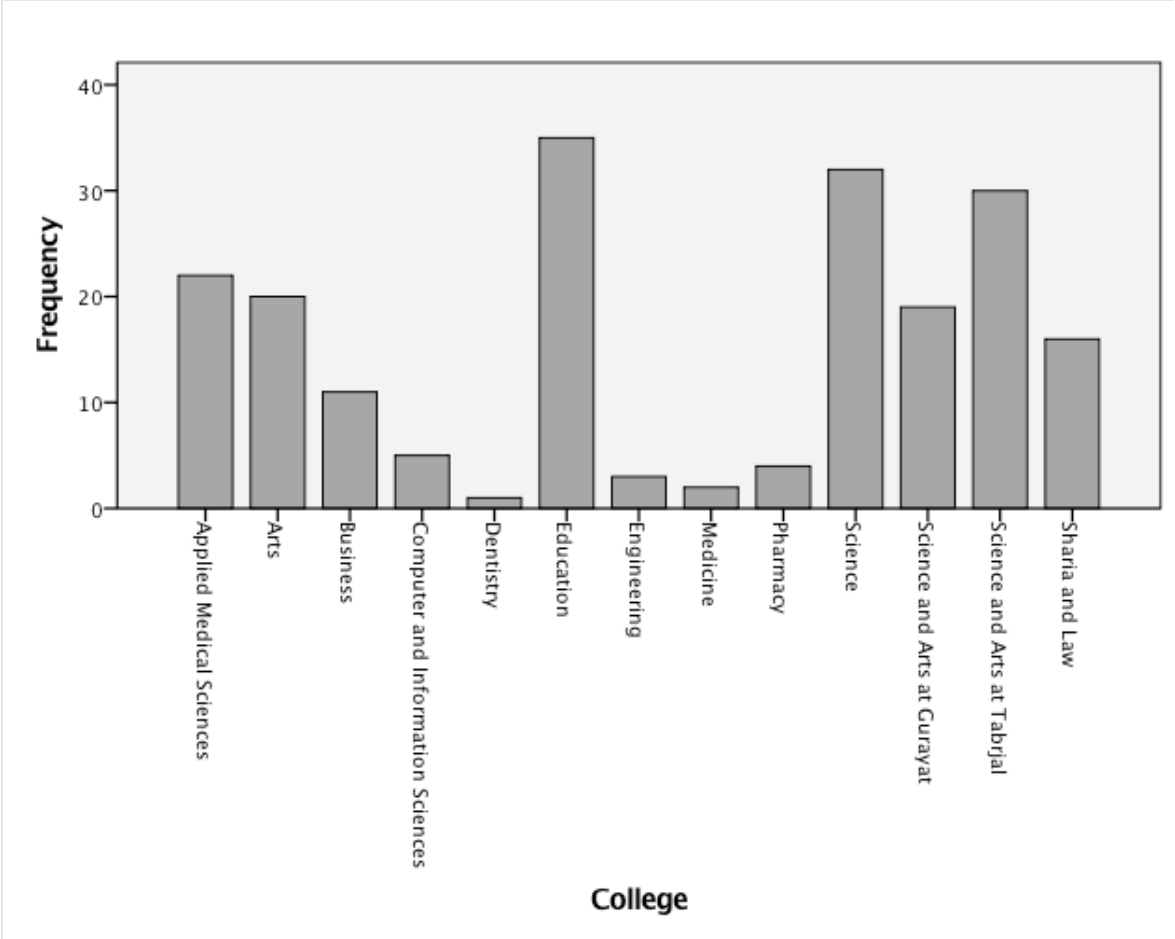

Figure 4.6 Colleges in which the participants are teaching (n = 200)

4.2.11 Years of Teaching with Computers

Technology plays an important role in higher education and in any learning environment. The introduction of the Blackboard system has affected learning environments and teaching methods at the target university. In order to collect valuable data about the use of technology in teaching among the faculty members, it was crucial to investigate the participants' experience of teaching using computers. The participants were asked to specify the number of years they had been using computers in their teaching. This question was designed to contribute to an understanding of the faculty members' experience of using LMSs. Their teaching experience with computers is presented in Figure 4.7. The distribution of the participants' experience of teaching with computers was relatively even between three durations: 69 participants had less than 5 years' experience, 65 had 5-10 years' experience, and 66 had over 10 years.

This data indicates that the faculty members had mostly used computers throughout their entire teaching experience. It should be noted that this use of computers refers to usage of essential software rather than to a specific platform, such as Blackboard. Also, it is necessary to highlight that this data does not contradict the data regarding participants' experience of teaching at the target university, as this data considered teaching experience from two aspects:

1 — Any previous teaching experience in a different university (there were many faculty members in the target university who were Saudis working at another university). Also, non-Saudi academic staff had worked in their native countries before being hired by the university.

2 — Faculty members who had been schoolteachers before gaining master's degrees and moving to teach at the university.

Finally, it was found that the more experience the participants had of the many aspects of teaching using technological tools, the more they accepted using modern and advanced tools such as the Blackboard system.

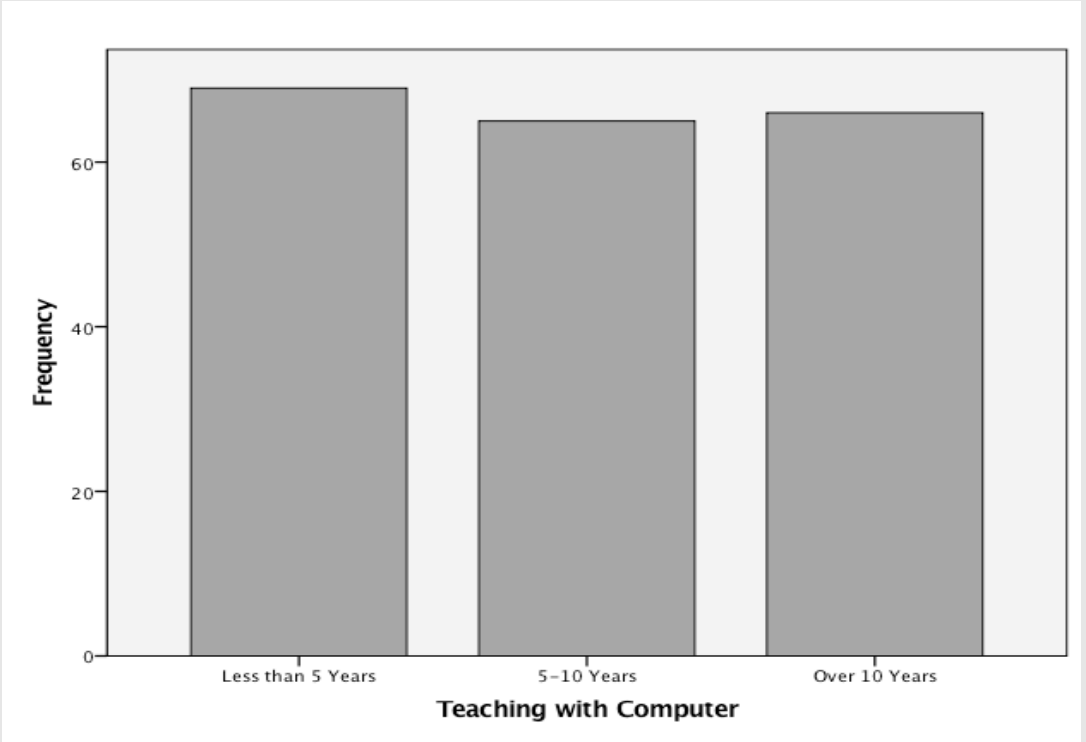

Figure 4.7 Participants' experience of teaching with computers (n = 200)

4.2.12 Number of Training Courses on Blackboard

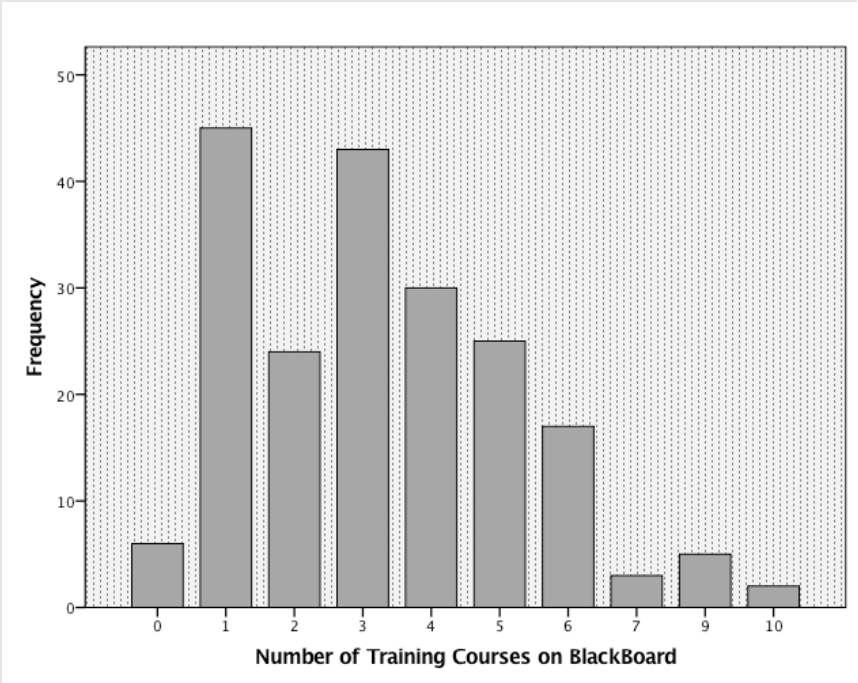

Figure 4.8 Number of training courses attended by respondents (n = 200)

As shown in Figure 4.8, participants were asked about the number of training courses on the use of Blackboard they had taken . The data show that the largest group of participants had attended 1-3 training courses (56%). Those taking 3-5 courses represented 83.5% of the participants. These findings shows that the faculty members had all taken at least the required introductory training course, or a course on the topics they would need for using the Blackboard system. Moreover, faculty members attended the compulsory courses and those relating to what they would need for their own teaching using the Blackboard system. However, a lack of time and topic availability restricted their attendance at more courses, which explains why relatively few participants had taken more than 5 courses.

4.2.13 Participants' Experience Using Blackboard

In this case, the term 'experience' refers to experience of using the Blackboard system at the target university and the ability to use its tools in one's teaching. The participants in the study were asked to specify whether or not they had

experience using Blackboard. The results show that the vast majority (192) had experience using it. Only eight had none. Hence, it is evident that the Blackboard system was already to some extent established at the target university. This result may have been influenced by the fact that the use of the system was mandatory at the university. See Figure 4.9.

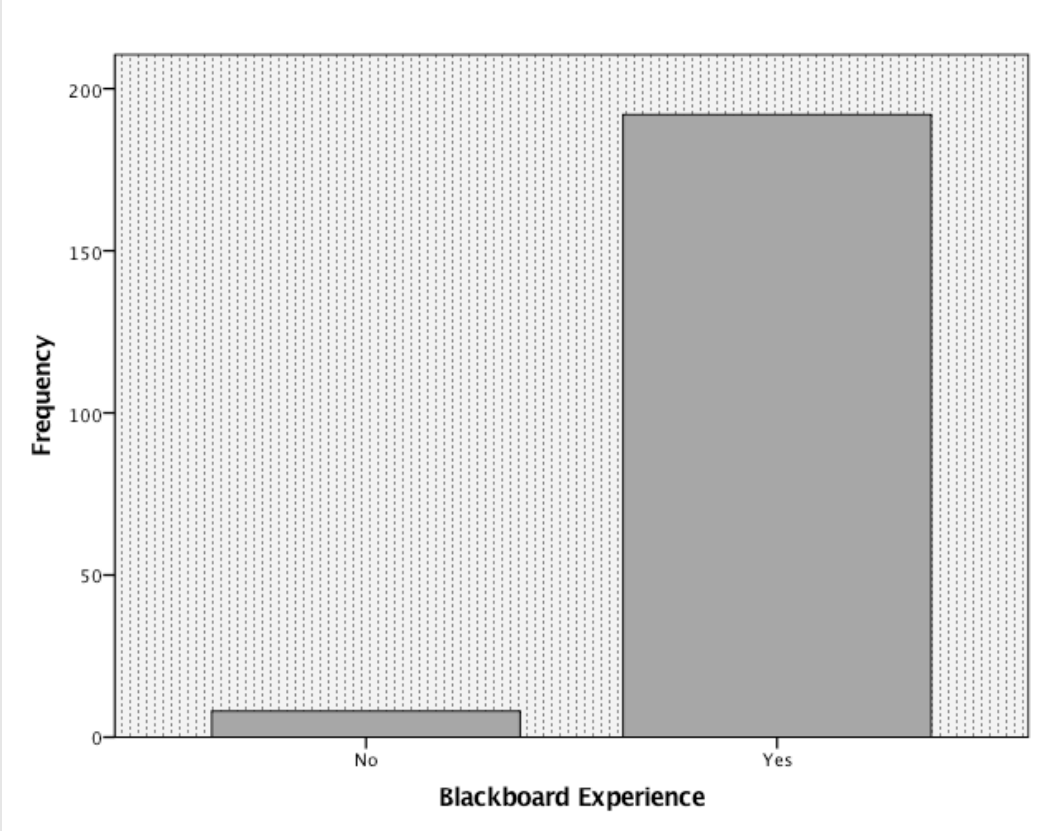

Figure 4.9 Respondents' experience of using Blackboard (n = 200)

4.3 Blackboard Functions

The research participants were asked about which Blackboard tools or functions they used most in their teaching (see Table 4.7). Also, this section represents Blackboard functions and all related aspects of the challenges, solutions and benefits of using it, as well as how this topic related to the activation of the system.

Blackboard Tools	Always	Very Often	Sometimes	Rarely	Never
Virtual Classrooms	**34**	**48**	**77**	**36**	**5**
	(17%)	(24%)	(38.5%)	(18%)	(2.5%)
Create Assignments	**124**	**47**	**21**	**7**	**1**
	(62%)	(23.5%)	(10.5%)	(3.5%)	(0.5%)
Discussions Panel	**81**	**56**	**46**	**12**	**5**
	(40.5%)	(28%)	(23%)	(6%)	(2.5%)
Blackboard Mobile	**28**	**24**	**59**	**55**	**34**
	(14%)	(12%)	(29.5%)	(27.5%)	(17%)
Students Assessment Records	**98**	**41**	**47**	**11**	**3**
	(49%)	(20.5%)	(23.5%)	(5.5%)	(1.5%)
Email	**59**	**39**	**57**	**26**	**19**
	(29.5%)	(19.5%)	(28.5%)	(13%)	(9.5%)
Electronic Tests	**15**	**31**	**43**	**39**	**72**
	(7.5%)	(15.5%)	(21.5%)	(19.5%)	(36%)
Provide Students with Links	**50**	**45**	**65**	**33**	**7**
	(25%)	(22.5%)	(32.5%)	(16.5%)	(3.5%)
Your Academic Advisor	**92**	**63**	**27**	**9**	**9**
	(46%)	(31.5%)	(13.5%)	(4.5%)	(4.5%)

Table 4.6 Participants' use of Blackboard tools

As shown in Table 4.7 , the most common function of Blackboard (171 of the 200 participants) was to create assignments. This result was confirmed by the proportion of participants responding that they used it 'always' or 'very often'. The high use of this tool indicates that the faculty members found it useful in their

teaching as a means of following up with students and giving out assignments in a non-traditional way. The next most commonly reported uses of Blackboard were for keeping student assessment records (139 out of 200), and the academic advisor function (155 out of 200). These three functions were used by many faculty members every day in their teaching to save time and effort which could be expended in other ways. This finding is also reflected in the response distributions. 85.5% said they used the system for creating assessments, 69.5% for student assessment records, and 77.5% for its academic advisor function. Moreover, the results show that faculty members used the Blackboard system more for its administrative functions than as a pedagogical tool. This may be because of the nature of the system, the time required to use the tools, and individual preferences.

On the other hand, the least used applications were Blackboard Mobile (52 out of 200), with only 26% using it always or very often. This might be because the faculty members prefer to separate their teaching tasks from their personal devices and their own time. Also, it might be explained by the fact that some tasks cannot be performed easily via the mobile version, such as the uploading of large files and data. Similarly, Electronic Tests was less commonly used on Blackboard (46 out of 200), with only 23% using it 'always' or 'very often'. This might be explained by the fact that faculty members were not sufficiently skilled to use such an advanced tool, nor did they feel confident about their ability to create tests or deal with students when using this function. See Figure 4.10.

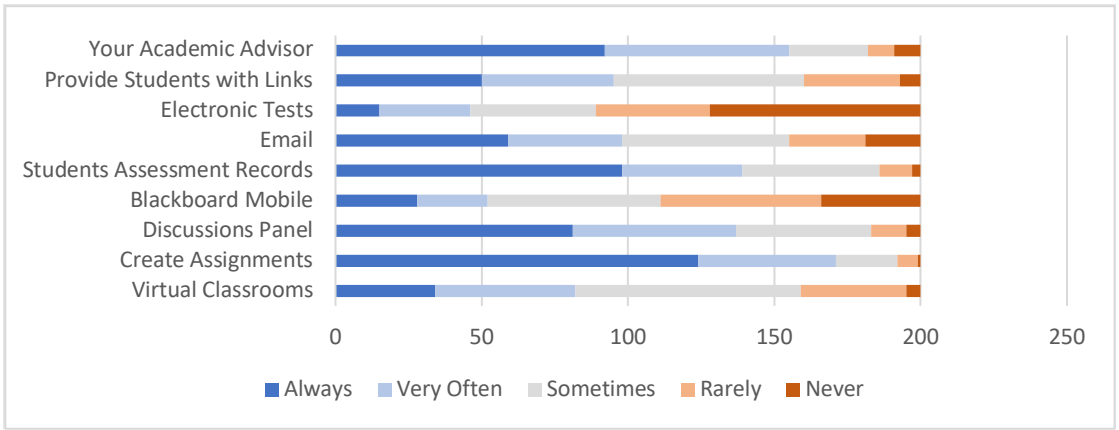

Figure 4.10 Participants' use of Blackboard

4.3.1 What are the challenges with E-learning?

In order to gain an overview of the possible barriers to participants' use of the Blackboard system, they were asked to choose from a list of items about their opinions, feelings, or attitudes about the system tools based on a Likert scale. The participants were asked to select from five responses, depending on whether they agreed, strongly agreed, were undecided (neither agreed nor disagreed), strongly disagreed, or disagreed with each statement.

The statements related to the time available, training, technical support, internet services, and faculty members' attitude towards students. The absence of any one of these factors should affect faculty members' attitudes towards using such a new system. The responses given to each statement are shown in Table 4.7 below.

Challenges with using Blackboard	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
I think students are not skilled enough in the use of Blackboard.	**22** (11%)	**104** (52%)	**28** (14%)	**38** (19%)	**8** (4%)
There is a lack of administrative support.	**15** (7.5%)	**65** (32.5%)	**62** (31%)	**44** (22%)	**14** (7%)
There is a lack of technical support.	**15** (7.5%)	**63** (31.5%)	**40** (20%)	**64** (32%)	**18** (9%)
There is a lack of internet services.	**47** (23.5%)	**58** (29%)	**38** (19%)	**36** (18%)	**21** (10.5%)
There is a lack of good training programmes for educators.	**24** (12%)	**63** 31.5%)	**50** (25%)	**45** (22.5%)	**18** (9%)
I think students are unwilling to use this type of educational tool.	**26** (13%)	**62** (31%)	**63** (31.5%)	**36** (18%)	**13** (6.5%)
I think faculty members are not sufficiently willing to attend training programmes.	**11** (5.5%)	**63** 31.5%)	**55** (27.5%)	**51** (25.5%)	**20** (10%)
I think faculty members are not receiving training that meets their needs and expectations.	**20** (10%)	**69** 34.5%)	**47** (23.5%)	**48** (24%)	**16** (8%)
I think lecturers do not have enough time to use Blackboard fully.	**67** (33.5%)	**63** 31.5%)	**34** (17%)	**28** (14%)	**8** (4%)

Table 4.7 Challenges with using Blackboard

As can be seen in Table 4.8, the most substantial challenge related to the lack of time lecturers had to fully use Blackboard, with 65% strongly agreeing or agreeing with this.

The challenge that least affected their use of the Blackboard tools related to their willingness to attend training programmes, with only 37% believing this to be the case. This can be explained by the fact that a lack of time would lead the participants to being unable to attend all of the courses they would like to. A high proportion (63%) of participants believed students lacked the skills required to use Blackboard. Moreover, many (52.5%) felt that the lack of internet services was a critical barrier to using Blackboard. The issue of training also was also considered a significant challenge, with 44.5% agreeing that faculty members are not receiving training that meets their needs and expectations, and 43.5% believing that there was a lack of good training programmes for educators.

These results provide an overview of the key challenges to adoption of the Blackboard system. The major barrier to teaching using the Blackboard system was lack of experience and time. Finally, it is important to mention that this lack of time, training, and internet services strongly correlates with the inductive themes emerging from analysis of the qualitative data.

4.3.2 What Solutions to Solve the Challenges of Using Technology and Encourage Academic Staff to Use E-Learning Tools in the University?

This section seeks to identify some solutions that faculty members believe would remedy some of the problems they face while using the Blackboard tools at the university. The participants were asked to choose from a list of responses which best describe their thoughts about a series of statements. The statements related to ways to encourage faculty members to use Blackboard tools in their teaching, help faculty members design electronic lessons, improve internet speed, and provide additional Blackboard training courses. The responses given to each statement are shown in Table 4.8 below.

Solutions for E-learning	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Find solutions to encourage faculty members to use Blackboard tools in teaching	**86**	**85**	**23**	**5**	**1**
	(43%)	(42.5%)	(11.5%)	(2.5%)	(0.5%)
Set up a department that responsible for designing electronic lessons	**108**	**77**	**11**	**4**	**0**
	(54%)	(38.5%)	(5.5%)	(2%)	(0%)
Improve internet speed within the university in order to enhance the learning environment	**128**	**54**	**13**	**3**	**2**
	(64%)	(27%)	(6.5%)	(1.5%)	(1%)
Provide Blackboard training courses for academic staff	**103**	**85**	**11**	**1**	**0**
	(51.5%)	(42.5%)	(5.5%)	(0.5%)	(0%)
Provide Blackboard training courses for students	**118**	**74**	**6**	**2**	**0**
	(59%)	(37%)	(3%)	(1%)	(0%)
Encourage the use of electronic tests in some courses	**91**	**75**	**20**	**6**	**8**
	(45.5%)	(37.5%)	(10%)	(3%)	(4%)

Table 4.8 Participants' perspectives on solutions for e-learning

The most common factors that were found to impede faculty members' use of the Blackboard system were the lack of training courses and poor internet speed. As shown in Table 4.10, the highest level of agreement was about the need to provide Blackboard training courses for students (96%), and academic staff (94%). This was closely followed by the need to improve internet speed within the campus in order to create a better learning environment. 182 (91%) of the participants agreed or strongly agreed with this suggestion. This finding can also be considered to correlate with the findings regarding the challenges associated with e-learning (see sections 5.5.2 and 5.5.5), where the most common factors that were found to impede faculty members' use of the Blackboard system were the lack of training courses and poor internet speed. Moreover, faculty members stated that the main forms of support that would help them use the Blackboard system were training courses and faster internet speed. The importance of these two factors can be found in many aspects of this research; the participants underlined them as being the most important solutions for better use of the Blackboard system.

The lowest agreement was in relation to the use of Blackboard for Electronic Tests, with 166 participants (83%) agreeing or strongly agreeing with this application of the technology.

4.3.3 What Benefits did Faculty Members Perceive by Using Blackboard?

This section of the survey aimed to identify the benefits of using Blackboard for teaching at the university. The statements in this section focused on giving students further education opportunities, creating a competitive environment, saving time and effort, enhancing communication between students and faculty, and fostering cooperation among students. The participants' responses regarding how best to promote the use of Blackboard are presented in Table 4.9.

Benefits of Using Blackboard	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
The use of Blackboard gives students the opportunity to complete their higher education and overcome geographical difficulties	**70**	**85**	**21**	**16**	**8**
	(35%)	(42.5%)	(10.5%)	(8%)	(4%)
The use of Blackboard creates a competitive environment between educational institutions	**59**	**69**	**37**	**29**	**6**
	(29.5%)	(34.5%)	(18.5%)	(14.5%)	(3%)
The use of Blackboard saves time and effort	**82**	**86**	**18**	**9**	**5**
	(41%)	(43%)	(9%)	(4.5%)	(2.5%)
The use of Blackboard encourages communication between students and faculty	**95**	**80**	**14**	**7**	**4**
	(47.5%)	(40%)	(7%)	(3.5%)	(2%)
The use of Blackboard encourages students to communicate with each other	**59**	**75**	**34**	**25**	**7**
	(29.5%)	(37.5%)	(17%)	(12.5%)	(3.5%)
The use of Blackboard enables large groups of students to learn together	**79**	**75**	**24**	**17**	**5**
	(39.5%)	(37.5%)	(12%)	(8.5%)	(2.5%)

Table 4.9 Participants' views of the benefits of using Blackboard

The highest level of agreement (87.5%) regarding the benefits of using Blackboard was in regard to the improved communication it brings between students and faculty. Its ability to save time and effort was agreed with by 168 of the 200 participants (84%). About 77.5% of the participants agreed or strongly agreed that Blackboard enables students to complete their education without geographical limitations. 77% of the participants agreed or strongly agreed that Blackboard enables students to be taught in large groups. Hence, if there is a need to cancel face-to-face classes or there are limited classrooms available at the university, the Blackboard system can assist in alleviating the situation through distance learning.

The lowest level of agreement (64%) was with the statement that Blackboard creates a competitive environment between institutions. This can be explained by the fact that as the use of the Blackboard system was still at an early stage, the faculty members needed more time to adapt to it and understand its use and benefits. Therefore, more time and training needs to be given so that they can better perceive the usefulness of Blackboard. Meanwhile, 67% agreed that Blackboard helped facilitate communication between students. The generally favourable responses regarding all of the benefits of Blackboard may be attributed to the fact that out of the 200 participants, 192 already had extensive experience using Blackboard (Figure 4.9) and had undergone at least one training course on system (Figure 4.8).

As has been noted (section 3.4.3), the caution of recipients as regards being surveyed needs to be taken in account. The following sections explain the results.

4.4 Interpretation of the Results Based on the Societal Considerations of the Research Sample and the Relationship Between the Nature of the Functionalities and Self-Determination Theory Categories

Applied to this research, it became clear that there was another way to look at the data by considering the Blackboard system's functionalities as high use or low use. An attempt was then made to link these results to the SDT categories. In addition, it was important to take into consideration the type of functionality, and whether it is pedagogic or administrative. Also, the activation of the functionalities (compulsory or non-compulsory) was examined as there is a managerial assessment system (i.e. faculty members are expected to use or activate certain functionalities in their work, and are assessed as to whether they indeed do so). Exploring the data from all of these aspects has assisted in explaining the unexpected results in the SDT section. Finally, by examining the data based on all of the above elements, the following functionalities have been examined:

1 — Motivational dispositions across compulsory administrative functionalities:

- Students' Assessment Records
- Email

2 — Motivational dispositions across non-compulsory functionalities:

- Blackboard Mobile
- Electronic Tests
- Providing Students with Links

3 — Motivational dispositions across compulsory pedagogic functionalities:

- Virtual Classrooms
- Discussion Panels

4.4.1 Types of Blackboard System Tools Based on Functionalities and Type of Assessment

In this section, the main focus is to look at the extent to which the faculty members are using the Blackboard system's tools in their teaching, and the purpose for which it is most used. To examine this, the 'Total Continuity of Use' has been calculated based on the data (Always = 5, and plus Very Often= 4).

Blackboard Functionalities	Always	Very Often	Continuity of Use	Median
Virtual Classrooms	34 (17%)	48 (24%)	82 41%	3
Create Assignments	124 (62%)	47 (23.5%)	171 85.5%	5
Discussion Panels	81 (40.5%)	56 (28%)	137 68.5%	4
Blackboard Mobile	28 (14%)	24 (12%)	52 26%	3
Students' Assessment Records	98 (49%)	41 (20.5%)	139 69.5%	4
Email	59 (29.5%)	39 (19.5%)	98 78.5%	3
Electronic Tests	15 (7.5%)	31 (15.5%)	46 23%	2
Providing Students with Links	50 (25%)	45 (22.5%)	95 47.5%	3
Your Academic Advisor	92 (46%)	63 (31.5%)	155 77.5%	4

Table 4.10 Blackboard Functionalities

Key: Always = 5, Very Often = 4, Sometimes = 3, Rarely = 2, Never = 1

Orange= compulsory pedagogic functionalities

Green= compulsory administrative functionalities

Brown= non-compulsory functionalities

As seen in Table 10, the essential use of the Blackboard system tools in the target university falls between using it for pedagogical purposes and using it for administration. In this case, if we look at Continuity of Use, the most common use of the tools is for administration, such as: Create Assignments (171, 85.5%), Students' Assessment Records (139, 69.5%), and Email (98, 78.5%). Then, when it comes to pedagogical methods in the use of the technology tools, the Continuity of Use of the tools is lower, as can be seen from: Virtual Classrooms (82, 41%), and Discussion Panels (137, 68.5%). It can be concluded from these outcomes that faculty members use the Blackboard system's tools to facilitate their tasks as academic staff dealing with many students. Also, instead of conducting face-to-face meetings with students as the Academic Advisor, they deal with this by having

their students activate the Academic Advisor tool. Moreover, when it comes to the advanced use of the Blackboard tools and the tools that the faculty members are not asked to activate for the assessments, they use these tools at a deficient level.

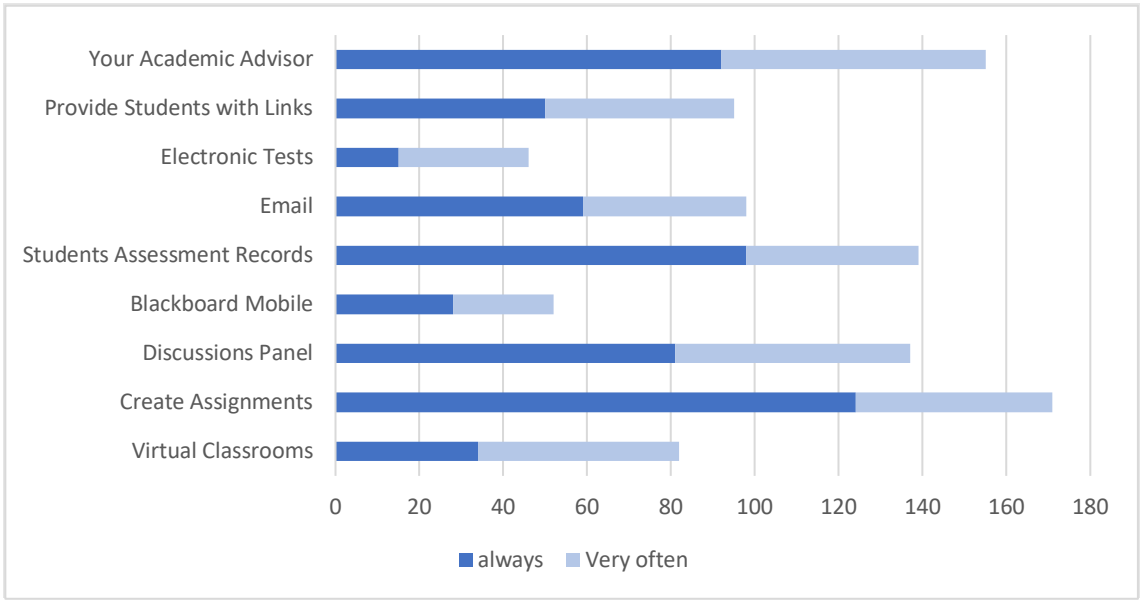

Figure 4.11 Use of Blackboard Functionalities

The reports of the following sections are based on the data from the high use of the Blackboard functions based on numbers of responses to (Always & Very often); these are then compared with the low use group.

