How Do Saudi Universities Motivate Students to Benefit from and Engage in E-Learning Systems?

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Abstract

In recognition of the importance of education and health, the Government of the Kingdom of Saudi Arabia allocated the largest budget in 2023 to the Ministry of Education and the Ministry of Health, among all ministries (Ministry of Finance, 2023). e-learning in Saudi universities is considered an indispensable part of continuing the educational process and keeping pace with the world in scientific and technological development. Because there are few studies that have focused on motivating students in Saudi universities and even less on motivating students to use and engage in e-learning systems i, this thesis investigates student motivation and explores strategies used by Saudi universities to motivate their students to benefit from and engage in e-learning. In addition, it aimed to measure the effectiveness of these strategies through the use of Keller's ARCS Model of Motivational Design. The study sample covered three universities in the Kingdom of Saudi Arabia, and included students, academic staff, and e-learning specialists. A mixed methods research approach was used in this thesis, which selected two units from each university. Data were collected through individual interviews with six academic staff members, five e-learning specialists, and twenty-six students in total in focus groups; one hundred and sixty responses were also obtained from students who participated through filling out questionnaires across the three universities.

The results of the study revealed that there were no specific strategies developed by the three Saudi universities to trigger students' motivation towards using and engaging in e-learning systems. However, the results showed that some academic staff motivate students in the e-learning environment, using different methods they consider appropriate based on their experience, aiming to make the content more engaging and thus increasing students' engagement. The results of the study also brought to light some barriers facing e-learning in Saudi universities, such as weak Blackboard systems or poor internet performance, especially in university branches outside big cities. The study concluded that Saudi universities need to develop clear strategies aimed at motivating students to use, engage in, and fully benefit from e-learning systems. The thesis recommended that academic staff should be involved in developing and creating e-learning content to ensure that it appeals to students. In addition, the study highlighted the need for further research to foster better understanding of students' motivation and achieve successful implementation of e-learning systems in Saudi Arabia.

Declaration

"I, Saad Othman Alamrei, declare that the PhD thesis entitled *"To what extent do Saudi universities motivate students to benefit from and engage in e-learning systems?*" is no more than 80,000 words in length including quotes and exclusive of tables, figures, appendices, bibliography, references and footnotes. This thesis contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree or diploma. Except where otherwise indicated, this thesis is my own work".

"I have conducted my research in alignment with the Australian Code for the Responsible Conduct of Research and Victoria University's Higher Degree by Research Policy and Procedures.

Signature: 

Date: 01-December-2023

Ethics Declaration

All research procedures reported in the thesis were approved by the Victoria University Human Research Ethics Committee Application ID: HRE19-171

Signature: 

Date: 01-Decmber-2023

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List of Abbreviations

ARCS	Attention, Relevance, Confidence, and Satisfaction.
IMMS	The Instructional Materials Motivation Survey.
ICT	Information and Communication Technology.

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Chapter 1: Introduction

1.1 Overview

Many educational institutions around the world are adopting Information and Communication Technology (ICT) in education because it is necessary in the educational environment. What distinguishes e-learning is that it aims to improve the educational process and increase its effectiveness. Integrating technology into education helps achieve learning goals such as acquiring knowledge and mastering skills (Kellar, 2008). Basically, technology is developing rapidly. A few years ago, students had to sit in front of a desktop computer to study or to attend online lectures, and this confined them the classroom, home, or library. With advances in technology, students can now attend a lecture virtually and participate using smart devices such as phones, laptops or tablets from any location where the Internet is available. These advances have made it easier for lecturers to deliver lectures, as well as for students to attend them. Moreover, they save lecturers and students time and money; it is no longer necessary to go to the campus to attend or deliver lectures and pay for travel and other expenditure, such as printing. Furthermore, e-learning provides the flexibility to deliver or attend lectures from anywhere in the world and to communicate with teachers and peers at any time, as well as various other benefits (Yakubu et al., 2018). Given its importance, the Saudi Ministry of Education has been keen to keep pace with scientific and technological advances, as well as with different domains that serve the interest of students. E-learning started in Saudi Arabia in 2002 and gradually gained the trust of both students and academics (Almahasheer, 2016). The Ministry of Education established the National Center for E-Learning (NCeL) in 2005 which integrated e-learning programs in universities (Al-Dosari, 2011). Saudi Arabia has twenty-nine public universities and sixteen private universities (Ministry of Education, 2021). The Saudi Electronic University purchased a perpetual license from the original Blackboard company to supply and technically support all Saudi universities. The Blackboard system is currently used to facilitate education for more than 2.5 million users in universities across the country (Saudi Electronic University, 2021).

1.2 The Significance and Problem of the Research

The Saudi Ministry of Education recognises the need for more effort in the education sector to achieve its vision to establish high-quality education to enable individuals to take pride in their identity and values and to compete globally (Ministry of Education, 2021). This goal has been established within the context of Saudi Arabia 2030, which aims to provide its citizens with the skills, knowledge, and

values to compete globally by furnishing solid educational foundations, equipping young people with the prerequisites for the labour market, developing their skills through lifelong learning opportunities, and promoting innovation and entrepreneurship (Saudi Arabia 2030 Vision, 2022). As education plays a pivotal role in improving the quality of life for its citizens, the Saudi government in 2023 allocated one hundred and eighty-nine billion Saudi riyals (Seventy-five billion Australian dollars) to the education sector and the same amount to the health sector (Ministry of Finance, 2023). Despite scientific progress in Saudi Arabia in recent years, including in e-learning which is the focus of this research, obstacles remain. Rahmatullah (2021) found that many students in Saudi universities cannot use e-learning due to lack of internet in some remote areas or its slowness. In this respect, the results of a study by Alsmadi, et al., (2021) during Covid-19 demonstrated that slow internet connection and scarcity of student interaction were the main obstacles to e-learning (Alsmadi, et al., 2021). Less student participation in classrooms led to general discontent about their academic progress (Rahmatullah (2021).

Nevertheless, some Saudi universities have been successful in introducing e-learning and several have even won local and international awards. These include King Khalid University (KKU, 2022), King Faisal University (KFU, 2022), and the Saudi Electronic University (SEU, 2023). Therefore, it is important that educational institutions and researchers investigate factors that lead to successful implementation of e-learning.

This research explores the motivational aspects of students engaging in e-learning, which some researchers considered was the reason they did not participate in e-learning in Saudi universities. Al-Jaber (2018) maintained that academic staff did not motivate students to engage in e-learning activities, which led to their perception that e-learning was complex and difficult to use and wasreflected in their low levels of engagement and acceptance.

More specifically, the significance of this research lies in exploring the strategies used by academic staff in Saudi universities to motivate students to use, participate in, and benefit from e-learning. It will examine how e-learning is provided in Saudi universities. The knowledge and insights emerging from this research will provide coordinators and students with useful motivational approaches to benefit from e-learning. Investigating the obstacles to students engaging in e-learning is important as Saudi universities have in recent years offered a variety of units through e-learning systems, especially during and after the Covid-19 crisis. Saudi universities also need to pay more attention to student motivation, and they are working towards achieving this goal. Motivation plays a crucial role in improving the performance of students and staff. Keeler and Suzuki (2004) argued that if e-learning was not supported by motivation and innovation, its benefits could be lost over time and students could become bored with

it. Therefore, this research will examine the importance of motivation and whether it is related to the success of e-learning and its acceptance among Saudi universities.

1.3 Aims of the Research

Saudi Universities, like many universities worldwide, aim to use e-learning to facilitate the learning and teaching process. Therefore, this research aimed to explore motivation in e-learning in Saudi universities (male departments) with a focus on how the current motivational strategies are used to engage students in the e-learning process. This aim will be met through the following objectives:

- To study the content of online units at three Saudi universities, and how they have been organized to motivate and engage learners.
- To examine whether these strategies have contributed to students' interest in using e-learning.
- Finally, the results of the data analysis will be used to help develop e-learning environments to increase students' engagement in e-learning activities and facilitate the process of learning in Saudi universities.

1.4 Research Questions

The main research question is: **To what extent do Saudi universities motivate students to benefit from and engage in e-learning systems?**

The research sub-questions are:

1) What is the importance of motivation in engaging students in e-learning?
2) How do academic staff and e-learning specialists in Saudi universities perceive the importance of motivating and engaging students in e-learning activities? What strategies do academic staff employ, and what are students' opinions on motivation in e-learning?
3) What are the main obstacles that prevent the application of e-learning in Saudi universities?
4) Based on the ARCS motivational design model, what is the extent of motivation provided by Saudi universities to their students to use and engage in e-learning systems?

1.5 Research Methodology Overview

This study used a mixed methods approach, which involved both quantitative and qualitative data collection, to gather data. By using this approach, the aim was to gain a comprehensive understanding of the research topic from various perspectives, as this would increase the credibility of the findings (Creswell, et al., 2011). Triangulation, or using different methods to measure a single phenomenon, was employed in this research to obtain data from academic staff, e-learning specialists, and students. Such a method can provide a more reliable and integrated view of the research topic (Creswell, et al., 2011). The qualitative phase involved face-to-face interviews with coordinators and e-learning specialists, as well as focus groups with students, to describe the underlying motives for using e-learning and answered the first, second and third sub-questions, as illustrated in Table 1-1. The quantitative phase involved the distribution of questionnaires to students to evaluate and analyse the motivational elements of e-learning in their universities, using the ARCS (Attention-Relevance-Confidence-Satisfaction) Motivational Design, measured by the Instructional Materials Motivation Scale (IMMS) (Keller, 2010). The aim of this phase was to answer research question number four. A total of 160 questionnaires were collected.

Overall, this mixed-methods approach was chosen to provide a comprehensive understanding of e-learning motivation from various perspectives. Table 1-1 summarises the research question, the sub-questions, and the associated chapters.

Table 1-1: Thesis structure guided by the research questions.

Research Question		
To What Extent Do Saudi Universities Motivate Students to Benefit from and Engage in E-Learning Systems?		
Sub-questions are:		**Answer from chapter**
1	What is the importance of motivation in engaging students in e-learning?	Three & Six
2	How do academic staff and e-learning specialists in Saudi universities perceive the importance of motivating and engaging students in e-learning activities?	

	What strategies do academic staff employ, and what are students' opinions on motivation in e-learning?	Three & Six
3	What are the main obstacles that prevent the application of e-learning in Saudi universities?	One, Three & Seven
4	Based on the ARCS Motivational Design Process Model, to what extent do Saudi universities motivate their students to use and engage in e-learning systems?	Five & Seven

1.6 Research Structure

This research is structured as illustrated in figure 1-1 below. Chapter 1, the introduction, provided a comprehensive overview of the research including its significance and problems, its aim, the research questions, an illustrative table of the research methodology and finally the research structure and the conclusion. The second chapter contextualises the Saudi educational environment. The third chapter presents the literature review which investigates e-learning and students' motivation and engagement in the educational process, including studies on e-learning in the Saudi context, as well as research about the benefits and obstacles of e-learning. The fourth chapter covers the research methodology, including research design, sample selection, quantitative and qualitative data collection methods, testing its validity and credibility, and finally data analysis methods. Chapter five focuses on analysing quantitative data, while the results of qualitative data analysis are presented in chapter six. Chapter seven is the discussion of these research findings and compares the results of the two types of data. Chapter eight is the conclusion and recommendations.