4.5 Motivation for Using E-learning (Self-Determination Theory)

This section was based on four dimensions of SDT: external regulation (ER), introjected regulation (IR), identified regulation (IDR) and intrinsic motivation (IM). The aim of this section was to evaluate the motivational factors that promoted the adoption of the Blackboard system by faculty members.

Motivation to Use Blackboard	Construct	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
2- Because I will get into trouble if I don't.	ER	48	82	41	22	7
		(24%)	(41%)	(20.5%)	(11%)	(3.5%)
6- Because I was told by the deanship of the college that I have to.	ER	59	88	32	12	9
		(29.5%)	(44%)	(16%)	(6%)	(4.5%)
1-Because I want my boss to think that I am a good member of the staff.	IR	51	87	34	16	12
		(25.5%)	(43.5%)	(17%)	(8%)	(6%)
4- Because I will feel bad about myself if I don't.	IR	37	100	43	17	3
		(18.5%)	(50%)	(21.5%)	(8.5%)	(1.5%)
5- Because I want to use e-learning technologies.	IDR	51	104	32	10	3
		(25.5%)	(52%)	(16%)	(5%)	(1.5%)
8- Because I believe using e-learning technologies is important.	IDR	73	101	23	2	1
		(36.5%)	(50.5%)	(11.5%)	(1%)	(0.5%)
3- Because I feel that teaching is more fun using the Blackboard.	IM	46	82	44	21	7
		(23%)	(41%)	(22%)	(10.5%)	(3.5%)
7- Because I enjoy using e-learning technologies.	IM	43	100	39	13	5
		(21.5%)	(50%)	(19.5%)	(6.5%)	(2.5%)

Table 4.11 Motivation for using Blackboard

Note: CON = Construct, IR = Introjected Regulation, ER = External Regulation, IM = Intrinsic Motivation, IDR = Identified Regulation

Scale: SA = Strongly Agree, A = Agree, U = Undecided, D = Disagree, SD = Strongly Disagree

As Table 4.11 shows, the statement participating educators agreed with most was: *"Because I believe using e-learning technologies is important"*, with 87% of the participants strongly agreeing or agreeing. This indicates that participants had a high level of identified regulation (IDR) in relation to their use of the Blackboard system. The second-highest response (77.5%) regarding the motivational factors was for another aspect of identified regulation, namely: *"Because I want to use*

e-learning technologies." This underlines that faculty members consciously perceived the value of using such a system. As a result, they were highly motivated to use the Blackboard system in their teaching practice. Another statement that received a high level of agreement was: *"Because I was told by the deanship of the college that I have to."* The high level of agreement with this statement indicates the power of external regulation (ER). So, even if the faculty were convinced of the importance of using technological tools in their teaching, they also felt some external force controlling them: using the system was mandatory and they would be assessed in this regard. Another external regulation factor was also highlighted by the relatively high level of agreement (65%) with the statement: *"Because I will get into trouble if I don't."* The faculty members feared punishment, failure, and exposure to observation by the administration, as use of the system is mandatory and there is a follow-up system of assessment. This finding can be related to the qualitative data findings and will be explored in detail in the discussion chapter.

69% of the participants also strongly agreed or agreed with the statement: *"Because I want my boss to think that I am a good member of staff."* This reflects a level of introjected regulation (IR), as the participants care about their self-esteem and want the administration to think of them as good faculty members as a result of their using the system as they were told to, and meeting the assessment criteria.

Additionally, 68.5% of the participants strongly agreed or agreed with the statement: *"Because I will feel bad about myself if I don't."* This indicates that the participants' self-esteem pressured them to behave in a way, in that by using the system it would make them feel worthy. This relates to considerations of ego, as the participants were critically aware of how others think about them. On the other hand, the statement least agreed with (64%) was: *"Because I feel that teaching is more fun using the Blackboard."* This indicates that the faculty members had a low level of intrinsic motivation towards using the Blackboard system, and that they did not use the system because they find it fun or engaging. This can be explained by the difficulties participants faced when using the system; as mentioned in the previous sections these include time, training and internet speed. This aspect or using the technology appears to hinder motivation and

interest among some faculty members, thus preventing them from discovering the full potential of the system.

The following section looks deeper at the descriptive analysis of the data based on considering the Blackboard system's functionalities as high use or low use in line with SDT categories. It also explores the type of functionality — if it is academic or administrative. Finally, the activation of the functionalities (compulsory or non-compulsory) is examined as there is an assessment system.

4.5.1 Motivational Dispositions Across Compulsory Administrative Functionalities

This finding can be related to the qualitative data findings and will be explored in detail in the discussion chapter as it is related to the motivational factors which impact faculty members.

4.5.1.1 Students' Assessment

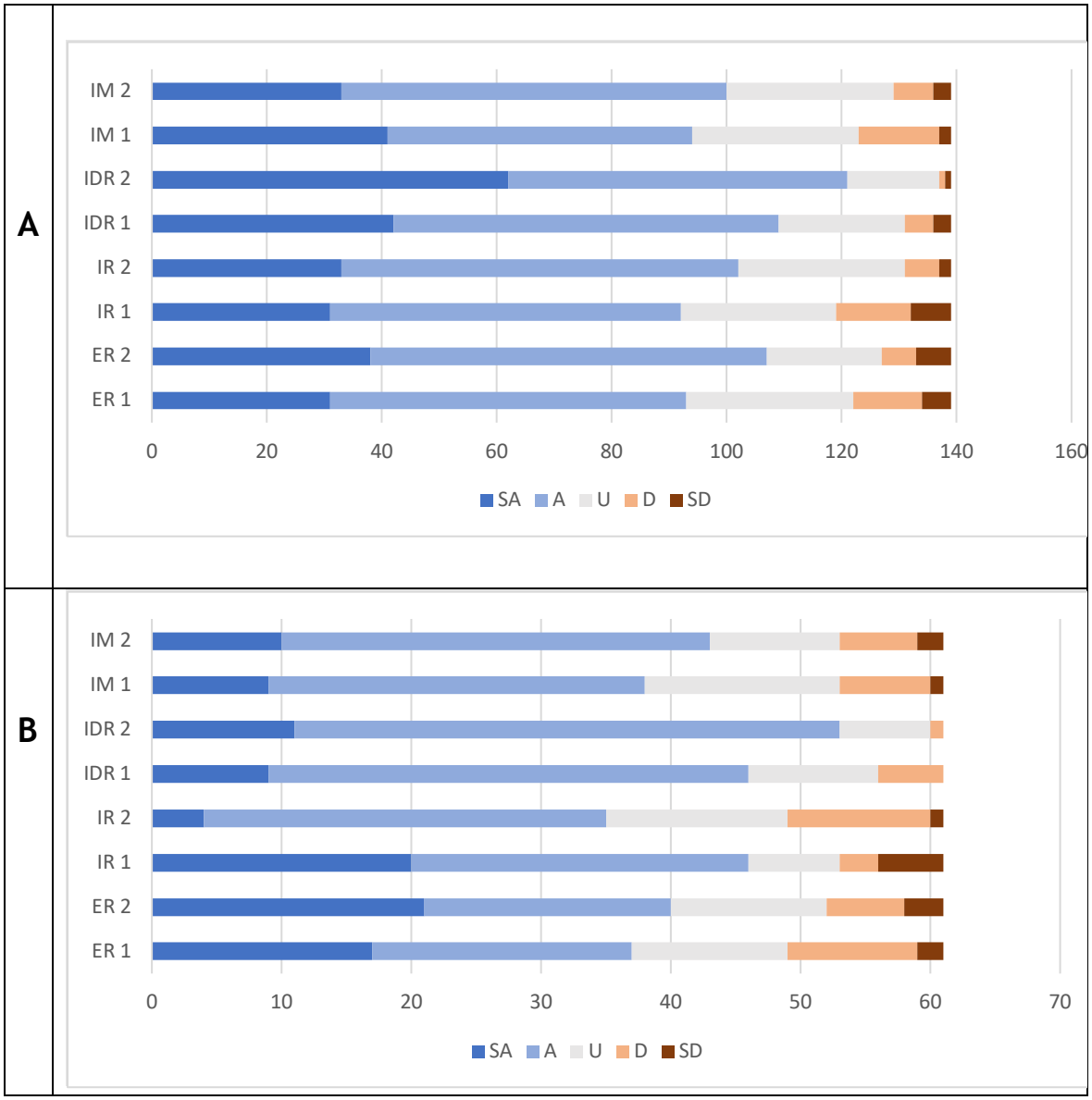

Figure 4.12 Levels of agreement with SDT dimension items by (A) high use of Students' Assessment (N=139) and (B) low use of Student's Assessment (N=61)

As shown in Figure 4.12, the degree of agreement is similar across most of the SDT dimensions; this includes both introjected (IR) and external regulation (ER). However, it can be seen that greater levels of agreement are for ER. ER is based on the idea that this tool is critical for activation, and as a result the use of the function may be driven by externally imposed punishments. Therefore, the faculty members did not have the right to decline using it and were expected to meet the assessment criteria. At the same time, Students Assessment Records is an administrative function that enables faculty members to deal efficiently with student evaluations. Also, the responses show varying degrees of influence affecting motivation to use the Blackboard system (for example, IR1 and IR2). Moreover, it is clear that both ER and IR influence those faculty members who are in a high use group in using these functionalities. Finally, this function is one of the compulsory functionalities of the faculty members' assessments process. As a result, external regulation plays a role (which shows the power of control) through management assessment criteria that have been accredited in the target university.

4.5.1.2 Email

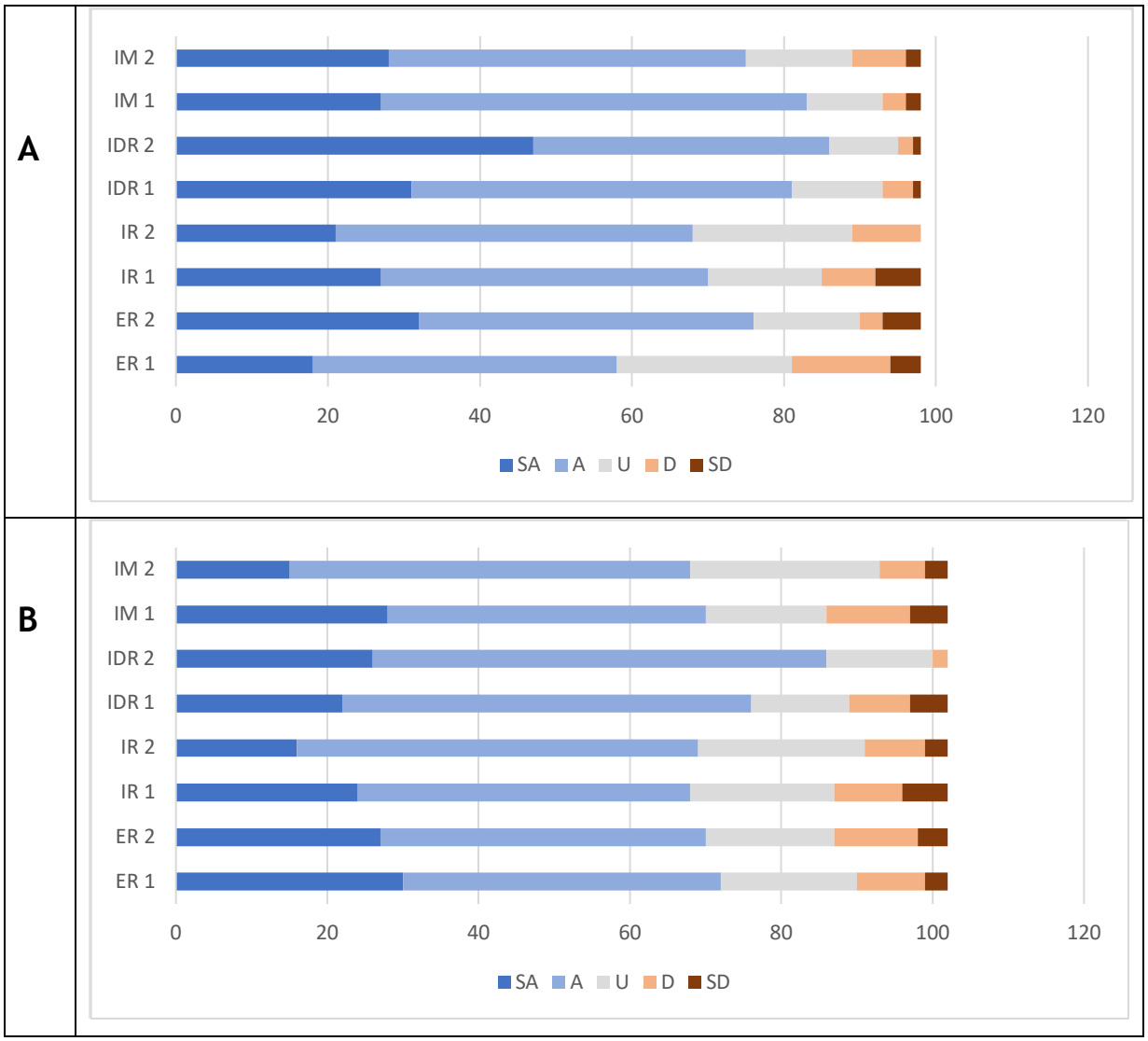

Figure 4.13 Levels of agreement with SDT dimension items by (A) high use of Email (N=98) and (B) low use of Email (N=102)

As shown in Figure 4.13, the differences in the level of the agreement are very high in the SDT dimensions of internal motivation. These are very obvious for both IM1 and IDR2 as the responses showed higher levels of agreement and a high level of volition to use. Moreover, the number of responses on both groups for high and low use of Blackboard's use of email is very similar. Email is a beneficial function for communication between both the students and the faculty members. This function is considered compulsory by the Administration of the university, which means that the faculty members have to activate the Email function. However,

they consider it to be a handy tool in their teaching. They found that Email enabled them to deal with the students, and they identified the value of the function. As a result, faculty members in the high use bracket count Email as an essential tool in their teaching experiences. It may also be that most of the faculty members use Email in their daily routine for different purposes. Then they have a positive attitude toward the function by itself based on previous experience; as a result, the faculty members have a high degree of volition to use the Blackboard system. However, there is still the fact that this function is compulsory, so some of the faculty members have expressed concern about the pressure of activating the tool, which can represent the related data and describe some of the externally controlled regulations, such as ER and IR.

4.5.2 Motivational Dispositions Across Non-Compulsory Functionalities

4.5.2.1 Blackboard Mobile

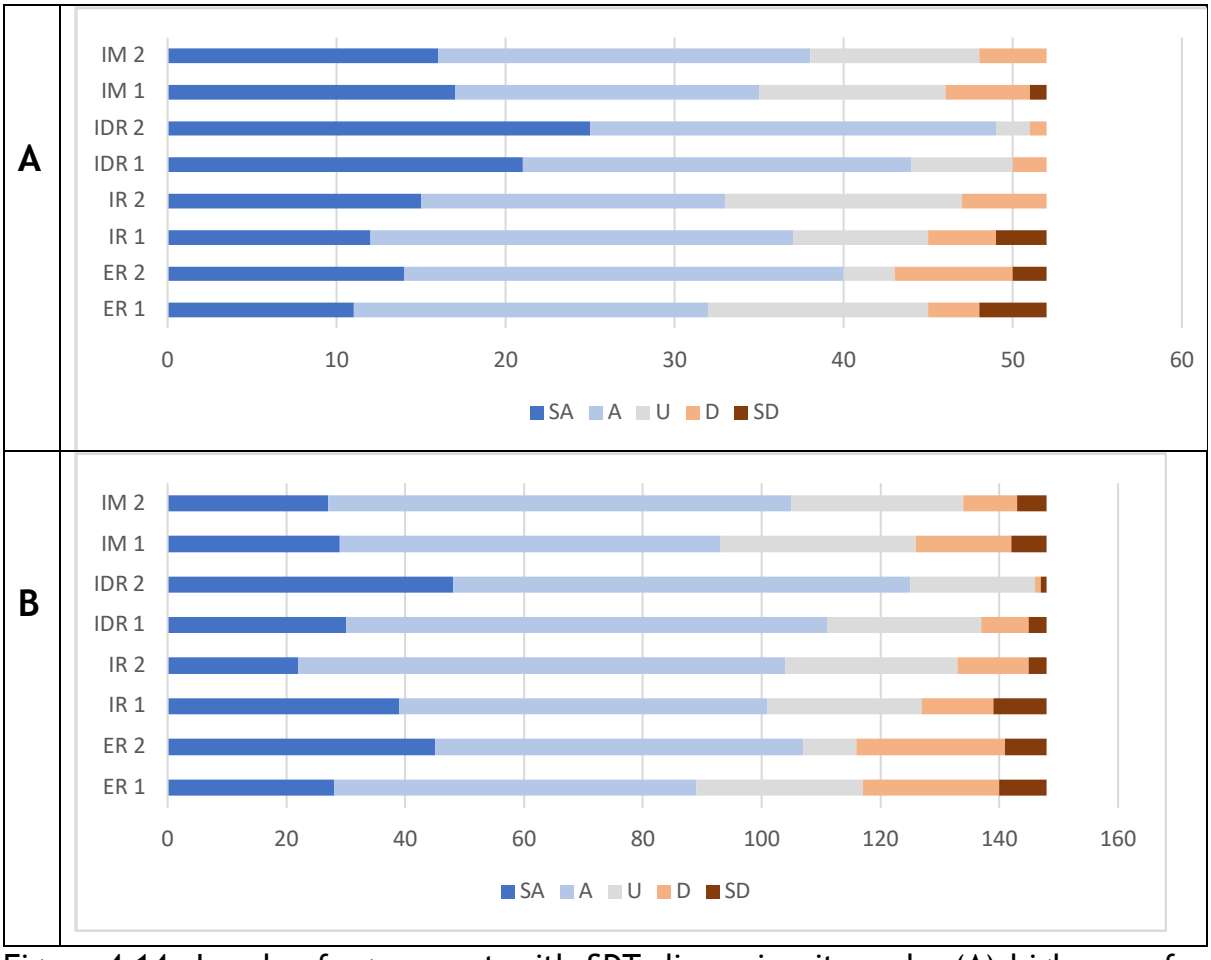

Figure 4.14 Levels of agreement with SDT dimension items by (A) high use of Blackboard Mobile (N=52) and (B) low use of Blackboard Mobile (N=148)

As shown in Figure 14, the differences in the degree of agreement are pretty similar across most SDT dimensions (as also illustrated in Figure 5). The only exceptions are ER1 and IR2, where those who used the Blackboard Mobile feature more frequently had higher levels of agreement and were driven by ER as a motivating factor that influences faculty members who use the function; this shows a high level of control motivation. It also demonstrates that those who utilise the Mobile function more regularly are motivated more by external and internal regulations than those who don't. As part of the staff evaluation process, the utilisation of Blackboard's Mobile feature is not mandatory. Thus, the difference between the groups may be because people who utilise this functionality more are more responsive to external motivators, such as the overall culture of control in the context of a university. Moreover, faculty members may feel that using their own devices, such as a mobile phone, is very personal. They therefore value privacy in separating their work life and their academic life. Faculty members may believe that this use of the tool is unacceptable and will not use this feature unless it is something stated as obligatory by the university administration.

4.5.2.2 Electronic Tests

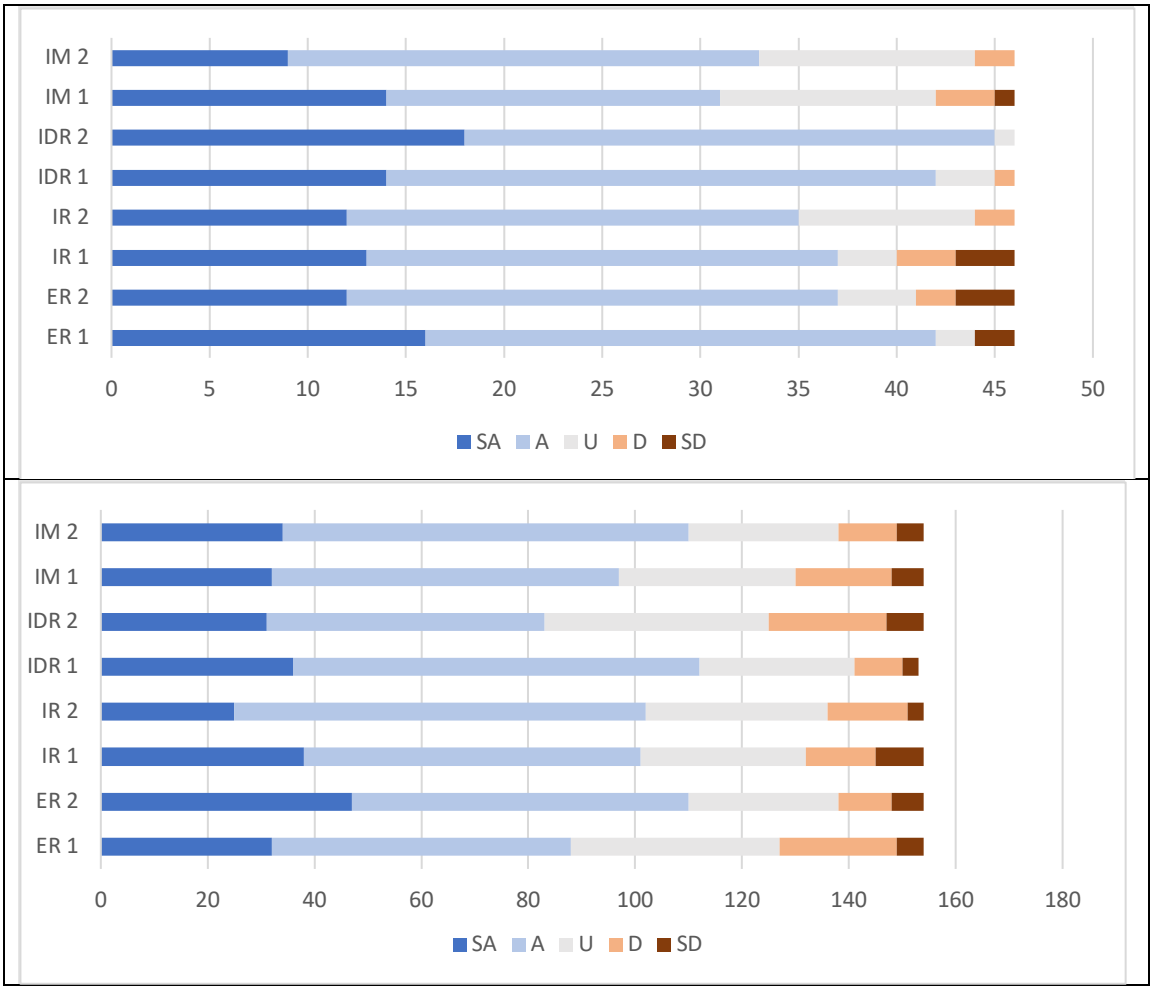

Figure 4.15 Levels of agreement with SDT dimension items by (A) high use of Electronic Test (N=46) and (B) low use of Electronic Test (N=154)

As shown in Figure 15, the highest motivational dispositions that influenced the faculty members in using Electronic Tests are both IDR2 and ER1. The Identified Regulation affected a smaller but significant number of faculty members . The individuals who activated this function feel more freedom and volition because it aligns with their particular aims. They recognise the benefits of utilising the Blackboard Test as it facilitates their role with students by designing the test and dealing with test correction. Furthermore, this activation is optional, meaning that academic staff can choose to employ it and want to make use of it. Another motivating aspect that affected the faculty members is External Regulation. Faculty members are faced with a high level of control from the E-Learning

Deanship, even if this function is not compulsory. See Appendix 5 for data tables of all groups.

4.5.2.3 Provide Students with Links

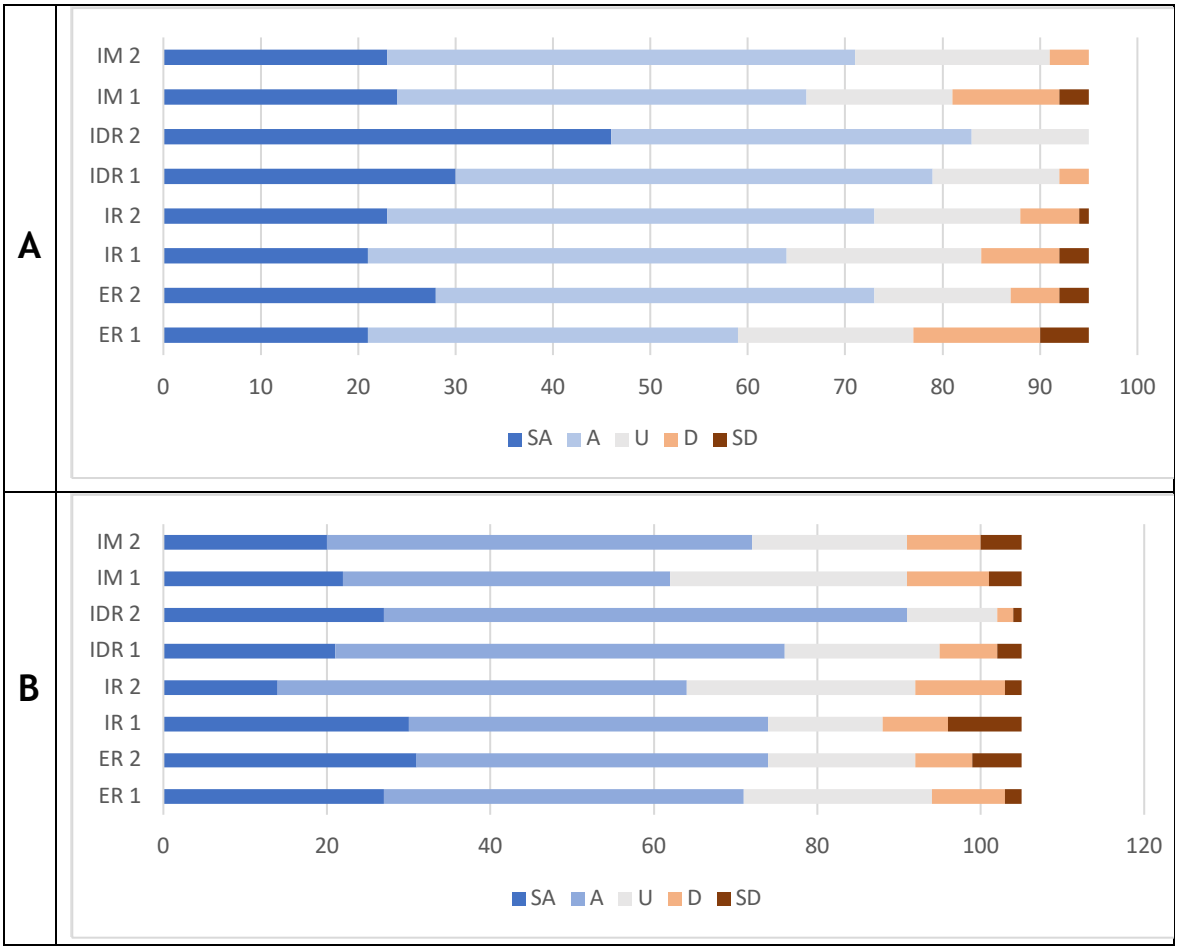

Figure 4.16 Levels of agreement with SDT dimension items by (A) high use of Provide Students with Links (N=95) and (B) low use of Provide Students with Links (N=105)

As shown in Figure 16, the combination of IDR1 and IDR2 are the main motivational elements for faculty members who were part of the high use group. The academic staff recognise the benefits of utilising the function Provide Students with Links as there are many responses. In that case, they recognise its usefulness because it aids their job as instructors in providing students with more materials and resources for their classwork and to make any modifications. Also, individuals who activate the function feel more freedom and volition because it aligns with their particular aims. Furthermore, this activation is optional, meaning that academic

staff can choose whether or not to employ it. In addition, another motivating factor affecting faculty members who utilise Provide Students with Links is Introjected Regulation (IR2). Faculty members face a high level of control in terms of professional esteem from the E-Learning Deanship, even if this function is not compulsory. Finally, the power of control dominating the work environment affected the faculty member's' attitude and perspectives toward using the blackboard system in their teaching experience.

4.5.3 Motivational Dispositions Across Compulsory Pedagogic Functionalities

4.6.3.1 Virtual Classrooms

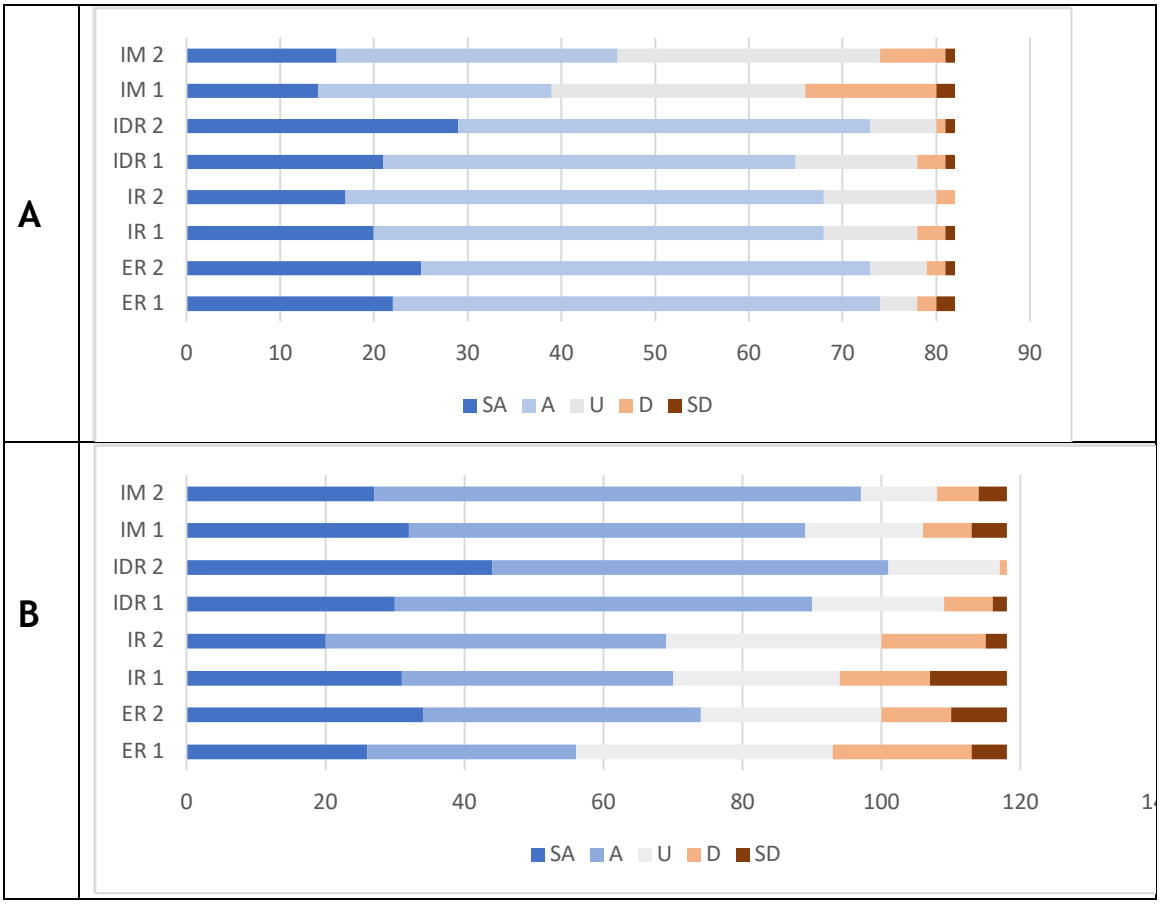

Figure 4.17 Levels of agreement with SDT dimension items by (A) high use of Virtual Classrooms (N=82) and (B) low use of Virtual Classrooms (N=118)

First of all, Virtual Classrooms is the function the Deanship of E-Learning is pushing the most on faculty members to use and activate. For example, faculty members must utilise the various tools each month as required. There is a high level of pressure to use this particular feature as a compulsory activation. It is also evident (see Figure 4.17) that Virtual Classrooms as an advanced tool had a low level of use in general. Moreover, the powerful effect of External Regulation and the power of the assessments affected the faculty members' attitude toward the function, even if it is beneficial regarding educational use. Activating this function is mandatory, and faculty members have to follow specific evaluation criteria.

On the other hand, the SDT factors that most affected faculty members in the low use category with regards to the Virtual Classrooms function were a high level of Identified regulation and Intrinsic Motivation. This group seem to have much higher levels of agreement with IM1 and IM2, but much lower levels of agreement with ER1 and ER2. So that, they are less likely to respond to managerial control and hence less likely to employ the function. To sum up, faculty members who use the Virtual Classrooms as a high use group have less motivation, while faculty members who use the function as low use group have a high level of motivation that drives them to activate the function.

4.5.3.2 Discussions Panel

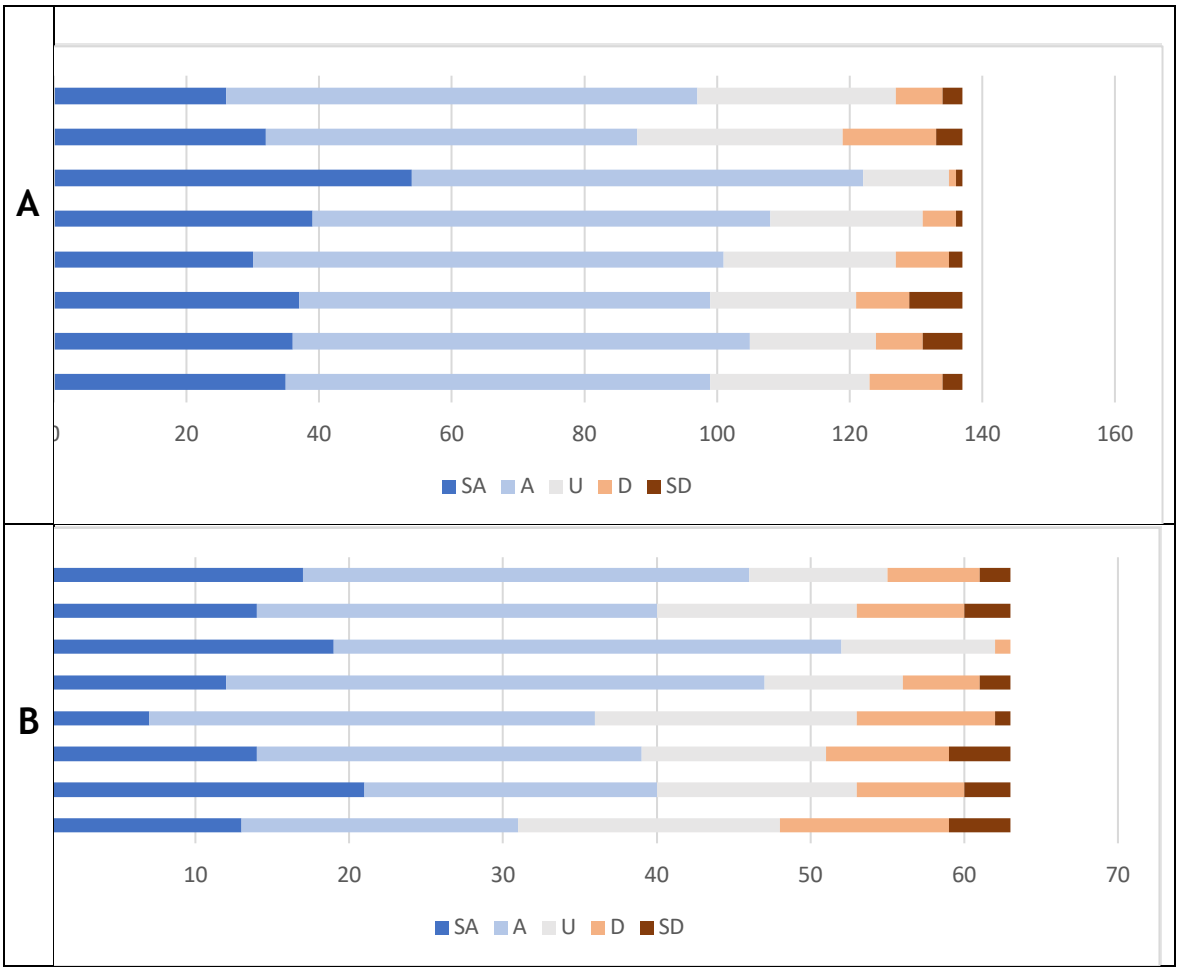

Figure 4.18 Levels of agreement with SDT dimension items by (A) high use of Discussions Panel (N=137) and (B) low use of Discussions panel (N=63)

As shown in Figure 18, the differences in levels of agreement are similar across most of the SDT dimensions. The main exceptions are ER1 and IR2, where the participants who used the Discussions Panel more frequently showed higher levels of agreement. This suggests that those who use the Discussion Panel more often are motivated to a greater extent by external and introjected regulations than those who use them less frequently. The use of the Discussion Panel is required as part of staff assessment. Thus, the distinction between the groups might be because those who use this functionality more respond better to external motivators, such as the requirement to 'activate' this functionality, and to the overall power of control executed in the target university. Moreover, it will be noted that faculty members who activate the function consider it important in

their teaching as a discussion tool that enables students to think critically and come up with new ideas related to the scientific subject discussed in class. Therefore, there is a higher level of Identified Regulation that influences these faculty members to use the function.

4.6 Technology Acceptance Model (TAM)

This section was based on four factors of TAM: Perceived Ease of Use, Perceived Usefulness, Attitude, and Self-Efficacy.

The Technology Acceptance Model (TAM) is a theory of information systems that describes how users accept and use technology. TAM identified two critical factors that govern the use of information systems and acceptance of information technology in executing activities: Perceived Usefulness (PU), and Perceived Ease of Use (PEU). The model argues that when people are introduced to new technology, various factors influence their decision on how and when to use it. The degree to which a person believes that employing a given system will improve their job performance is perceived usefulness (PU). It has to do with job effectiveness, productivity (time savings), and the system's relative value to one's employment. Perceived ease of use (PEU), on the other hand, relates to "the degree to which a person perceives that using a certain system would be free of effort", both in terms of physical and mental effort, as well as ease of learning (Davis,1989, p. 320). According to TAM, a person's perceptions concerning PU and PEU of IT are hypothesised as being salient beliefs that determine their attitude towards IT use. According to Strauss (1945), a person's attitude is the generally consistent outward behaviour that influences his social standing. Moreover, according to TAM, a person's salient ideas about a system—such as its usefulness and perceived ease of use, would determine how they feel about using it. So, attitude is a person's positive or negative feelings regarding conduct. Finally, Self-Efficacy is the, "belief in one's capability to organize and execute the courses of action required to produce given attainments" (Bandura, 2000, p. 17), or people's assessments of their skills to accomplish a task, is a major regulatory mechanism in this dynamic interaction that influences human behaviour.

The highest frequency responses to Strongly Agree and Agree for each section's statements are identified and highlighted in light brown, and the report is annotated accordingly in all tables.

4.6.1 Perceived Ease of Use

Perceived ease of use	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
It is easy for me to remember how to carry out tasks using the Blackboard system.	87	92	13	7	1
	(43.5%)	(46.0%)	(6.5%)	(3.5%)	(0.5%)
I believe that it is easy to get the Blackboard system to do what I want to do.	73	103	11	11	2
	(36.5%)	(51.5%)	(5.5%)	(5.5%)	(1.0%)
My interaction with the Blackboard system is clear and understandable.	76	98	19	5	2
	(38.0%)	(49.0%)	(9.5%)	(2.5%)	(1.0%)
I believe using the Blackboard system takes more time	49	79	29	35	8
	(24.5%)	(39.5%)	(14.5%)	(17.5%)	(4.0%)
Overall, I believe that the Blackboard system is easy to use.	78	100	12	8	2
	(39.0%)	(50.0%)	(6.0%)	(4.5%)	(1.0%)

Table 4.12 Perceived Ease of Use

Table 4.12 shows the frequency distribution of the answers given to the statement for perceived ease of use. Faculty members agreed with a high rate for the four items. The highest response was for the total proportion of 'strongly agree' and 'agree' responses to the statements *"It is easy for me to remember how to carry out tasks using the Blackboard system"*, and *"Overall, I believe that the Blackboard system is easy to use."* This response shows the faculty members' perceived ease of use of the Blackboard system: it is easy to use it, easy to get the system to do what they want to do, and their interaction with the system is clear and understandable.

However, this is not the case for the for the statement *"I believe using the Blackboard system takes more time."* Some faculty members had a mixed response about the time needed to activate the Blackboard functions and the time available to them in addition to their teaching loads, as some of them indicated on the open-ended question in the questionnaire. The faculty members always expressed their issues with time, as expressed in the qualitative data.

4.6.2 Perceived Usefulness

Perceived usefulness	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Using the Blackboard system improves my teaching performance.	51	88	41	17	3
	(25.5%)	(44%)	(20.5%)	(8.5%)	(1.5%)
Using the Blackboard system improves my productivity.	50	86	38	23	3
	(25%)	(43%)	(19.0%)	(11.5%)	(1.5%)
Using the Blackboard system enhances my effectiveness as a lecturer	59	84	34	19	4
	(29.5%)	(42%)	(17.0%)	(9.5%)	(2%)
Overall, I find that using the Blackboard system is useful in my teaching.	54	101	29	12	4
	(27%)	(50.5%)	(14.5%)	(6.0%)	(2%)

Table 4.13 Perceived Usefulness

Table 4.13 above shows the frequency distribution of the answers given to the statements for perceived usefulness. The highest response of Agreeing and Strongly Agreeing was for *"Overall, I find that using the Blackboard system is useful in my teaching"*, and *"Using the Blackboard system enhances my effectiveness as a lecturer."* This can be explained as the degree to which the faculty members consider operating the Blackboard system improves their job implementation. Also, it will help them as regards their effectiveness in lecturing, and in terms of their productivity. On the other hand, the lowest response was in response to the statement *"Using the Blackboard system improves my productivity."* The system was introduced to the faculty members five years ago when this data was collected. This may be related to their attitude and individual experience with the Blackboard system. Also, sometimes the poor performance of new information systems can be due to administrative or behavioural factors rather than technical ones. Finally, taken overall, it can be said that the Blackboard system is high in Perceived Usefulness as the faculty members believe there will be a positive relationship between their task effectiveness and user performance.

4.6.3 Attitude

Attitude	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
I prefer the use of Blackboard in my teaching more than traditional face-to-face education.	49	79	18	39	15
	(24.5%)	(39.5%)	(9.0%)	(19.5%)	(7.5%)
I believe that adopting the Blackboard system at the university would improve student education.	60	88	23	21	8
	(30.0%)	(44.0%)	(11.5%)	(10.5%)	(4.0%)
The Blackboard system is fun to use in teaching.	54	97	28	17	4
	(27.0%)	(48.5%)	(14.5%)	(8.5%)	(2.0%)
I think the blackboard system provides an attractive work environment.	59	82	38	15	6
	(29.5%)	(41.0%)	(14.0%)	(7.5%)	(3.0%)
I think the use of Blackboard will increase stress for me.	30	74	49	36	11
	(15.0%)	(37.0%)	(24.5%)	(18.0%)	(5.5%)

Table 4.14 Attitude

As seen from Table 4.14, the highest responses regarding attitude are for *"The Blackboard system is fun to use in teaching"*, and *"I believe that adopting the Blackboard system at the university would improve student education."* This reveals that faculty members consider the Blackboard system as practical and valuable for working with students and they view the system to be more fun to use in their teaching. At the same time, faculty members had a lower response to the statement *"I think the use of Blackboard will increase stress for me"*, either because they are unsure of their perspective on the usage of the Blackboard system or because they are not open enough to express their concern about it; this can be explained by the influence of the power of control and assessments in the target university. Also, as Arab country participants, they do not share their fear or opinions easily in work environments. Another explanation may be that the stress drives them not to use Blackboard more effectively in their teaching experiences.

Finally, in sum, the faculty members here express some positive attitudes towards using the Blackboard system, even if they usually complain about related issues

such as time and training. This gave an overview of how the other aspect and factors would affect academic staff attitudes and how they perceived the use of new technological tools.

4.6.4 Self-Efficacy

Self-Efficacy	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
I can use basic Blackboard features, for example: email, and announcements	91	89	13	7	0
	(45.5%)	(44.5%)	(6.5%)	(3.5%)	(0%)
I can operate advanced Blackboard functions, for example: electronic tests, and virtual classrooms.	54	89	40	16	1
	(27.0%)	(44.5%)	(20.0%)	(8.0%)	(4.0%)
I can help students in the use of Blackboard tools.	72	82	29	14	3
	(36.0%)	(41.0%)	(14.5%)	(7.0%)	(2.0%)
I can solve problems that arise while using the Blackboard system.	56	78	40	24	2
	(28.0%)	(39.0%)	(20.0%)	(12.0%)	(3.0%)
Overall, I am able to use the Blackboard system.	71	118	9	2	0
	(35.5%)	(59.0%)	(4.5%)	(1.0%)	(0%)

Table 4.15 Self-Efficacy

As shown in Table 4.15, the highest responses are for *"Overall, I am able to use the Blackboard system"*, and *"I can use basic Blackboard features, for example, email and announcements"*, where participants indicated Strongly Agreed or Agreed. This data gives a clear understanding of how self-efficacy develops when learning a new platform. As a result, the faculty members beliefs in their skills have a significant impact on their performance. Moreover, self-efficacy is a motivating factor in learning, and those who have succeeded in completing a task have higher levels of self-efficacy.

On the other hand, the lowest responses are for the statements *"I can operate advanced Blackboard functions, for example, electronic tests, and Virtual Classrooms"*, and *"I can help students in the use of Blackboard tools."* To illustrate, when it comes to self-efficacy, the significant issues with the faculty

members in using the Blackboard system were apparent. They were able to deal with the essential tools and requirements of the Blackboard system, demonstrating that prior experiences in using technology are important in building self-efficacy beliefs. People with a high level of self-efficacy are more likely to complete a task successfully, therefore previous experiences are important in shaping self-efficacy beliefs. But many of the faculty members started using the Blackboard system recently, so they do not yet show a high degree of self-efficacy in regard to the advanced functions and solving problems. Still, they were unsure about their satisfaction and ability when it came to the advanced functions and issues.

4.7 Open-ended Questionnaire Questions

This section presents an overview of data from open-ended questionnaire questions examining the factors that influence faculty members using Blackboard, as well as participant-identified suggestions for increasing Blackboard usage. Each section of the questionnaire has open-ended questions asking the participants if they were willing to add more information to gain a deeper understanding of different factors that affected the faculty members using and activating the Blackboard system. These open-ended questions may have been redundant given that the questionnaire already contained 56 items covering four categories, which probably covered all obstacles and associated themes linked to using Blackboard.

However, they gave very brief answers to these questions with a few words regarding the following topics: Lack of Time, Lack of Training Topics, and Lack of Computer Labs.

The second part of this section will outline responses to the open-ended questions in the questionnaire, including participants' statements on barriers, mandatory assessment, training, time, the advantages of using the system, and perceptions regarding the use of Blackboard.

4.8.1 Barriers

The most significant barriers reported were an inadequate network and problems with internet. Respondents also mentioned the teaching load, and some

complained that Electronic Tests is useless. Also, many responses indicated that they would like sufficient laboratories provided for female students only and see internet speed at the university improved. These barriers were almost the same as the interview data obtained and will be presented in the qualitative findings chapter (Chapter 5).

4.8.2 Mandatory assessment

The participants responded to a question regarding their opinion about any challenges they faced in utilising the Blackboard system. They had been sharing their ideas about the managerial assessment of the faculty members' activation by the faculties and the Deanship of E-Learning — this makes them feel obligated to use it, meaning that the member's freedom to use it is weak. Also, the assessment issue was raised many times in the interview data. In addition, other participants mentioned that Blackboard is mandatory in some courses, despite their belief that it is a technological aid to the educational process, not the entire educational process.

4.8.3 Training

Participants also identified the need for more training support and availability of topics. For instance, one participant noted that it is preferable to allocate training courses for Blackboard for each college separately, and not to conduct general courses for all because of the different concepts and requirements for each college — members appreciate training with colleagues from the same college. Other participants indicated that the Blackboard system would be more effective if training were given to female faculty members and students separately, especially as males control the system. Moreover, one participant suggested conducting training courses for members outside normal working hours due to the difficulty of attending the classes: most faculty members are lecturing during the daytime. Finally, an interesting point was raised by one participant that was related to the idea of providing moral support to those who attend the courses, such as a certificate of appreciation.

4.8.4 Time

The topic of time was also mentioned frequently by participants. Participants indicated the necessity of providing sufficient time for faculty members to work on Blackboard. Some of them were complaining about the 'teaching load', and also the need to give adequate time to faculty members to work on the Blackboard as they believe this factor impacts their successful adoption of the sy4.8.5 Advantages of using Blackboard

The participants specified that they were using the Blackboard system for various reasons. One participant, for instance, mentioned that Blackboard could develop students' minds as regards modern learning management systems. Another said that using the Blackboard system would promote continuous communication with students.

Others cited the following advantages of Blackboard:

"Because I want to follow modern trends in teaching."

"Blackboard is one of the most accessible and most enjoyable university tools, and it is easy for us to communicate with Blackboard."

"It is very easy and saves time and effort, especially regarding the diversification of assessment sources."

"The use of Blackboard helps students to communicate with faculty members with ease and without embarrassment or fear."

"Direct communication with students is the most effective way of education."

Finally, other participants indicated that utilising the Blackboard system is a straightforward way to communicate; it is also a quick way to access information about students. These topics are discussed in the main qualitative findings in more depth (see Chapter 5).

4.9 Summary

This chapter reported and presented the descriptive statistical analyses of the data collected from a questionnaire regarding the use of the Blackboard system by faculty members and decision-makers (N=200). It also covered the data's descriptive statistics, population and sampling description, and reliability analyses. This chapter has identified many factors influencing the adoption and application of the Blackboard system in the target university, using TAM and SDT. The results show that the experience of teaching using technology affected the faculty member's acceptance of the system. Also, training course topics, time, internet services and IT support were all essential and significant in the adoption of e-learning within the university. Moreover, the type of functionality, whether compulsory or non-compulsory as an assessment criterion, was found to have a negative and significant influence as an example of the power of control. Furthermore, the results further emphasised that SDT motivational factors influenced faculty members adoption of the Blackboard system. Finally, the findings showed that participants had a positive attitude and high level of self-efficacy based on TAM if they had prior experience using the system. Also, the faculty members indicated they sometimes perceive the system as useful and easy to use in terms of basic functions.

Chapter 5 Interview Findings

5.1 Introduction

This section presents the findings from the interviews with fourteen faculty members from several colleges at the target university regarding the use of learning management systems (LMSs) such as the Blackboard system. In those interviews, the researcher attempted to explore and obtain more in-depth information than the questionnaire results provided and gain more detailed data on the factors that influence the implementation of learning management systems in Saudi higher education from the viewpoint of academic staff.

The interviews were conducted in order to clarify the views of the participants on the use of LMSs in Saudi universities for educational support. The first part of this section outlines the demographic information of the interviewee participants including their ages, colleges and departments, years of higher education teaching experience, their highest level of education, and nationalities. The second part analyses the deductive themes regarding Self-Determination Theory (SDT). The third section is about the inductive themes analysed from the interview data. The chapter ends by providing a conclusion.

5.2 Demographic information

The first few questions in the interview were demographic since these factors could be linked to the activation of an LMS. Table 1 provides an overview of the demographic information of the participants and discusses the results of this information in greater detail.

Participants Code:	Gender	Nationality	Major	Position	Years of Experience
P.1	M	Saudi	E-learning	Co-Professor	22 years
P.2	F	Saudi	Computer and Info sciences	Lecturer	8 years
P.3	M	Non- Saudi	E-leaning	Assistant Professor	7 years
P.4	M	Non- Saudi	Psychology	Assistant Professor	2years in JU- (13) in total
P.5	F	Saudi	Education	Assistant Professor	14 years
P.6	F	Saudi	English Language	Lecturer	10 years
P.7	F	Saudi	English Language	Lecturer	10 years
P.8	M	Saudi	Psychology	Assistant Professor	7 years
P.9	F	Non- Saudi	Curricula and teaching method	Assistant Professor	5 years
P.10	F	Saudi	Early Childhood	Assistant Professor	5 years
P.11	F	Saudi	Special Education	Lecturer	9 years
P.12	F	Non- Saudi	Accounting	Assistant Professor	3 years
P.13	F	Non- Saudi	Electrical Engineering	Assistant Professor	5 years
P.14	F	Saudi	Special Education	Teaching Assistant	4 years

Table 5.1 Participant Demographics

5.2.1 Participants' Ages

Six of the interviewees were in their early to mid-30s which represents 42.86% of the total number of participants (see Table 1 above). The 41-48 age group included four of the participants (28.57% of total number participants), and the 50-54 years age group also four (28.57%). In the interviews, the researcher explored whether the influence of age on the participants' Blackboard preferences were similar, and whether older faculty members were more likely to use the Blackboard system, because in the survey it was found that the older participants were less likely to use Blackboard than those younger. For example, in the survey 66.7 % of participants aged 55 and above used Blackboard as part of their teaching, whereas all those aged under 55 years used it in their lessons (see Table 5.1 above).

The researcher ensured that the participants represented a variety of faculty members from different faculties at the university, were of various ages, and with a different range of experience. This meant that the outcomes of the interview data are based on different perspectives regarding the activation of the Blackboard system.

5.2.2 Participants' Colleges

The interviewees were from five different colleges: the College of Computer and Information Sciences, the College of Engineering, the College of Arts, the College of Education, and the College of Business. Nine of the interviewees came from the College of Education (64.29% of participants), and two came from the College of Arts (14.29% of participants). One each came from the College of Computer and Information Sciences, the College of Engineering, and the College of Business (7.14% of participants in each college). Therefore, most of the participants were from two main fields. Because the interviewees were only from two colleges, the researcher obtained limited information on the use of Blackboard across a variety of disciplines.

5.2.3 Participants' Nationalities

Nine of the interviewees were of Saudi origin, which represents 64.29% of total participants, and five interviewees were non-Saudis (25.71%). The Saudi participants had experience of Blackboard during their study and teaching,

whereas the non-Saudi interviewees had experience of Blackboard in their teaching but not in their studies. For instance, all non-Saudi interviewees stated that during their university studies in their respective Arab countries they did not use technology tools, and that their studies were traditional. This is likely due to the fact most of them did their studies in the 1980s and early 1990s when technology was more limited.

5.3 Deductive Thematic Analysis: Self-Determination Theory (SDT)

As explained in the literature review, Deci & Ryan (2020) provide a useful way of explaining Self-Determination Theory (SDT), which features 6 types of motivation. First, amotivation refers to a lack of intentionality where there is an absence of intentional regulation and a lack of motivation. Then we move to extrinsic motivation, which concerns behaviours done for reasons other than one's inherent satisfaction. This kind of motivation is considered an umbrella for four major subtypes: external regulation, introjected regulation, identified regulation and integrated regulation. These four sub-categories form the basis of the themes discussed in this thesis, which were reached based on thematic analysis and a hybrid approach (see the Methodology chapter). Finally, the last type of motivation is intrinsic motivation, which is based on interest and enjoyment — people behave in certain ways because they find it engaging or fun. The natural human inclination to learn and assimilate is the intrinsic driving force. Extrinsic motivation, however, varies significantly in its relative autonomy and can thus either reflect external control or authentic self-regulation. Several related themes were also discovered, yet SDT is the main basis of the themes and provides a useful tool for categorisation and analysis. However, the six types of motivation were not all represented in the data. Ryan and Deci (2020) also point out that research into technology and the motivation to use it will become an increasingly important area of research.

The data from the interviews is discussed below and is based on the following themes that were discovered after a process of thematic analysis and coding (see the Methodology chapter for more details), and these can be related to SDT by Ryan and Deci (2020), as explained above:

- External Regulation (actions controlled by external incentives such as praise and rewards, or punishment; it involves pleasing others rather than oneself).

- Introjected Regulation (actions are regulated by internal pressure directed towards attaining the reward of self-esteem for success, or avoiding anxiety or punishment; it can involve feelings of guilt or embarrassment).

- Identified Regulation (actions affected by reasons and beliefs personally important to the individual).

- Integrated Regulation (where motivation is internalised following self-reflection and is fully integrated into the individual's personal values as it is the most autonomous form of extrinsic motivation).

- Intrinsic Motivation (performing an action for inherent satisfaction rather than a specific consequence. The individual acts out of enjoyment or challenge rather than external pressure or reward).

It is important to note that intrinsic motivation is the action performed out of one's interest in the activity itself, and it is prototypically autonomous. However, one important aspect of SDT is extrinsic motivation, which can vary greatly in the degree to which it is autonomous or controlled (Gagne & Deci, 2005).

5.3.1 External Regulation

To reiterate, external regulation is where "behavior is controlled by external means, such as external authority, rewards or the avoidance of negative consequences" (Stephanou & Mpiontini, 2017 p. 1948).

The Dean of E-Learning (M) described the role of the university in setting out a specific methodology for the use of Blackboard, along with the necessity for obtaining approval from the university to gain the right to evaluate the faculty members through e-learning courses. In addition, the training of faculty members

in the programme and Blackboard system tools *"took place according to a specific plan to adopt the Blackboard system"* (P.1).

The Dean of E-Learning (M) also pointed out that faculty members are evaluated by a special committee and expected to reach a basic level of e-learning at the target university; hence, the use of Blackboard is mandatory and controlled, thus falling under external regulation. The outcome of this has implications for the faculty members' employment and future career progression. However, although some faculty members were wary, and even upset and scared in the beginning, e-learning, *"became part of the culture of most faculty members"* (Dean of E-Learning, (M). This was recognised by (P.8), who stated, *"I'm with this team who support the Blackboard system assessment at the end of each month. The evaluation adjusts the new path going forward."* However, (P.10) saw the evaluation as limited to the present time, rather than being part of continuing professional development, as she shared her view that,

> *As for the evaluation, I feel that in two years there will be no evaluation in the future because the evaluation proposal was only in order to increase the members' use of Blackboard and to make them feel the importance of the application and its implementation.*

(P.4) mentioned the importance of attitudes that may be related to the power of the external regulation; also, he said this includes the attitude of those helping coordinate requests made to faculty:

> *Sometimes coordinators conduct themselves inappropriately with faculty members. We must keep in mind that faculty members are not our subordinates and therefore can't be told what to do or asked why they didn't do this or that! All we as E-Education Coordinators do is to tell faculty members that we are there for them and are available to solve any problems they may have with the system. A faculty member needs to feel that he is being treated amiably and that he isn't the subject of constant evaluation, because then he may say 'Don't talk to me like that!!' So, the success of the whole system depends upon the way you deal with people.*

(P.2) mentioned extrinsic motivation and how *"Any incentive, whether praise or material, motivates a faculty member towards greater achievement in terms of technological integration",* although they added that training is also needed. The importance of such external regulation was mentioned explicitly by some of the participants, for instance (P.13) reported, *"If there was no assessment, we would not have used the Blackboard system",* and (P.12) mentioned *"There is reward and punishment. If things were not like this, no one would have done anything, so I am very much in favour of the evaluation and system assessment."* This is particularly important, as P.14 stated that "*At first, most of us were against being forced to use the Blackboard system."* Furthermore, this external regulation greatly influenced the use of the Blackboard system since "*There was pressure due to the evaluation among us as faculty members. So, even when you want to present a virtual class, you present it only as if it is part of an evaluation"* (P.6). Therefore, faculty members were constantly aware of the evaluation and meeting its criteria, and "*Even the contracted foreign staff members do what they have to do and more, and always strive to satisfy the administration"* (P.9).

Yet the Computer and Information Sciences Lecturer (F), (P.3) explained that some,

> *… resent the fact that faculty members' activation of the Blackboard system is the subject of strict and continuous evaluation and even goes into their respective academic files. This is regarded as positive motivation by some but is resented by others depending on their respective levels of activation.*

Again, while management may be aiming to implement external regulation through fear of negative consequences, it may not work and can create a poor working environment. Furthermore, (P.1) explained that as most of the faculty members were foreigners working in the university with a contract, *"It was easy to activate the system and force staff to do so",* which seems like a strong statement, but he added *"We looked at it as a strength, and the issue became, with time, easy regarding acceptance and adoption by the faculty members."*

Added to that is evaluation, which was mentioned by the Dean of E-Learning (M) and the other participants. (P.2) also mentioned the idea of forcing the use of Blackboard, and that although *"They may argue about the timetable they are given for the evaluation … in the end, however, they needed to meet the criteria of the Blackboard tools' activation as it is mandatory."* Here, the external regulation seems to have a sort of negative, authoritarian approach, yet she also added *"In order to encourage the faculty members, the Deanship of E-Learning could allocate a list of honours for the most active faculty members on the system. It is also possible to assign certificates of gratitude and appreciation as well"*, and *"I think it is a mistake to impose evaluation without providing incentives to encourage everyone to take on such a load in teaching.", thus employing a reward element to external regulation as well.*

In addition, (P.4) expressed how externally imposed rewards can motivate faculty members, and he suggested the university could *"issue attendance certificates, including a statement to the teaching member, and include the member's attendance and give some positive reward, support, and encouragement."* Similarly, (P.9) suggested *"providing motivation through holding competitions for the best faculty member in using the Blackboard system, or the best designed e-course"*, and that *"Such moral and financial motivation will help faculty members excel and become more receptive to technology."* It is the belief of this Assistant Professor that praise or material motivation will lead to greater achievement, and *"motivate faculty members towards a higher level of Blackboard system integration."* Moreover, several of the participants gave examples of possible rewards that would encourage faculty members to activate the Blackboard system. For example:

> *It is possible to motivate them at the end of the term or at the end of the year. We could organise a small party for the people who have responded one hundred percentage. We may give them certificates of appreciation.* (P.9)

> *We may have something like a vote or a top-three which comes out on a weekly basis, for example, in this college, or even the whole university,*

> *meaning the member who uses Blackboard the most and has activity and visits on his page.* (P.6)

(P.3) also flagged up the importance of evaluating the willingness to integrate electronic tools into the learning environment, stating,

> *Unfortunately, if there is no follow up evaluation, people are unwilling to integrate such electronic tools; therefore, you must evaluate faculty members over both terms and on a departmental basis so that integration is maintained.*

This respondent also claimed that the evaluation should take place on a continuous basis, *"even though some faculty members rather resent that."* This is fairly similar to the good practice of some faculty members who keep a reflective log. (P.4) pointed out the importance of making sure that staff know about the requirements, as he stated, *"We need to inform the new faculty staff members that this platform is mandatory, and all of them need to activate and be aware that there will be assessments of the faculty members."* This highlights the complexities around motivation and how a combination of motivating factors are involved when introducing a new system, such as an LMS like Blackboard.