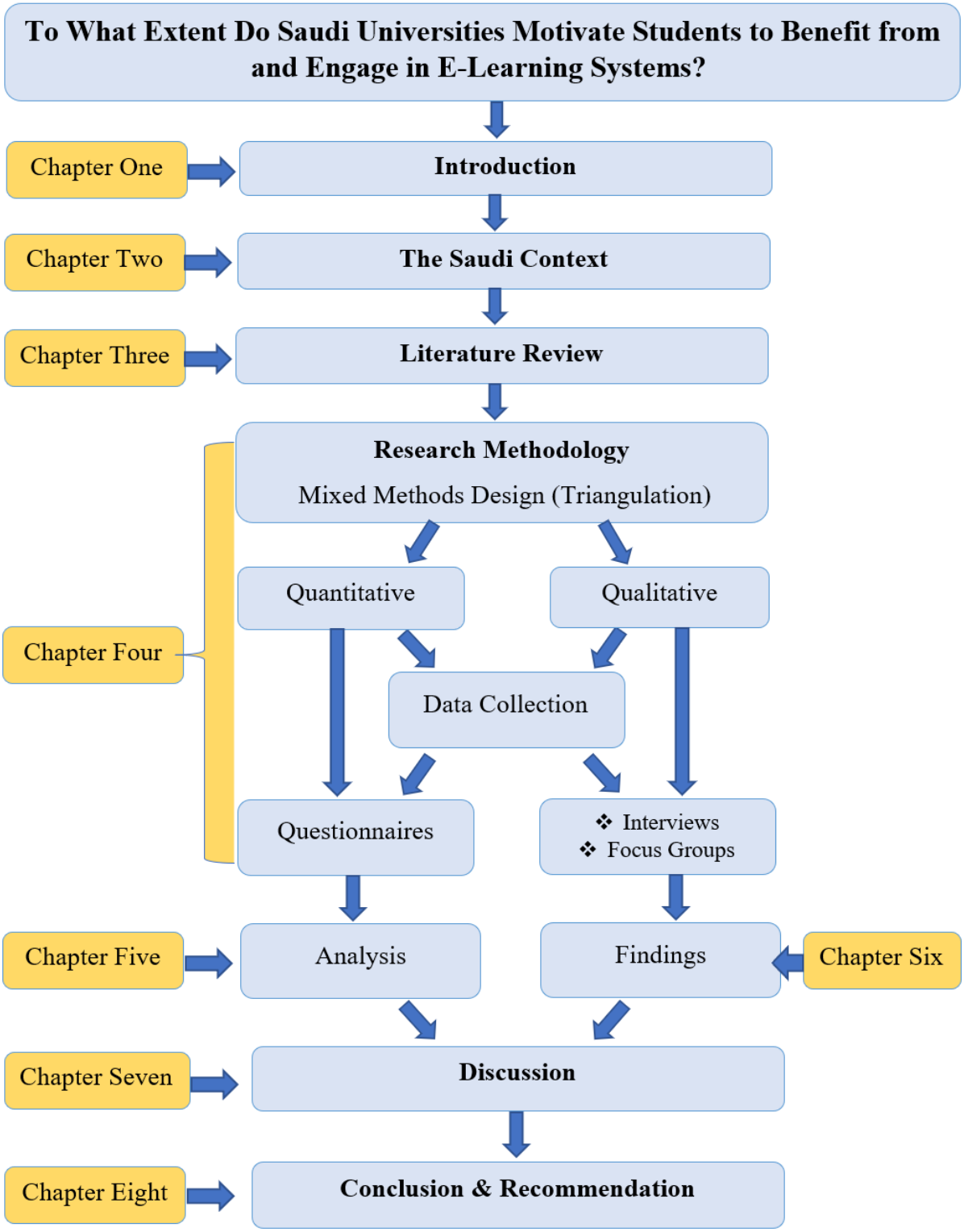

Figure 1-1: The thesis structure

1.7 Chapter Summary

This chapter presented an overview of the thesis that seeks to explore the motivational strategies used in Saudi universities to engage students in e-learning. The importance of education in Saudi Arabia was highlighted within the context of the vision of the Ministry of Education and the aims of Saudi Arabia 2030. The chapter then discussed obstacles that hinder the progress of e-learning in Saudi Arabia. It explained that the research aims to explore current motivational strategies used by Saudi universities and will focus on three selected universities and how they contribute to motivating students to use and engage in e-learning. The research questions include a main research question and four sub-questions, which aim to assess the level of motivation in the participating universities and emphasise the importance of student engagement in e-learning. The thesis seeks to explore the perceptions of academic staff and e-learning specialists regarding the significance of motivation. It also aims to identify the strategies employed by them to motivate learners to participate in e-learning activities. Thus, it will highlight the importance of developing motivational strategies that increase students' desire to learn and increase their participation in and use of e-learning activities to facilitate the learning process.

Chapter 2: The Saudi Context

2.1 Overview

Saudi Arabia is one of the largest countries in the Middle East. It stretches over an area of more than two million square kilometres (General Authority for Statistics, 2019). The Kingdom of Saudi Arabia is located in south-west Asia and covers almost 80% of the Arabian Peninsula. It shares borders with Jordan, Iraq and Kuwait to the North, Qatar and the United Arab Emirates to the East, Oman and Yemen to the south, and the Red Sea to the West, as shown in Figure 2.1. Saudi Arabia is unique among Muslim countries as Islam originated in one of its cities, Makkah, and it has two of the most holy places in the Muslim world – the Grand Mosque in Makkah Al-Mukarramah and the Prophet's Mosque in Medina (Hugail, 2019). Saudi Arabia was established in 1932 by King Abdulaziz bin Saud and its capital is Riyadh. There are thirteen provinces in the Kingdom. The official language is Arabic and Islam is the official religion of the country (Mutambik, 2018). The discovery of oil transformed Saudi Arabia from a primitive agricultural economy to one of the richest countries in the world and has given it a great position of power and influence in the global economy (Alhbeeb, 2018). The population of Saudi Arabia in 2022 was thirty-five million. One in four (29.95%) were aged under 14, 71% were aged between 15 and 64, and 2.81% were aged 65 years and over (General Authority for Statistics, 2022).

Given that this thesis will be submitted and assessed in a country other than Saudi Arabia, this chapter will provide a comprehensive understanding of the education system and policies in Saudi Arabia. It will also explore the guiding principles, sources, and characteristics adopted by the Saudi government in its educational policy, as well as the various educational reform models, and the country's vision for education in 2030. In addition, the chapter will discuss educational objectives in Saudi Arabia, along with the use of technology in education.

Figure 2-1: A map of Saudi Arabia. Source: https://maps-saudi-arabia.com/al-jouf-saudi-arabia-map

2.2 The History of the Emergence and Development of Saudi Education

The history of education in Saudi Arabia dates from 1926 when the Directorate of Knowledge was established. Initially, its jurisdiction was limited to the Hijaz region, but later extended to the entire kingdom after the formation of Saudi Arabia. The Directorate initially oversaw four schools, but now administers 323 schools. In 1952, the Ministry of Education was established to plan and supervise general education for boys in primary, intermediate, and secondary schools. King Fahd bin Abdul-Aziz was the first minister. In 1959, the General Presidency for Girls' Education was established, with 15 primary schools and one intermediate teachers' institute. As education developed, the General Presidency for Girls' Education was merged with the Ministry of Knowledge in 2003 by royal decree. A year later, the Ministry of Knowledge was renamed the Ministry of Education (Ministry of Education, 2021).

2.3 Ministry of Higher Education

In 1975, the Ministry of Higher Education was created by Royal Decree (No. 236/1) to administer the Kingdom's higher education policy. The Minister of Higher Education is responsible for implementing the government's policy on university education. The government has provided significant support for university education, including the establishment of new universities and scientific and applied colleges, and large funding allocations. Currently, there are twenty-nine public universities, sixteen private universities, and twenty-three private colleges offering various scientific and applied specializations in the Kingdom. The Ministry has adopted modern trends in higher education, including scientific research (Ministry of Education, 2022).

2.4 Vision and Mission of the Saudi Ministry of Education

The Kingdom’s vision for education in Saudi Arabia is to provide quality education that produces a globally competitive society through knowledge acquisition. The mission of the Ministry of Education is to offer equal educational opportunities through appropriate learning environments and to achieve better educational outcomes by promoting scientific research, innovation, and creativity. It also prioritizes developing the skills and abilities of educational staff and fostering social partnerships (Ministry of Education, 2021).

2.5 Objectives of the Saudi Ministry of Education

The Saudi Ministry of Education (2015) has set key goals to guide its policies, including: fostering students' knowledge, skills, and values in terms of Islamic, national, and intellectual identity; providing educational opportunities for students; improving the selection and training of teachers; promoting quality education and upgrading its standards; expanding and maintaining educational facilities; producing and utilizing scientific research and expanding postgraduate programs; encouraging the growth of private education; improving the quality of educational outcomes to meet the needs of society and development; establishing a regulatory framework and governance system; providing scholarships for talented students to study abroad and exchange knowledge; utilizing information technology and telecommunications; diversifying funding sources and investing in education; and enhancing local and international partnerships. Perhaps the subject of this study falls under one of these goals of the Ministry

of Education – by motivating students to benefit from information and communications technology in their university studies.

2.6 The Saudi 2030 Vision in Education and Educational Reform

The Saudi 2030 Vision, launched in April 2016, is a comprehensive plan for economic development in Saudi Arabia. A significant aspect of this vision is the emphasis on education and its outcomes. The aim is to build a highly educated and skilled workforce that can take responsibility for making informed decisions in the future (Alshagham, 2016). The vision seeks to enhance the quality of educational outcomes, increase the effectiveness of scientific research, encourage creativity and innovation, promote community partnerships, and upgrade the skills and abilities of educational personnel (Saudi Vision 2030, 2022).

Thus, The Ministry of Education has been keen on educational reform in Saudi education, including the search for new educational models and objectives, and the use of new teaching techniques consistent with the technological revolution and technical advances, as well as benefiting from the experience of developed countries (Al Anezi, 2021).

One of the primary goals of Vision 2030 is to bridge the gap between higher education outputs and the requirements of the labour market, while also advancing the development of public education (Alshagham, 2016), This goal is essential in addressing the current challenges facing the Saudi workforce and the economy, which include high unemployment rates among young graduates and a significant skills mismatch between graduates and labour market demands (Alshagham, 2016). Therefore, to achieve this goal, the Saudi government plans to reform its education system by incorporating modern teaching techniques, increasing investment in research and development, and promoting international collaboration to boost the quality of education.

Another crucial objective of Vision 2030 is to have at least five Saudi universities among the top 200 international universities by 2030, which is vital in promoting the country's academic and research reputation globally and creating a knowledge-based economy. To achieve this, the government plans to support research and innovation in universities, attract highly skilled faculty and researchers, and provide advanced technology and infrastructure (Saudi Vision 2030, 2022).

This study, within the context of Vision 2030, aims to help Saudi universities clarify the current stereotype of e-learning in some universities, and benefit stakeholders either through avoiding any weaknesses in e-learning, or gaining knowledge from the experience of other universities. It is envisaged that providing more stimulating and supportive e-learning environments will be consistent with the goals of Vision 2030 to advance education.

Overall, Vision 2030 recognizes the significance of education in achieving sustainable economic and social development. The plan's focus on education is critical in preparing Saudi Arabia's workforce to adapt to future challenges and technological change, thereby enabling the country to achieve its ambitious goals of economic diversification, job opportunity creation, and social development.

2.7 Terms and Definitions

2.7.1 Educational policy in Saudi Arabia

To discuss education policy in Saudi Arabia, it is necessary to first define this concept. Education policy refers to the set of principles and standards that guide the education system, including the objectives and models deemed valuable by society. It reflects the vision and beliefs of a society and contributes to its culture and development (Nasr et al., 2010, p. 37).

In 1969, the Supreme Committee for Education Policy in Saudi Arabia developed an official document outlining its vision for Saudi society and education. It stated that Saudi educational policy aims to define God and religion for individuals, guide behaviour according to God's law, meet community needs, and achieve national objectives (Hugail, 2019, p. 115). Thus, the principle of Saudi educational policy is based on Islamic thought and reflects the teachings of Islam which influence the state's doctrine, worship, ethics, law, judgment, justice, and lifestyle (Azazi, 2010).

2.7.2 Sources of the educational policy in Saudi Arabia

Nasr et al. (2010) maintain that the sources of educational policy in Saudi Arabia are influenced by five factors: Islamic faith, socio-economic conditions, the need for development, age-related requirements and characteristics as well as the specific characteristics and needs of Saudi citizens, and the demands of growth.

2.7.3 Principles of education policy in Saudi Arabia

The Supreme Committee for Education Policy in Saudi Arabia has established a set of principles that are necessary for creating a dependable education system (Hugail, 2019). These include the principles of faith and humanity, equal educational opportunities and justice, scientific progress, education for productivity, empowerment and development, comprehensive and continuous education, innovation and creativity, and education for life.

2.7.4 Properties of Saudi educational policy

Saudi educational policy is based on Islam, which is the dominant religion in the Kingdom of Saudi Arabia (Nasr et al., 2010). It emphasizes the inclusion of religious and social sciences in the curriculum to promote correct Islamic culture and ensure equal educational opportunities (Nasr et al., 2010). The preservation of Arabic, the language of the Quran, is also prioritized to strengthen cultural identity (Hugail, 2019). Moreover, Saudi Arabia follows single-gender education, making it one of the few countries globally that does not allow co-education except in nurseries and kindergartens, and the first three grades in some primary schools (Hugail, 2019).

2.7.5 Educational levels and their objectives in Saudi Arabia

Like other countries, the education system in Saudi Arabia is organized by age group into various levels, each with specific characteristics and objectives based on education policy (Nasr et al., 2010). According to the Saudi Arabian Government's National Unified Portal (2023), the educational levels are divided into the following stages:

- Early Childhood Stage

This phase caters for children below the age of six and is available through both government and private kindergartens across Saudi Arabia and is divided into nurseries and pre-schools.

- Public Education

Public education is both cost-free and obligatory for citizens and residents enrolling in government schools. The Ministry of Education (MoE) ensures an adequate educational setting, facilities, textbooks, and complimentary transportation for the following three educational phases:

- Elementary School: spanning six academic years, commencing at ages 5 to 6.

- Middle School: covering three academic years.
- High School: encompassing three academic years. High school-level programs are also offered by industrial institutes, as well as construction and architectural institutes.