(P.2) mentioned the impact of extrinsic motivation for some faculty members in that attempts at encouraging it through evaluation and expectations may actually backfire:

> *I think some members may reject the idea of evaluation because it is motivated by control. They believe that they are in an academic position that allows them freedom of choice and action. Sometimes a person rejects the controlling force, and it is possible to accept the power that comes from motivation and personal inner motivation. I can assure you that most of the faculty members who have a negative perception of the Blackboard system reject it from the start as they do not accept another person's control over them.*

Therefore, it seems that it is possible to move from external regulation to more internalised form of motivation or even intrinsic motivation, which, ultimately, is more conducive to a cooperative staff team. (P.2P.2) also mentioned this shift in motivation with regard to students, suggesting encouraging them while also dealing firmly with them *"so they do not slacken."*

(P.4) added that some faculty members see the system as being *"A form of surveillance",* and that *"Some members who use the Blackboard system do not agree with it and have a negative attitude toward it. They only conform due to the additional 'pressure.'"* Hence, more education and encouragement is needed to show faculty members the advantages of the Blackboard system and to convince them that is not a form of surveillance but rather a form of support, as there should not be this kind of mandatory evaluation in which some of the faculty members have a negative perspective.

This highlights the complexities around motivation. (P.5) recognised this and stated, *"I think the university needs to reconsider that issue and find another way to motivate the faculty members and students to activate the system as it is a need in this technology-driven era."* In particular, the interviewee then expressed how the external regulation was controlling her and the students by applying the mandatory activation: *"I believe that the problem is that the way the university force the platform assessments causes the rejection and non-acceptance by some members … The students and I must agree to the Virtual Classrooms because it imposed on us."*

This shows a need to revise some management practices. Despite the difficulties, (P.5) stated, *"The fact is that from time to time, the administrative work, academic guidance or contents and teaching are further developed. Therefore, I want the evaluation to be within the scope of job performance."* They also mentioned that part of the solution is to address the time constraints of faculty members, which is also discussed below.

5.3.2 Introjected Regulation

Ryan and Deci (2020) explain that introjected regulation *"concerns extrinsic motivation that has been partially internalized; behavior is regulated by the*

internal rewards of self-esteem for success and by avoidance of anxiety, shame, or guilt for failure" (p. 2). There wasn't a rich amount of data talking about introjected regulation, and it was not easy for all participants to express themselves and their feelings toward a new technology introduced to them as something they were required to activate (mandatory activation). This type of motivation deals with self-esteem, worth, and ego involvement as a regulation that has been taken by someone even if he/she does not accept it totally in order to avoid the feeling of failure.

The Dean of E-Learning (M) seemed to have a positive outlook overall, which has impacted his attitude towards new systems, as he commented, *"Difficulties are possibilities of success."* (M) revealed a situation that may be related to self-esteem with regard to the success of the implementation of the system at the target university, as he described how *"Another university has adopted our strategy criteria"*, and how the target university *"is the second university in the Kingdom to implement the Blackboard system and the first university in the Kingdom to implement the system according to a specific strategy."* This strategy was as follows: *"We started with one electronic course, and the application was not random — it was studied and based on a specific strategy at one campus only, among both male and female students."*

This can also be related to introjected regulation with regard to actions being regulated by internal pressure from the need to make the system a success. Therefore, care was taken in the way that the electronic courses were introduced. Furthermore, a manager in the School of Education (P.5) explained, *"It is definitely a good idea when the system includes the entire curriculum, whether content, activities or even evaluation."* She added:

> *If the Blackboard system is applied, or if the faculty members are encouraged to appropriately and scientifically use it, there will be quality in the teaching process, especially in the stage of setting goals, meaning that the content shall be established, as well as the teaching plan and the semester chronology.*

The director also used a strong expression to underline the importance of integrating technology with teaching methods as a motivation factor in the use of e-learning tools in teaching experience: *"… meaning that the use of the learning management system will be a quantum leap based on the availability of time to the teaching staff to apply it."*

However, not all faculty members agreed with this, and sometimes their own attitude changed over time. P.4 stated, *"From sensing that there was a force that was controlling, I...became passionate with a desire that pushes me to lea-n more" - an example of the partial internalisation that characterises introjection* while (P.6) described a fear of failure by saying *"The problem we were facing was that there was always a deadline for activating the Blackboard tools before the assessment of each one, which really causes some anxiety."*

Also, another participant acknowledged (P.14) by explaining, *"Not all people behave the same. You have people who come with intimidating approaches; some come with encouragement and others with a sweet word."*

Therefore, there is a kind of path towards introjected regulation, with each staff member reacting in a slightly different way until they recognised that they would have to work with the system either to reach success or avoid failure because of the use of praise/esteem and criticism/shame. (P.4) stated:

> *I got a surprise when the students told me for the first time at that year that it was one of the best lectures I had given, because the previous lectures were not interactive or face-to-face. When we interacted with each other and I uploaded the files online, they reviewed and answered them and felt they could contribute; they praised the lecture very much because they performed their assignment on an proper basis.*

Similarly, participants talked about the importance of regulation that includes self-esteem, as it pressures people to behave in order to feel worthy. For example (P.3) found it easy to activate the system, in that it helped him to satisfy his ego: *"Personally, I didn't face any challenges"*, explaining that *"Usually a person who possesses all the required skills has such self confidence that he has no fear or*

trepidation or anything." It was also very clear that some of the faculty members accepted the use of the Blackboard system as it helped them as regards their self-esteem and to feel more worthy. (P.2P.2) said: *"Using the Blackboard tools, I feel that I am controlling my class positively, and I feel more confident."* She then shows introjected regulation as she was helping other people. This gave her a sense of esteem: *"I help them, of course, on what they need. Usually, faculty members in the College ask me for help with how to design their homework and how to upload it."*

Then she expressed that she did not want to fail at a task, stating, *"I think there was a little bit of anxiety because of the evaluation idea, but then I understood the reason for it."* In addition, she related this to the efforts of the Deanship and the way the system was introduced. (P.4) also hinted at introjected regulation in saying, *"Yes, I felt so; such feedback has strongly motivating, and encouraged me in using the system, and it has strengthened my use of it in order to enhance the learning environment"* and, *" … if the students expressed that the professor has positively interacted with, it is a motivating point."*

In addition, (P.3.H) described a different form of introjected regulation in the form of praise, as he described how students praised online lectures, which he found motivating. Moreover, he described various types of motivation in relation to introjected regulation, explaining that with regard to Blackboard,

> *My students told me that it was one of the best lectures, and their comments are still affect me. One student told me that it was almost the first lecture in which they felt that the course was good and interesting; at that time, I thought of the idea of evaluation and that it was a great measure. The students' opinions were very important for me.*

Also, as noted in the interviews some participants talked about the importance of praise from their students on their teaching and how can they see this benefit in activating the Blackboard system. For example, (P.4) stated that *"students expressed that the professor has positively interacted with them"*, and that *"it is a motivating point."* Then the interviewee said that the incentive and reward are very important elements of support: *"This kind of support is essential and*

useful for me, as I previously told you. When more students thanked me and praised the content and my lecture, they felt the difference or sensed the interaction."

Moreover, somehow it can be seen that there was a mix of external regulation and introjected regulation in one particular statement where an interviewee expressed the important of the encouragement, rewards, and praise by saying:

> *… the Deanship of E-Learning may allocate a list of honours for the most active faculty members of the system. It is also possible to assign certificates of gratitude and appreciation as well … including a statement to the teaching member and which includes the member's attendance and gives some positive reward, support and encouragement.* (P.4)

Another interviewee made a similar statement by highlighting the need to provide motivation *"through holding competitions for the best faculty member in using the Blackboard system, or the best-designed e-course. Such moral and financial motivation helps faculty members excel and become more receptive to technology"* (P.3).

Here the participants gave a mixture of external regulation and introjected regulation as both really mattering for them in dealing and activating the new model tools on the Blackboard system. In addition, the participants here are non-Saudi and had never used any technology tools in their teaching before; they were unable to refuse the use of the system as it is mandatory. On the other hand, there was another interviewee who did not support the idea of rewarding people, insisting that there should not be any kind of reward or prize for activating the system: *"No, I cannot support the idea of a reward for someone who fully activates the system. The university already helped me with this tool, and it helps me in teaching; I should be competent in it"* (P.7).

This statement shows that based on the self-esteem of the interviewee, she could not see how the reward would be a positive factor that would encourage her to use the system. This interviewee then stressed the idea that if the faculty member activated the system, why then should they be scared of the assessments, and

showed the importance of self-esteem by stating, *"Those who are afraid of evaluation are those who don't comply with it, because if I did my job properly, why would I be afraid of evaluation. What would be the reason to refuse the evaluation?"*

This highlights that some faculty members feel respected in their positions; they are caring about their ego involvement as they think that they are academic staff who should be worthy and do not have a negative attitude towards new systems, including LMSs and Blackboard specifically. (P.2M) suggested that positive encouragement would help to *"finally get a positive attitude from academics to use and activate e-learning effectively. The university must consider the faculty members' perspectives toward the Blackboard system to reach their goals."* This demonstrates the importance of considering self-esteem in being willing to succeed and avoid anxiety, which pressurises people to behave in order to buttress their fragile egos.

5.3.3 Identified Regulation

Identified regulation is a softer form of regulation where the person can see the point of the activities they are engaged in, but less strongly than integration. If someone has both knowledge and skills they are likely to excel (Stephanou & Mpiontini, 2017), if they value what they are doing and if it is of personal importance.

First of all, the Dean of E-Learning (M) seemed to have a clear plan which was a high level of IR. He stated: *My goal in the first three years was to build a culture of e-learning among the faculty members and the students",* and he had the awareness to recognise that *"It is essential to talk about the strategies used for applying e-learning through courses, including discussion before eight electronic courses were introduced.* He also emphasised the importance of *"improving, controlling and developing the educational process and integrating e-learning."*

Moreover, (P.2) explained that they value the Blackboard system as it is useful for organising teaching and learning: *"It is beneficial in terms of saving time and effort. I can easily contact my students and keep them updated if anything changes",* and she has considered the practicalities stating, *"I think that that*

formal class takes more hours than the number of hours of the electronic curriculum."

Another interviewee (P.4) indicated that *"It is excellent, but I think the university needs to define it at the beginning of each academic year for both faculty member and students"*, and stated that he did not identify with it at the start: *"I was not convinced of the use of the Blackboard at the beginning."* Another participant (P.3) showed how vital it is to reorganise the importance of the activities as he stated that *"I'm very satisfied with this development and view it as highly agreeable"*, and *"if there is no desire and no positive motivation, the educational environment will never be appropriately receptive to technology, no matter what you do and how positive your vision for the future is."* Also, this seems to be identified motivation as (P.4) recognised the value of the Blackboard system, and went further by adding, *"Using the Blackboard tools, I feel that I am controlling my class positively, and I feel more confident. Even if at the beginning, when I felt that I was forced to use and activate it."* And he added a comment about the importance of the Blackboard system: *"Yes, certainly and this clarifies the importance of Blackboard, meaning that after discussing this with the students, you find out that the feedback after the lecture is very important because this feedback is considered [an] evaluation of the lecture"*. Moreover, the participant understood the usefulness of the Blackboard system so that he was willing to utilise it in his teaching: *"All professors can log in and review the video, as well as a detailed video explaining each matter and being available throughout the semester, meaning that each professor could continuously teach himself."*

The participant then insisted that there was a benefit of the Blackboard system that the faculty members need to recognise as this would change their perspective toward the use of it in their teaching method. He pointed out that *"As a result, this should enhance the students' educational environment. Also, it is right and should encourage, stimulate and influence the educational process in general."*

The identified regulation here deals with being more autonomously motivated, which requires someone to identify the value of behaviour for his or her own self-selected goals. Identified regulation monitoring and evaluating are described by

(P.4) as: *"We have to keep in mind that evaluation is intended to increase the level of integration and provide continuous follow-up."*

In addition, when faculty members feel greater freedom as the behaviour is more congruent with their personal goals, they perceive the new task as it is related to their achievements and success. This was clear when (P.12) claimed *"I like the use of the Blackboard system because I can reach the students anywhere and anytime."* Moreover, (P.8) pointed out how Blackboard supports communication between genders in traditional Saudi society*: "Especially you know, for example, as a male professor in dealing with female students, there is some difficulty in communicating. Now with the use of e-learning, the student can communicate from her place, from her home."* Therefore, they can clearly see a point in using the Blackboard system in their teaching environments as the faculty members can easily understand the importance of activating the system. As a result, faculty members feel relatively autonomous when they are performing this task. For example, the participant mentioned the input from students and not just staff: *"I believe that when the students like to use Blackboard tools, the faculty member is encouraged. I am talking about myself based on my personal experience — I am encouraged by students"* (P.6).

Furthermore, the faculty members here can identify the importance and the value of their behaviour towards the use of a new system such as Blackboard, and have fully accepted it as a result of knowing the importance of their self-selected goals. As one participant claimed, *"I see that the Blackboard system can support success, but it depends much more on the faculty member than the student"* (P.10). Hence, it can be seen that the faculty members are placing value on the Blackboard system and endorsing it.

Another interviewee expressed the importance of the Blackboard system as he perceived the benefit of using it by saying that *"[I] make the most benefit therefrom, support my educational method by using the tool, and it significantly supports interaction with my students."* (P.4) also pointed out the importance of activating the Blackboard system in teaching methods, where *"knowledge of Blackboard's elements needs to be deepened because it is a great feature that needs to be used and invested in more."* He also described how they gained

knowledge of the system: *"My colleagues explained the instructions to me, and I tried to follow them by myself step by step until I mastered them."*

Then the interviewee talked about the importance of alignment and communication by saying, *"If there is any problem, the college asks us to come to discuss it, and the support is currently easier despite that fact I did not use it."* He emphasised the same sentiment about the importance of identification: *"We need to encourage and support the faculty members to feel that using such a platform is essential, useful and profound, regardless of assessments."* In addition, he considered the knowledge level of students:

> *If we encourage the students to engage in self-education by using the Blackboard system and its tools, the student shall be informed of, understand, and know how to use it; and we can disclose to him an evaluation at the end.*

This interviewee also emphasised the importance of the use of the Blackboard system as a benefit the students' learning environments declaring, *"Now it is easier for the student because the professor is online all the time, and if the student has a problem, he can immediately review the video online."* Similarly, (P.2) stated that *"We should help students to see how the new technology tools can enhance their environments and facilitate their learning. If the faculty members are motivated by themselves, they can easily encourage the students to do the same."*

(P.5) explained that problems can arise if faculty members have a problem with their computer skills: *"The faculty member shall be responsible, keep pace with any developments and should develop their capabilities and knowledge in a way to keep up with these developments."* This participant was also close to the idea of involvement when stating that *"when they are involved in the decision, they feel that they are a part of the educational process."* These aspects highlight the importance of identified regulation.

Self-endorsement is also important with regard to identified regulation, where (P.7) stated, *"That is how we deal with it, how I do a test, how I do virtual classes;*

once we began to master things, we felt more fulfilled and accomplished." Similarly, (P.9) explained:

> *When I find I have accomplished what I have to do, I will be happy because it is my job, God willing, it is one hundred percent, praise be to God. And as you know, no one takes possession of something like this unless he is competent.*

In addition, this interviewee showed that the use of the Blackboard system is in alignment with her personal goals which would be classed as identification regulation: *"It serves my personal goals"* (P.5).

5.3.4 Integrated Regulation

As Ryan and Deci (2020) posit, *"Autonomy concerns a sense of initiative and ownership in one's actions. It is supported by experiences of interest and value and undermined by experiences of being externally controlled, whether by rewards or punishments"* (p. 2). Therefore, some types of extrinsic motivation can undermine autonomy, especially where the individual feels that they are being controlled against their will. Hence, we move on to the next theme, which is integrated regulation, which Ryan and Deci (2020) describe as the most self-determined and autonomous form of extrinsic motivation, in which *"the person not only recognizes and identifies with the value of the activity, but also finds it to be congruent with other core interests and values"* (p. 2).

First, the Dean of E-Learning had a very positive and clear sense of integrated regulation in the use of the Blackboard system in the university, stating that *"Improving, controlling and developing the educational process and integrating e-learning is very important"* (P.1). P.5 also talked about how the system has helped her with her performance, highlighting how important it was to use it: *"I have blackboard requirements and I like the system which facilitates many things",* and *"I want to activate the blackboard system."*

It is essential that the individual recognises the benefits of a new system, even if they do not actually like it, as they will be able to focus on the advantages and do a better job than if they do not understand why a change, such as the introduction

of an LMS, is being introduced. (P.2) explained, when asked if she felt like interacting with the Blackboard system from the beginning, that *"Yes, because we need such programmes; we need technology to facilitate life — this is the basis of technology — the technology exists to improve our life."* Another participant stated that:

> *The idea is that this Blackboard system helped facilitate our academic life, enhance the learning environments, and encourage the students to communicate with each other and with their professors. It has helped us as academic staff to engage with the students.* (P.4)

Therefore, she was focusing on the usefulness of technology, rather than whether it is enjoyable. (P.3) gave a similar reply: *"The use of technology is certainly a valuable addition to the educational process by improving the educational output."*

Additionally, there were some enthusiastic responses on the borderline between identified and integrated regulation. For example, (P.7) stated, *"The use of some Blackboard tools really helped me in communicating with my students, and it became very useful and helpful."* Also, some of the interviewees shared perspectives and ideas that can be represented as features with autonomous motivation, As (P.12) specified: *"It acts as an incentive for me to communicate with female students and deliver the lesson, since I can now do it from anywhere."* In addition, (P.8) identified students' learning achievements as a motivating factor, explaining, *"From my point of view, the biggest motivator for a faculty member to activate the Blackboard system is the development of students' academic levels, and the ease of communication for them everywhere."*

Furthermore, the following participant showed that the use of the system becomes important for her personal goals. She was not just interested in activating the system, but claimed *"I like the system as it facilitates many things"*, and *"I enjoy and participate in Virtual Classrooms after understanding its benefits"* (P.5). This interviewee revealed the presence of autonomous motivation that some faculty members presenting integrated regulation by saying, *"Some lecturers want to deal with the Blackboard platform with their students.*

Those lecturers...believe in this Blackboard system's benefit." Moreover, (P.5) interviewee then demonstrated integrated regulation in the Blackboard system by stating that *"I want to activate the blackboard system."* She then emphasised the strength of integrated regulation where she stated that *"use of the learning management system will be a quantum leap based on the availability of time to the teaching staff to apply it."*

These participants can see the advantages of using a system such as Blackboard. (P.10) also described how the valuing of Blackboard by faculty members affects students' attitudes towards it:

> *In education itself, in the use of technology, in the university in general; I mean, a faculty member is considered an important factor. If he/she likes the topic, this will, as a result, affect the students.*

Similarly, (P.8) described a kind of 'moving forward' among faculty members, a form of external regulation as a result of the evaluation towards a positive view of the Blackboard system in and of itself: *"Of course, as we mentioned, the Blackboard system must undergo continuous evaluation, modification and development. I see that it will be an essential pillar of education at the university."*

As can be seen from the aforementioned data, the internalising and integration of LMSs is a process that greatly affects outcomes.

5.3.5 Intrinsic Motivation

"Intrinsic motivation is characterized as that which comes from within the individual. It inspires action even when there is no perceived external stimulus or reward" (Stirling, 2014, p. 2). The way that the following interviewee described the implementation of the Blackboard suggests intrinsic motivation, although not explicitly, as he described the process and the use of the Blackboard system in saying, *"I really like the idea that I am able because of technology to design the lesson, teach, evaluate the students"* (P.2). It is difficult to see whether this is an example of intrinsic motivation (enjoyment) or integrated regulation (shared values). (P.2) was clearer about their motivation, which they described thus:

"Every day I familiarise myself with the tools, and I become more motivated by using it. I can say that I enjoy using it and I am willing to activate it in my teaching." From this it can be seen that intrinsic motivation involves action because the activity is interesting. However, this participant did not always have this intrinsic motivation, as *"I did not like this in the beginning. There was a little bit of anxiety, but I think it is because of the idea of evaluation — until I understood the reason for it"* (P.2). (P.3) described his feelings about the use of technology and the Blackboard system, and expressed interest in the task as he rated the degree to which he is satisfied and how much he values the system in the following statements:

"I'm very satisfied with this development and view it as highly agreeable."

"I can see the educational process by improving the educational output as reflected by the educational level of students and by enriching the educational process using modern technology as reflected by electronic presentations".

This again may be expressive of a borderline area between integrated and intrinsic motivation. Another interviewee, (P.4) expressed that he needs to feel competent and autonomous to maintain his intrinsic motivation, stating, *"The idea is that this Blackboard system would help facilitate our academic life, enhance the learning environments and encourage the students to communicate with each other and with their professors. It helped us as academic staff to engage with the students",* and *"I used to add tasks or activate the tools just for the activation requirement; however, when I tried it more times, I liked it."*

As explained above, this shows the potential for shifting towards intrinsic motivation, and it is important for management to recognise this so that they themselves do not become despondent.

Finally, (P.11) stated that she was motivated to use Blackboard because she viewed the system as something which she enjoyed, even if she did not have enough time to fully activate the system: *"I do not have sufficient time, but I like the system as it facilitates many things."* As she likes Blackboard, she is

intrinsically motivated to try to use it despite time constraints — an issue discussed below.

5.3.6 Summary: The Role of Motivation in the Use of Technology:

It is clear that motivation plays a key role in the success of LMSs, including the Blackboard system at target University in Saudi Arabia. For example, the Computer and Information Sciences Lecturer (F) explained the importance of *"Increasing motivation and encouragement, so that we finally get a positive attitude from academics to use and activate e-learning effectively."* The university must consider the faculty members' perspectives toward the Blackboard system to reach their goals. However, there are different elements to motivation, as posited by SDT, and the Assistant Professor in Psychology (M) reiterated this by explaining, *"Sometimes, they activate it because they are interested and becoming more motivated to do so, or they do the activation to avoid punishment."* This reveals different kinds of regulation: identified and integrated regulation, then external regulation. Importantly, (M) claimed that the Blackboard system *"can facilitate our working life, enhance the learning environment, and encourage the students to communicate with each other and with their professors. It helps us as academic staff to engage with the students."* The vital importance of motivation was noted by (M) who also explained that,

> *Interest in technology is impacted by vision. So, if there is no desire or positive motivation, the educational environment will never be properly receptive to technology no matter what you do and how positive your vision for the future is.*

5.4. Deductive Thematic Analysis: Technology Acceptance Model (TAM):

As regards the subject of TAM theory as a deductive theme, there was less evidence of TAM theory in the qualitative data regarding perceived usefulness and perceived ease of use. For instance, some data demonstrated perceived ease of use (PEU) and perceived usefulness (PU). However, the data around PU and PEU were not rich enough to be consider as themes which could be identified from the data. Where this was present, it was better captured by SDT or inductive themes.

For example, a participant said, "I like the Blackboard system as the system makes my job easy". This quote can be termed Identified Regulation and analysed as PU, but this could be risky and may confuse readers. Based on that, the researcher decided to classify it as a theme of SDT. Wherever this type of data has been discovered, it has been more appropriate to classify it based on SDT. On the other hand, the faculty members' attitude towards the Blackboard system emerged as a prominent theme. Furthermore, everything that needed to be said about TAM was already in the quantitative data; the interview data did not add anything.

5.4.1 Attitudes towards Technology

Attitude is “a psychological tendency that is expressed by evaluating a particular entity with some degree of favour or disfavour” (Eagly & Chaiken,1993, p. 1). The attitudes of teachers to IT are a key issue for the successful use of computers in education (Yushau, 2006; Abedalaziz et al., 2013). Hardy (1999) submitted that the attitude of teachers to computers and their use in the classroom, along with their prior computer experience and knowledge, could have a positive effect on their attitude. This theme of ‘attitude’ varied widely and is an important aspect of the findings of this study as it is related to individual participants; it is very difficult to change that. Also, there were many factors that may have affected faculty members’ attitude, such as the degree of confidence, knowledge, level of education, previous experience, and self-esteem.

The main goal of activating the use of the Blackboard system is to increase its productivity, efficiency and effectiveness. To achieve this goal, it is important to ensure that faculty members are able to integrate such a system into their teaching, and help enable them to adapt it to their teaching environment and adjust their instructional methods. All of the above cannot be achieved unless the faculty members have a positive attitude towards using the Blackboard system.

This problem was exemplified by (P.7), who explained how she felt towards the system at the beginning: *“At first, when they introduced the system, I felt a little rejected because I didn’t know what the reasons for it were and how to deal with it.”* The same participant changed her attitude once she used the system, saying,

> *Once I started using the Blackboard system in my teaching, I liked how it helped to improve the students' learning progress such as online submission and deadlines. Also, students can interact by using the Blackboard discussion tool to communicate with each other.*

Another participant demonstrated a similar positive attitude towards the system saying, *"By using the Blackboard system in my teaching, I can save time and improve some working conditions that may I face, for example if we had to cancel some of the face-to-face classes because of weather or something"* (P.14). Similarly, the following interviewee held a very positive attitude towards integrating the use of technology in higher education today: *"These days it is important to keep up with modern teaching practices in higher education, and that can be done by using such system"* (P.6).

This data shows that some of the participants were open to change and adopted a different perspective over time; this had an impact on both their attitudes and actions, some examples of which have already been described above. This is the case for both faculty members and students; for example, the Dean of E-Learning (M) stated, *"In the beginning, the students were obliged to use the Blackboard system. They were complaining because the system monitored everything, so they were not aware of the feasibility of the system in their learning environment."* However, with time, the benefits became apparent, and *"e-learning helped to overcome many problems in the university, such as the need for more faculty members, and lack of classrooms."* This was also beneficial to the university's status, since *"we were working on getting additional institutional and academic accreditation"* (M).

At the start, some of the senior management, especially the older members, questioned the usefulness of the Blackboard system. This was exemplified thus: *"The biggest challenge we faced was from the senior leadership because they were 'old school'"*, yet *"The middle leadership's awareness of the importance of e-learning helped us to activate the use of the Blackboard system."* Similarly, (P.12) claimed:

> *Not everything that technology has brought is accurate either. It works in balance according to the quality of the content, the decisions made. We must respect the classroom hours. But considering technology as an alternative to the professor on the course is not useful. Human feelings and human communication must be present in order to fulfil many needs.*

This suggests that a holistic approach to LMSs should be used, and in a practical sense, as the following quotation underlines: *"Some subjects need to be integrated with technology. But purely electronic, it will be a little difficult"* (P.9). However, the following participant was opposed to this: *"I am against the idea of forcing the user to activate specific tools, regardless of the appropriate time and need"* (P.7), and therefore seemed to require autonomy in their teaching practices. Therefore, there are not only differences in an individual's openness over time, but also differences between participants. Moreover, the Dean of E-Learning (M) mentioned future aspirations and the plan to have more online programmes, especially for postgraduate studies. Whereas there was reluctance in the beginning, faculty members also changed their perceptions of the evaluation, as exemplified by (M): *"The evaluation became part of the culture of the faculty members."* Thus it is not the case that faculty members' attitudes towards technology will reach the point where it is seen as a replacement for face-to-face teaching. That is, while its usefulness was not denied by any of the interviewees, based on their honest and open feedback, they did not agree with moving everything online. For example, (P.2), despite their speciality, stated, *"I am against the idea of fully transferring the content to be digital."* Similarly, despite describing how he changed his opinion about Blackboard over time, (P.4) stated:

> *The traditional method of education (normal off-line interaction) is indispensable. I do not support the idea of only digital courses because the educational process differs from any other process and needs face-to-face interaction at a certain ratio. But I can use Blackboard as a tool, get the most benefit therefrom, support my educational methods through that tool, and significantly support the interaction with my students.*

Therefore, openness to change does not mean accepting all change. In addition, there are various actors involved, as mentioned by and (P.10) in terms of the role of students: *"Sometimes students don't take the topic seriously. I mean, the first term they did not understand. Even the demand for students to use the university email was negative; this must affect our perspective."*

(P.2) also described some of the problems with LMSs, explaining,

> *OK, now the students will have a busy time: at the same time as wanting to maintain their academic level while floundering between class materials and preparing for the tests that are also coming, they still have not started virtual classes.*

This shows that there are sticking points that need to be overcome, which is mentioned by the Assistant Professor, as she described how things began when Blackboard was introduced:

> *Certainly, there were some challenges, including lack of training, and dissatisfaction with the Blackboard system, which was negatively viewed by those who couldn't use it; they saw it as a heavy burden. Naturally, all these were negative factors that adversely affected the use of the Blackboard system by faculty members.*

Yet while they were against Blackboard, she' stated, *"I'd say that support is essential, whether in terms of training or providing technological support."*

While many examples of changes in attitudes were given, this is not the case universally. (P.3) spoke of this regarding essential training:

> *The problem is that many faculty members aren't satisfied with or convinced of the value of such workshops and therefore fail to attend them on a regular basis. So, even though we try to provide the necessary information about the system, attendance is poor, and when members are evaluated as to their knowledge of the system, they say that they don't know, and we have to go through the whole thing again even though the service was previously provided.*

(P.13) mentioned that some faculty members were against the Blackboard system, stating that *"there are some faculty members who tell you that we are not working or using the system based on what they want."* Such data show that introducing a learning management system may involve a long process requiring continuous support and intervention.

Nevertheless, (P.4) is an example of a faculty member that changed their mind about Blackboard based on an inductive attitude: *"Honestly, I was not convinced of the use of Blackboard at the beginning"*, but changed their viewpoint once they started to realise the benefits, adding, *"I used to add tasks or activate the tools just for the activation requirement; however, the more I tried it, the more I liked it."* Acknowledging the advantages of Blackboard, (P.8) claimed *"The use of the Blackboard system is really a new, great and useful tool that faculty members should take seriously."* Even so, the importance of a blended learning approach was emphasised by (P.6) as she stated,

> *I need some communication between me and the students based on our subjects. But if you are talking about a second language such as English, the student must see the professor of the course in-person, and it must be like a class lecture face-to-face.*

5.5 Inductive Themes

The results from the interviews serve to support or contradict the findings of the survey, providing important information and an added richness that could not be achieved through the surveys. An inductive approach, adopted in this research, involves allowing the data to generate the themes.

5.5.1 The Participants' Experience of Using the System

As in higher education and any learning environment, there is always a relationship between faculty members' knowledge of a subject or skills and their level of acceptance of the task. In this research and from the qualitative data, there was a very important sign of the relationship between acceptance in using the Blackboard system and the level of technology experience each of the participants had. For this reason, the first theme of the inductive analysis is about the participants' level of experience, and to what extent faculty members shared

information about expressing how that level of experience influences technology acceptance.

The interviews explored the knowledge and use of learning management systems, in particular the Blackboard system. Most participants were aware of the system, but interviewees who completed their academic studies in Saudi Arabia (and the five non–Saudi faculty members) had no knowledge of the system before the university asked them to use it in their teaching. However, most of the Saudi faculty members who attained a degree *outside* of Saudi Arabia were familiar with these type of technological tools, even if they had used similar ones on another platform. One interviewee had been working in the university for 10 years but had only five years of experience using the Blackboard system. She commented, *"Up until 5 years ago we didn't use technology tools as we were used to the traditional way of teaching. It was a huge difference in my teaching tools and responsibility"* (P.7). The participant expressed the extent of the change in the method of teaching because she did not use any kind of technology tools before and believed that this technology would increase her responsibility level in teaching. Another interviewee explained:

> *Blackboard is new to the university higher education sector in Saudi, and we did not have Blackboard at the beginning, since it was not a priority for our faculty. But now the system for learning management has begun to appear in our learning environments.* (P.6)

Another non–Saudi faculty member indicated that:

> *I have not used the technology tools in my learning or teaching during the last 11 years while teaching in my own country, but these two years since I started working at The target university, I started using the Blackboard system and have shifted away from the use of traditional methods of teaching.* (P.4)

Another interviewee (P.11) indicated that *"The lack of experience in using technology really affected my ability on activating the tools."* Moreover,

(P.10P.10) reported, *"The biggest problem that I am facing in using The Blackboard system is the lack of knowledge of some of the tools or steps."*

As seen from the statements above, most of the participants had no previous experience using technology in their learning environments before they started using the system at the target university five years ago. This lack of experience had really affected their acceptance and willingness to use the system. All Saudis got their Masters or PhDs inside the country, whereas non-Saudis got theirs in other countries.

On the other hand, if the faculty members had attained one or more degrees abroad, they revealed they have more experience with using technology tools. One participant used a platform called Moodle when she was studying for her master's degree in the US, stating:

> *I used the traditional method of teaching at the university, but when I went to the US to get a masters degree, I started to use a learning management system in 2012. Then, when I am back [in KSA], I found that they had introduced the Blackboard system.* (P.11)

Another participant used technology tools while he was studying in the UK for his masters and PhD (P.8):

> *When I studied for my masters degree, I used a platform called Model, and it was similar to the Blackboard system. I found out that the use of technology was a really rich experience. All of this knowledge benefitted and really changed my education.*

The participants who took part in the interviews were aware of the Blackboard system as an LMS, even if they had not used it at the target university before. From the data, the interviews examined the relationship between the experience of using technology and the degree of acceptance of this tool. Most of the participants had experience with another LMS before they used Blackboard in the target university. However, some of them did not have that experience of using technology in their teaching or higher education. (P.14) stated:

> *The system is excellent, but as you know it's the first time for me to use such a system. So sometimes I did not find it easy, and I am always wary of making mistakes, especially if I am designing the lessons or quizzes.*

As seen above, the participants insisted that their previous experience, even if it was short, had helped them to deal with and understand the system when it came to mandatory system activation. As a result, the participants were aware of the ability to collaborate using such a system. On the other hand, participants with no previous experience with such a system were unable to utilise the platform in the beginning as required by the university administration.

Finally, if the faculty members had experienced in the past using technology, they would be confident in using the system now at the university. However, if the faculty had not used the system before they would be more worried or lacking confidence when using it.

5.5.2 Training

Training can be defined as the systematic approach to affecting individuals' knowledge, skills, and attitudes in order to improve the individual, team, and organizational effectiveness (Aguinis & Kraiger, 2009). Training is particularly good in applied psychological research, within organizations and in society generally, as it makes a clear contribution to the enhancement of human well-being and performance. This theme came up many times among participants, showing how crucial a factor it is to the successful activation of the Blackboard system. It also reveals that requirements for different kinds of training has not been introduced to the training system yet. Overall, concerns regarding experience and training, as well as the development of the system, were revealed. For example, (P.7) explained:

> *At first, when they introduced the system, I felt a little rejected because I didn't know what the reasons for it were and how to deal with it. Of course, I did not express my discomfort with using the system.*

Similarly, (P.9) shifted their perspective through gaining more experience, stating, *"I consider my experience with the use of the Blackboard system to be*

very useful, especially these days, as technology plays an important role in our teaching — even if I faced difficulties at the beginning." In addition, the importance of keeping up to date with training and developments was highlighted by (P.7) as follows: *"I think that training topics should always be updated to keep pace with need, and the appropriate time to present them must be considered."* Overall, (P.8) claims that *"Compared to traditional education, the satisfaction is very high, but I still see the system itself is in need of development."*

Part of these developmental needs are related to training. As (P.9) shared:

> *There have been developments and changes that are supposed to inform and train us before we start the [academic] year. I mean, for example, that we had two weeks before the start of the semester dealing with the Blackboard system to address how to deal with students and studying in general. During these two weeks, we were able to find out what is new in it and be trained on it.*

In addition, (P.12) expressed, *"I need more training. I want to understand more. They want people to be more interested in training, whether for the student or for me, but not only me."*

A suggestion on how to facilitate this was put forward by (P.6), as they suggested:

> *The workshops are at the beginning of the semester when the faculty members are usually busy with schedules and preparing work. Therefore I think it is better for training to be during the semester when the faculty members are averagely busy.*

There was also some fear about the extent of the LMS, with (P.6) stating:

> *With some of the courses, such as the one with a specialisation, I felt that it was unfair since some courses turned into totally online classes using the Blackboard system. More importantly, the more specialised courses and subjects need to be taught face-to-face because they have content that needs to be communicated directly to the student.*

Another interviewee stated, *"I would suggest that there should be regular training courses providing on how to use the system"* (P.6). Therefore, part of the training process should address the full impact of the new technology and how it can support, rather than take over, courses at the university. The responses seem to show a lack of experience overall and a clear need for more training. As (P.4) claimed, *"The most important thing is to continuously hold workshops and provide technical support to faculty members to solve any problems that may arise."*

5.5.3 Time

Time concepts and expressions permeate our speech, thinking, feelings, actions, and arrangements with others (McGrath et al., 1986). This theme is related to the main issue that faculty members had regarding the time required to activate the Blackboard system. For instance, (P.14) said, *"I think that the Blackboard system is complicated, and time-consuming for me."* Here the interviewee expressed how the lack of time really affected her perception about the Blackboard system. Even so, another participant was enthusiastic about further changes and building on developments already in place, as she stated, *"In my capacity as a faculty teaching member, I want to activate the Blackboard system and I want the decision-makers to pay attention to the issue — 'MORE TIME NEEDED!'"* (P.5). This same participant also identified the problem faculty members have with time, when she reported, *"I hope that they reconsider the distribution of the number of hours about the system used so that there will be freedom to deal with the system"* (P.5). Therefore, their attitude has flagged up some of the problems with the system that need to be addressed, in particular the amount of time allocated to faculty members to utilise Blackboard properly, and to receive training outside normal teaching hours.

This issue of time was a major focus for (P.5), as she also described that for herself, *"I do not have sufficient time to study the system thoroughly; I cannot develop myself nor use the existing tools"*, suggesting that she felt it could be more beneficial if there were time available for each faculty member to engage with the Blackboard system properly; that is, having enough time may make faculty members become more aware of the usefulness of the system, rather than

seeing it as a burden, and become more motivated. She even went as far as saying, *"Use of the learning management system will be a quantum leap based on the availability of time to the teaching staff to apply it."*

Therefore, considering the time required to activate, improve, and use the system must be considered by the E-Learning team. Faculty members have many responsibilities, so if there is mandatory use of the system there should be more time to activate it. There should be a sufficient gap between the time required to use the system and the actual time given to the faculty to use it when taking account of faculty members' workload.

The amount of time available was also mentioned by several other participants; for example, (P.8) claimed, *"There is a very clear problem that always appears to the student and the professor, which is the time required to activate some tools."* (P.12) agreed: *"There is pressure concerning the hours of faculty members, and sometimes the lack of faculty members in these disciplines, and the increase in the number of students."*

As seen from these statements, the participants raised the issue of time prominently during the interview; they insisted that time pressure was a significant issue in their teaching experience and as a result, it has affected their attitude and ability. Similarly, (P.9) stated, *"There is always an inverse relationship with the time available to apply and use the Blackboard tools, and the time required to use it"*, but (P.10) suggested solving this through having a timetable *"so that you can get organised with these tasks, for example, an item that you must do and activate for assessment purposes."* However, even if such statements reveal that the participant was certainly using the system, he was satisfied with the time given to use it. This difficulty was also mentioned by (P.8) in that *"every faculty member oversees seven or eight e-classes which he is supposed to activate, and that sometimes creates an overload."* Furthermore, (P.13) stated,

> *There are many things, such as the lack of integrated online course content, so you must make up for it in the class lecture, which is face-to-face, but time does not allow it. You don't have enough time as in a normal*

course to put in the effort and also complete tasks when you put things on Blackboard.

This participant also indicated that *"For our university staff, we truly need more institutional support. They may consider financial incentives which may increase' the system's activation."*

In addition, the increase in the uptake of female students has led to new departments being opened in the university; this requires more activation by faculty members, which must include considering the additional time required and the student numbers in each course. This has added to the pressure of faculty as (P.6) explained:

Pressure on the hours of faculty members and sometimes the lack of faculty members in these disciplines, as well as the increase in the number of female students, all affect the time we need to activate and meet the criteria.

Finally, the number of students on one online course is sometimes more than 60 students, which makes it difficult for academic staff to keep pace with them and make sure they are able to participate in the course and use the system tools as required. This is in addition to the time faculty members need to use the system.

5.5.4 Support

Support is the key element of success in any training or IT support system. The faculty members here needed the support regarding any problem they faced while activating the system. They also required support regarding how to communicate using the Blackboard system. Support should meet the intrinsic needs of the individual, as without a supportive context, intrinsic motivation declines (Ryan & Deci, 2021). One issue, however, is how to provide support that meets the needs of a range of individuals. (P.4) explained:

The university, unfortunately, deals with too many cultures. I think if the university does the workshop based on online registration, the university and IT support teams will know in advance how many faculty members or

> *students will attend this topic. In this way, there will be more consideration about time and effort.*

In addition, this factor was the main institutional issue identified by the participants that could affect activation of the Blackboard system. (P.5) explained the differences between students:

> *Where the student has never used Blackboard or used a laptop before, the professor will need to provide an introduction to inform the student, even via SMS, how to use the Blackboard system, and make it open for the students in their free time.*

She believed that there has not been sufficient development regarding use of LMS tools, stating, *"As for development, I believe that there has been no development,"* adding *"I think that the current situation with the system is not sufficient because the system tools do not facilitate the educational process."* The interviewee here talked about the kind of support the administration department should be willing to offer faculty members regarding the use of technology. As it is the main support team, it can enhance the system and the IT team in addressing every issue that might be raised by faculty members using Blackboard.

Another participant stated, *"I have not got enough support, just some training course"* (P.14). Another participant considered another kind of support when reporting, *"As university staff we truly need more institutional support. They may also consider financial incentives as this might increase the system's activation"* (P.13). Another interviewee talked about support as a vital need for the faculty members: *"We have a problem with inadequate administration support: we need more help accessing the system and getting a quick response"* (P.9). (P.10) made a similar statement: *"I would like more and quicker technical support."*

5.5.5 Equipment and Internet

The internet has enormous potential to improve education quality, and is one of the cornerstones of sustainable development. The university should be able to

unlock this potential via an internet access framework. Four key elements for decision-makers are defined: infrastructure and access, inclusion, capacity and content, and devices. Together these are key considerations in supporting education for opening access to the internet.

For any LMS, including the Blackboard system, to be a success and accepted the right equipment and infrastructure must be made available. (P.2) explained that,

> *In the first preparatory year, they really need language laboratories; and we need computer labs, but the current lab does not suffice because it does not exceed 30 seats and is small. It is assumed that the laboratories shall be open to all students, whether they are students at the College of Computer Science or other colleges.*

Similarly, she stated, *"Of course, we can't expect any positive outcomes if there are no e-labs in the university. So, e-labs must be made available to each faculty, particularly since most students don't even have a computer!"* And (P.10) described how *"There is just one lab for all of the School of Education students to use. This is really a problem regarding offering the students who cannot use the internet in their homes."* In addition, (P.13) explained that this is because, *"The numbers of students are huge, and the classrooms are a little limited, and there is a lack of labs."* Here the interviewee talked about poor or lack of access to technology labs and difficulties in using the system. (P.11) also claimed that there was a need to provide the university with more laboratories that would allow all faculty members to use the system as required by the Deanship of E-Learning. It was not appropriate for all departments in one college to have only one lab with limited equipment and seats: *"In fact, there are e-labs being installed as we speak, but not as many as required, because each faculty is supposed to have at least one e-lab that is fully equipped and has its own independent budgetary allocation."*

As well as the lack of labs, the quality of the internet connection was flagged up as a major barrier, with (P14.N), despite being positive in general explaining, *"Overall, I'm satisfied, except that at times the speed of the internet connection*

leaves a lot to be desired, but they are few and far between and not on a continuous basis."

Not only that, but the internet in students' homes also presents problems, since *"Sometimes, some students have a problem with the internet. I mean, the internet is weak, especially in the villages"* (P.8). As a result, *"Most of the students face difficulty with the internet at home and at university, and at the same so do we, especially at the university"* (P.7). Yet more than that, participants gave reasons such as the internet crashing and suddenly stopping while they were working; they saw these problems as reasons that hindered the use of the Blackboard system: *"Not all of us have the same internet speed at home, so we need to get better internet speed at the university"* (P.12), and *"You will always hear complaints about the internet from students and faculty members"* (P.9).

Finally, poor internet speed and the lack of access to technology will always be a significant issue related to the use of LMSs in education or learning environments. Also, the lack of sufficient numbers of labs to enable students and faculty members to activate the system will has become a key reason for hindering access to the system.

5.6 Summary

This chapter presents the findings from interviews with fourteen faculty members from several colleges at the target university regarding the use of Learning Management Systems (LMSs) such as the Blackboard system. In the interviews, the researcher attempted to explore and obtain more in-depth information than the questionnaire results provided, and gain more detailed data on the factors that influence the implementation of learning management systems in Saudi higher education from the viewpoint of academic staff. The analysis of the deductive themes based on SDT undertaken here has extended our knowledge of the impact of the motivational factors on faculty members' attitudes and perspectives on using and activating the Blackboard system. This chapter has also provided additional evidence concerning the inductive themes that enhance our understanding of the role of academic support, the use of time, and internet

access and speed to ensure that the faculty members fully benefit from the use of technology in their learning environments.

Chapter 6 Synthesis of Findings from Qualitative and Quantitative Data Analysis

This chapter synthesises the findings from analysing both the qualitative and quantitative data.

6.1 Synthesis Approach

In this research, the main goal is to investigate the factors affecting the use of e-learning, educators' perspectives on using a specific e-learning tool (Blackboard), and the elements that motivate educators to use this system or that present challenges. The study also investigates faculty members' opinions of the kinds of training they require at their university. In addressing all of these elements, a synthesis approach will enable an exploration of the similarities and differences between strands from the quantitative and qualitative data gathered in this research.

Combining quantitative and qualitative evidence in a mixed-method synthesis can potentially contribute to understanding the complexities of the use of technology and enable the assessment of a given platform, such as the Blackboard system used at the target university (Noyes et al., 2019). A mixed-method synthesis may address several key questions for understanding the complexity of faculty members' perspectives about using such a platform, along with the broader concerns regarding their autonomy and the degree of control to which they are subject.

This study's heavy reliance on mixed methods allowed for the collection of a comprehensive and robust set of data. Drawing on multiple sources offers significant potential to improve the quality of research data, while also addressing the issue of generalisation in qualitative research and allowing a better understanding of the quantitative data. The researcher's ability to examine the views of academic staff on a given issue is enhanced by a greater awareness of their perceptions. These perceptions are critical and can help develop a more comprehensive understanding of the current practice and the factors that have led to the present situation in the target university.

Triangulation was implemented concurrently in this study's research design and data collection. This allowed the synthesising of all aspects of the evidence among the research data, whether it indicated similarities or differences. One surprising finding point of synthesis between the data strands was the participants' interest in engaging with this study and their willingness to provide information and perspectives on the issues raised; they expressed a strong desire for change. These decision-makers appeared to have been waiting for a study of this kind to provide them with an opportunity to express their views on the examined issues. Some participants shared their thoughts on the value of the research and how it can be applied, and gave recommendations for ways to enhance the system to ensure good outcomes. Hence, even though they considered the issues being discussed to be sensitive in Saudi Arabia, the participants viewed this study as necessary.

6.2 Interpreting the Results

This section incorporates quantitative and qualitative evidence to illustrate possible uses of the mixed-method findings. The quantitative evidence is obtained from the questionnaire responses. All topics relating to support, communication, time, training and experience were represented in the questionnaire sections regarding the benefits, challenges and solutions associated with using the Blackboard system. Also, these topics were discussed by interviewees and highlighted in the interview data as inductive data.

This chapter also considers synthesis via the use of the Technology Acceptance Model (TAM) and Self-Determination Theory (SDT). Both were considered in the questionnaire and the interview as deductive themes. However, this research revealed that it was the quantitative data that best captured TAM findings, as is often the case in studies on the use of e-learning based on that model. On the other hand, the use of SDT in this research suited all of the questionnaire and interview data. In addition, SDT integrated well as it helped interpret the qualitative data. In this stage, both the quantitative and qualitative data were analysed for this chapter based on the structure outlined in the next section (6.3).

6.3 Multidimensionality of Training Needs

The following section presents the five sub-categories of the multidimensionality of training needs based on the topics discussed in the qualitative and quantitative chapters. These topics were introduced by participants many times in both the open-ended questions in the questionnaire and the interview data. Moreover, a key area of synthesis was the multidimensionality of training needs, defined as the complex, dynamic and interwoven nature of the factors influencing training and development.

6.3.1 Infrastructure and Support

The theme of support covered all of forms of support that faculty members receive. This section distinguishes between three categories: administrative, technical and internet support. Referring to administrative support in the interviews, faculty members noted that a lack of guidelines and overassessment led to problems. Faculty members tried to activate the Blackboard tools as much as possible, which led to high numbers of Virtual Classrooms activation. Also, there were high student-faculty member ratios which meant there was a need to follow up after the lecturer had activated other tools such as Discussion Panel and Assignments. In terms of technical support, the faculty members always required the availability of quick IT support and assistance whenever they encountered difficulties. The theme of internet support related to the quality of the internet services at the university and its availability in every college and place on the campuses. The questionnaire data stressed the importance of all three support elements so as to be able to fully and successfully use the Blackboard tools. The quantitative data included the features of this support and the related issues (Section 5.4.1) that faculty members encountered when using the Blackboard system. Solutions (Section 5.4.2) were also proposed for the potential challenges to enable effective use of the Blackboard system in the university. For example, faculty members agreed strongly that there was the need to set up a department responsible for designing Electronic Lessons. The faculty members considered the internet to be a key element for enhancing the learning environment, as highlighted by their strong agreement that there was a need to improve internet speed within the university in order to enhance the learning environment.

Furthermore, based on the interview data, most of the participants noted issues with the quality of the internet service in the university and discussed how this issue affected their effective use of the Blackboard tools and their intention to use them in future. The faculty members' concerns about issues related to the internet also emerged from the interview data under the 'inductive theme' (see section 5.3.5). Given its capacity to improve education quality, it is necessary for decision-makers to consider improving access to the internet. The participants also referred to a lack of access to technology labs, as not all colleges in the university have such labs or sufficient equipment and seats. All of these concerns suggest that there were various issues with the existing infrastructure.

6.3.2. Communication

Communication also emerged as a significant factor for the faculty members, and was highlighted in both forms of data. Based on the questionnaire responses it was not the most critical issue, but it was given more salience in the interview data. The most important area of communication that needed improving, according to the faculty members, was communication between students and academic staff inside the university.

Most of the interviewees mentioned the importance of communication with decision-makers, who should be seeking and considering their ideas, and providing advice and feedback regarding all aspects of using the Blackboard system. Also, the interviewees underlined the importance of having a faculty member in each department who deals with and considers all of their complaints and the problems they might face when using the system. Analysis of the interview data shows that despite many new requirements and changes compared to the traditional teaching methods that were being employed just five years before this study was conducted, faculty members were open to talking about what they require in order to better adopt e-learning as a new method of teaching in the university. The faculty members placed great emphasis on the need for this type of communication support as they viewed it as essential in the academic field.

6.3.3 Time

Time was a factor that was considered in two different ways and with different meanings: 1) the time the Blackboard system could save, and 2) the time available

to use the system and meet assessment requirements of faculty members' use of Blackboard. In the first case, in both types of data, faculty members and decision-makers expressed positive views about the time-saving opportunities the system afforded. However, they were pessimistic in the interviews about the time they had available for using Blackboard. Both groups talked about time in terms of the time and effort saved by using the Blackboard platform for all university members, including the students. For example, when asked about the benefits of using the system (Section 5.4.3), the questionnaire respondents reported that the Blackboard system enabled them to save time and effort. However, the qualitative data presented a different view of the system from the quantitative data. This difference can be explained by the fact that in the interviews faculty members were able to express their ideas with greater freedom and feeling than the questionnaire respondents could. Almost all interviewees expressed the view that the time required to use Blackboard felt like it placed added pressure on them and their teaching.

The participants also mentioned that the lack of time available to them was a critical element that hindered their success in using the Blackboard system; this came up in both the interview data and open-ended question in the questionnaire. This perspective can be found in the quantitative data, with 65% of the participants agreeing with the statement that "I think lecturers do not have enough time to use Blackboard fully" (see section 5.4.1). In the interviews too, the time available to use Blackboard versus the time required emerged as a significant issue that faculty members raised multiple times. The interviewees observed that this lack of time affected their perceptions of their ability to use the Blackboard system tools effectively. They explained this by pointing to the many responsibilities they already had in relation to their teaching. Hence, although use of the system was mandatory, their already heavy workloads meant that faculty members felt they did not have enough time to use the system effectively. Furthermore, some participants mentioned the lack of time available for planning their use of the Blackboard system. Faculty members suggested that if they were given more time, this would help them become more aware of the usefulness of Blackboard; as things currently stood, they considered it a burden.

6.4 Training

The subject of training was viewed from two different perspectives in the interviewees' feedback and questionnaire respondents: topics for training, and timing of training. The faculty members viewed this type of support as important as they considered it the main factor that can help them to accept the use of the Blackboard system at the university.

6.4.1 Timing of Training

According to the quantitative data, the majority of faculty members had attended between one and three training sessions. This can be explained by the fact that they were taking only the required introductory training course, or they may not have had enough time to attend more than what was expressly stipulated. Also, the participants would only take the lessons that they needed to understand how to use Blackboard in their teaching. Training was also considered among the significant challenges relating to the use of the system (Section 5.4.1).

Another point the interviewees raised in regard to training was the time that sessions were held — they mentioned the lack of time they had to attend the workshops when considering their workloads. Many of them complained that the timing of training was not flexible and did not fit in with their schedules. Moreover, some interviewees commented that they should be provided with training before starting every academic year as part of their professional development. The Blackboard system still represented a new technological platform which has its challenges. All of the interviewees stressed the importance of training and its central role in their ability to teach effectively and adapt to the e-learning tools and methods.

6.4.2 Topics of Training

The academic staff felt they did not receive the training required to meet their needs and expectations. This point also emerged when considering solutions for using the e-learning tools (Section 5.4.2). The questionnaire respondents agreed with the statements about the need to provide suitable training courses for both academic staff and students.

Similarly, in the qualitative data, the topic of training emerged many times, thus highlighting how important they all viewed it as a factor in teaching successfully and how it shaped their use of the system. Also, the interviewees reported needing different types of training from what they were provided, even if some participants did see the advantages of the activities on offer. They stated that the training they were provided had helped them accept the use of the system following their initial reluctance to accept it. Moreover, interviewees suggested that the training should address the latest technology, tools, and tasks required to use Blackboard, such as electronic test design, rather than revisit the same courses and topics. They also underlined the need for training in different areas and alternative kinds of training.

6.5 Experience

The theme of prior experience was also important. From analysing the questionnaire data, it is evident that the participants' responses were based on the fact that use of the system was compulsory at the university. However, the interview participants gave more detailed feedback and shared their opinions more openly. They spoke about their prior experiences of using technology and how these influenced their acceptance of the Blackboard system at the university. The interview participants were able to express themselves with greater freedom. They noted that the degree of their experience with technology had a great impact on their acceptance and ability to employ Blackboard effectively. The interviewees described very varied experiences. Faculty members who had prior experience of using the technology or who were non-Saudi academics reported that they strove to prove to the administration that they were doing what was required of them, and sometimes even more. These interviewees expressed a very positive attitude regarding the target university's use of the Blackboard system. On the other hand, other faculty members in the interview reported that they were using the Blackboard system for the first time or had only employed traditional teaching methods previously. Hence, there was a strong relationship between the level of experience in using technology and Blackboard system acceptance. The faculty members who had obtained their academic degrees inside Saudi Arabia, or from other Arab countries, had not previously used such platforms in their university teaching, while the faculty members who had gained their

degrees outside of Saudi Arabia or in other Arab countries were familiar with these kinds of platforms.

In addition, many interviewees noted the considerable changes in their teaching and responsibilities due to the need to incorporate the Blackboard platform since they had been used to traditional teaching methods. Nevertheless, they could also see the advantage of employing modern technological tools and platforms. Other faculty members felt that their lack of experience of using such platforms affected their ability to use the tools.

Based on the questionnaire data, most of the participants (192 out of 200) had experience of using the system. This large percentage might be partly due to the fact that use of the system was mandatory at the target university. When the questionnaire respondents were asked about their teaching experience at the target university, the majority (122 out of 200) reported having taught for five years or less, which means that they had started working at the university around the time when the Blackboard was introduced. Finally, from the questionnaire data it is clear that the participants' answers were based on the fact that use of the system was compulsory.

On the other hand, the interview participants gave more detailed information and shared their opinions more openly. Interviewees talked about their prior experiences of using technology and how these affected their acceptance of the Blackboard system in the university. They considered the impact of using technology in their teaching based on their experiences of employing such tools in other educational settings outside of the university. Some accepted the Blackboard system because they had used it before or were optimistic about adopting this new teaching method. While noting the unique responsibilities involved in dealing with such tools, they were also aware of the potential to take their teaching to a higher level. However, other interviewees expressed their fears regarding this new technological tool and how their lack of experience affected their ability to employ the system effectively.

6.6 Motivation Within a Culture of Control Based on Questionnaire and Interview Data

This section presents a synthesis of the themes and findings which emerged from an analysis of both quantitative and qualitative, based on Self-Determination Theory (SDT). Also, it is essential to mention that SDT has the power and role to enable the researcher to understand the motivational factors affecting the faculty members in their current use of the Blackboard system by providing a comprehensive explanation for exploring the effect of each dimension of SDT.

Regarding the use of the SDT in this study, the quantitative data contains information on four dimensions/types of motivation. This is as follows: External Regulation, Introjected Regulation, Identified Regulation, and Intrinsic Motivation. On the other hand, the qualitative data contains information on five types of motivation since the interviews provided greater depth with which to separate out identified and integrated forms of motivation, which are as follows: External regulation, Introjected Regulation, Identified Regulation, Integrated Regulation, and Intrinsic motivation.

From the questionnaire findings, there were similarities on the level of the agreement for each of the four types of motivation based on SDT motivation category subtypes: external regulation (ER), introjected regulation (IR), Identified Regulation (IR), and intrinsic motivation (IM). The lowest item got 64 % and the highest 71.5%. However, the only exception was identified regulation with 87% and 77%, respectively. These results were unexpected as it was hard to examine and find out the differences and ascertain the motivational factors which most affected how faculty members using the Blackboard system, except for IR. The power of control (a way of expressing the presence of external regulation — ER) was clear since the platform's activation was mandatory; there were assessment criteria not just for students but also for the faculty members to push them to activate the platform more effectively. Also, this convergence of findings showed how it affected the participants' point of view and their perspective towards such a new e-learning platform introduced to them five years before this research data was conducted. There was evidence of a high impact of a culture of control.

During the interviews, the participants opened up more, with most willing to share their opinions, thoughts, difficulties, struggles, fears and honest stories about using the Blackboard system. The considerations of SDT in this research were based on employing the four major subtypes of extrinsic motivation: external regulation (ER), introjected regulation (INR), identified regulation (IDR), and integrated regulation (IR). Intrinsic motivation (IM) also appeared in the findings. As a result, the findings from the qualitative data took on a unique and profound character in this research.

The following section gives a deeper understanding and explanation of all data related to SDT from both quantitative and qualitative finding.

6.6.1 External Regulation (ER)

From analysing the questionnaire responses, the participants' view of ER was high and had the second-highest level of agreement after IR. Specifically, the responses gave the idea that ER impacts faculty members' attitudes, for instance: "I was told to use the Blackboard system", and the statement "I will get into trouble if I did not." This showed evidence of a high impact of the power of control, i.e. something externally imposed upon the faculty members concerning activation of the system. As a result, these findings suggest that the faculty members felt a sense of being controlled by the E-learning Deanship and were obliged to use the system. It is important to mention the faculty members' managerial evaluations using the Blackboard system.

Furthermore, the power of ER was discussed extensively during the interviews, as it had a significant impact on participants' points of view and opinions. This type of regulation was viewed from two different perspectives, based on whether the interviewees were decision-makers or faculty members. The decision-makers tended to view ER as necessary to obtain academic accreditation. Also, they considered e-learning to be part of the culture for most of the faculty members, even if they were initially wary of or upset about using it. In addition, the decision-makers saw the Blackboard system assessments for the faculty members as the basis for e-learning at the university.

On the other hand, when the faculty members talked about the power of ER they expressed an attitude regarding the use of the Blackboard system that was not always positive. Some interviewees stated that pushing faculty members to activate the Blackboard system by conducting mandatory assessments was the main external regulation factor related to their use of the system. How does this impose them to use the system based on specific managerial evaluations criteria? They stated that they would prefer it instead if the power of ER were used in the form of a reward to encourage them to use the system comfortably without feelings of pressure. Hence, the power of external regulation was considered by faculty members as a sort of negative consequence when related to conducting assessments on the use of the Blackboard system. However, they viewed it as a positive factor when related to potential rewards, which could lead to good practice and greater achievements. The faculty members expressed a desire to use the Blackboard system based on their needs but with freedom of choice and action. Nonetheless, as is the case throughout academia, faculty members did not accept being controlled by others, which can create tension between decision-makers and academic staff. Moreover, the data show that managerial evaluations motivate them (externally), so they perceived this type of motivation negatively.

6.6.2 Introjected Regulation (INR)

First, the analysis of questionnaire responses showed a high level of agreement and evidence of introjected regulation (INR). For example, both of the following statements in the quantitative questionnaire had a similarly high response: “I wanted my boss to think I am good”, and “I will feel bad if I did not use the system”. This showed that the faculty members were regulated by internal rewards related to their self-esteem when they succeeded in using the platform, or when avoiding feelings of anxiety, guilt or failure. This kind of motivation was based on the resulting internally controlled regulation.

On the other hand, interviewees were not open to sharing their views and thoughts regarding INR, even though they provided a great deal of data supporting the force of internalised motivation. When they talked about INR as a form of motivation, they considered the boost to their self-esteem that derived from succeeding in using the Blackboard system. Also, when they spoke about motivation (a form of introjected regulation), they noted that their fear of failure pushed them to use

the system and learn more about it; this also caused anxiety to some, so they took steps to avoid such feelings. Most of the faculty members used the Blackboard system either to achieve success or avoid failure. In addition, the faculty members considered more aspects related to INR, including the factors relating to self-esteem that pressure people to behave in specific ways that will make them feel worthy. For example, they mentioned that their students prefer virtual classrooms to face-to-face lectures. The faculty members spoke of the different forms of praise they received for their lectures. When students praised their online lectures, the academics found it to be motivating, which in turn led them to accepting the use of the Blackboard system as they could better understand its benefits for their teaching.

To sum up, based on considerations of these two types of controlled regulation (ER and INR), it appears that the participants' behaviour was controlled by internal rewards relating to increased levels of self-esteem deriving from success as well as avoiding anxiety, shame, or guilt due to failure. INR is concerned with extrinsic motivation that has been partially internalised. Regulation that is internally controlled is common in academic settings because of the involvement of ego that goes along with it.