- University and Higher Education

Higher education, as defined by Nasr et al. (2010), encompasses all forms of education that follow secondary level education. Specialized courses are offered by numerous institutes and centres, which vary in terms of duration of study and qualifications.

Saudi Arabian universities are structured like other universities around the world and share the same purpose of preparing qualified individuals to meet post-graduation societal needs. Depending on the major, university studies in Saudi Arabia typically last between four and seven years, culminating in the award of a bachelor's degree. Saudi Arabian universities strongly encourage students to pursue scientific research and stay abreast of developments that contribute to achieving the country's educational policy objectives (Hugail, 2019). In addition, public universities provide the opportunity to acquire a bachelor's degree at no cost to citizens, regular students, and external scholarship students. Monthly stipends are provided for students throughout their undergraduate degree.

2.8 History of Technology in Saudi Arabia and its Integration into Education

Before the advent of technology, people did not have the means to communicate with others who were in distant areas. In the Arabian Peninsula, people employed some primitive methods to communicate over the centuries; these included using cave drawings, smoke signals, symbols, carrier pigeons, and later the telegraph (Khan et al., 2022). However, with the advent of modern technology, communication has become much more convenient and diverse. The telephone, radio, television, and the internet have emerged as the most influential communication technologies, facilitating easier interaction with others (Habibi, 2019) and have revolutionized people's communication methods, transforming simple devices into global communication channels that connect individuals worldwide (Habibi, 2019). As early as 1926, King Abdul Aziz Al-Saud established the Directorate of Post, Telephone, and Telegraph (PTT) as the first Saudi government agency responsible for postal and communication services (Farag, 2019).

The integration of technology, specifically computer usage, into Saudi education commenced with the Ministry of Education (MoE) implementing a database to collect, process, and store information about teachers, students, and administrators. Subsequently, in the 1990s, computer studies were introduced as a significant component of the Saudi educational curriculum. Initially, the MoE conducted pilot computer literacy programs in the late 1990s, which later became mandatory for high school students and optional for students in primary and intermediate schools (Al-asmari and Khan, 2014).

In recent decades, technology has made significant strides in various fields in Saudi Arabia, particularly in education, as noted by Al Anezi (2021). The education system has incorporated technology through applications, tools, and various techniques that enhance the learning experience and advance research. The Saudi government recognizes the importance of technology in education and has implemented several projects to support its development, including the King Abdullah Project to establish the National E-learning and Distance Learning Centre, and the Saudi Digital Library Project (Khan et al., 2022).

Furthermore, there is an increasing desire by the Saudi government to allocate resources towards developing IT infrastructure. The crown prince of Saudi Arabia recently unveiled the NEOM project, a SMART city situated at the intersection of Saudi Arabia, Jordan, and Egypt. This ambitious initiative aims to create a city that leverages every aspect of advanced technology, providing its residents with a distinctive and innovative living environment. Despite being in its preliminary stages, the implementation of this $500 billion project is anticipated to encounter challenges. Upon its successful completion, it will have the potential to serve as a paradigm for future mega smart cities (Farag, 2019; Habibi, 2019).

Consistent with Vision 2030, the Ministry of Education in Saudi Arabia is aiming to achieve a digital transformation in e-learning (Ministry of Education, 2017). The National E-learning and Distance Learning Centre has launched four e-learning initiatives that concentrate on "digital skills"; these are the unified e-learning and training platform initiative, the virtual school initiative, the digital content initiative, and the governance and operation initiative (Ministry of Education, 2017). Saudi Arabia has emerged as a leading country in utilizing technology in various fields, particularly in education, which is a critical starting point for knowledge acquisition among socially and globally conscious generations who keep abreast of the latest developments.

2.9 Chapter Summary

This chapter provided a brief overview of the Kingdom of Saudi Arabia in terms of its location, area, geographical boundaries, population, and the most prominent economic sources on which the state is based, as well as information about the kingdom’s educational system and policies and the country’s historical development. It highlighted the country's Vision 2030 in the field of Education. In addition, this chapter discussed the higher education system in Saudi Arabia. Finally, it addressed the integration of technology into education and explored the role of technology in enhancing teaching and learning processes, as well as initiatives and programs that have been implemented to promote digital literacy and innovation in the Saudi education sector.

Chapter 3: Literature Review

3.1 Overview

This chapter outlines the literature reviewed in the thesis. It is divided into five main sections. The first focuses on studies dealing with the history and definition of e-learning and provides a comprehensive overview of e-learning, highlighting its advantages and disadvantages, as well as studies on e-learning in Saudi Arabia. The second section reviews studies focusing on the relationship between e-learning and motivation and how motivation may act as a decisive factor in the success or failure of e-learning. The third section covers the importance of engaging students in the learning process, especially in e-learning environments. The fourth section examines studies which used Keller's ARCS Model and their views on the applicability of the Instructional Materials Motivation Survey tool (IMMS) to scientific studies. The last section is the conclusion. Given that e-learning concept has many alternatives that have been used in research such as m-learning and distance learning, I searched by the concept of 'e-learning' only since it was the mostly used in Saudi Universities where the study had been conducted. Figure 2-1 summarises the structure of this chapter.

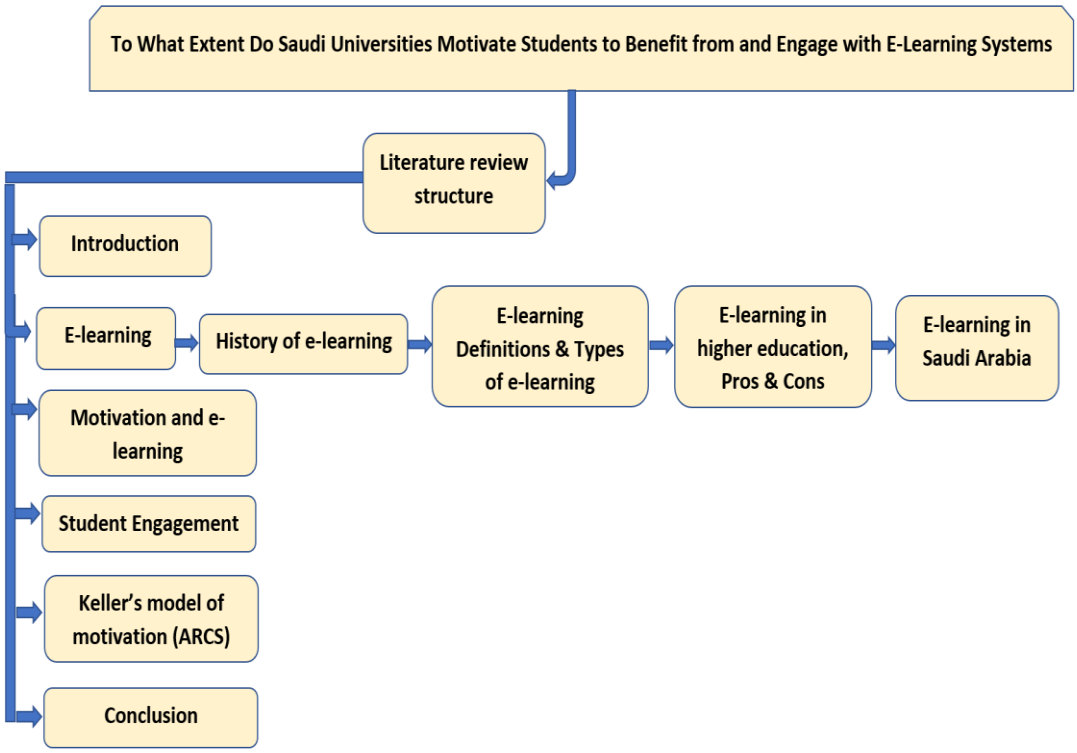

Figure 3-1: The structure of the literature review chapter.

3.2 E-Learning

3.2.1 History of e-learning

Researchers have various views about the emergence of e-learning. Some researchers suggested that the term e-learning first appeared in the eighties (for example, Moore et al., 2011), while Friesen (2009) argued that it emerged in the mid-nineties. Nicholson (2007) described the eighties and nineties as a period of intensive expansion and innovation in e-learning and networks, but claimed that it emerged in the sixties with the development of network communication. The debate about the emergence of e-learning was not only about determining when it was established only, but also about its definition. Nicholson (2007) maintained:

"In the history of e-learning, it is important to note that there is no single evolutionary tree and no single agreed definition of e-learning" and claimed it had been used since the sixties in some sectors such as education, as well as in business, training, and the military where it was called online practice. In subsequent decades e-learning developed further and took on different forms, types, and models (Bates & Poole, 2003). Soon, many educational institutions became dependent on e-learning in their curricula, especially in the late nineties and early twenty first century when digital technological capabilities rapidly advanced and modern educational models emerged which applied these new technologies in educational settings (Harasim, 2006; Mutambik, 2018).

In summary, e-learning has witnessed great advances over time, regardless of various views about its origins. E-learning has become an integral part of modern education, especially during the COVID-19 crisis, as it is the key means of continuing the educational process.

3.2.2 Definitions of e-learning

There is no comprehensive definition of e-learning (Nicholson, 2007). Sangrà et al. (2012) considered that e-learning could be defined according to the target audience and its type. However, it could vary depending on the type and objective of the learning and the content provided (Mutambik, 2018). Still, the development of technology and expansion of e-learning make it difficult to find a definition on which all specialists in education agree, as it is understood differently from multiple perspectives (Sangrà et al., 2012).

Below is a selection of definitions which are presented here to provide a broad view of the concept of e-learning.

According to Wagner (2005), "E-learning can be understood as an educational process, using information and communication technologies to create training, to distribute learning content, communication between students and teachers and for management of studies". However, Clark (2002) maintains that e-learning is simply a type of education that uses modern technology, whether computers, the internet, or any other electronic device that help develop skills and build knowledge.

Al-Mousa and Al-Mubarak (2005) defined e-learning as: "A method of education using modern means of communication such as computers, networks, multimedia, sound, image, graphics, search mechanisms, electronic libraries, as well as Internet portals, whether remotely or in the classroom, with the main aim of using technology of all kinds to deliver information to the learner in the shortest time, least effort, and the greatest benefit."

The Saudi Electronic University (2021), which is one of the three universities participating in this study, defined e-learning as *"*a type of learning that provides educational content via an interactive environment using advanced technologies to enable the learner to access and interact with the content as a resource available anytime, anywhere, synchronously or asynchronously".

Other studies have attempted to provide a comprehensive definition of e-learning (Sangrà et al., 2012), including Garrison and Shale (1987) and Keegan (1980, 1988). Sangrà et al. (2012) asked thirty-three international experts in the field of e-learning for a definition. They unanimously agreed that any definition of e-learning must include four main elements: technology, educational models, communication, and delivery. The definition reached was that: "E-learning is an approach to teaching and learning, representing all or part of the educational model applied, that is based on the use of electronic media and devices as tools for improving access to training, communication and interaction and that facilitates the adoption of new ways of understanding and developing learning" (Sangrà et al., 2012).

While Sangrà et al.'s research made a commendable effort to synthesize expert opinions, it is essential to acknowledge dissenting views in their study, and that their definition may not fully encapsulate perspectives within the broader community of e-learning specialists.

Finally, Sangrà et al. (2012, p. 93), quoting Rossiter (2007), argued that it was important to find a comprehensive definition because "There is a pressing requirement to understand better the nature of e

learning, as an educational innovation, and to evolve contextually derived frameworks for change which align with organisational culture and practice".

In all these definitions of e-learning, the close link between education and technology become clearer. In this thesis I will use the definition of the Saudi Electronic University, mentioned above, that*: "*e-learning is a type of learning that provides educational content via an interactive environment …".

3.2.3 Types of e-learning

Saudi universities differ in their use of e-learning for courses. Al-Sadhan and Abdulrahman (2015) and Amiti (2020) classified two categories of e-learning. The first category is synchronization of e-learning, which is of two types:

1. **Synchronous e-learning**: synchronous learning is online learning in real time, allowing teachers and learners to interact synchronously (real-time chat) (Sharma, 2010). This approach is usually delivered via video conferencing tools which facilitate immediate feedback and discussion and is more like traditional education but via live broadcast (Al-Sadhan & Abdulrahman, 2015).
2. **Asynchronous e-learning** includes self-learning, with learners interacting and completing course materials without being present at the same time (Shahabadi & Uplane, 2015). This method is usually delivered through online learning management systems and often includes pre-recorded videos, readings**,** and quizzes and thus is free of time constraints (Al-Sadhan & Abdulrahman, 2015).

The second category is e-learning according to intended use. Al-Sadhan & Abdulrahman (2015) note that there are three types:

1. **Supplementary e-learning**: which is considered an aid to traditional education.
2. **Partly online or integrated education**: which combines traditional classroom education with e-learning and allows for greater flexibility in scheduling. It has become popular in recent years due to improved learning outcomes, and brings students together face-to-face in the classroom as well as online.
3. **Fully Online e-learning**: which is provided entirely via the internet, and the student does not meet face-to-face with the teacher.