6.6.3 Identified Regulation (IDR)

Based on the questionnaire result, this type of motivation got the highest number of agreement to responses. The statements related to identified regulation (IDR) show that faculty members consciously recognised the value of using the Blackboard system; they also experienced a high degree of volition and willingness to employ the system. The responses showed the highest agreement to the idea that "believing that using the Blackboard system is important", followed by "I want to use e-learning technology". As a result, participants were highly motivated to use the system in their teaching practice.

Likewise, interviewees identify strongly with the role of IDR in their perceptions of using the Blackboard system. As this type of extrinsic motivation becomes more autonomously enacted, it occurs when a person has a high degree of volition or willingness to act because they identify with or endorse the value of a particular activity.

In the interviews, the decision-makers demonstrated motives aligned closely with IDR. They considered tools such as the Blackboard system to serve as means for building a culture of e-learning. One of them emphasised the importance of using the Blackboard system as it serves as a critical element of development in the university. They considered the system to offer a tool for communicating with students and other faculty members.

The faculty members valued the Blackboard system for its capacity to help them organise teaching and learning. Most of them stressed the need to understand the importance of using the system so that they would be more willing to utilise it in their teaching. Moreover, faculty members showed a high level of IDR by being autonomously motivated, as they identified the value of their own self-selecting behaviour. For example, faculty members expressed feeling a greater sense of freedom to pursue their personal goals as they perceived the new tool as something that contributed to their future achievements and success. As a result, they had come to accept the use of the Blackboard system, knowing how essential it is to their capacity to make independent choices. Finally, faculty members demonstrated a high degree of volition and willingness by emphasising the importance of using the Blackboard system to benefit their students and enhance their learning environment.

6.6.4 Integrated Regulation (IR)

The most autonomous form of extrinsic motivation is integrated regulation (IR), which is manifested when a person recognises and identifies with the value of an activity and finds it to be congruent with other core interests and values. This type of motivation frequently emerged from the interview data, thus highlighting another benefit of using the qualitative data. This type of regulation was not considered in the quantitative questionnaire as there was a need to consider the length of the questionnaire and the most relevant type of motivation which could explain and consider the power of this type of motivation within a culture of control based on the faculty members' assessments criteria that the researcher found out after conducting the pilot study.

Likewise, the decision-makers valued using the Blackboard system as they found it congruent with other core interests. For example, they had a very positive and

clear sense of IR by considering how the system enabled them to improve, control and enhance the educational process and environment.

Moreover, some faculty members shifted from manifesting INR to IR, describing how they had become more enthusiastic about using the system in their teaching once they had familiarised themselves with it. This pushed themselves to learn more, and as a result were motivated to use the system as they saw its value and found it interesting. Most of the interviewees identified the importance of using the Blackboard system for regulating activities and integrating a wide range of other aspects of their work and teaching activities; this resulted in improved performance. Also, faculty members found that the Blackboard system could be used to enhance students' learning achievements, which could motivate students to use the system. For example, they thought that using the Blackboard would be more successful than traditional methods at raising participants' achievement because it will enable them to experience several opportunities to experiment with different ways to engage with peers, teachers and course material. All these can be achieved using the Blackboard system tools to do more activities. As the campus is gender-separated, male faculty members also noted that the system enabled them to better communicate with female students and deliver lessons.

On the other hand, some interviewees expressed opposite or negative views, in terms of the lack of IR. They argued that Blackboard should be used when circumstances prohibited face-to-face classes. Other faculty members who did not like using the system also expressed a negative opinion of the system.

From all these findings, it is evident that IR was a common type of motivation found among participants. It represents an advanced internalised form of extrinsic motivation and can also constitute an autonomous kind of motivation like intrinsic motivation (see below).

6.6.5 Intrinsic Motivation (IM)

The results of intrinsic motivation (IM) were mixed among questionnaire responses. Faculty members indicated a high degree of IM by expressing their enjoyment of using the Blackboard system. But when it came to their engagement, they gave the lowest response in the motivation section, e.g., "I feel that teaching

is fun using the system." In this instance faculty members did not yet feel that using technology in teaching is fun, even though they enjoy using e-learning in general.

When it comes to IM, it was not easy to classify the interview data related to enjoyment. Some interviewees expressed a desire and enthusiasm for using the Blackboard system. For example, one interviewee said that they liked using Blackboard as it helped them design their lessons as well as teach and evaluate students online. They expressed a strong willingness to actively use the system in their teaching, classifying themselves as, "satisfied with the system." The interviewees highlighted the value and fun they found in their experiences with the Blackboard system, as they felt it enabled them to be more competent and autonomous, thus maintaining IM.

On the other hand, some interviewees did not view the system as providing a source of IM or consider this form of motivation when discussing their experiences using the system. For example, they said they did not like Blackboard as it made them feel anxious. They asked for more time to better learn how to use and understand the system, and hoped to have more training programmes. All of these problems prevented them from feeling a sense of interest or enjoyment in relation to the use of Blackboard in the university. They reported encountering more struggles and worries as a result of the new system.

Intrinsic and extrinsic forms of motivation both have the quality of being highly intentional. However, IM gives rise to a desire to learn and have fun. It stems from perceiving a sense of value in activities that motivates people to engage in them, even if they do not find them particularly enjoyable.

6.7 Technology Acceptance Model (TAM)

The second theory considered in this research is the Technology Acceptance Model (TAM), which focuses on four dimensions: attitude, perceived usefulness (PU), perceived ease of use (PEU), and self-efficacy.

It is essential to highlight that the qualitative data gathered from the interviews relating to PU and PEU dimensions were insufficient, as interviewees did not

discuss in depth these two factors. As a result, SDT was drawn on to facilitate capture of rich data regarding current use of the Blackboard system at the target university as it better fits most of the interview data.

6.7.1 Attitude

From analysing the questionnaire responses, it emerged that faculty members found the Blackboard system fun to use. They believed that using the system at the target university can create an engaging work environment. Hence, the faculty members held positive attitudes regarding the use of the system. Another finding was that the participants felt that students at the target university would benefit significantly from adopting Blackboard. In addition, the faculty members believed the system creates a more attractive work environment. Therefore, it was evident that both faculty members and decision-makers held positive attitudes regarding the implementation of the system at the university. However, this can be explained by the fact that the participants did not want to share their fears and worries, or that they were wary of the power of control exerted via the mandatory assessment of academic staff at the target university.

The findings from the qualitative data indicate that most of the interviewees held positive attitudes regarding their use of the Blackboard system — they viewed the teaching method as enabling a more technological learning environment. The interviewees expressed the view that using the system was their primary aim as they wished to boost their productivity and efficiency levels. Most faculty members also referred to the benefits for students of using Blackboard, as it can enhance their learning and help them discover new alternatives to traditional learning methods. All of these findings reflect the interviewees' positive attitudes toward adopting Blackboard.

Furthermore, many interviewees spoke at length about experiencing or witnessing a shift of attitude at the university towards the system. Some faculty members had rejected the system at first, but over time they had come to hold more positive attitudes and became more open to using it. This illustrates how raising levels of confidence through increased knowledge, experience, and practice using new technology can shift attitudes toward adopting any newly introduced technology. Many interviewees also referred to students as being a factor in their

effective use of the system, as they wished to see the students taking their learning seriously. Some interviewees highlighted the fact that students' perspectives influenced the faculty members' attitudes.

At the same time, the findings from the interview data show that the participants were also expressed their fears about the amount of stress that using such a system places on them. Moreover, they talked in depth about how assessment of faculty members' performance was conducted by the E-learning Deanship. Some of the interviewees held a negative attitude regarding this form of assessment and the obligation placed on them to use the tools. However, unlike in the questionnaire responses, the faculty members did not give importance in the interviews to any additional stress the new system might cause. In turn, the decision-maker interviewees considered this assessment to be part of the plan to set up more online programmes, as they wished to see e-learning become part of the culture for faculty members. Finally, data from both the interviews and questionnaires indicate that the Blackboard system was viewed as a valuable system for students' education, although a few respondents (in both cases) indicated they preferred traditional face-to-face teaching.

6.7.2 Perceived Usefulness

The questionnaire responses were generally positive regarding the usefulness of the Blackboard system. Perceived usefulness (PU) is another name for the degree to which people value a new course or a technological tool's ability to help them learn and teach. PU comprises two factors: the importance of tools or a technology, and effectiveness in learning or teaching. Based on this definition, the Blackboard platform's PU, as indicated by the questionnaire responses is summarised below.

The faculty members noted that using Blackboard allowed them to accomplish tasks quickly and enhanced their effectiveness as lecturers. Also, it was clear that they viewed Blackboard as making it easier for them to carry out teaching-related functions, based on their high levels of agreement with the corresponding statement. However, the questionnaire respondents indicated very low levels of agreement with the statement that the Blackboard system would help improve productivity and performance. This finding would appear to derive from that fact

that as the system had only been introduced five years prior to the research period, the respondents had not yet had enough experience to be able to evaluate the system's usefulness. Moreover, this point also highlights the lack of qualitative data in this regard derived from the interview data, which will be illustrated next.

Interviewees expressed some opinions about the perceived usefulness of the Blackboard system, but as previously illustrated, there was not much data relating to this. The theme of usefulness did not emerge clearly from the interview data. However, some of the statements provided by the interviewees are presented below.

The participants mentioned that using the tools and resources provided by the Blackboard system enabled them to increase their productivity levels. Likewise, the interviewees highlighted the opportunities the tools provided for better organising their teaching and schedules. The majority of interviewees noted that the Blackboard system helped them accomplish their work tasks more quickly. They also said that the Blackboard system made them feel more fulfilled and gave them a greater sense of accomplishment. However, it is essential to mention that in this regard, the interviewees were not talking about usefulness in terms of performance or achievement, they are talking about it in terms of how much they recognised the importance of utilising the Blackboard tools in education today, and how their use of the Blackboard system could change their teaching methods. As mentioned previously, this is possibly due to their relative inexperience in using the system, which affected their views. It is also possible that some of the negative attitudes expressed regarding the system or the impact of faculty member assessment affected their considerations.

6.7.3 Perceived ease of use (PEU)

Based on the questionnaire responses, there was a high agreement rate with all items relating to the perceived ease of use (PEU) of the Blackboard system. The highest level of agreement was with the statement that it was easy for the participants to carry out tasks using Blackboard. Also, they generally believed that using the system was easy for them. However, the lowest level of agreement was shown by the idea that using the Blackboard system would require more time. This contrasts with the interview data, which indicates that the participants were not

satisfied with the time available, the time required to use the system tools for their teaching needs, or the time needed to meet faculty member assessment criteria. Analysis of the questionnaire responses indicates that faculty members and decision-makers perceived Blackboard as easy to use, and that it enabled them to quickly achieve what they wanted to do. Also, they found interacting with the system to be clear and understandable.

However, the interview data contains little information about PEU of the system. The participants did, however, note that they could easily use the system to contact their students. By contrast, most of the interviewed faculty members did not consider themselves to be sufficiently skilled to be able to use Blackboard's advanced tools.

To summarise the complete TAM perspective in this research, the findings from analysing the quantitative data show a high level of PEU and PU in relation to the Blackboard system. Both faculty members and decision-makers expressed the view that using Blackboard would free them of effort as it was easy and effective to use. Nonetheless, in the qualitative data, it was not easy to capture the degree of PEU or PU. In the interviews, faculty members spoke with greater freedom than they could in the questionnaires, and were more open to sharing and discussing issues of concern. This does not mean, however, that they changed their perspectives, since they thought that even if the system were easy to use and activate, they still faced challenges regarding motivational factors such as ER. As a result, other related matters and problems could be more easily observed and explained using SDT.

6.7.4 Self-Efficacy

In the section of the questionnaire dedicated to self-efficacy based on TAM theory, the participants gave the highest scores to statements that indicated they were able to use the essential features of Blackboard. This shows that they had an acceptable level of self-efficacy. From the interviews data, faculty members with a high level of self-efficacy were more likely to complete a task more successfully. This may also be related to their previous experiences. However, some of the faculty members were using the Blackboard system for the first time, and therefore did not show a high degree of self-efficacy in using the more advanced

functions and dealing with problems. This shows they had insufficient capacity to use these cutting-edge tools.

In the interview data too, a high level of self-efficacy can be seen among faculty members who had previous experience of using the system. In cases where interviewees had a low level of self-efficacy, this tended to stem from a fear and a lack of knowledge in relation to such platforms, as well as insufficient experience. Some interviewees spoke of how they initially had low self-efficacy and a negative attitude when first starting out with the Blackboard system. They had rejected it because they did not know how to use the platform and perform the required tasks, as they had only previously used traditional teaching methods. Over time, the same participants had changed their attitudes as they came to learn how to use the platform, thanks to some specific training courses. This finding highlights how one's ability to use the Blackboard tools can enhance one's self-efficacy.

Analysis of the qualitative data indicates that the participants who had experience using technological tools tended to have a higher level of self-efficacy, while those who lacked such experience and knowledge had a lower level of self-efficacy. At the same time, the quantitative data indicates that the faculty had a high level of self-efficacy regarding their use of the basic functions of Blackboard, but a low level in using the system's more advanced functions.

6.8 Summary

This chapter has presented the synthesis of the key findings from both quantitative and qualitative data and the similarities or differences in which the data were presented and analysed. The faculty members and decision-makers highlighted the essential findings many times: the need for more time to activate the system and the need for considering training from the perspective of both the topics offered and the time available. Also, the respondents looked for greater IT support as they used the system. The issue of the power of control as an external regulation motivational factor became evident. The other motivational factors were found and addressed in both data sets, namely such as introjected regulation, integrated regulation and identified regulation. Finally, the role of internal factors such as PEU, PU and attitude were observed via TAM. Self-

efficacy, as an external factor of TAM, had affected all faculty members using the Blackboard system. Finally, this research extends our knowledge of the role of motivational factors based on SDT on the faculty members' acceptance based on TAM theory and the impact of factors such as training, time, internet, and IT support. All of these must be considered to ensure faculty members can easily use and activate the Blackboard system more effectively and frequently.

Chapter 7: Discussion

7.1 Introduction

This study explores the use of e-learning by faculty members and examines decision-makers' perceptions regarding the use of the Blackboard system and its role in improving the quality of learning and teaching. Moreover, it seeks to provide an overview of this issue by examining both faculty members' and decision-makers' perspectives and attitudes. It concludes by identifying the challenges faced when using such a system under the condition of mandatory activation. The data assists in uncovering the factors affecting the use of the Blackboard system.

To address the research questions, SDT and TAM were applied. The study also investigated other related aspects, such as the challenges, benefits, and possible solutions in relation to using the Blackboard system in the target university.

The main question addressed by this research is:

> Which factors do academics view as important in affecting the adoption and use of e-learning in a Saudi Arabian Higher Education institution?

This can be broken down into the following:

1. To what extent is the Blackboard system utilised and valued by faculty members at the target university?

2. What are the barriers and challenges in the use of the Blackboard system in the target university?

3. What can TAM theory tell us about academics' perceptions on the use of the Blackboard system in the target university?

4. What can SDT tell us about the motivational factors which influence academics on the use of the Blackboard system in the target university?

Objectives:

1. To determine the extent to which Blackboard system is utilised by educators within KSA HE.

2. To discover the perceived value of e-learning amongst educators within KSA HE.

3. To establish if there are any barriers and challenges that impede the use of Blackboard system amongst educators within KSA HE.

4. To investigate the motivational factors which affect the use of Blackboard system amongst educators within KSA HE, through Self-Determination Theory (SDT).

5. To explore the use and adoption of Blackboard system amongst educators within KSA HE through the Technology Acceptance Model (TAM).

In order to address the central research question, the chapter is first divided into several sections based on the findings, and to enable the researcher to cover all aspects relating to the key results of the research:

- The extent to which the Blackboard system is used by academic staff and the factors affecting this.

- How TAM helps understand the adoption and use of the Blackboard system

- How SDT helps understand the adoption and use of the Blackboard system

The first few sections discuss the findings concerning factors that influence the academic staff's use of the Blackboard system within higher education in Saudi Arabia, and information relating to the actual use of Blackboard, and how training influences faculty members' employment of the learning management system

(LMS). They also examine how the dimensions of TAM influence the adoption and use of the Blackboard system by faculty members as well as the impact of SDT factors on their adoption and use of the system. Finally, the relationship of the findings to the research is discussed at the end.

7.2 The Extent to Which the Blackboard System is Used by Academic Staff

When using the Blackboard system, academic staff have to contend with a variety of external and general factors. These factors are discussed in this section, which examines, among other issues, the impact of participants' age, academic position and education level on their likelihood of employing the Blackboard system in the classroom. An analysis of the questionnaire data indicates that most of the respondents were female (63%), which contrasts with the mostly male sample group in a past study at the same university by Alanazy (2017), which also focused on the use of the Blackboard system. This corresponds to the shift towards hiring more females for jobs in higher education in Saudi Arabia, based on the aim of Vision 2030 to increase the number of women in leadership positions (Vision 2030), This suggests that women's empowerment in the country has started to affect higher education in KSA. These efforts to increase women's empowerment are also noted in a report by the World Bank Group in 2020, which cites Saudi Arabia as being among the top ten countries to improve women's economic empowerment (World Bank, 2020). In addition, Al-Qahtani et al. (2021) found that female academic staff at a Saudi university had high levels of empowerment; although there is a need for further improvement (Alessa et al., 2022). Indeed, during the study, women faculty members were very willing to share their ideas and thoughts. Also, it reflects the changes currently taking place in higher education in the country, which highlights the need to focus on continuing to raise education standards among Saudi faculty members, including female staff. All of these changes meet and support the goals of the Saudi Vision 2030 programme.

Another difference between the sample in this study and the previous study concerns the highest academic qualifications achieved by the participants. In the current study, most participants hold a doctoral degree, while in Alanazy (2017), most held a master's degree only. Therefore, the participants in the interviews in the current study gained more experience of using Blackboard when they were

doing their academic studies, especially when they had studied abroad for their master's and PhD degrees, which could have influenced their attitudes positively towards this technology. Therefore, the participants in the current study may have more experience of using Blackboard as students, particularly if they have studied abroad, which could have influenced their attitudes towards this technology.

In addition, the findings from the questionnaire show that most of the participants indicated a high degree of using the Blackboard system. This was for both academic and administrative functions. Most of the questionnaire participants attained academic degrees, which means that they have used e-learning tools in the past, and they would have been used to this type of technology. Moreover, the interview participants also stated that they understand the benefits of e-learning, support using e-learning systems, and have adopted and use the Blackboard system successfully. Similar findings were obtained by Alanazy (2017), in that it was discovered that most participants were aware of this particular LMS and were willing to learn how to use it; however, by the time the current study was carried out, they also had additional experience of using the LMS. An additional factor that differentiates the samples of this Alanazy's study (2017) concerns the nationality of the participants. In the current study, there were similar numbers of Saudi and non-Saudi faculty members participating, while in Alanazy (2017) most were non-Saudi faculty members. To some extent, this change in the demographic variables reflects the current changes taking place in higher education in Saudi Arabia, especially regarding the Saudisation of academic jobs and the efforts being made to achieve the goals of the Saudi Vision 2030 (Vision 2030; Alessa et al., 2022; Al-Qahtani et al., 2021). Consideration of nationality is important because non-Saudi faculty may have had previous experience of using technology such as Blackboard in their home countries, which highlights the need to focus on raising education standards among Saudi faculty members to ensure they meet global norms.

At the same time, the difference between males and females in this study regarding perceived barriers was insignificant. However, the males in the target university are the ones who manage the e-learning system. They may also influence their male peers, yet in this respect the current study's findings do not support previous research by Al Ghamdi et al. (2016) because it shows that female

educators reportedly see fewer obstacles to e-learning than their male counterparts.

7.3 Barriers to Activating the Blackboard System

This chapter highlighted barriers to e-learning among the target university. The barriers or challenges that faculty members shared were about: training, lack of time, lack of knowledge and experience, and lack of technical support and internet.

7.3.1 Influence of Training

The topic of training emerged as a central concern in this study, with the timing of training and the topics covered in training sessions the aspects most frequently mentioned by the participants as being important for enabling faculty members to use the Blackboard system effectively. This is similar to the findings of other studies, which also indicate that the availability and time of training in using the Blackboard system has a positive effect on uptake (Al-Shammari & Higgins, 2015; Pereira, 2015; Al Ghamdi et al., 2016; Al Meajel & Sharadgah, 2018). The participants stated that their lack of training had led to them encounter a number of obstacles when using the system. For example, they reported having greater difficulty utilising Blackboard when they were unfamiliar with the system and were not aware of how it could serve their needs. Hence, they felt there was a need to attend more training programmes. This finding is in agreement with Mirzajani et al. (2016) which indicated that lack of training and support impact the implementation of e-learning. Learning management systems such as Blackboard can be used more effectively with the help of training workshops. As noted by Al Meajel and Sharadgah (2018), “Attending a training workshop effectively encourages faculty and helps reduce barriers to using Blackboard” (p. 359). The findings show that when faculty members receive effective training on how to employ the Blackboard system, they have more positive attitudes toward its use in their teaching. Finally, these findings support previous research into the consideration of inadequate training as an barrier to fully activate and accept the use of e-learning tools in educational environments; training is not enough based on their need as it does not meet their time availability or the number of topics they want to cover (Mitchell & Geva-May, 2009; Al-Shammari & Higgins, 2015). Moreover, this finding is consistent with Alharbi et al. (2019), which reported that

training is essential in Saudi Arabian universities for helping faculty members and students to be better able to integrate technology into teaching and learning.

Furthermore, another barrier was frequently noted in respect of the data and the interview findings: the participants always complained they had insufficient time to activate and utilise the Blackboard system. These findings corroborate the research of Mirzajani et al. (2016) which highlighted the lack of time as a barrier and challenge to using e-learning tools. Moreover, an increased workload has added more pressure that negatively affects the effective use of e-learning tools. This finding is also in line with Qwaider (2017) as teachers already have extremely demanding workloads without having to also utilise e-learning tools. As a result, lack of time and amount of workload has always been an issue that influences faculty members' use of any technology tools. Decision-makers and administrators need to reconsider all of these barriers and make the activation of the system less complex so that it is easier for the faculty.

7.3.2 Influence of Internet Connection, Issues, and Technical Support

According to the research literature, there are barriers and difficulties associated with the implementation and efficient use of e-learning by students, educators, and educational institutions. This was found to be the case with this study's findings of both quantitative and qualitative data. An essential critical finding of the barriers related to the internet. The questionnaire data indicated that the participants consider the internet to be challenging to them.

Also, as the number of people using the internet grows, so does the frequency and severity of internet disconnections and slowdowns (Alaofi 2016). These are the drawbacks most commonly cited by interviewees. In the current study, almost all faculty members complained about internet disconnections and slowdowns, as highlighted in both forms of data. According to multiple studies, even when users have access to the internet on campus they are still dissatisfied with poor connection speed or frequent dropouts (El Zawaidy, 2014; Kent, 2015; Alenezi, 2018; Ghamdi et al., 2016). Moreover, Alaofi (2016) is in line with this study's findings regarding the challenge of slow internet connections. This affects faculty members' ability to use LMSs such as Blackboard and Moodle.

The results are similar to those of other studies (e.g., Al Meajel & Sharadgah, 2018; Alenezi, 2018) in that the participants in the current study were not satisfied that the overall level of the university's infrastructure was a barrier to implementing the LMS, they also complained about slow internet, not enough labs, especially for female students, and the status and speed of support they receive from the university's IT department. In this regard, faculty members also lamented the lack of computer labs at the university, noting that there were not enough computers available to support a whole class working online at once. This confirms the findings of Alharbi et al. (2019), where internet barriers affect the use of technology tools, which was the case in the present study's findings.

Furthermore, there are similarities between the lack of adequate and appropriate support expressed by participants in this study and those described by Alqurashi (2016), Alshahri (2015), Al-Shehri (2010), Asiri et al. (2012), Al-Shammari and Higgins (2015) and Alaofi (2016). These studies all show that users of any e-learning resources, such as teachers, faculty members and students, frequently complained about the lack of adequate and appropriate support for e-learning educators, including technological impediments such a lack of IT suites and internet connection problems.

7.3.3 Experience

The findings from analysing the data highlight the key role played by faculty members' prior experiences in shaping their attitudes and use of the Blackboard system at the university. They show that the participants' prior experience of using technology influenced their acceptance of the Blackboard system. A similar finding was also reported by Al-Busaidi and Al-Shihi (2010) which showed that experience affects faculty members' acceptance of technological tools. In addition, similar to the findings of the current study, Fathema et al. (2015) and Fathema and Akanda (2020), reported that faculty members' level of technological proficiency varied significantly by academic discipline and prior technological experience, and that previous experience has a significantly positive effect on instructors' use of technology platforms. Likewise, Martínez-Torres et al. (2015) uncovered how important prior knowledge and experience was on technology user acceptance. Therefore, it seems evident that previous experience has a significant impact on how potential users of a technology view it. The

findings suggest that prior experience alters users' acceptance in that those who have previously used information systems can more confidently evaluate their effectiveness and capabilities. In addition, Lau and Sim (2008) found that experienced teachers who are already familiar with the use of technology in the classroom have an advantage when it comes to digitising their materials for use with ICT systems, and are able to come up with inventive ways to incorporate them into lesson plans. This is consistent with the study by Singh and Chan (2014), which found that users' views on implementing ICT varied depending on how much they already knew about the system. Moreover, the findings of this study showed that lack of knowledge affected faculty members as they would talk about fear of the Blackboard system in the beginning because of their lack of knowledge. This study produced results which corroborate the findings of previous work as mentioned in the literature review, namely Al-Shammari and Higgins (2015), Fathema et al. (2015), Alqurashi (2016) and Mirzajani et al. (2016).

Hence, a lack of experience of using technology can be considered a barrier that affects faculty members' attitudes towards the Blackboard system. To some extent, this is compatible with Alanazy (2017) who found faculty members who lack familiarity with such platforms experienced difficulties in using their various features.

Finally, in line with the findings of similar studies, the present study found that faculty members' attitudes in relation to online learning are significantly influenced by their prior experiences of online learning. Furthermore, faculty members with more experience may feel better prepared to use systems such as Blackboard, increasing the likelihood of them using it successfully, which may in turn lead to enhanced knowledge, skills and productivity over time. On the other hand, a lack of knowledge and experience can result in stress, especially where the use and activation of the Blackboard system is a requirement, as shown in the current study; this affects the interest and willingness of the user in activating the technological tools (Ertmer, 2014; Algahtani et al., 2020). Therefore, experience is linked to greater use of technological systems such as Blackboard. Finally, this study found that the participants' experience significantly influenced their level of technology acceptance.

7.4 Theoretical Models to Assist the Implementation, Acceptance and Use of E-Learning Technologies

While several theoretical models and frameworks have been created and adapted to investigate the acceptance and utilisation of e-learning technologies, there is a knowledge gap regarding the motivational factors that influence the adoption of e-learning tools such as the Blackboard system, which was the case particularly from the perspective of higher education educators in Saudi Arabia, where LMSs have been introduced fairly recently (Sheerah & Goodwyn, 2016; Yamani, 2014).

To identify all those factors that may influence faculty members' use and activation of such a system, it is necessary to have a deeper understanding of human motivational factors and technology adoption. Therefore, SDT was the most suitable theory to examine the motivational aspects that might influence faculty members' use of the blackboard system. In addition, TAM provides greater understanding about faculty members' perceptions of the system's usability, and their attitudes and self-efficacy.

Self-Determination Theory (SDT) and the Technology Acceptance Model (TAM) were chosen as relevant models for this thesis to give theoretical frameworks for studying the essential areas of concern in the research aims, objectives and issues (see below). SDT and TAM are the 'theoretical lenses' utilised to investigate the motivational factors and value of e-learning and Blackboard amongst educators in KSA HE, as well as the constraints and problems that inhibit educators' use of Blackboard. Consequently, the essential domains of SDT and TAM supported the analysis for this thesis, including data analysis and findings.

7.4.1 How SDT Influences the Adoption and Use of Blackboard

Among educational psychologists, self-determination theory (SDT) is a widely accepted theory for explaining people's motivation and performance (Ryan & Deci, 2017). In the current study, SDT was applied in an attempt to understand the impact of human motivation on user's acceptance of the Blackboard system, including faculty members and decision-makers, along with TAM to extend the theoretical framework. Also, applying SDT represents a key contribution of this study, which seeks to discover whether the participants recognise the advantages

of utilising such a system in their teaching tools, and how the power of control via external regulation affects faculty members' attitudes, usage and willingness in relation to their employment of the Blackboard system. It was deemed that SDT would provide the best means of addressing all of these aspects, based on studies by Ryan and Deci (2000, 2017).

First of all, SDT argues that people do things for many reasons, which could include one of more of the following: 1) we view the activities as enjoyable (intrinsic motivation); 2) we see them as congruent with our identity (integrated regulation); 3) we identify with the value of the action (identified regulation); 4) we feel internal pressure and guilt (introjected regulation); 5) we are forced by others (external regulation); 6) we have no good reason (amotivation); 7) we are non-self-determining.

In the current study, some of the participants reported experiencing pressure resulting from feelings of guilt (introjected regulation); yet, according to Racero et al. (2020), such motivational factors are typically disregarded. This is noted in Senécal et al. (1995), which found that academic procrastination may be exacerbated by fear of failing and other motivational factors, which is useful to consider in relation to this study and claims that some faculty members are not confident in using the Blackboard system tools. Academic outcomes such as curiosity, persistence, learning, performance, affect and self-esteem can all be influenced by the user's ability to control their behaviour. In the implementation of e-learning in higher education institutions, great benefit can be drawn from SDT's features of self-determination: competence, relatedness and autonomy. As a result, instructors' ability to implement e-learning can be influenced by autonomous learning.

This study's application of SDT helps to fill a gap in the literature, as the model's factors were found to significantly relate to the participants' behaviour, which has helped to explain and expand on the findings from the data. Nikou and Economides' (2017) assertion that the, "Self-Determination Theory of motivation may provide an appropriate theoretical framework to study mobile-based learning" (p. 84), is echoed by the findings of the current study across both data strands. Therefore, as well as this study revealing the various barriers and

motivational factors affecting faculty members' use of the Blackboard system, the findings also reiterate the usefulness of SDT to research in a higher education environment.

In this study, SDT supported the exploration of the possible factors that might impact faculty members' effective use of the Blackboard system. One of the challenges when analysing the SDT data obtained from the questionnaire stemmed from the similar levels identified for external regulation, introjected regulation, and intrinsic motivation. The differentiating aspect was 'identified regulation', which is a more autonomous form of motivation (de Wal et al., (2014). The faculty members indicated that they valued the use of the Blackboard system and were generally very willing to use it; furthermore, faculty members who expressed identified regulation were more likely to extend the use of Blackboard to providing links for students, which is not a requirement of their role (e.g. see section 3.3). A study by Racero et al. (2020) also found that a supportive autonomous learning environment may lead to an increase in the tendency to develop specific behaviour. Furthermore, when an education system is designed to encourage the provision of choice, users tend to behave more autonomously, and that was not the characteristics of the system in Saudi Arabia. Also, as mentioned previously, while faculty members are required to use some aspects of the Blackboard system, some extended this to use additional features in an autonomous manner. However, it was very difficult to determine any differences between the impacts of other motivational factors based on the use of SDT in the quantitative analysis of this research other than identified regulation, where an individual consciously values an action and acts on it (de Wal et al., 2014; Ryan & Deci, 2020). However, in the current study, the power of control was found to significantly affect the participants' motivation levels, based on the analysis of the quantitative data. However, there is little discussion in the literature on how this type of motivation can really affect faculty members' acceptance of new technological tools and methods.