3.2.4 The advantages and disadvantages of e-learning

Many studies have addressed e-learning and classified it into different categories and concepts, including those who consider it as a type of modern education which depends on technology (Clark, 2002; Friesen, 2009), while others like Sangrà et al. (2012) maintain that it is an extension of distance education. Njenga et al. (2010) regard e-learning as a myth, with supporters motivated by a personal agenda to achieve material gain, while ignoring its risks to teaching and education. Some studies have replaced the term e-learning with other terms such as education using technology or computers, and computer-based training (Friesen, 2009).

What distinguishes e-learning is that it aims to improve the educational process and increase its effectiveness. Integrating technology into educational environments helps achieve learning goals such as acquiring knowledge and mastering skills (Keller, 2008). Negroponte et al. (2004) argued that the internet can build new knowledge for societies, and students will become more educated and active through digital technologies that enable everyone to learn and collaborate with each other or independently. Thus, e-learning has become one of the most important methods of education. and research in this field has created interest among researchers due to its effects on education (Kew et al., 2018). Unlike traditional education, e-learning is flexible, facilitating continuous learning, participation, discussion, and communication with teachers (Nasrullah et al., 2018). Students can use their computers or mobile phones to access e-learning systems and attend lectures at any time – depending on the type of e-learning offered – and from anywhere instead of studying in traditional education systems.

e-learning platforms such as the Blackboard, LMS, and Web CT have helped teachers and students save time and money while also providing students with appropriate learning materials (Yakubu et.al., 2018). Teachers who used e-learning could accomplish other academic tasks such as research, publishing and supervising graduate students, because they saved more time using e-learning, accessing information and working from home (Zewayed. 2012, referring to Ndubisis, 2006). In addition, e-learning systems help teachers manage their lecture time by explaining and discussing the main topics during the lecture and then leaving activities, exercises, and assignments for students on the e-learning system. To take full advantage of these platforms, it is necessary to continuously improve and develop Information and Communication Technology (ICT) skills, keep pace with modern teaching methods, and provide courses and support for teachers and students. Otherwise, e-learning will not have a positive impact on the educational process (Al-Asmari & Rabb Khan, 2014).

However, e-learning, like any other educational system, has its disadvantages. For example, it requires a large budget to establish ICT infrastructure (Harandi, 2015) which can make it difficult for educational

institutions with limited budgets to implement e-learning systems, especially in developing countries. Moreover, Harandi (2015) and Rahmatullah (2021) argued that poor infrastructure was an obstacle to e-learning, especially for those who live in remote areas far away from strong communication networks. Kew et al. (2018) found that weak ICT infrastructure constituted a barrier to using e-learning systems for some students at Thai universities. However, they considered that a lack of experienced teachers in providing educational content and teaching via the internet was one of the main barriers to e-learning. Zewayed (2012) agreed that teachers need experience and skills in using technology. Other barriers that may hinder the use of e-learning are inadequate technical support, weak system and information security, lack of teacher training, and poor motivation (Zewayed, 2012; Bin Abdulaziz Al-Sadhan et al., 2021).

3.2.5 E-Learning in Saudi Arabia

E-learning in Saudi Arabia may make learning easier and more flexible for students who have limited access to university facilities. The literature discusses various aspects of e-learning in Saudi universities. Some studies focus on the success of implementing e-learning (Alhabeeb & Rowley, 2018), user awareness (Almaiah & Almulhem, 2018), and adoption and acceptance of e-learning (Salloum, 2018; Iffat Rahmatullah, 2021). Other studies have shed light on various difficulties in the implementation process, including technological gaps (Al-Ahmari & Amirault, 2017; Habib & Rolli, 2017; Al-Jaber, 2018), topic design (Al-Jaber, 2018), student motivation (Alahmari & Amirault, 2017; Alhabeeb & Rowley, 2017; Aljaber, 2018), policy constraints (Alahmari & Amirault, 2017), teacher motivation (Alahmari & Amirault, 2017; Alhabeeb & Rowley, 2017; Aljaber, 2018), and support and training (Alahmari & Amirault, 2017).

Alshehri et al.'s (2019) study of 507 students at King Faisal University in Saudi Arabia focused on identifying the factors affecting use and acceptance of the Blackboard e-learning system, using the Unified Theory of Technology Acceptance and Use (UTAUT) as a framework. They found that teacher characteristics, a well-designed course, course content support, and course evaluation had a positive impact on increasing students' use and acceptance of the Blackboard e-learning system. Similarly, Almaiah and Alyoussef (2019) noted that a well-designed course encouraged students to engage with, accept and benefit from the Blackboard system. Moreover, Alshehri et al. (2019) reported that when e-learning provided basic information such as course objectives, planning, and outputs in a clear manner, students were more likely to use it, thus enhancing acceptance of the Blackboard e-learning system, whereas poor design diminished students' desire to participate. Therefore, they emphasised the important role of course designers, policy makers and trainers in improving the quality of courses to achieve high levels of use and acceptance of e-learning systems.

Some studies indicated that a well-designed e-learning course had a significant impact on its use and outcomes. Therefore, the integration of various multimedia components such as videos, animation, and audio recordings to clarify the course and any complex concepts was essential (Almaiah & Almulhem, 2018; Alhabeeb & Rowley, 2018).

In the Saudi context, there were only a few studies that focused on motivation in education, especially higher education, but almost none on motivating students to use and participate in e-learning. Some studies dealt with motivating students to use English as a second language (for example, Kaid Mohammed Ali, 2017) or motivating faculty members to develop an electronic course (Salloum et al., 2019). The problem in universities, Al-Jaber (2018) noted, was that: "The faculty members do not motivate students to participate in e-learning activities, and this leads to students' perception that the e-learning system is complex and difficult to use, which is reflected in their levels of acceptance and engagement in it".

Iffat Rahmatullah's (2021) study of 125 students and 25 faculty members at King Khalid University, one of the three universities participating in the current research, found that e-learning was not available to many students, especially those in remote areas in the Asir region, in south western Saudi Arabia, due to lack of internet access. Those participants with access to e-learning found it very convenient for learning, while teachers reported greater satisfaction with delivering and managing interactive activities for students. However, their observations of e-learning indicated different results to the data in the student and staff questionnaires which revealed less student participation in virtual classes, academic dishonesty in some assessments, the incorrect use of some assessment tools, and student dissatisfaction regarding their academic progress (Iffat Rahmatullah, 2021). Given that I collected data from this university, the thesis will compare these results with those of my current study in the discussion chapter (Chapter 7).

Some studies indicated that e-learning in Saudi Arabia, like other countries, still faces many challenges, but has managed to address many of them. Al-Asmari and Rabb Khan (2014) recommended that attention should be paid to development and improvement in e-learning systems to overcome these challenges. Saudi Electronic University (2021) noted that during the COVID-19 crisis the Saudi Ministry of Education was able to overcome infrastructure and support for technology resources challenges. As the main goal of the Ministry of Education during the pandemic was to continue the educational process remotely, it formed partnerships with several parties including Microsoft to implement innovative strategies to achieve this goal. It established a Madrasati (My school) platform which enabled continuation of distance learning, and this platform served about six million students (Microsoft, 2022). As part of that transition to online learning, the Ministry offered training courses for

teachers to provide the knowledge, support and skills required for e-learning and also to motivate them to continue this educational process (Saudi Electronic University, 2014). Similarly, Al-Shahrani et al. (2022) found that many teachers in higher education did not use e-learning systems until the COVID-19 crisis forced them to do so.

To sum up, previous studies in the Saudi context indicated the successes, challenges and obstacles still faced by e-learning systems since they were first introduced in 2002. They also demonstrated their rapid progress in Saudi Arabia in recent years, especially during and since the COVID-19 crisis, for which the nation has received many international awards (Microsoft, 2022; Alsaffar et al., 2022; SEU, 2023; Laurens-Arredondo, 2022). The main obstacle is ensuring the quality of the e-learning system, consistent with the goals of Saudi Arabia's Vision 2030 to support standards of excellence in all areas of life, including education. To achieve this level of quality, it is necessary to identify the strengths and weaknesses of e-learning systems and support educational policy makers to improve them (KKU, 2022).

3.3 Motivation and E-Learning

Motivation is one of the key factors for progress and success. According to Ryan and Deci (2000): *"*To be motivated means to be moved to do something". Motives can be intrinsic or extrinsic; if the motive is enjoyment or interest then it is intrinsic, but if there are rewards or incentives to do the task, then the motive is extrinsic (Ryan & Deci, 2000). Motivation has also been defined as directing individual's behaviour through the need to achieve a specific goal in life (Sansone & Harackiewicz, 2000).

This section focuses on the impact of motivation on learning, especially on e-learning, and determining whether it has an impact on students' achievements. An extensive review of the literature indicated a relationship between e-learning and students' motivation and academic progress. Al-Jaberi (2018) maintained that motivation increased the demand for e-learning, which created positive motivation for learning. Furthermore, the application of an e-learning system stimulated students desire to learn (Harandi, 2015).

A study of 80 students at the University of Bisha in Saudi Arabia investigated whether teaching students via e-learning (using the Blackboard system) motivated them to learn or whether traditional (face-to-face) education was better for them. It found that when participants used the Blackboard system for an English language course, they believed it motivated them to learn more than traditional education (Kaid Mohammed & Ali, 2017). This is consistent with Kew Si et al.'s (2018) findings that Thai university students reported they were more motivated to learn when they used e-learning systems.

For successful application of e-learning systems, it is necessary to know the students' perceptions and understanding of e-learning, as well as their skills and what motivates them to participate in on-line learning. Thus, studies on learners can help to enhance e-learning applications, reduce financial cost and effort (Al-Shehri, 2010), and improve the planning, implementation, and production of materials on e-learning platforms (Alhabeeb & Rowley,2018; Federico, 2000).

The efficacy of e-learning systems in fostering student motivation and facilitating the learning process depends upon the quality of system design. Inadequately designed e-learning systems cannot effectively motivate students (Almaiah & Alyoussef, 2019). Consequently, it is imperative to ensure that users understand the course content and associated tasks. This will stimulate students to actively engage in the learning process by searching, exploring, and deriving enjoyment from their educational pursuits. These attributes, Almaiah and Alyoussef (2019) contend, are essential elements of successful e-learning systems.

Many students who study online do not pass their courses (Abou El-Seoud et al., 2014). Therefore, teachers need to understand their students' motivation towards e-learning, as this may determine the success or failure of e-learning. Nehme (2010) provided various tips for lecturers who taught their courses through e-learning platform. For example, they should explain the e-learning environment to students and how to benefit from it, and provide a clear outline of the course and the key tasks and goals it aims to achieve. In addition, the lecturer should facilitate interaction and participation among students, and encourage them to work cooperatively. Students learn from each other in the e-learning environment, as they are keen to benefit from the knowledge of their peers, whether inside or outside the classroom (De Marsicoet al., 2013). It is therefore essential for the course presenter to monitor the students' presence during the lecture by interacting with them and engaging them in the lesson on an ongoing basis (Nehme, 2010). Finally, teachers need to be sufficiently open-minded to expect that many students may experience fear and anxiety about the difficulty of the course or the examination. If these problems are not addressed by motivating students and mollifying their fears, e-learning may not succeed or provide a motivating learning environment for students.

Regardless of the existence of multiple educational techniques, capabilities, and ICT infrastructure provided within educational institutions, e-learning tools may be under-utilised and may not receive sufficient attention from students (Hu et al., 2016). This could be the result of lack of student motivation.

In contrast, Hung et al.'s (2010) study of 1051 Taiwanese university students found that the performance level of students who were motivated to learn online was high. Their study also showed that intrinsically motivated students were better at learning through the internet, as well as communicating with fellow

students and teachers (Hung et al., 2010). This supports Ryan and Deci's (2000) view that intrinsic and extrinsic motivation may affect students' performance in education, as intrinsic motivation is embedded in the student and linked to a decrease in the dropout rate and the student's enjoyment in the learning environment; while extrinsic motivation is related to learning to obtain compensation, such as grades or an award.

The feasibility of students' benefiting from e-learning when not accompanied by motivation has also been addressed. A study of Taiwanese university students divided participants into two groups; the first group who had not previously used e-learning studied the course using an e-learning system, while the second group studied using traditional (face-to-face) teaching methods. After six weeks, there were no significant differences in the grades of all students from both groups. The researchers re-conducted the study and found that students in the first group who were motivated outperformed their fellow students who studied the course using the traditional method (Lin et al., 2014). Gargrish et al. (2020) also affirmed that motivation increases a student's interest and participation in the lesson, because student motivation translates into participation and interest. In addition, Lin et al. (2014) found that when the learner was in an interactive environment with multiple media that enhances learning and participation, the motivation to learn increased.

3.4 Students Engagement in E-Learning

In education, it is vital to involve students in the learning process by motivating them to use technology, which contributes to improved educational performance and to less chance of them withdrawing from the course (Eccles & Wang, 2012). Thus, student engagement is central to learning (Skinner & Bitzer, 2012)

The concept of engagement is defined differently in various contexts. The concept as used here reflects Kahu's (2013) description of student engagement as the time and effort of students to accomplish targeted learning tasks. In addition, Kuh and Umbach (2004) defined student engagement as 'the time and energy students devote to educationally sound activities inside and outside of the classroom, and the policies and practices that institutions use to induce students to take part in these activities". This definition makes it clear that student engagement aims to involve students in various activities.

Recognising the importance of engaging students in the learning process and acknowledging its positive association with academic progress, Kuh (2003) created a tool – the National Survey of Student Engagement (NSSE) – which measures student responses to learning (Richards, 2011). Multiple studies have used the NSSE to measure student engagement. Kuh & Umbach, (2004) focused on the impact of

race and colour on student engagement; they found that students in a classroom in which everyone shared a similar ethnic identity or colour tended to be equally engaged, whereas when white students shared a classroom with students of other colours, the white students performed better and engaged more. Measuring engagement levels can help teachers understand how students interact with a lesson. Factors such as personal strength, self-confidence, motivation, and attitude may affect the extent, strength, or weakness of student responses (Mandernach et al., 2011).

In e-learning environments, the course supervisor can measure student engagement – formal or informal – by accessing student entry data in the educational system to review how students participate, respond, and interact with others, as well as how long they are active on the system (Gray & Delorato, 2015). Clearly, student engagement in learning plays a central role in the success of the educational process. It also protects students from the isolation that may arise in remote learning via computer screens, where properly engaging students provides a sense of belonging and motivates them to interact with classmates and teachers (Kuh & Umbach, 2004).

Integrating discussion forums into the course content was highlighted in a Saudi study as a means of helping students exchange ideas and experiences and share them with their teacher asynchronously (Alshehri et al., 2019), as well as enhancing their sense of community and participation in the course. Such interaction can also help address any concerns students may have and can lead to increased course satisfaction. In addition, asynchronous communication can provide greater flexibility for students who may have scheduling conflicts or other commitments that prevent them from participating in synchronous discussions (Alshehri et al., 2019).

The main role of e-learning systems is facilitating communication, providing links, and interaction between three basic pillars: the teacher, the student, and the content (Holmes & Prieto-Rodriguez, 2018). For these interactions to occur, teachers must realize the importance of their role in engaging students in the e-learning environment, as an effective learning management system "must support active engagement, meaningful connections between segments of the course, easy communication, and formative feedback on work that is presented in class discussions or through other venues" (Rubin et al., 2009, p. 82).

Some researchers have focused on who is responsible for interaction and participation in the lecture (Lonn, & Teasley, 2009; Zanjani et al., 2012; Rubin et al., 2010; Nicol & Macfarlane-Dick, 2006), and maintain that the teacher is accountable for engaging students. They argued that teachers know the advantages of e-learning and should engage their students to benefit from the e-learning system (Lonn, & Teasley, 2009). However, Zanjani et al. (2012) and Rubin et al. (2010), asserted that students should

be an active party in the lecture. They can view the lessons throughout the week, including assignments, discussion, lesson objectives, and other information. Because students engage and interact with others in the lesson, the course presenter may be less responsible for engaging students (Zanjani et al., 2012; Rubin et al., 2010). Nicol and Macfarlane-Dick (2006) took a different view, considering that the responsibility was shared between students and teachers.

3.5 Keller's ARCS Model of Motivation

The ARCS (Attention, Relevance, Confidence, and Satisfaction) model of motivational design developed by John Keller is based on expected value theory (Keller, 2008). It is a widely used framework in e-learning studies to motivate students in different fields of education, particularly in e-learning, and in those studies that applied it successfully (Souza & Bittencourt, 2019; Jones et al., 2006; Shih & Mills, 2007). Keller (2008) indicated that the ARCS model had four main components, namely:

1. Attention: the use of ICT in new ways that aim to capture students' attention and engagement by arousing their curiosity and interest. It is essential to integrate technology in unexpected ways for students to ensure effective participation;
2. Relevance: relates to students' sense of connection between the new learning element and their personal experiences, needs, and preferences;
3. Confidence: relates to students' belief in their ability to complete the learning process successfully. Such self-confidence is crucial to keep them motivated throughout the session; and
4. Satisfaction: relates to the level of positivity students experience when engaging in the learning process. When they feel satisfied with their progress and their efficiency in completing tasks, it helps keep them motivated.

Souza and Bittencourt (2019) demonstrated that each of the four components represented a different aspect of motivation and could be used to design different paradigms based on the needs of learners.

3.6 Keller's Instructional Materials Motivation Survey (IMMS) Tool for Measuring Students' Motivation

The aim of this research is to measure the level of motivation provided by Saudi universities to their students. Keller's Instructional Materials Motivation Survey (IMMS) tool for measuring the level of motivation among students has been chosen as a part of the data collection and analysis in this research.

This tool will be explained and previous studies that have used it will be reviewed, along with their main findings.

Keller (2009) identified four components as the main pillars for measuring the level of motivation among students. His tool has proved effective in various studies and has been applied in different countries and in many linguistic and cultural contexts. Keller designed the IMMS to measure students' level of motivation and considered it to be an essential component of his ARCS model (Keller, 2008). The IMMS instrument contains 36 items in four sections: Attention (12 items), Relevance (9 items), Confidence (9 items), and Satisfaction (6 items) (Keller, 2010). The IMMS has been used in many studies that confirmed its reliability and effectiveness in measuring motivation levels of students. For example, various studies have been conducted in Thailand, Indonesia, and Saudi Arabia.

In one study, Kew (2018) assessed the motivation levels of 174 higher education students in Thailand towards e-learning using IMMS. Most of the students showed an above-average level of motivation towards e-learning, with notable differences in the motivation levels. One of the recommendations of the study was that teachers should take into consideration the students' motivation levels and provide appropriate educational materials to enhance participation in e-learning activities.

A second study examined the role of intrinsic motivation in learning outcomes for geography topics among students at Sumur School, Bandung, Indonesia. It used the IMMS survey tool to collect data from 180 students. The results indicated that levels of attention, relevance, and satisfaction were high, but confidence needed to be improved. The study suggested that a balance between these components was necessary to enhance students' motivation towards learning (Jamil, 2019).

Finally, Lail's (2022) study in Saudi Arabia used Keller's Tool (IMMS) to measure students' motivation to use a game-based system that helped high school students to improve their computer programming skills. It found that their motivation and enthusiasm towards learning to code through games improved by 67%, showing a moderately positive attitude. The study recommended that combining personalised learning and gamification pedagogy could be an effective approach for enhancing learning outcomes in computer programming. The validity of the IMMS questionnaire used in the study was also confirmed.

While many studies indicated that Keller's ARCS model was useful and proved effective in different countries and in various linguistic and cultural contexts, Li and Keller (2018) argued that this model may not be appropriate or effective in some teaching methods or some learning environments, given the evolving complexity of learning environments compared to the time when the original ARCs model was designed; this in addition to the fact that variance in student demographics, multiculturalism and

student different learning strategies may play a role in its currency, and also the rate at which technology increases and infiltrates learning environments which may constitute a need for updating the strategies provided.

In conclusion, the ARCS model and the IMMS tool have been widely used in e-learning studies to measure and enhance students' motivation. Previous literature has shown that the four components of the ARCS paradigm – attention, relevance, confidence, and satisfaction – are effective in different cultural and linguistic contexts. The IMMS tool which measures students' motivation levels has been used in various studies and has demonstrated reliability and effectiveness. However, some studies indicated that the ARCS model may not be effective in some teaching methods or learning environments including the evolving complexity of learning environments, different cultures, and the evolving technology. Finally, the success of these tools depends on designing appropriate learning materials and providing personalised learning experiences to enhance student's engagement and motivation, in addition to using them to design different models based on learners' needs.

3.7 Chapter Summary

In the studies analysed above, a range of authors have argued that e-learning is a modern educational method that employs technology to deliver educational content, manage learning, and improve the effectiveness of the educational process. It has become an essential part of modern education, especially during COVID-19, which forced people into isolation at that time. COVID-19 was defined as an infectious disease caused by the SARS-CoV-2 virus, that spreads through respiratory droplets, prompting self-isolation (World Health Organization, 2023). Consequently, during the pandemic e-learning was one of the most important means of continuing the educational process in many countries. However, there are still challenges and obstacles to overcome, such as ensuring the quality of the e-learning system and training teachers. Motivation and engagement are key factors in e-learning, and studies have shown that they are closely related to students' academic progress. To enhance students' motivation and engagement, teachers need to provide customized learning experiences, design, and appropriate learning materials based on the learners' needs. Teachers also need to understand their students' motivation to enhance engagement and improve academic progress. This research has been driven by the present need in the Saudi educational arena to assess the effectiveness of e-learning and engagement in it in Saudi Universities, and mainly discuss the various factors that may influence students' engagement in e-learning, given the scarcity of previous studies that addressed this issue in addition to the significance of e-learning after the pandemic. Student motivation has been addressed as an important factor in the successful implementation of e-learning. Nevertheless, previous studies have not measured the levels of motivation or discussed the types of motivational strategies used by faculty

members in Saudi universities. Therefore, this research aims to bridge the gap through exploring the current situation of motivating students to participate in e-learning activities, using Keller's ARCS model and the IMMS tool to measure the level of motivation among Saudi university students.

Chapter 4: Research Methodology

4.1 Overview

The previous chapter presented a review of the literature in relation to three key concepts: motivation, student engagement, and e-learning. This chapter provides a detailed description of the thesis methodology that was used to answer the research questions.

The diagram below (Fig. 4.1) presents an overview of the methodology chapter and the methodology followed in the data collection and data analysis phases. This chapter is organised as follows: introduction, research design and methodology, research sample, data collection and procedures for collecting data for both qualitative and quantitative studies, and finally the conclusion.

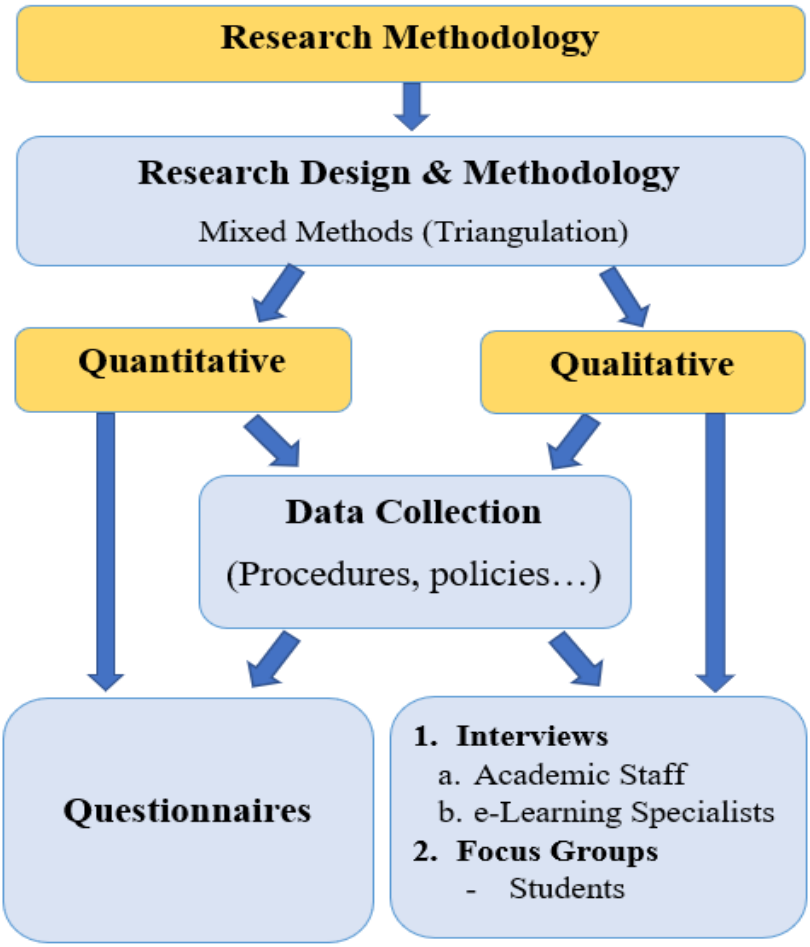

Figure 4-1: The Chapter Structure

4.2 Research Design and Methodology

Saudi universities, consistent with universities around the world, are keen to develop educational processes and keep abreast of modern developments. They have increasingly become reliant on the use of e-learning systems to facilitate the learning process (Alshehri et al., 2019). The Covid-19 pandemic during 2020 and 2021 enforced the use of e-learning in most countries, including in Saudi universities. Following a systematic review of the literature, this chapter focuses on the research question: "To what extent do Saudi universities motivate students to benefit from and engage in e-learning systems?" as well as the following four sub-questions:

1) What is the importance of motivation in engaging students in e-learning?
2) How do academic staff and e-learning specialists in Saudi universities perceive the importance of motivating and engaging students in e-learning activities? What strategies do academic staff employ, and what are students' opinions on motivation in e-learning?
3) What are the main obstacles that prevent the application of e-learning in Saudi universities?
4) Based on the ARCS Motivational Design Process Model, to what extent do Saudi universities motivate their students to use and engage in e-learning systems?