Based on the analysis of the interview data, the most appropriate interpretation of the results involved considering external regulation in terms of the extent to which the continuous assessment of staff relates to the use of the Blackboard system, including how the participants have been activating the system. The

participants in the current study highlighted several critical situations. To illustrate, one of the participants expressed her nervousness every time a reminder reached her of the necessity of activating a specific tool for that month (de Wal et al., 2014; Ryan and Deci, 2020 — see section 7.3.1). At the same time, she had other work and mid-term exams, which meant she already under pressure. Moreover, another interviewee expressed unease about the mandatory continuous assessment of staff, as it makes them feel unworthy as faculty members and undermines their professional standing (see section 7.3.1). Moreover, this shows how these findings were significant and critical as they underline that everyone perceives that the Blackboard system's mandatory activation is challenging. Hence, it is interesting to note that considering the SDT as a lens to analyse the data enabled the researcher to uncover and explain such issues.

Also, a higher number of faculty members took part in the interviews than decision-makers, and the qualitative approach gave them the chance to share their feedback on their current usage of Blackboard and their experiences.

Some of the existing research, e.g. Racero et al. (2020) and Nie et al. (2015), examined autonomy and its importance in e-learning. Similar to autonomy, one focus of the current study is the factors of control and forced regulation and their influence on the use of the Blackboard system by the faculty members at the target university, which is where there is evidence of a lack of autonomy. Even though all levels of regulation are represented in the data, and faculty members were willing to implement the system, it was important to consider the power of external regulation as a factor that may prevent the faculty members from using the system more effectively in the future. Given the significant findings in this research related to external regulation and introjected regulation, it is essential to consider the power of control, as actions may be regulated by external regulation, such as when people are forced to utilise technology, or usage stems from feelings of guilt or pressure (introjected regulation) (Ryan & Deci, 2000, 2017).

Senécal et al. (1995) note that despite the complexity of the relationship between external controls and intrinsic motivation, a number of studies have indicated that offering an external incentive for an activity that someone already enjoys can

reduce that person's intrinsic drive for that activity (Koestner & McClelland, 1990). It is widely accepted that while standards of behaviour imposed from the outside are internalised over time (Zhou 2016; Yu & Levesque-Bristol, 2020), initial external regulation of behaviour does not need to be applied in all academic environments. For example, the current study found that control and external regulation negatively affected the faculty members in terms of both their attitudes and their ability to accept the system. The term 'internalisation' refers to the process through which individuals voluntarily adapt previously established rules and norms to their own behaviour (Deci & Ryan, 1991; Ryan, 1992). It involves the transition from relying on others to restrict one's actions, to relying on oneself to do so. In the current research, as the faculty members were required to used Blackboard, some of those who were reluctant at first went on to utilise it and make it part of their everyday duties. Individuals develop a stronger feeling of independence and capacity for self-initiation when they come to completely internalise a habit (Deci & Ryan, 1991), and in this respect some of the faculty members in the current study chose to use additional aspects of Blackboard independently. Therefore, it may be useful to consult staff so that they use LMSs willingly, rather than being required to do so, as in this way they are more likely to make the most of its functionalities.

7.5 TAM Factors in the Adoption and Use of the Blackboard System

According to Davis (1989), the influence of TAM factors on users is mediated by perceptions of utility; TAM dominates the top of the list of models used to study how users accept new technology (Asiri et al. 2012; Celik & Yesilyurt, 2013; Fathema et al., 2015; Mouakket & Bettayeb, 2015; Abdullah & Ward, 2016; Brangier, 2011). Since its inception, similar to SDT, TAM has been highly useful in explaining how people interact with technology. It has played a key role in this study's attempts to uncover the ways in which faculty members' beliefs and attitudes regarding the use of the Blackboard system affect their interactions with that technology. According to TAM, a user's motivation can be explained in terms of three factors: perceived ease of use, perceived usefulness, and attitude toward use. In this study, a fourth TAM factor was added: self-efficacy as an external factor of TAM, with reference to the extent of self-efficacy faculty members possessed, or did not possess, due to external influences and force. When a user is allowed to decide whether or not to utilise a certain platform based on how

beneficial they perceive it to be, they are more willing to use it. The different TAM factors are discussed in the sections below.

7.5.1 Attitude

In this research, the role of attitude was found to have a strong impact on the use of the Blackboard system by faculty members, as there was a significant relationship between users' attitudes towards the use of the system and their acceptance of it. Hence, consideration of users' attitudes plays a central role in determining whether or not an educational system is successful in making meaningful use of technology in instruction.

As educators and implementers of instructional strategies and tools, teachers' contributions to society cannot be denied; moreover, teachers' attitudes towards technology play a critical part in the success of technology use in any educational setting. This study has included a review of other related studies that considered the factors affecting faculty attitudes toward the use of online e-learning platforms in the classroom (Paraskeva et al., 2008; Asiri et al., 2012; Celik & Yesilyurt, 2013; Mouakket & Bettayeb, 2015; Alanazy, 2017; Tatli et al., 2019). An analysis of the synthesised data has revealed that faculty members' attitudes have a very strong impact on their ability and willingness to use the Blackboard system. Also, it was found from the interview data that if the faculty members were satisfied with the Blackboard system and they held positive attitudes towards it (see sections 7.3.3 and 7.4.2), they were more likely to be motivated to use it and felt more prepared to overcome any challenges or problems they encountered. This finding is consistent with the study by Asiri (2012), which found that faculty members with favourable attitudes towards technology are more prepared and equipped to handle the challenges that may arise when employing it.

Academics are more inclined to use e-learning platforms if they have a favourable impression of the systems being used. Fathema et al. (2015) and Tatli et al. (2019) found that having a more positive outlook on technology can result in a more thorough understanding of course materials and reflect a more positive attitude towards the use of the e-learning in higher education, as found in the current study. It has been observed that a person's attitude may have an impact on whether or not they like or dislike any related topic, and consequently on their

decision-making processes (Asiri et al., 2012; Alanazy, 2017). Hence, attitudes towards LMSs are key, because if faculty members believe that an e-learning approach is important and has helpful tools, they are more likely to use it in their teaching and learning. The current study found that the more essential faculty members view the Blackboard system to be, the more willing and prepared they are to incorporate it into their teaching methods and environment. Therefore, whether positive or negative, attitude affects the use of technological tools for teaching and learning purposes.

In short, the current study found that faculty members generally held positive attitudes regarding the use of the Blackboard system as a new teaching method, viewing this tool as vital in the current process of integrating technology in higher education. Furthermore, some participants explained how their attitudes had changed over time as they became more familiar with Blackboard and recognised its usefulness, which suggests that time should be taken to engage faculty members and explain the reasons for the introduction of LMS to encourage positive attitudes from the start. This shift towards a more positive attitude is related to the perceived usefulness and ease of use of the Blackboard system, with both factors improving over time. This is in line with Alharbi and Drew (2014), who report that both perceived ease of use (PEU) and perceived usefulness (PU) directly influence the user's attitude toward a system, while perceived PU is directly influenced by PEU. Some of the faculty members in the current study revealed highly positive attitudes towards the use of the Blackboard system, viewing it as beneficial in multiple ways for academic staff, students and institutional environments. This is in line with the finding of Asiri et al. (2012) that faculty members with a more positive attitude felt more satisfied in using technology. Moreover, based on the analysis of both forms of data in the current study, it was found that faculty members' attitudes are key to the success of technology tools in any higher education setting. Finally, this study discovered that attitude has a significant influence and is a critical factor in the successful use of the Blackboard system, and as a result the faculty members' ability to use and activate the system more effectively.

7.5.2 Self-Efficacy

The present study was, in part, designed to determine the effect of self-efficacy (SE) as a component of TAM on faculty members' acceptance of using the Blackboard system in their teaching environments, and how SE can influence their attitudes towards using such a system. Analysis of the data reveals that faculty members had a good level of SE regarding their ability to use the basic tools, and they believed that their skills impact the way they use the system and their level of performance. Furthermore, faculty members were more likely to complete tasks successfully if they had a high level of self-efficacy (Hatlevik et al., 2018). The key finding in this regard is that there is a strong relation between the faculty members' level of experience of using technological tools and their level of SE. This result is in line with the findings from previous studies, e.g. Fathema et al. (2015) and Alanazy (2017).

In addition, Alanazy (2017) adopted a broader perspective regarding the relationship between faculty members' self-efficacy and attitudes and online learning. That study found that e-learning tools have removed many barriers to communication thanks to the increased efficiency they provide in terms of teacher–student correspondence. Likewise, the findings from the interviews in the current study show that faculty members with more experience tend to have higher levels of SE (see section 6.7.4). This could also be as a result of their prior experiences. However, especially where several faculty members were using Blackboard for the first time, they did not demonstrate high SE in using the system's more complex features and resolving issues. This indicates they could not fully utilise the Blackboard tools. An examination of the qualitative data reveals that participants who had experience with technology tools tended to have a better level of SE than those who lacked such competence and knowledge. Overall, the quantitative data reveals that the faculty had a high degree of SE in utilising Blackboard's core capabilities, but a low level in using the system's more sophisticated functions such as Electronic Tests.

Furthermore, the current study found that the participants considered SE to be an important factor that positively affects their participants' experiences and makes them more self-sufficient and motivated when employing technological tools. This mirrors findings in previous studies that have considered SE as a direct factor

affecting faculty members' ability levels and confidence when employing any kind of technology (Chen et al., 2011; Holden & Rada, 2011; Chen & Tseng, 2012; Motaghian et al., 2013; Chang et al., 2017; Hatlevik & Hatlevik, 2018; Hatlevik et al., 2018). Therefore, e-learning managers "should pay attention to factors that have a role in improving teaching performance and increasing instructors' efficiency in the design of a successful web-based learning system" (Motaghian et al., 2013, p. 166) as this will increase their SE. Moreover, Holden and Rada (2011) found that "teachers with higher teaching self-efficacy are more likely to persist through negative outcome expectations and experiences" (p. 341). In the current study, several faculty members using Blackboard for the first time did not demonstrate high SE in using its more complex features, which might be related to the effort needed when implementing a new technology such as Blackboard — there will inevitably be some problems at the start that need to be ironed out. Finally, this study found that self-efficacy had a major influence on the participants' attitudes and acceptance of the Blackboard system's usage and activation.

7.6 The Benefit of Using TAM and SDT in Parallel

The approach in this thesis offers a new way of using TAM and SDT in tandem to analyse and explain the factors affecting the implementation of an LMS, and it provides more in-depth explanations that extend our understanding, with one theory shedding light on concepts and findings that the other theory cannot. For example, this study found a major influence stemming from external regulation and introjected regulation (ideas from SDT) on users' acceptance (an idea from TAM) of the Blackboard system. Hence, these two factors can be said to play an important role in motivation.

Previous related studies have tended to employ TAM as the leading theory, with other theories subordinate to it. This is the case with the work by Fagan et al. (2008), who utilised the Integrated Model of Technology Acceptance to study the intention to use computers, adding both intrinsic motivation and extrinsic motivation as TAM factors in the form of perceived ease of use and behavioural intention to use computers, whereas the current study has employed SDT in a more balanced and equal way, rather than as subordinate to TAM. For instance, Nikou and Economides (2017) applied SDT, with the studying finding that

autonomy and competence have a positive effect on both perceived ease of use and perceived usefulness. Similarly, Racero et al. (2020) focused on open-source software (OSS) and discovered relationships between user behaviour and perceived ease of use, perceived usefulness, competence, relatedness and autonomy.

Furthermore, there is at least one example where motivation and continued use of e-learning has been analysed using SDT and TAM (Roca and Gagné, 2008). SDT enables the discovery of motivational factors, which is best obtained by considering this theory alone. Then the use of TAM becomes the best way to examine the actual use of the Blackboard system and all related aspects of the system acceptance and its perceived ease of use. Also, TAM helped in evaluating the participants' attitudes and self-efficacy. Using TAM and SDT, Roca and Gagné (2008) analysed students' intentions regarding their continued use of e-learning tools in a professional context. This finding has a bearing on the current study since it is important to consider how attitude and self-efficacy affect faculty members because they are the ones who activate the system.

Finally, it is essential to mention that to achieve these goals, the best use of the approach is to deal with both separately, or in parallel. Sørebø et al. (2009) also looked at how SDT constructs influenced educators' plans to keep using in-person training. The above findings are consistent with the results of a study by Nikou and Economides (2014), which centres on students' attitudes towards the use of mobile-based assessment and extends the work of SDT mentioned above, and TAM. The authors employed TAM constructs (PU, PEOU and ATU) to examine the underlying motivational factors that trigger students' behavioural intention to use mobile-based assessment, and applied SDT. The authors' purpose was to use the SDT framework to explain and predict the factors that motivate students to use mobile assessment systems. In contrast, the present study has sought to uncover and examine the extent to which academic staff use the Blackboard system by employing the method of using TAM to consider the quantitative descriptive analysis and part of qualitative data analysis, in parallel with SDT based on the descriptive and qualitative data analysis, rather than integrated as a combined TAM-SDT-based model, or with one subordinate to the other.

7.7 Relating the Findings to the Research Question(s)

This section will interpret the relationship between the research findings and the research questions by looking at the meaning of the quantitative results and the interview findings' significance and implications. In addition, it provides evidence-based answers to the research questions through the rich data this study has gained.

This research study has examined the factors affecting the use of e-learning in Saudi Arabia by analysing the perspectives of academics, specifically regarding the implementation of Blackboard at a higher education institution. The main research question is: Which factors do academics view as important in affecting the adoption and use of e-learning in a Saudi Arabian Higher Education institution? This has been answered, with several factors presented and linked to theories of motivation through the use of Self-Determination theory and the Technology Acceptance Model.

The data collected shows that training courses and faster internet speed have a major impact on e-Learning. Moreover, the way that e-learning has been implemented at the higher education level examined in this research has had an effect on the extent to which the Blackboard system is utilised, and the levels and types of motivation. For example, the participants were evaluated on their use of the system, and while the decision-makers of e-learning viewed this as a positive step, some of the faculty members viewed it as negative and as somewhat de-motivating. Related to this point, self-efficacy was found to be important, as if faculty members are capable, confident and motivated to use the Blackboard system, their performance is likely to improve, and their experience of the e-learning tool is likely to be more positive. This main research question has been broken down into second-level research questions to include the following questions:

7.7.1 To What Extent is the Blackboard System Utilised and Valued by Faculty Members at the Target University?

The Blackboard system is valued by most of the faculty members that took part in this research, as 77.5% confirmed they want to use such technology, which related

to identified regulation. This shows that they are motivated to do so; however, some of the respondents felt pushed into using the system, with one stating they use it "*Because I was told by the deanship of the college that I have to.*" Even so, the importance of the Blackboard system was confirmed, including the potential for it to save time and help staff better organise themselves, as well as enrich teaching and learning. Several faculty members revealed identified regulation as they explained they were willing to extend their use of Blackboard beyond the requirements of the university, such as providing links for students. This highlights the importance of autonomy and encouraging faculty members to value e-learning without being forced to do so. In addition, some faculty members struggled to use the Blackboard system at the start, as it was new to them, which effected their attitude towards it and the extent to which they utilised it. Hence the level of external regulation (being forced to use the Blackboard system) and introjected regulation (pressure to use it and guilt) were significant in this study.

7.7.2 What are the Barriers and Challenges to the Use of the Blackboard System at the Target University?

The analysis of the data has shown that the key barriers that impact the participants were very clear. First, a lack of experience of e-learning and in using the Blackboard system was a barrier to its use for the participants in the current study, with the findings showing that faculty members with experience of Blackboard while studying abroad were quicker and more willing to use it. Moreover, a lack of knowledge of the system led to a lack of confidence and worry about using it, which is not conducive to the effective implementation of a new system.

As well as this lack of experience, some faculty members stated that not enough time was allocated for training and using the system, which is a barrier to its use. In addition, the participants of this study confirmed from both quantitative and qualitative data that the slow internet speed and intermittent connection quality were key barriers when trying to activate the system in teaching methods. A challenge to the use of the Blackboard at the institution was related to internalisation, as some faculty members shifted from being reluctant to using Blackboard on a daily basis. This shows that the challenges that arise from negative attitudes can alter as habits are internalised. Moreover, encouraging

independence in the use of e-learning is important, and this could be achieved by consulting faculty members so that they are on-board with new systems and have positive attitudes towards it, which should lead to better use.

7.7.3 What Can TAM Theory Tell us About Academics' Perceptions on the Use of the Blackboard System at the Target University?

The Technology Acceptance Model is a theoretical lens and has been used to investigate how users come to accept the use of technology tools and the value of e-learning and Blackboard amongst academics at the target institution. TAM has led to a better understanding of faculty members' perceptions of Blackboard and their attitudes and self-efficacy. The areas of motivation addressed by TAM are perceived ease of use, perceived usefulness, and attitude toward use, and for further analysis, a fourth TAM factor was added in the current study, which is self-efficacy as an external factor (as discussed above). TAM theory has helped to evaluate the participants' attitudes, self-efficacy, and acceptance of using the Blackboard system tools. It has been shown that allowing greater autonomy can lead to greater self-efficacy because attitudes and perceptions are closely related to how well a system is utilised.

7.7.4 What Can SDT Tell us About the Motivational Factors Which Influence Academics in the Use of the Blackboard System at the Target University?

Self-determination theory has been useful in analysing the motivational factors that influence the use of the Blackboard system, in particular, through consideration of intrinsic motivation; integrated regulation; identified regulation; introjected regulation and external regulation. This was seen for example where externally imposed requirements to use Blackboard led to high levels of external regulation, despite internal regulation through autonomy being likely to have a more positive impact on its use. The effect of external regulation in terms of the power of control was surprising. Also, unexpected results were observed via the data as the faculty members were hugely affected by conducting mandatory assessments. In addition, with regard to identified regulation, the faculty members that valued the Blackboard system were more willing to use it; and in

relation to internal regulation, some faculty members extended the use of Blackboard beyond the university's compulsory requirements. Therefore, SDT has provided insights into the motivational factors affecting the faculty members who took part in this research.

7.8 Summary

The chapter has provided an analysis of the research findings based on the research question. It has addressed the factors that affect the use of the Blackboard system in the target university and the extent of that use. It has also analysed how TAM and SDT factors have affected the faculty members' adoption and use of the Blackboard system. Notably, the power of control over the system's use in assessments (external regulation) impacted the faculty member's acceptance of the system. Users' attitudes towards the use of Blackboard and its perceived ease of use are examples of the internal variables of TAM that influenced the adoption and usage of the Blackboard system. Training and support are two inductive elements discussed here that affect whether faculty members in the target university adopted and used Blackboard.

This study has gathered important information and evidence regarding the factors affecting the use of e-learning in Saudi Arabia. It has not only applied TAM to uncover the factors affecting users' acceptance of the Blackboard system, it has also taken into account the role of motivational factors. The next chapter provides insight and ideas to improve implementation of Blackboard and any e-learning tools, which will enhance the learning environment. This will help improve the ability of faculty members to utilise the Blackboard system more fully by better considering what motivates them.

Chapter 8: Conclusion

8.1 Introduction

This study investigated to what extent the technology acceptance model (TAM) and the Self-Determination Theory (SDT) can explain the current use of the Blackboard system at a university in Saudi Arabia. In addition, this research also analysed participants' perceptions based on aspects related to infrastructure and support and all related issues. As part of the research, participants' expectations about the forms of training they would require the university to provide them were investigated.

This study is grounded in the research objectives and aims, and has revealed common themes that have implications for educators and their managers based on its results. This chapter presents an overview of the key findings along with a brief discussion and the limitations of this research. Also, it discusses the study's main contributions regarding both knowledge and methodology. Finally, the chapter ends with providing recommendations and suggestions for further investigation.

8.2 Research Overview and Key Findings

The main objective of this study was to analyse the factors influencing the use of e-learning from the perspectives of educators and their attitudes towards utilising a specific e-learning tool (Blackboard); this included exploring the factors that inspire or challenge them to utilise this system. The study also explored faculty members' perspectives regarding the training they require at their university. Addressing these factors using a synthesis method allowed the researcher to examine the similarities and discrepancies between the quantitative and qualitative data collected.

Based on the research findings, it was possible to derive insightful explanations in support of the current use of the Blackboard system at the target university. In light of this greater understanding, some key strategies are proposed that may encourage the adoption of effective forms of e-learning technology. This is important considering the research context of Saudi Arabia, where new teaching and learning methods are being introduced with the goal of meeting the objectives

of the country's Vision 2030 project, and taking into account the background of the faculty members that took part in the research, such as the extent of their experiences with e-learning. The existing implementation patterns of activating e-learning tools may not necessarily be followed in all phases and procedures, especially when used by other nations and communities. As a result, the hurdles to its use and the deciding criteria may vary from case to case. Moreover, it is important to identify, research and remove any obstacles and hurdles that impede the success of e-learning to reach the adoption stage successfully.

Therefore, this research explored the crucial elements that affect the acceptance of e-learning in a Saudi University as an illustration of a higher academic institution within a developing nation. In addition, the use of both TAM and SDT in this study enabled the current use and all related aspect of the Blackboard system activation to be examined.

When it comes to the use of e-learning technology in higher education, a variety of personal, technical and organisational elements can influence its adoption. The adoption of e-learning depends not only on the benefits of e-learning, but also on other factors such as the barriers to e-learning, such as the time required to establish and use e-learning; the infrastructure and technology necessary to implement e-learning; the willingness of potential users to use it; and the motivational factors that can affect users when they activate the system.

This research required the selection and employment of an appropriate methodology and method for the data collected and presented in this thesis. It has been explained that a mixed methods approach was determined to be the best research strategy for achieving the purposes of this study and answering the research question. The research technique focused on identifying the influential elements in the adoption of e-learning in Saudi higher education institutions. This thesis explained in chapter three (Methodology and Data Collection Methods) why a pragmatic strategy was suited to this research and described the research design process used to achieve the research aims and objectives.

The first stage of the exploratory (pilot) study was a questionnaire-based survey used to collect data. Next, interviews were conducted with five faculty members,

which revealed that activating the Blackboard system is mandatory, which affected their attitudes towards e-learning technology as some were more accepting than others; yet all faculty members had to use it.

The findings from the pilot study shed light on the impact of external motivational factors (e.g. external regulation and introjected regulation) on the activation and acceptance of the Blackboard system in preparation for the main study. This study's main findings are based on quantitative and qualitative data, as explained in the next section. The quantitative data were analysed as descriptive analysis, and the qualitative analysis using thematic analysis methods, to confirm the previous findings of this research and explain any unexpected or new findings.

However, the quantitative questionnaire analysis does not provide detailed explanations and responses to the 'Why' questions. Consequently, qualitative interviewing was the principal alternative method. The objective of utilising qualitative data was to investigate further and discover the influence of TAM and SDT theories on the users' acceptance by conducting interviews and qualitative analysis. Consequently, the key findings and conclusions will be discussed next.

8.2.1 Infrastructure and Support

First of all, it was important to uncover the barriers faced by faculty members while using the Blackboard platform. These barriers were then categorised as institutional barriers and technological barriers. According to the findings, faculty members at the target university viewed the lack of technical support as the main obstacle to their adoption of the Blackboard system. This is in line with Alebaikan and Troudi's (2010) findings that to give learners a great experience, managing many crucial factors, including technology, course structure, instructor, technical support, and assignments, is essential. Academics and their students should have unrestricted access to the e-learning facilities necessary and be supplied with the e-learning equipment and infrastructure required, including computers, computer laboratories and internet access. Furthermore, the interviews revealed that academics believe that the greatest barriers are technological and institutional. They also confirmed that providing the required e-Learning tools to users is an important and influential factor in adopting e-learning in higher education. In addition, they believed that the inflexibility of the Blackboard system procedures

would undermine pedagogy. In addition, some faculty members pointed out that there is a lack of laboratories in some colleges. Also, the findings from the questionnaire indicate that faculty members agreed with the idea of the importance of administrative support as they considered it the main challenge they face while using the system. Furthermore, a lack of internet services and technical support strongly correlated with their ability to activate the system more efficiently. Finally, providing the required e-learning tools to users with specialised technical support could encourage more academics to use the platform. It is important to stress that greater access to learning management systems entails access to technical support whenever faculty members require it.

8.2.2 Training

In this research, it was found that training influenced the faculty members' attitudes to, and acceptance of, the Blackboard system. Also, the study shows that training was an essential factor so that the faculty members could use the system successfully; it also affected their activation of the Blackboard system. They highlighted a significant need for specific training based on the training time and the training topic. Moreover, the data collected from the questionnaire shows the importance of the topic of training for the participants. Training can be related to the challenges they face while activating the system, and for the solutions they need to overcome any issues they may face. Also, some of the responses to the questionnaire were 'lack of training and support', which negatively affects their attitudes towards using the system, meaning that in the end, the faculty members were unable to use the system. In addition, the interview findings reveal that training is crucial from the faculty members' perspectives. Most faculty members expressed that their use of the Blackboard system would grow if the software was easy to use and the training was more available, with a greater number of topics and more suitable times. It is essential to mention that lack of training or poor training hinders the adoption and use of LMSs.

Overall, the findings show that training should shift from a focus on the practicalities of technology (how to use technology) towards targeted professional learning that focuses on teaching and learning possibilities, perceived usefulness, and promoting a positive attitude towards technology use among faculty

members. Importantly, this research shows that while the Blackboard system is a useful tool, its advantages are not being fully recognised or utilised by faculty members, mainly due to the lack training, as well as reluctance or lack of motivation to change. Therefore, while Saudi Arabia is seeing many advances in technology and its availability, including e-learning, those expected to use this technology require appropriate support.

8.2.3 Prior Experience of Using Technology

The findings from the qualitative data in this thesis show highlight the role of experience in faculty members' acceptance of the Blackboard system, as this significantly affected their approval of e-learning tools. Moreover, faculty members' attitudes towards implementing e-Learning tools varied depending on their prior experience and familiarity with the use of technology. Therefore, this research confirms the positive and strong influence of experience on the adoption of e-learning, and shows how it can influence the intentions of academics to adopt and use e-learning. Singh and Chan (2014) also found that educators' perspectives on incorporating ICT ranged according to their familiarity and experience with a given technology. This finding is also consistent with Lau and Sim (2008), who found that experienced educators already familiar with the use of the technology in the classroom have an advantage when it comes to digitising their materials for use with ICTs and finding creative ways to incorporate them into lesson plans.

8.2.4 TAM

This research applied both TAM and SDT in its attempt to explain the data. TAM provided a lens through which various technological behaviours could be analysed.

The researcher examined and identified the effect of TAM constructs on Blackboard and its continued usage. The focus of TAM factors are based on the consideration of attitude, perceived ease of use, perceived usefulness, and self-efficacy. The data collected from the questionnaire showed that faculty members and decision-makers engage with the Blackboard system based on their attitude towards it. Also, they consider the Blackboard system based on its perceived usefulness to them for doing their job. If they find it easy to activate and use, they develop a positive attitude towards it. Hence, the research found that TAM factors affect faculty members' use of the Blackboard system, and these are

directly related to the user behaviour construct, which refers to the actual use of e-learning in this research. Moreover, these findings are similar to the interview findings as the faculty members noticed that using e-learning tools allowed them to accomplish tasks quickly. However, attitude and self-efficacy were both mentioned many times in the interviews; this is related to the importance of both factors as they can play an essential role in user acceptance.

Furthermore, the findings of this study highlighted the importance of attitude and self-efficacy, such as having autonomy over the choice to use Blackboard, and the consideration of TAM factors to uncover the issues related to e-learning tools. Hence, decision-makers and institution administrators need to consider TAM factors to ensure increased Blackboard use and to overcome the problems faced by users in higher education. When introducing a new system to users, it is essential to inform them about the features, usefulness and any issues they may face. In this way they can help ensure that faculty members use the Blackboard system more confidently. Finally, the data from this study provided evidence that faculty members would be more motivated to implement new technology if they were made aware of the positive impact of that system on their teaching and student learning.

8.2.5 SDT

The role of SDT factors was a significant feature in this research. The data collected as part of the study provided a comprehensive and multilevel exploration of the effect of each SDT dimension, and how SDT could aid in achieving the objectives of activating e-learning tools in higher education. Also, there is a knowledge gap concerning the impact of the power of control (external regulation) and the user's intention to continue using the system. This study has shown that SDT factors impacted faculty members activating the system. The research thus provided evidence that can support further understanding of the motivational factors affecting users' tendency to activate e-learning tools or not.

The challenge of discovering the effect of the power of control contrasts with the power of the identified regulation. To illustrate, this study demonstrated that external regulation and introjected regulation significantly impact users' adoption of the Blackboard system, as faculty members are using Blackboard due to being

required to do so and hence to avoid negative consequences (external regulation), and they are using it to maintain their status and self-worth (introjected regulation). These two factors play an important role in motivation.

The findings presented in this thesis and the application of SDT is a significant contribution to this area of research, and it seeks to determine whether participants recognise the benefits of using such a system in their teaching and how faculty members' attitudes, usage and willingness to employ the Blackboard system are influenced by the power of control over them. The study has demonstrated that in the workplace it is essential to feel motivated to act, and be satisfied in doing so to be effective in your actions. Moreover, there is a need for another kind of motivational factor to encourage faculty members, which can be seen in the role of identified regulation and integrated regulation. These two kinds of motivation have been presented in the data. However, if autonomy is encouraged, it will lead to improved performance since the task of activating e-learning tools becomes more attractive to users.

8.3 Contributions

8.3.1 Contributions to Knowledge

This study has highlighted the importance of motivational factors when utilising e-learning tools such as the Blackboard system. It is not simply about faculty members' acceptance of new technology tools in their teaching methods, but about what motivates them. In order to determine the effect of motivational factors on academic staff, SDT was employed to uncover all the possible factors relating to the findings, while TAM was utilised to help understand to what extent academic staff perceived the ease of use of the Blackboard system.

Earlier studies have employed TAM as their main theory, while considering SDT motivational factors as external factors of TAM. Moreover, regarding the consideration of SDT, there are no exhaustive studies on the acceptance of e-learning or the essential elements that might influence its adoption. Due to the paucity of empirical studies and research on e-learning adoption, little is known about user acceptability and adoption of this technology based on SDT and TAM. This research has contributed to the literature and knowledge in the field of e-learning adoption by reviewing the literature on e-learning in both developed and

developing countries, listing and organising the related studies about e-learning adoption, and adding to the literature on e-learning adoption in the context of developing countries, and Saudi Arabia in particular, through the empirical aspect of the research.

Furthermore, this research has provided an investigation into the elements and issues that might influence users either positively or adversely on the acceptability and adoption of e-learning in Saudi Arabia. Although these findings have been derived from research conducted in KSA, they are relevant to similar cultural and higher education contexts where e-learning and technology has not yet been fully established. For example, in many Gulf nations, not just KSA, it is only in the last ten years that HE institutions have begun to use e-learning tools in their educational environments. At the same time, some of these discoveries have particular application to countries like Saudi Arabia and the nature of educational management and teaching approaches, for instance, where staff and students are both separated on the basis of gender. This is common in KSA and many Arab countries, but rare in academia globally.

In light of the lack of literature regarding the issues and factors that influence the acceptance and adoption of e-learning, the findings of this study provided a distinct contribution regarding the identification and understanding of the problems and factors that affect its adoption in Saudi Arabia, and the acceptance or lack of acceptance of technology. In addition, the study revealed a lack of theoretical models that investigate and analyse the various difficulties and aspects that affect the acceptance and adoption of e-learning. These findings may serve as a framework for future studies in similar situations, or the investigation of additional challenges and elements that influence the adoption of e-learning.

Furthermore, this research fills some gaps in our understanding of how and to what extent Saudi Arabian university faculty members use LMSs. According to the data, most educators only use Blackboard for the mandatory activities of their courses. As a result, there is a call for greater dissemination of information about LMS features, for example the training needed, which would increase and support self-efficacy. Also, it would enable faculty members to act more based on their identified regulation as a motivational factor.