This research used a mixed methods approach to collect data which enabled the researcher to gain greater credibility through gathering both quantitative and qualitative data (Creswell, 2011).

The data gathered for this thesis was triangulated. Bednarz (1985) defined triangulation as using two or more different methods to measure a single phenomenon. Creswell (2011) argued that this method makes data collection easier for the researcher within a shorter time frame, and that using triangulation is more likely to result in reliable outcomes. For Zobel (2014), the strength of the triangulation approach is its ability to measure phenomena from different angles. In this thesis triangulation is used to validate the perspectives of academic staff, e-learning specialists, and students in Saudi universities, and to produce results which integrate, complement, and reinforce each other (Bednarz, 1985).

Collecting data abroad is a challenge, and the researcher needed careful planning to manage time and resources. In this case, collecting data required travelling from Melbourne, Australia to Saudi Arabia during semester at the Saudi Universities. Therefore, data collection for the two stages – quantitative and qualitative – was undertaken simultaneously to save time and to improve the chance of accessing the target population. Collecting both qualitative and quantitative data concurrently is one approach to triangulation (Creswell, 2011) and helped the researcher during data collection at three universities in Saudi Arabia. Such an approach can produce more reliable results (Creswell, 2011).

To collect data from different sources, the researcher chose two academic units from each of the three Saudi universities; that is, a total of six units. The objectives in choosing those units were as follows:

1- The first three units from each university should be similar and be taught during that semester (the time of data collection).

2- The three second units should be different and from different faculties.

This approach was adopted to obtain a fair comparison.

As discussed above, there were two phases for collecting data – a qualitative phase and quantitative phase. The aim of the qualitative phase was to collect data from different perspectives to describe the underlying motives for e-learning use (Creswell & Clark, 2011). Data were collected through face-to-face interviews with academic unit coordinators and e-learning specialists, and through focus groups with students. The total number of participants was six coordinators, five e-learning specialists and twenty-six students (See Table 4.2, page 53).

The aim of the quantitative phase was to answer sub-question four – Based on the ARCS Motivational Design Process Model, to what extent do Saudi universities motivate their students to use and engage with e-learning systems? – through the quantitative results of students in the units in the participating universities, using ARCS Motivational Design of e-learning, through the assessment tool Instructional Materials Motivation Scale (IMMS), (Keller, 2010) (See Table 4.2). The quantitative phase consisted of questionnaires that were distributed to gather supplementary data from students. The total number of questionnaires collected from students was 160.

To sum up, the aim of using triangulation in collecting mixed data in this study was to obtain data from different sources, as well as a variety of opinions and insights in order to achieve greater credibility in interpreting and validating the results (Creswell, 2009). In addition, it would highlight similarities and convergence in the results analysed in the discussion chapter. This model generally uses separate quantitative and qualitative approaches to compensate for the limitations of each method by leveraging their respective strengths. In other words, the strengths of one method are utilized to enhance the strengths of the other, while also mitigating their individual weaknesses (Creswell & Plano Clark, 2017)

4.3 Research Case Studies

Three Saudi universities among the 29 Saudi public universities – Saudi Electronic University, King Saud University, and King Khalid University – were chosen for data collection (Saudi Ministry of Education, 2021). Each of these universities has unique characteristics and a different geographical location which was expected to provide a good point of comparison and contrast of each institution.

King Saud University located in Riyadh, the capital of Saudi Arabia, was established in 1957 and is considered one of the oldest and most prestigious Saudi universities. In addition to the usual infrastructure for higher education institutions, it has conference centres, medical and sports centres, and international hotels. It ranked fourth among the Arab region universities in 2023 (QS Quacquarelli Symonds, 2023), and has also been regarded as the top university in the Middle East for the number of patents obtained (King Saud University, 2020).

The Deanship of Electronic Transactions and Communications for e-learning at King Saud University is keen to establish a distinctive environment for both academic staff and students to engage in e-learning and e-training practices. To achieve this, it focuses on providing robust technical infrastructure that operates efficiently, ensuring the seamless functioning of electronic systems across various educational programs offered by the university. Furthermore, it plays a crucial role in overseeing the implementation of e-learning, whether in the form of distance education or blended learning (King Saud University, 2022).

The second university chosen was King Khalid University (KKU), established in 1998, one of the top Saudi universities in the field of e-learning. Located in Abha, a city in the south of Saudi Arabia, it has provided excellence in e-learning for more than ten years; winning many local and international awards in this field, including fourth place in the 2022 Open Education Global Award (King Khalid University, 2022).

KKU has implemented a comprehensive three-level strategy to effectively manage e-learning practices (Aljaber, 2018). The first level, supportive e-learning, focuses on providing students with the necessary support and resources to enhance their e-learning experience. This includes offering technical assistance, access to online libraries and databases, and guidance in effectively utilizing e-learning tools. The second level is blended learning, which combines traditional face-to-face instruction with online learning components by integrating online resources, activities, and assessments into traditional classroom settings (Aljaber, 2018). The third level of the strategy is complete e-learning, which involves delivering courses entirely online. This approach allows students to access course materials, participate

in discussions, submit assignments, and take assessments through the university's Blackboard system. Complete e-learning provides flexibility and convenience, enabling students to learn at their own pace and from any location (Aljaber, 2018).

To ensure the quality of e-learning at KKU, the university recognizes the importance of providing training for both academic staff and students. The academic staff are equipped with the necessary skills and knowledge to deliver effective online courses, facilitate online discussions, and assess students' learning outcomes. Similarly, students receive training and orientation to familiarize them with the e-learning platforms and tools used at KKU, ensuring that they can actively engage in the e-learning environment (Alqahtani, 2020).

These efforts by KKU to implement a multi-level e-learning strategy and prioritize faculty and student training contribute to the enhancement of quality assurance procedures within the university's e-learning system (Aljaber, 2018). By embracing blended learning and complete e-learning approaches, KKU has demonstrated its commitment to leveraging technology for innovative and effective educational experiences.

The third university chosen for data collection was the Saudi Electronic University, established in 2011. It is the only Saudi University whose education system relies heavily on information and communication technologies as well as the e-learning system and blended learning. Its main headquarters is in Riyadh, with thirteen branches located in various cities and regions across Saudi Arabia (Saudi Electronic University, 2021).

The Saudi Electronic University is committed to offering superior educational services within a learner-centric framework. To cater for the needs of learners in the knowledge economy, the university has embraced a flexible blended learning model that leverages technology, particularly information and communication technologies (ICTs), to facilitate self-directed and collaborative learning. By combining both face-to-face and online instructional approaches, the university considers that this integrated model effectively mitigates the sense of isolation often associated with distance learning (Saudi Electronic University, 2021). This approach allocates 25% of the overall unit duration to traditional classroom instruction, while the remaining 75% is dedicated to online activities. Undergraduate students typically attend one class per week, whereas Master's degree students have a class every three weeks (Alshathri & Male, 2015).

What distinguishes university cities in the Kingdom of Saudi Arabia is that they provide private housing for faculty members and students, in addition to separate housing for female students, all at a nominal

cost. They also provide infrastructure such as a hospital, libraries, sports fields, and swimming pools, as well as restaurants and some retail stores that residents need, such as supermarkets, laundries, and a barbershop.

4.4 Research Sample

After choosing three Saudi universities in which to conduct the research, the research population was identified. It comprised the main stakeholders in the e-learning system – students, academic staff, and e-learning specialists from each of the three universities – who were chosen for the research. The requirements for choosing the study population were:

- The participating students must be enrolled in the units specified in the study;
- The units in the case study must be being taught by academic staff; and
- The e-learning specialists must be supervisors of one of the units specified in the data sample.

Two units were chosen in each university (a total of six units), where data was collected through interviews, focus groups and questionnaires. Interviews were conducted with six academic staff members who provided these units and five e-learning specialists. In addition, six focus groups were conducted with students (each group consisted between three and five students) (see Table 4.1).

Table 4-1: Number of participants from each university

No.	University Name	Academic staff	e-learning specialists	Students (Focus Group) First unit	Students (Focus Group) Second unit
1	Saudi University 1	2	2	4	4
2	Saudi University 2	2	2	3	5
3	Saudi University 3	2	1	5	5

Total	6	5	12	14
			26	

4.4.1 The selected participants

All participants in the study were male. The sample was limited to male students in this research for several reasons, including that the educational policy in Saudi Arabia separates male and female students in Saudi universities. Therefore, it is difficult for the researcher to reach the participants to collect data except through correspondence or a female assistant to collect data from girls 'colleges, and this may conflict with the ethics of scientific research. For convenience, I decided to focus on male students as representatives of the target population. The ages of academic staff participants varied from twenty-five to sixty years. E-learning specialists interviewed, who were responsible for training academic staff and supervising e-learning systems in Saudi universities, ranged in age from twenty-two to fifty years, while students who participated in focus groups were between nineteen and forty years in age. The units selected for the study were engineering, business administration and academic skills, in addition to the Islamic culture unit which is similar across all three universities. Similar units were deliberately selected to compare the level of motivation from one university to another. However, these units were optional for students, and therefore may not adequately reflect student motivation. Thus, the other three units were compulsory units, as required in the ethics approval from the researcher's university (See Appendix 1). The reason for choosing three similar, optional units and three compulsory units was to compare the level of motivation in the specialist compulsory units with those in the optional units. In this study, students participated only once, either in the compulsory or the optional unit. All the units selected were taught throughout the semester, which extended to three months, and at the end of the semester examinations were taken to assess if the student passed the unit or needed to repeat it next semester, as is the case in most universities around the world.

The Saudi educational environment is characterized by staff and students being willing to participate in scientific studies and research. Thus, most of the research conducted in the Saudi context has attracted a large number of participants, as several studies indicate (Alqahtani, 2022, the number of participants was 446; Hasan, 2023, 509 participants; Al-Kahtani, 2022, 728 participants); and Alyahya, 2022, 1,200 participants).

Therefore, it can be concluded that the Saudi educational environment may be a supportive one for researchers. This was certainly my experience during my trip to collect data in the three Saudi universities. When participants learned that I had come from Australia to collect data at their university, they expressed their willingness to participate in the study.

4.4.2 Sampling size

The sample size was determined by considering the average number of students enrolled in a unit in these universities (100 students in each unit). Two units from different disciplines at each university were selected to ensure a variety of data. The total number of students required for the questionnaire was 180 (30 * 6). If we assume that the population in these six units was 600, the confidence interval is 95% and the margin of error is 5%. For the focus groups, five students seemed adequate to represent the population in each unit, since there were six focus groups, and this data was also supported by questionnaires (Bryman, 2008). For the questionnaire, the total was 160 respondents from the three universities, which is considered suitable according to Keller's IMMS.

Table 4-2 :The number of students participating in the questionnaire from each unit.

No.	Part	Unit Name	Sample Size	Percent
1.	**First Part**	**1H**	12	7.5%
2.		**2A**	24	15.0%
3.		**3M**	13	8.1%
4.	**Second Part**	**1S**	38	23.8%
5.		**2S**	34	21.3%
6.		**3S**	39	24.4%
	Total		**160**	**100%**

4.5 Ethical Considerations

After applying for ethics approval to collect data from the three Saudi universities specified for this study (see Appendix 2), the Victoria University Human Research Ethics Committee (VUHREC) approved the application on 28 October 2019 (HRE19-171) (see Appendix 1). The ethical approval to collect data reflected my understanding of research principles and procedures including, for example but not limited to, the researcher's ability to deal with data in a safe and correct way; the researcher's ability to deal with the study population with respect to avoiding any conduct that may disturb or cause them discomfort throughout their participation in the study; and the researcher's fulfilment of all agreements concluded with the participants (National Statement on Ethical Conduct in Human Research, 2018). I also gained ethical approval from each of the three Saudi universities in this study (see Appendix 2). I started the data collection process in January 2020 and finished it at the beginning of March 2020. Considering the study to be important, the three Saudi universities encouraged their affiliates to collaborate with me during the data collection process; and one of the three universities requested that I provide them later with a copy of this study and any publications related to it (See Appendix 3).

4.6 Data Collection

After I arrived in Saudi Arabia, and before I started the data collection process, I made sure that the following were in place. First, that I was in a direct communication as needed with my supervisors in Australia who showed their readiness to facilitate any assistance required during data collection. Second, I was able to upload data in chronological order to the R-Drive (Research Data Storage) at Victoria University. Third, I was able to apply all items of the ethical approval that I had obtained from Victoria University, as well as those obtained from the three Saudi universities.

Initially, I contacted the Deanship of E-learning at one of the three Universities and met with the Vice Dean of E-Learning who provided all the assistance I required, including a brief explanation of the university structure and its faculties as well as the e-learning system at the university, location of the faculties and appropriate times to hold interviews with academic staff, e-learning specialists, and students. In addition, he explained which units were being taught to students during that semester.

After I had obtained the units and their codes from this university, I went to the other universities to obtain details of the units taught in that semester. After being provided with the names of all the units offered at the three universities in that semester, I selected two units from each university. One of these units was offered in all three universities and had the same name under the code (S); thus, data would be collected in this unit in each university. The second unit was different in terms of its title and code, as well as the faculty offering it. I also aimed to choose units with the highest number of registered students, for the following reasons:

1. These units are usually offered by several academic staff due to the large number of students. This meant that one academic staff member could participate in an interview if his colleagues were busy.
2. I planned to complete many interviews during this limited time; thus, choosing units with a large number of registered students enabled me to reach many potential participants faster.
3. Equally important, I aimed to choose units with large numbers of students to obtain diverse responses in the focus groups, and to achieve the required number of participants answering the questionnaire, which was set at 180 participants.

By the end of the data collection stage, 242 participants from the three universities had filled out the questionnaire through Qualtrics. The total number of responses was 160, after data screening and cleaning of missing and incomplete responses. This number is acceptable for Keller's scale for motivational design (Keller, 2010, p. 282).

4.6.1 The qualitative phase of data collection

Qualitative data was collected through interviews and focus groups. Interviews were conducted with the providers of units selected for the study, who were faculty members at the three chosen universities.

The first group in the interviews were academic staff, and they were divided according to their academic rank. The first article of the "regulations governing the affairs of university employees and those of the like" issued by Higher Education Council Resolution No. (4/6/1417) defines the rank of academic staff in Saudi universities (Al Hamad, 2018) as follows:

1. Professors
2. Associate professors
3. Assistant professors

To be appointed in the rank of assistant professor, a doctoral degree is required. The job description includes teaching, supervising, and advising postgraduate students; conducting studies, research, and

workshops; and participating in various college meetings. Academic staff who hold a master's degree are also called lecturers. Then there are teaching assistants language teachers, and finally, research assistants, who must have a bachelor's degree.The roles and responsibilities of academic staff are generally divided into three categories, the first of which relates to the students, the second to the university in which they work, and the third to continuing professional development in their field of specialization (Alhamad, 2018). Academic staff have social status at the university and in Saudi society. They have reached the highest academic ranks compared to many people who have not been able to complete their education. As Al-Twaim et al. (2020) note, individuals with higher education qualifications are considered in Saudi society to have reached the top of the pyramid in scientific societies and have greater human capital.

The interviews were held with academic staff participants who taught the six units in the selected Saudi universities. All of them had doctoral degrees.

In the beginning, the deans provided me with the names of the units that were offered through the Blackboard system in their college, as well as the names of the faculty members who presented the selected units to ensure their willingness to participate.

I then contacted each faculty member and arranged a meeting. They all expressed their willingness to participate in the study. The necessary measures were taken regarding research ethics, such as explaining the project and providing them with the Information to Participants Form and the Consent Form. After obtaining their written approval, they were given a faculty member approval form to participate (see Appendix 4). Then the appropriate time and place were determined for the interview. Most interviews were conducted in the faculty member's office, and ranged from thirty to fifty minutes in duration. They were assured that participation was voluntary and that they could withdraw from the interview at any time. The interviews were audio-recorded, then transcribed and encoded into a Word file. After that, the audio recordings were compared with the transcribed version. Finally, audio records, Word transcripts, and participant consent forms were saved to the Victoria University's R-Drive. The total number of faculty members who participated was six, two from each university.

The same method was also used in the interviews with the e-learning supervisors at each university, who oversee the selected units and have direct contact with the academic staff and students. Their role is to solve technical issues and answer inquiries about the e-learning system in each university. The duration of the interviews with the e-learning specialists ranged from twenty minutes to fifty minutes. A total of five specialists were interviewed, two from the first and second university, and one from the third university as the rest of the technical support specialists were busy at that time.

E-learning specialists constitute an important part of the e-learning system in universities. They are usually graduates with intermediate diplomas or university graduates who have obtained academic degrees and certificates in all types of computer specialization, such as information systems and computer science. Among the participants interviewed, one had a master's degree from a university in Australia and another a bachelor's degree from a Saudi university. Their role focused on preparing for the semester by obtaining the names of students from the Deanship of Admission and Registration and adding them to the system. They then placed the courses to be taught in that semester as templates and explanatory notes on the Blackboard system. The names of the students and the content of the course needed to be uploaded before the start of the semester. They also tried to solve problems facing students and faculty members in the e-learning system, and to prepare servers and networks before the examinations began. In addition, they developed and evaluated the courses. The work assigned to them will be discussed in Chapter Six (Analysis of Qualitative Data).

The third phase of data collection was in focus groups conducted with students, with between three and five students in each group. The duration of each focus group ranged from forty minutes to fifty minutes. Focus groups differed from one university to another, depending on whether the students were present at the university, as it was difficult to gather five students together at the same time and place, because the unit was originally offered online. Thus, some focus groups were conducted online after faculties had placed announcements on the students' Learning Management System (blackboard) inviting students to participate. An online room was then opened on the Blackboard System to conduct the focus group.

I uploaded all audio records, interview papers, and record transcriptions in chronological order to the R-Drive at Victoria University to save the data. However, some focus groups were conducted face-to-face. During all the focus groups, I was keen to focus on the participants' gestures, facial expressions, and physical movements that may denote meaningful expressions, such as head and hand movements. Likewise, I was very keen to listen to the participants and draw their attention by nodding my head and smiling. This focus on the students helped to make them feel comfortable and engaged, while respecting their time limits and well-being (Irvine, Drew, & Sainsbury, 2013).

4.6.2 The phase of quantitative data collection

I provided the faculties at the three Saudi universities who participated in this study with a sample of the questionnaire. They shared the link of the questionnaire with the students on the Blackboard System. Invitations were sent to any students who wished to participate by filling out the questionnaire. The completed questionnaires were then filtered and cleaned through the SPSS program. The total number

of questionnaires across the three universities was 160. The completed forms were uploaded directly to Qualtrics at Victoria University, and then a copy was also saved to Victoria University's R-Drive.

Finally, the data of the study participants was treated with strict confidentiality. The names of the participants in the interviews, focus groups and questionnaires were de-identified and each sample was identified by a number.

4.7 Data Analysis

This section discusses the process of analysing data in each phase. I focused on the most suitable way of analysing data using Keller's ARCS model of motivation as the theoretical lens.

4.7.1 The phase of qualitative data analysis

Both focus groups and interviews were analysed using thematic analysis which proved suitable and flexible for the qualitative data (Braun & Clarke, 2006). During the analysis, I took into account topics and issues identified by participants. In order to become familiar with the transcripts, I read them repeatedly. They were then coded. A first set of codes was generated that identified the major points of the data and were relevant to answering the research questions. To connect all codes, they were grouped together into themes. Based on Keller's ARCS model of motivation, potential themes were identified and categorised, unless the themes did not fit into the model.

The qualitative data validation method differs from the quantitative data method, which relies on statistical analysis. There are many methods for verifying the validity of qualitative data. Creswell (2009) outlined eight strategies through which the accuracy of the results of qualitative data can be verified, including checking participants, using different data sources (triangulation), and extracting information from peers. In this study, the validation process was undertaken through peer debriefing, where the data that was translated from Arabic into English were reviewed with two persons who were fluent in both languages and had accreditation certificates in translation, they were asked to review the data analysis, examine transcripts of the audio and written interviews, and verify the translation again to ensure the reliability and validity of the data.

Emerging themes

The data analysis process revealed distinct themes that offered insights into various aspects of e-learning implementation and engagement.

Emerging themes from interviews with the academic staff

The interviews conducted with the academic staff members yielded several key themes, shedding light on their perspectives and experiences in the realm of e-learning. Firstly, the participants highlighted the diverse range of tasks assigned to academic staff, which encompassed course design, lecturing, grading, student support, research, and curriculum development. Secondly, the significance of technical support for academic staff emerged as a key theme, with participants discussing the challenges they encountered in navigating e-learning platforms and their need for adequate training and assistance. Another notable theme was the lecturers' strategies for motivating students to fully utilize e-learning systems, emphasizing clear communication, interactive content, and personalization to enhance engagement. Lastly, the interviews underscored the importance of measuring students' understanding and assimilation of lessons, with educators employing various methods such as quizzes, assessments, and interactive simulations to gauge comprehension.

Insights from interviews with e-learning specialists

Interviews with e-learning specialists revealed their distinct perspectives and responsibilities. The emerging themes included tasks assigned to them, encompassing roles in platform management, technical support, and the development of innovative e-learning solutions. Additionally, the specialists shared their views on supporting academic staff by providing training, troubleshooting assistance, and facilitating the integration of technology into the curriculum. Moreover, the interviews highlighted insights into e-learning specialists' efforts to motivate both students and academic staff through initiatives such as the student assistant project.

Focus groups with students

Engaging in focus group discussions with students provided a deeper understanding of their perceptions of e-learning. Their perspectives centred on the usability of the Blackboard system, services provided by technical support, motivational factors in e-learning, the advantages of e-learning compared to traditional education, and challenges they encountered within the e-learning environment. They expressed a preference for interactive and user-friendly content, and discussed challenges related to internet connectivity and technical issues. The focus groups also indicated specific challenges faced by students at King Saud University, King Khalid University, and Saudi Electronic University, spanning issues related to exams, lectures, and internet performance.

Chapter six will provide a comprehensive exploration of the themes identified in the qualitative data analysis. Each theme will be discussed in detail, offering valuable insights into the perspectives of the academic staff, e-learning specialists, and students. The chapter will also provide a platform for a thorough exploration of the strategies, challenges, and recommendations that emerged from the analysis of qualitative data.

4.7.2 The phase of quantitative data analysis

Quantitative data were analysed using a descriptive analytical approach to maintain quantitative measurement and analysis. The questionnaire included 36 items (IMMS) (see Appendix 5). As six units were investigated, each sample was analysed separately, and then the sample findings of each unit were measured through Keller's four dimensions of motivational design – Attention, Relevance, Confidence, and Satisfaction. This was followed by a comparison of the sample findings of the three similar units from each university. Finally, an analysis and a comparison were made between the sample findings of the three universities.

The validity of the data was checked in two ways. Internal validity was measured through the correlation coefficients between each item in the construct and its total. Construct reliability was measured through calculating Cronbach's Alpha for each dimension of Keller's model which are Attention, Relevance, Confidence, and Satisfaction.

4.8 Chapter Summary

This chapter presented the methodology that was used in collecting and analysing quantitative and qualitative data, the aim of which was to investigate the ways in which Saudi universities motivate their students to use and engage in e-learning systems. A mixed methods approach was used to obtain quantitative and qualitative data from different sources and multiple perspectives. The chapter identified the universities involved and the sample of this study. Ethics approvals for data collection were obtained from three Saudi universities participating in this study as well as from Victoria University, Melbourne. Different methods were chosen to collect data, including individual interviews with academic staff and e-learning specialists, and focus groups with twenty-six students. The aim of this phase was to obtain qualitative data, in addition to obtaining quantitative data through questionnaires completed by 160 students. All data were collected, transcribed, and uploaded to Victoria University's R Drive. Chapters five and six will focus on analysing the quantitative and then the qualitative data.

Chapter 5: The Quantitative Analysis of Data

5.1 Overview

This chapter presents the quantitative data of the thesis and measures how far the chosen units in the case studies motivated students to engage with online learning. It includes an explanation of the statistical analysis and how the data validity and reliability were tested. It also provides an analysis of the questionnaires and presentation of the results which aim to answer the fourth sub- question of the research question. which is:

Based on Keller's model of the Motivational Design (ARCS), "to what extent do Saudi universities motivate students to benefit from and engage in e-learning systems?"

Quantitative data were analysed using a descriptive analytical approach to maintain the quantitative measurement and analysis. The Instructional Materials Motivation Survey (IMMS) included 36 items (see Appendix 5). Since we had six units, each sample was analysed separately. After that, the sample findings of each unit were measured through Keller's four dimensions of motivational design: Attention, Relevance, Confidence, and Satisfaction. Then the results of the three dissimilar units from each university were compared. Afterwards, a comparison was drawn between the sample findings of the three similar units from each university. Finally, an analysis and a comparison were made between the sample findings of the three universities. The final findings indicated that students in the three Saudi universities demonstrated motivation, and the degree of motivation was estimated to be between an intermediate and high degree.