The findings regarding TAM and SDT factors that affect academics' use of the Blackboard system constitute another important contribution to knowledge in this field. In particular, it has demonstrated that TAM theory factors such as usefulness, attitude and self-efficacy can influence faculty members' use of the blackboard system. Furthermore, the application of SDT is an essential aspect of this finding. The data has shown that all the identified regulations, external regulations and motivations affect users' attitudes towards using and activating the Blackboard system.

8.3.2 Contributions to the Methodological Approach to Research

This study has identified and implemented a suitable approach for the data collected in this thesis. A mixed-methods approach was determined to be the most appropriate research strategy for fulfilling the objectives of this study and addressing the thesis questions. The purpose of the research methodology was to discover the significant factors in the adoption of e-learning in Saudi Arabian institutions of higher education. This thesis has demonstrated, in chapter three (Methodology and Data Collection Methods), why a pragmatic strategy was appropriate, and how the design was utilised to meet the aims and objectives of the research. The study involved a deeper use of SDT in parallel with TAM, and this was achieved by employing a mixed-methods design.

Despite existing research conducted to analyse and study the elements influencing e-learning adoption, this study has argued that no previous studies have attempted to use SDT in the context of e-learning in Saudi Arabia or any other Arabic country. In addition, the study revealed a general lack of theoretical models that investigate and analyse the various difficulties and aspects that affect the acceptance and adoption of e-learning in such contexts.

Moreover, the researcher aimed to gather qualitative data to provide more significant insights and information about the role of motivational factors such as external regulation, identified regulation and intrinsic motivation in the context of Saudi Arabia. This depth of data in detail could not be gained from quantitative data alone. As a result, this consideration has given this research more value. The unique contribution of this study is its use of SDT and TAM to examine the

acceptance of Blackboard among academics. In particular, it has helped shed light on the enablers and barriers to LMS adoption from the perspective of academics.

Additionally, incorporating both female and male viewpoints into the analysis of this study has helped to address the research question in a more gender-inclusive manner. In the most recent research in a Saudi content, the study considered either male or female perspectives rather than both, and even where some studies have considered both the empirical element of the research has been limited. Most of the recent studies in Saudi Arabia consider the female point of view based on the idea of women empowerment, since more Saudi women now are being promoted in academia.

8.4 Limitations

As with any new phenomenon being studied, this research experienced significant limitations and obstacles. The primary limitation was the lack of available time for data collection and analysis. Due to time constraints, the period allotted for data collection was only sufficient to collect information from only the minimum required the smallest number of participants necessary for valid and trustworthy analysis and a set of results following. Nonetheless, the data analysis employed was effective enough to yield reliable and accurate results. To confirm and validate the results, other analyses employing distinct approaches such as further statistical analysis, were also conducted.

Another limitation was the difficulty in acquiring private and sensitive information related to strategies employed by the researcher. Due to the lack of knowledge about the significance of such research and studies, respondents were hesitant to provide such information. Also, the findings from this mixed-methods study are not generalisable due to the limited number of academic staff and institutions involved. However, they are valuable for informing further research that addresses the role of motivation and acceptance of e-learning in higher education.

Although vital and extensive data was gathered from the selected participants (decision-makers and academics), some had such busy schedules and kept missing appointments that it was impossible to collect the necessary data from them. In addition, only a small number of participants were motivated to engage in this

study due to stress as many were preoccupied with their daily work and tasks. The sample was selected partly for its accessibility and practicality, but also because managers and academics are among those whose views on e-learning will shape its uptake in higher education. All participants were also staff members, and in future research, it would be beneficial if the students' point of view could be considered.

Another limitation was that interviews with male participants were conducted via telephone; as a result it was not easy to gain in-depth information and discuss aspects of this research to the same extent as with the face-to-face interviews carried out with female participants. This also impacted the discussion in that not all of SDT dimensions were referred to by participants.

Moreover, the translation of qualitative data presented several difficulties. Due to the fact that the interviews were conducted in Arabic, a substantial quantity of data had to be transcribed in Arabic and then translated into English, which was challenging and error prone. Through discussions with supervisors, the researcher translated the data back and forth between English and Arabic in order to achieve reliable and impartial results, a procedure that required considerable time and effort.

8.5 Recommendations Based on the Discussion and Findings

Future work in this area may further encourage the adoption and acceptance of e-learning systems in higher education institutions. Based on the findings, there are several important recommendations that may help other researchers and decision-makers examining the integration of technological tools and platforms within higher education:

Future research:

- The study has revealed the benefits of considering motivational dimensions, including namely external regulation, introjected regulation, identified regulation and intrinsic motivation when investigating the use of e-learning, as supported proposed by Ryan and Deci (2018); therefore, motivational dimensions may be useful in future studies as the data show that many individuals were motivated by

more than one type of motivation. Understanding which types of motivation coexist would be a valuable focus of future work.

- Moreover, the effect of both SDT and TAM elements could be considered in different ways during analysis. To illustrate, this methodology utilised a new model approach that has shed light on the activation of e-learning tools. Future researchers might consider combining SDT and TAM to undertake advanced statistical tests to test hypotheses regarding applying both theories. In addition, investigation of the motivational factors in each approach could be carried out to test the effect of these factors on usability and user attitude. Also, this methodology can be applied to each of the faculty members and students and compare the results of each to verify the extent of the impact of experience on each of the motivating factors and the acceptance of the use of technology tools.

- Further research is required into the effects of these adoption factors on actual student learning outcomes across the various types of technology-based instructional strategies, for example through quantitative research involving a number of higher education institutions. To illustrate, future researchers could consider more advanced statistical tests or doing focus-groups involving students, which should be mentioned as a methodological approach.

- There is currently a lack of contribution to the literature on e-learning systems, specifically the development of the system in Saudi Arabia. This encourages researchers to investigate this field of study so that Saudi Arabian universities can benefit from the anticipated effects of e-learning systems.

- Finally, more investigations are needed into how external regulation works against extrinsic motivation and autonomy, such as employing distinct approaches like statistical analysis and hypothesis tests to confirm and validate the results differently, with more consideration to a quantitative approach.

Practical recommendations

- It is necessary to improve all aspects considered as factors that might hinder the use of the Blackboard system, such as: topics of training, the timing of training, communication and internet access. This point is also raised by Al Meajel and Sharadgah (2018).

- Students and teachers require more computer labs and improved technological infrastructure, as stressed by many of the participants interviewed in this study. Hence, increased investment in universities and other higher education infrastructure is essential, as also advocated by Zalat et al. (2021).

- It is critical to recognise and address obstacles, such as a lack of an adequate network infrastructure and technical support for female academics and their students, as described above, in order to ensure that they and their students have easy access to the necessary technologies.

- Higher education institutions that wish to create and utilise e-learning systems could use this study's findings as a reference point in the context of this research. Moreover, it might act as a decision-making tool to assist educational organisations and other organisations in their attempts to implement and spread e-learning in teaching and training.

- By incorporating modern educational technologies into the teaching and learning process, higher education institutions can improve the quality of the performance of academic staff. It is essential in an academic setting to inspire and motivate faculty members to utilise and activate new technology tools rather than simply controlling and forcing them to use any new system. In this way they can more effectively perform their duties by utilising the university's e-learning system. Therefore, to enhance their skills more effectively and improve their performance, faculty members must be highly encouraged to develop their technology-handling skills. In addition, this has highlighted the importance of the role of another type of motivation (autonomy motivation), which is divided into two kinds: identified regulation, integrated regulation, and intrinsic motivation. In contrast, a positive and stimulating work environment should focus on

encouraging faculty members in a supportive way that increases incentives and autonomy motivation which will enable them to integrate the use of e-learning in their teaching at the university.

8.6 Research and the COVID-19 Pandemic

Online learning becomes even more important during a time of crisis, such as the recent Covid-19 pandemic. However, further research is required into the effective use of e-learning tools and all the related problems. As Zalat et al. (2021) point out in their recent study, while, "the majority of participants strongly agreed with the perceived usefulness, perceived ease of use, and acceptance of e-learning", during the pandemic, the challenges around the acceptance of e-learning are "insufficient/unstable internet connectivity, inadequate computer labs, lack of computers/laptops, and technical problems" (p. 9). Nevertheless, the great extent of e-learning during Covid-19 and its efficacy could result in (and may already have resulted in) the "strategic development and implementation of e-learning," (Zalat et al., 2021, p. 10).

It should be pointed out that the data in the current study were collected prior to the Covid-19 pandemic. It is likely that the pandemic has accelerated the adoption of technology in higher education, although it is unclear what the full impact of the pandemic will be. Therefore, specific research is required to understand the effect of the pandemic in this area. It is important to note that some of the main findings, such as the role of external regulation, will hold regardless of the pandemic. The findings of this research on the use of e-learning tools in higher education (the Blackboard system) can lend support to future researchers, seeking different forms of data, findings, beliefs and user perspectives. This study's application of SDT to understand motivations has provided certain insights that may change due to the pandemic. However, the findings relating to faculty members' power of control will likely hold. The research discovered, for instance, that external regulation and introjected regulation significantly impacted user approval of the Blackboard system. These two factors, therefore, play a significant role in motivation.

8.7 Summary

This thesis has presented the findings of an investigation into the factors that influence faculty members' adoption of learning management systems such as the Blackboard system at a Saudi Arabian university, and has sought to examine the perspectives of decision-makers regarding such systems. The study also attempted to understand how widely and effectively faculty members use Blackboard.

The study applied the five dimensions of Self-Determination Theory: external regulation, introjected regulation, identified regulation, integrated regulation and intrinsic motivation. Studying the actual use of e-learning systems in higher education is essential, as is identifying the factors that help and support this activation. Therefore, it was vital to use the Technology Acceptance Model and its main aspects related to ease of use, usefulness, attitude and self-efficacy. This type of research is prevalent in scientific research in the Gulf and Saudi circles. However, what distinguishes this research, in particular, is the critical consideration of SDT and its motivational factors. Moreover, it has aimed to discover the impact of these factors on academics' attitudes, perceptions, and acceptance of the use of the Blackboard system. Each type of motive helped the researcher to understand, analyse and classify the data.

This study provides a vital contribution to existing knowledge regarding the activation of e-learning systems such as Blackboard, providing an in-depth, mixed-method comprehensive view that searches for the positions and perspectives of users with accuracy and depth based on the theoretical perspective of both TAM and SDT. The findings imply that although most of the educators recognised the value of a learning management system, their adoption of the technology was influenced by motivational factors such as external regulation, and more specifically because using the Blackboard system was mandatory, meaning they faced a lack of individual choice.

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Appendix 1

The factors affecting the utilisation the use of Blackboard system in Saudi Arabia

The study's aim:

This research aims to explore factors influencing the adoption of a Blackboard System in a Saudi University, and the factors that encourage or discourage staff from using this type of system. It will also explore faculty member's opinions of the kind of training they require in their university.

Personal information:
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Please answer the following questions based on the adoption of e-learning (Blackboard) in your university and relate your responses to your experience of the use of its tools.

Section 1: Demographic Questions and Background Information

1- Age:

☐ Less than 25 years.
☐ From 25 and less than 35 years
☐ From 35 and less than 45 years
☐ From 45 and less than 55 years
☐ From 55 years and over

2- Gender:

☐ Male ☐ Female

3- What is your nationality?

☐ Saudi
☐ Non- Saudi

4- What is your highest academic degree?

☐ Bachelor
☐ Master
☐ Doctorate

5- What is your position?

☐ Professor
☐ Associate Professor
☐ Assistant Professor

☐ Lecturer
☐ Teaching Assistant
☐ English teacher

6- Where did you complete your graduate studies (MA)?

☐ in Saudi Arabia
☐ Abroad
☐ Not holding the degree

7- Where did you complete your graduate studies (PhD)?

☐ in Saudi Arabia
☐ Abroad
☐ Not holding the degree

8 - How many years of teaching experience do you have at Al-Jouf University?

☐ Less than one year
☐ 1 – 5 years
☐ 6 – 10 years
☐ 11 – 15 years
☐ More than 15 years

9- How many courses/ subjects you typically teach over a 1-year period?

☐ 1 – 3 courses/ subjects
☐ 4 – 6 courses/ subjects
☐ 7 – 9 courses/ subjects
☐ more than 9 courses/ subjects

10- Experience with computers:

☐ Less than 5 year
☐ Between 5 and 10 years
☐ More than 10 years

11 - How many training courses on Blackboard have you attended?

1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9 – 10 - No courses have been attended

12 - Do you have experience of using an e-learning (Blackboard) system?

☐ Yes. ☐ No

13- In which college you are working.

Science college	Health College	Social Science College	
College of Computer and Information Sciences	College of Medicine	College of sharia and law	Community College
	College of Dentistry	College of Education	
College of Engineering	College of Applied Medical Sciences	College of Arts	
		College of Business	
College of Science	College of Pharmacy	College of Science and Arts	

Section 2: Blackboard Functionalities:

The aim of this section is to determine your use of Blackboard in the university.

- **Please select the Blackboard tools you are using in your work and the frequency of your use:**

Functionalities Used	Always	Very often	often	Rarely	Never
Virtual Classrooms					
Create assignments					
Discussions panel					
Blackboard Mobile					
Students Assessment Records					
Email					
Electronic Tests					
Provide students with links					
Your academic advisor					
Other:					

Section 3: Challenges with the Use of Blackboard

The aim of this section to determine the obstacles faced by educators in the use of Blackboard in the university.

- **Please indicate the obstacles that educators face with the use of Blackboard:**

Please tick the appropriate box to indicate your agreement.		Totally agree	Agree	Neutral	Disagree	Totally disagree
1	I think students are not skilled enough in the use of Blackboard.					

2	lack of administrative support.					
3	lack of technical support.					
4	lack of internet services.					
5	lack of good training programmes for educators.					
6	I think students are unwilling to use this type of educational tool.					
7	I think faculty members are not sufficiently willing to attend training programmes.					
8	I think faculty members are not receiving training that meets their need and expectations.					
9	I think lecturers do not have enough time to use Blackboard fully.					

- Would you like to add any more information regarding the obstacles faced using Blackboard system in your university?

Section 4: Benefits that support the use Blackboard:

The aim of this section is to determine the factors that encourage you to use Blackboard tools in the university.

- **Please indicate whether you think the use of Blackboard within the university leads to the following outcomes:**

Please tick the appropriate box to indicate your agreement.		**Totally agree**	**Agree**	**Neutral**	**Disagree**	**Totally disagree**
1	The use of blackboard system gives students the opportunity to complete their higher education and overcome geographical difficulties.					
2	The use of Blackboard system creates a competitive environment between educational institutions.					
3	The use of Blackboard saves time and effort.					
4	The use of blackboard system encourages communication between students and faculty.					
5	The use of blackboard system encourages students to communicate with each other.					
6	The use of blackboards helps to enable students to be taught as groups and large numbers.					

- Would you like to add any more information regarding the factors that encourage educators to use Blackboard system in your university?

Section 5: Solutions to facilitate educators' use of E-learning:

The aim of this section is to determine solutions to potential challenges hindering the effective use of technology in the university.

- **Please consider whether you think the following measures would encourage educators to use Blackboard.**

Please tick the appropriate box to indicate your agreement.		**Totally agree**	**Agree**	**Neutral**	**Disagree**	**Totally disagree**
1	Find solutions to encourage faculty members to use blackboard tools in teaching.					
2	Providing a department that responsible for designing electronic lessons.					
3	Improve internet speed within the university in order to enhance the learning environment.					
4	Provide Blackboard training courses for academic staff.					
5	Provide Blackboard training courses for students.					
6	Encourage the use of electronic tests in some courses.					

- Would you like to add any more information regarding solutions to encourage use of Blackboard system in your university?

Section 6: Faculty Members' Perceptions of the Blackboard system in the university.

The aim of this section is to determine faculty member's perception of Blackboard in the university (based on TAM Theory).

	Please tick the appropriate box to indicate your agreement.	Totally agree	Agree	Neutral	Disagree	Totally disagree
1	It is easy for me to remember how to carry out tasks using the Blackboard system.					
2	I believe that it is easy to get the Blackboard system to do what I want to do.					
3	My interaction with the Blackboard system is clear and understandable.					
4	I believe using the Blackboard system takes more time					
5	Overall, I believe that the Blackboard system is easy to use.					

A- Perceived ease of use:

B- Perceived usefulness:

	Please tick the appropriate box to indicate your agreement.	Totally agree	Agree	Neutral	Disagree	Totally disagree
1	Using the Blackboard system improves my teaching performance.					
2	Using the Blackboard system improves my productivity.					
3	Using the Blackboard system enhances my effectiveness as a lecturer.					
4	Overall, I find that using the Blackboard system is useful in my teaching.					

C-Attitude:

	Please tick the appropriate box to indicate your agreement.	Totally agree	Agree	Neutral	Disagree	Totally disagree
1	I prefer the use of Blackboard in my teaching more than traditional face-to-face education.					
2	I believe that adopting the Blackboard system at the university would improve student education.					
3	The Blackboard system is fun to use in teaching.					
4	I think the blackboard system provides an attractive work environment.					
5	I think the use of Blackboard will increase stress for me.					

D- Self-Efficacy:

Please tick the appropriate box to indicate your agreement.		Totally agree	Agree	Neutral	Disagree	Totally disagree
1	I can use basic Blackboard features, for example: email, and announcements					
2	I can operate advanced Blackboard functions, for example: electronic tests, and virtual classrooms.					
3	I can help students in the use of Blackboard tools.					
4	I can solve problems that arise while using the Blackboard system.					
5	Overall, I am able to use the Blackboard system.					

Section 6: Motivations for the use of Blackboard:

The aim of this section is to determine what motivates you integrate technology into your teaching.

Please tick the appropriate box to indicate your agreement:	Totally Agree	Agree	Neutral	Disagree	Totally disagree
1. Because I want my boss to think that I am a good member of the staff.					
2. Because I will get into trouble if I don't while					
3. Because I feel that teaching is more fun using the Blackboard					
4. Because I will feel bad about myself if I don't.					
5. Because I want to use e-learning technologies.					
6. Because I was asked by the deanship of the college that I have to.					
7. Because I enjoy using e-learning technologies.					
8. Because I believe using e-learning technologies is important.					

Would you like to add any more information regarding motivations for using Blackboard in your university?

Appendix 2

Main Study Interviews Questions

Interview Questions with decision- makers:

1- Based on your experience, can you please tell me about the use of the Blackboard system by faculty members, and how satisfied are you with that?
   - (Is this true of all staff members, or just some?)
   - (Are there groups that use Blackboard more than others?)

2- How do you think that use of Blackboard system will change or effect the quality of education at Al-Jouf University?
   - (Is this true for all aspects of education?
   - (Disciplines or learning activities or staff members, etc.?)

3- Based on your experience, what are the most common problems faced by faculty members in the use of Blackboard?
   - (How serious do you think these problems are?)
   - (Which problem(s) seems the most important?)
   - (How do you learn about these problems from staff?)

4- Based on your experience, what are the most helpful solutions and guidance that can help in overcoming the difficulties faced by faculty members in the use of the Blackboard system?
   - (Have any of these solutions been tried already? How successful were they?)

5- What are your future aspirations with respect to the use of the Blackboard system?
   - (Is there an E-learning Development Plan?)

6- Would you like to add any more information regarding the use of the Blackboard system in your university?

Interview Questions for Faculty Members:

1- How do you see the development of the use of the Blackboard system in the university over the past five years?
   - (How happy are you with these changes that you describe?)
   - (Do you think these changes are positive?)

2- Do you think that using the Blackboard system improves or will improve the quality of education at Al-Jouf University? Please explain.
   - (Do you say this in relation to your own subject area or work, or more generally?)

3- Based on your experience, can you please tell me what kind of challenges you are facing with the use of Blackboard tools?
   - (Can you tell me more about …)

4- Based on your experience, can you please tell me how educators can solve the problems they may face while using the Blackboard system?
   - (Is this a solution that you have tried yourself, or did someone tell you about it?)

- (How effective do you think that might be in …?)

5- Based on your experience, can you please tell me what factors motivate you as a lecturer to use Blackboard tools in your teaching?

- (Are all of these reasons equally important?)
- (Is there one reason that really stands out for you?)

6-Based on your experience,

First: Are you satisfied with the support and training services provided by the University?

Second: Can you tell me about the type of training you want to receive from the university now and in the future?
(How might that be organised, what format, etc. – where/when/f2f or online, etc.?)

(What might be the focus of this training?)

7- Would you like to add any more information regarding the use of the Blackboard system in your university?

Appendix 3

1441/2/4 03-10-2019 3/41/12267

الرقم: .....
التاريخ: / / ١٤هـ
المرفقات: .....

المملكة العربية السعودية
وزارة التعليم
جامعة الجوف
إدارة الإبتعاث والتدريب
رمزه (٥١/٣/٩)

جامعة الجوف
Jouf University

رؤية VISION 2030
المملكة العربية السعودية
KINGDOM OF SAUDI ARABIA

((قرار رحلة علمية))

اسم المبتعث	رقم الهوية الوطنية	جهة العمل	رقم الطلب
هيفاء عبد الله حمد البازعي	١٠٦٤٣٢١٧٧٩	كلية التربية	٢١٣٠٠٠٣٤

سعادة الملحق الثقافي السعودي في المملكة المتحدة **سلمة الله**

السلام عليكم ورحمة الله وبركاته ،،،

إشارة إلى طلب المبتعثة والمتضمن القيام برحلة علمية في جامعة الجوف لمدة ثلاثة أشهر اعتباراً من تاريخ ٢٠١٩/٠١/٢٠م.

نفيد سعادتكم بموافقة اللجنة الدائمة للتدريب والابتعاث في جلستها الخامسة للعام الجامعي ١٤٤٠/١٤٤١هـ. على القيام برحلة علمية لمدة ثلاثة أشهر اعتباراً من تاريخ ٢٠١٩/١٠/٢٠ م في جامعة الجوف، على أن تباشر المبتعثة أبحاثها تحت إشراف القسم التابعة له، ويقوم القسم بإعداد تقرير واف عن الرحلة وفق مانصت عليه اللوائح والأنظمة

أمل التكرم بالاطلاع واتخاذ ماترونه مناسباً.

وتقبلوا سعادتكم خالص تحياتي ،،،

وكيل الجامعة للدراسات العليا والبحث العلمي المكلف
رئيس اللجنة الدائمة للابتعاث والتدريب

د. بندر مزعل الشمري

- صورة مع التحية والتقدير لسعادة وكيل الجامعة
- صورة مع التحية والتقدير لسعادة الدكتور عميد شؤون أعضاء هيئة التدريس والموظفين.
- صورة مع التحية والتقدير لسعادة عميد الكلية المعنية.

Appendix 4

University of Glasgow

College of Social Sciences

09/10/2018

Dear Haifa Abdullah Albazie

College of Social Sciences Research Ethics Committee

Project Title: The factors affecting the use of E-Learning in Saudi Arabia

Application No: 400170193

The College Research Ethics Committee has reviewed your application and has agreed that there is no objection on ethical grounds to the proposed study. It is happy therefore to approve the project, subject to the following conditions:

- Start date of ethical approval: 09/10/2018
- Project end date: 12/08/2025
- Any outstanding permissions needed from third parties in order to recruit research participants or to access facilities or venues for research purposes must be obtained in writing and submitted to the CoSS Research Ethics Administrator before research commences. Permissions you must provide are shown in the *College Ethics Review Feedback* document that has been sent to you.
- The data should be held securely for a period of ten years after the completion of the research project, or for longer if specified by the research funder or sponsor, in accordance with the University's Code of Good Practice in Research: (https://www.gla.ac.uk/media/media_490311_en.pdf) (Unless there is an agreed exemption to this, noted here).
- The research should be carried out only on the sites, and/or with the groups and using the methods defined in the application.
- Any proposed changes in the protocol should be submitted for reassessment as an amendment to the original application. The *Request for Amendments to an Approved Application* form should be used: https://www.gla.ac.uk/colleges/socialsciences/students/ethics/forms/staffandpostgraduateresearchstudents/

Yours sincerely,

Dr Muir Houston
College Ethics Officer

Muir Houston, Senior Lecturer
College of Social Sciences Ethics Officer
Social Justice, Place and Lifelong Education Research
University of Glasgow
School of Education, St Andrew's Building, 11 Eldon Street
Glasgow G3 6NH
0044+141-330-4699 Muir.Houston@glasgow.ac.uk

Appendix 5

University of Glasgow

College of Social Sciences

Participant Information Sheet for Faculty members

Study title: **The factors affecting the use of e-Learning (Blackboard) in a Saudi University.**

Researcher: Haifa Albazie

Supervisors: **Prof. Victor Lally and Dr Rebecca Mancy**

معلومات المشارك/ ة في المقابلة

السلام عليكم ورحمه الله وبركاته

عنوان الدراسة: العوامل المؤثرة في استخدام التعليم الإلكتروني (البلاك بورد) في جامعة سعودية

الباحث: هيفاء البازعي
المشرفون: البروفيسور فيكتور لالي والدكتورة ريبيكا مانسي

تمت دعوتك للمشاركة في هذا المشروع البحثي حيث ان الدراسة ستحاول معرفة وجهات نظر أعضاء هيئة التدريس حول الاستخدام الحالي للتعليم الإلكتروني وسيتم جمع كل من البيانات النوعية (مقابلات)، الكمية عن طريق الاستبيان الالكتروني.

هدف الدراسة

يهدف هذا البحث إلى استكشاف المتغيرات والعوامل التي تؤثر على تفعيل استخدام التعليم الإلكتروني (نظام البلاك بورد)، وكذلك التعرف على وجهات نظر أعضاء هيئة التدريس حول استخدام نظام البلاك بورد والعناصر التي تحفزهم على استخدام هذا النظام. كما يحرص الباحث على إلقاء الضوء على نوع التحديات التي يواجهها أعضاء هيئة التدريس وإي عوائق تمنع الاستخدام الفعال. تشير الدراسات إلى أهمية فهم العلاقة بين العوامل المؤثرة على استخدام أدوات التعليم الالكتروني ومواقف الأعضاء منها وكذلك تحديدها بما يؤثر إيجابا على استخدام نظام البلاك بورد وتطوير التعليم الالكتروني في المؤسسة التعليمية. تهدف هذه الدراسة إلى المساهمة في فهم هذه العلاقة لسد فجوه بحثية في مجال التعليم الالكتروني والجامعي

بيان عن السرية

سوف يتم معالجة البيانات الواردة في هذه المقابلة بسرية تامة، وسوف يتم استخدامها فقط لأغراض هذا البحث الأكاديمي ولن يتم نسب أي معلومة الى أي شخص او منظمة. سيتم استبدال أسماء المشاركين بأرقام بما يتضمن عدم الكشف عن هوية المشارك إطلاقا

المشاركة التطوعية

يرجى إدراك أن مشاركتك في هذا البحث تطوعيه. وإنني احترم حقك في الانسحاب من الاجابة في أي وقت دون عواقب ودون الحاجة إلى تقديم أي مبررات أو تفسير

استخدام المعلومات
استخدم المعلومات كجزء من بحثي في رسالة الدكتوراه والتي من المتوقع اكتمالها في نوفمبر 2020.وسيتم استخدام المعلومات الواردة في المقابلة في المجلات العلمية والاكاديمية والمؤتمرات العلمية وسأحمي هويتك من خلا ل تقديم هذه المعلومات بطريقه لا تسمح بالتعرف على هويتك إطلاقا

تخزين المعلومات
سيتم الاحتفاظ بالمعلومات إلكترونيا على جهاز كمبيوتر محمي بكلمة مرور بكلية التربية بجامعة جلاسكو، ولن يتمكن سوى فريق البحث من الوصول إلى البيانات

التخلص من المعلومات
سيتم الاحتفاظ بجميع البيانات الورقية والالكترونية والمسجلة التي تم جمعها في هذا البحث بصورتها النهائية لمده تقل عن عشر سنوات بعد الانتهاء من مشروع البحث في مكان آمن في جامعة جلاسكو في بريطانيا ولن يتمكن من الوصول إليها الا طالب الدكتوراه بعد التخرج. سيتم التخلص من البيانات الورقية نهائيا بشكل امن ومن البيانات الالكترونية بمسحها بطريقة امنه عن طريق حذفها بشكل إلكتروني

المشكلات
من غير المحتمل أن يثير هذا البحث أي مشاكل شخصية أو مزعجة ولكن إن وجدت، بإمكانكم التواصل مع لجنة أخلاقيات البحث العلمي في جامعه جلاسكو عبر

Mrs Terri Hume I Ethics & Research Student Administrator I

Graduate School I College of Social Sciences I University of Glasgow
terri.hume@glasgow.ac.uk

الموافقة
تمت الموافقة على هذا البحث من قبل لجنة أخلاقيات البحث الانساني التابعة لجامعه جلاسكو (رقم الموافقة 400170193 ساريه المفعول الى حتى 12/08/2025

بيانات التواصل مع الباحثة
هيفاء عبد الله البازعي
h.albazie.1@research.gla.ac.uk

Supervisors:

Professor Vic Lally victor.lally@glasgow.ac.uk

Dr Rebecca Mancy Rebecca.mancy@glasgow.ac.uk

Appendix 6

College of Social Sciences Research Ethics Committee

University of Glasgow
College of Social Sciences

Consent Form for Faculty members

Title of Project: **The factors affecting the use of e-Learning at a Saudi University**

Name of Researcher: **Haifa Albazie**
Name of supervisors: **Prof. Victor Lally and Dr Rebecca Mancy**

نموذج الموافقة لأعضاء هيئة التدريس / صناع القرار لأجراء المقابلة

عنوان البحث: العوامل المؤثرة في استخدام نظام البلاك بورك في جامعة سعودية

اسم الباحثة: هيفاء البازعي
اسم المشرفين: البروفيسور فيكتور لالي والدكتورة ريبيكا مانسي

أؤكد أنني قد قرأت وفهمت ورقة معلومات المشاركين للدراسة المذكورة أعلاه وأتيحت لي الفرصة لطرح الأسئلة
☐ نعم ☐ لا

أفهم أن مشاركتي طوعية وأنني حر في الانسحاب في أي وقت، دون إبداء أي سبب
☐ نعم ☐ لا .

انا أفهم الحاجة إلى تسجيل الصوت أثناء إجراء المقابلة
☐ نعم ☐ لا .

أقر بأن المشاركين سيشار إليهم باسم مستعار (اسم مختلف عن اسمه الحقيقي)
☐ نعم ☐ لا

أقر بأنه لن يكون هناك أي تأثير ضار ناتج عن مشاركتي أو عدم مشاركتي في هذا البحث
☐ نعم ☐ لا

- سيتم الاحتفاظ بكل من المواد الإلكترونية واليدوية بشكل آمن في جميع الأوقات ، وفقًا لإرشادات أبحاث جامعة جلاسكو
- سيتم إتلاف المواد من الأجهزة الشخصية للباحث بمجرد اكتمال المشروع.
- سيتم إتلاف المواد بعد 10 سنوات من الانتهاء من المشروع ، وفقًا لإرشادات أبحاث جامعة جلاسكو.
- يمكن استخدام المواد في المؤتمرات والمنشورات المستقبلية ، سواء المطبوعة أو عبر الإنترنت.

College of Social Sciences Research Ethics Committee

أوافق على المشاركة في هذه الدراسة البحثية

نعم ☐ لا ☐

أوافق على التسجيل الصوتي

نعم ☐ لا ☐

أوافق على التنازل عن حقوق النشر الخاصة بي لأي بيانات تم جمعها كجزء من هذا البحث

نعم ☐ لا ☐

اسم المشارك: ..... التاريخ: .....

التوقيع: .....

اسم الباحثة: هيفاء عبدالله البازعي التاريخ:.....

التوقيع: .....