5.2 Data Measurement

All questionnaire items were measured by a 5-point agreement-type scale, where 1=Not true, 2=Slightly true, 3 =Moderately true, 4= Mostly true, 5= Very true, and for the reverse scale we used a 5-point agreement-type scale, where 5=Not true, 4=Slightly true, 3 =Moderately true, 2= Mostly true, 1= Very true.

Table 5-1: Level of agreement measurement scale

		Level of agreement				
		Very true	Mostly true	Moderately true	Slightly true	Not true
Toward	Points	5	4	3	2	1
Scale	Mean	5.0 - 4.21	4.20 - 3.41	3.40 - 2.61	2.60 - 1.81	1.80 - 1
Reverse	Points	1	2	3	4	5
Scale	Mean	1.80 - 1	2.60 - 1.81	3.40 - 2.61	4.20 - 3.41	5.0 - 4.21

To determine the level of implementing the strategies used in Saudi universities to motivate students to use e-learning systems, the length of the scale switches was determined by defining the range:

Range = High response – low response

Range= 5 – 1 = 4

Then dividing it by (3) which are the three levels to obtain the length of the period (1.33), and adding it to the lowest value in the scale, as shown in Table 5-1 and Table 5-2.

Table 5-2: Average range for level of implementing the motivational strategies.

No.	Average Value	Level
1	Average between 1 and 2.33	Low level
2	Average is more than 2.33 and less than 3.66	Medium Level
3	Average is greater than 3.66	High level

The Instructional Materials Motivation Survey (IMMS) is a questionnaire consisting of 36 items, grouped into four subscales: Relevance, Confidence, Satisfaction, and Attention. The Relevance and Confidence subscales have 9 items each, the Satisfaction subscale has 6 items, and the Attention subscale has 12 items. Although the items are typically presented in a specific order, each subscale can be used and evaluated separately. Table 5-3 displays the items in their usual administration sequence.

Table 5-3: IMMS scoring guide.

Attention	Relevance	Confidence	Satisfaction
2	6	1	5
8	9	3 (reverse)	14
11	10	4	21
12 (reverse)	16	7 (reverse)	27
15(reverse)	18	13	32
17	23	19 (reverse)	36
20	26 (reverse)	25	
22(reverse)	30	34 (reverse)	
24	33	35	
28			
29(reverse)			
31(reverse)			

5.3 Validity and Reliability of Scales

The validity and reliability of the scale were checked by two means – Pearson's correlation and Cronbach's Alpha. The internal validity of the questionnaire was the first statistical test used to test its validity and was measured through the correlation coefficients between each item in the construct and its total. To assess the scales' validity and reliability, I analysed the overall results using the entire sample of 160 responses. This approach was adopted due to the relatively small sizes of the individual samples. In the following paragraphs, I will show the results of the correlation for each subscale, based on analysis of the total sample.

5.3.1 Internal consistency

The Pearson Correlation Coefficient was employed to assess the validity of internal consistency, examining the correlation between each item and its respective subscale. The values between 0.3-0.8 indicated a good correlation between the item and the construct (subscale).

- **CORRELATION COEFFICIENT OF EACH ITEM OF "ATTENTION" AND THE TOTAL OF THIS SUBSCALE.**

The correlation coefficients for each item in the first dimension (Attention) and the total dimension are presented in Table 5-4. All p-values (Sig.) are less than 0.05, indicating that the correlation coefficients for all items are statistically significant at $\alpha \leq 0.05$. Therefore, it can be concluded that the first dimension is valid for measuring what it was intended for, and aligns with the study's main aim.

TABLE 5-4: CORRELATION COEFFICIENT OF EACH ITEM OF THE FIRST DIMENSION (ATTENTION) AND THE TOTAL OF THIS DIMENSION

No.	Item	Correlation Coefficient	Sig.
1	There was something interesting at the beginning of this lesson that got my attention.	>.498	>.000
2	These materials are eye-catching.	>.477	>.000
3	The quality of the writing helped to hold my attention.	>.494	>.000
4	This lesson is so abstract that it was hard to keep my attention on it.	>.521	>.000
5	The pages of this lesson look dry and unappealing.	>.526	>.001
6	The way the information is arranged on the pages helped keep my attention.	>.606	>.000
7	This lesson has things that stimulated my curiosity.	>.630	>.000
8	The amount of repetition in this lesson caused me to get bored sometimes.	>.529	>.000
9	I learned some things that were surprising or unexpected.	>.449	>.000
10	The variety of reading passages, exercises, illustrations, etc., helped keep my attention on the lesson	>.666	>.000
11	The style of writing is boring.	>.505	>.000
12	There are so many words on each page that it is irritating.	>.523	>.000

- **CORRELATION COEFFICIENT OF EACH ITEM OF "RELEVANCE " AND THE TOTAL OF THIS DIMENSION**

Table 5-5 clarifies the correlation coefficient for each item in the second dimension (Relevance) and the total of the dimension. The p-values (Sig.) are less than 0.05, so the correlation coefficients of all

items are significant $\alpha \leq 0.05$; it can therefore be concluded that the second dimension is valid for measuring what it was intended for, and aligns with the study's main aim.

TABLE 5-5: CORRELATION COEFFICIENT OF EACH ITEM OF THE SECOND DIMENSION (RELEVANCE) AND THE TOTAL OF THIS DIMENSION

No.	Item	Correlation Coefficient	Sig.
1	It is clear to me how the content of this material is related to things I already know.	>.417	>.000
2	There were stories, pictures, or examples that showed me how this material could be important to some people.	>.662	>.000
3	Completing this lesson successfully was important to me.	>.657	>.000
4	The content of this material is relevant to my interests.	>.607	>.000
5	There are explanations or examples of how people use the knowledge in this lesson.	>.682	>.000
6	The content and style of writing in this lesson convey the impression that its content is worth knowing.	>.709	>.000
7	This lesson was not relevant to my needs because I already knew most of it.	>.399	>.000
8	I could relate the content of this lesson to things I have seen, done, or thought about in my own life.	>.601	>.000
9	The content of this lesson will be useful to me.	>.464	>.000

- **CORRELATION COEFFICIENT OF EACH ITEM OF "CONFIDENCE " AND THE TOTAL OF THIS DIMENSION**

The following table (5-6) clarifies the correlation coefficient for each item in the third dimension (Confidence) and the total of the dimension. The p-values (Sig.) are less than 0.05, so the correlation coefficients of all items are significant $\alpha \leq 0.05$; and it can be concluded that the third dimension is valid for measuring what it was intended for, and aligns with the study's main aim.

TABLE 5-6: CORRELATION COEFFICIENT OF EACH ITEM OF THE THIRD DIMENSION (CONFIDENCE) AND THE TOTAL OF THIS DIMENSION

No.	Item	Correlation Coefficient	Sig.
1	When I first looked at this lesson, I had the impression that it would be easy for me.	>.623	>.000
2	This material was more difficult to understand than I would like for it to be.	>.529	>.000

No.	Item	Correlation Coefficient	Sig.
3	After reading the introductory information, I felt confident that I knew what I was supposed to learn from this lesson.	>.595	>.000
4	Many of the pages had so much information that it was hard to pick out and remember the important points.	>.499	>.000
5	As I worked on this lesson, I was confident that I could learn the content.	>.625	>.000
6	The exercises in this lesson were too difficult.	>.652	>.000
7	After working on this lesson for a while, I was confident that I would be able to pass a test on it.	>.595	>.000
8	I could not really understand quite a bit of the material in this lesson.	>.428	>.000
9	The good organization of the content helped me be confident that I would learn this material.	>.631	>.000

- **CORRELATION COEFFICIENT OF EACH ITEM OF "SATISFACTION" AND THE TOTAL OF THIS DIMENSION**

The following table (Table 5-7) clarifies the correlation coefficient for each item in the fourth dimension (Satisfaction) and the total of the dimension. The p-values (Sig.) are less than 0.05, so the correlation coefficients of all items are significant $\alpha \leq 0.05$, and it can be concluded that the fourth dimension is valid for measuring what it was intended for, and aligns with the study's main aim.

TABLE 5-7: CORRELATION COEFFICIENT OF EACH ITEM OF THE THIRD DIMENSION (SATISFACTION) AND THE TOTAL OF THIS DIMENSION

No.	Item	Correlation Coefficient	Sig.
1	Completing the exercises in this lesson gave me a satisfying feeling of accomplishment.	>.630	>.000
2	I enjoyed this lesson so much that I would like to know more about this topic.	>.744	>.000
3	I really enjoyed studying this lesson.	>.780	>.000
4	The wording of feedback after the exercises, or of other comments in this lesson, helped me feel rewarded for my effort.	>.657	>.000
5	It felt good to successfully complete this lesson.	>.541	>.000
6	It was a pleasure to work on such a well-designed lesson.	>.563	>.000

5.3.2 Construct validity

Construct validity evaluates whether a measurement tool really represents the thing we are interested in measuring. It is central to establishing the overall validity of a method. The following table (table 5-8) clarifies the correlation coefficient for each dimension and the total of the questionnaire. The p-values (Sig.) are less than 0.05, so the correlation coefficients of all dimensions are significant $\alpha \leq 0.05$.

TABLE 5-8: CORRELATION COEFFICIENT OF EACH DIMENSION AND THE TOTAL OF THE QUESTIONNAIRE

No.	Dimension	Correlation Coefficient	Sig.
1	Attention	>.917	>.000
2	Relevance	>.884	>.000
3	Confidence	>.868	>.000
4	Satisfaction	>.872	>.000

5.3.3 Reliability of the research

The reliability of an instrument is the degree of consistency which measures the attribute it is supposed to be measuring (George & Mallery, 2009). The less variation an instrument produces in repeated measurements of an attribute, the higher its reliability. Reliability can be equated with the stability, consistency, or dependability of a measuring tool. To ensure the reliability of the questionnaire, Cronbach's Coefficient Alpha should be applied. The closer to one the better. Table 5-9 shows that all values of Cronbach's Alpha for the subscales are above 0.7, which Diamantopoulos et al. (2012) suggest indicates an acceptable level of reliability. Cronbach's Alpha equals 0.917 for the entire questionnaire, which indicates an excellent reliability. It can therefore be said that the questionnaire was valid and reliable for the descriptive data analysis.

TABLE 5-9: CRONBACH'S ALPHA FOR EACH DIMENSION OF THE QUESTIONNAIRE

No.	Dimension	No. of Items	Cronbach's Alpha
1	Attention	12	0.771
2	Relevance	9	0.739
3	Confidence	9	0.736
4	Satisfaction	6	0.736
	Total	36	0.917

5.4 Results

Following Keller (2009), I used the descriptive data analysis where the mean and the standard deviation for each subscale were calculated to measure the level of agreement for each item and each subscale, as discussed in section 5.2. The following sections display the results of descriptive analysis for each of the six samples, and again for each university case.

5.4.1 First sample (1H)

A. Attention

In order to determine the role of Attention as one of the strategies successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and the standard deviation to establish whether the average degree of approval of the study sample on the items in this dimension had reached a higher degree than Neutrality. The following table (table 5-10) illustrates these results.

TABLE: 5-10: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE (1H) INDIVIDUALS ON THE ITEMS RELATED TO THE FIRST DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	There was something interesting at the beginning of this lesson that got my attention.	**2.17**	**43.4**%	**1.47**	Moderately True	**12**
2	These materials are eye-catching.	**3.08**	**61.6**%	**.90**	Moderately True	**5**
3	The quality of the writing helped to hold my attention.	**3.33**	**66.6**%	**1.07**	Moderately True	**3**
4	This lesson is so abstract that it was hard to keep my attention on it.	**3.83**	**76.6**%	**.94**	Slightly True (Rev.)	**1**
5	The pages of this lesson look dry and unappealing.	**3.75**	**75.0**%	**1.36**	Slightly True (Rev.)	**2**
6	The way the information is arranged on the pages helped keep my attention.	**3.08**	**61.6**%	**1.16**	Moderately True	**5** rep.
7	This lesson has things that stimulated my curiosity.	**2.75**	**55.0**%	**1.06**	Moderately True	**8**
8	The amount of repetition in this lesson caused me to get bored sometimes.	**2.75**	**55.0**%	**1.29**	Moderately True	**8 rep.**
9	I learned some things that were surprising or unexpected.	**3.17**	**63.4**%	**1.27**	Moderately True	**4**

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
10	The variety of reading passages, exercises, illustrations, etc., helped keep my attention on the lesson	**3.00**	**6.0**%	**.85**	Moderately True	**7**
11	The style of writing is boring.	**2.25**	**45.0**%	**1.22**	Moderately True	**11**
12	There are so many words on each page that it is irritating.	**2.33**	**46.6**%	**1.30**	Moderately True	**10**
All items of the questionnaire		**2.96**	59.2%	**.44**	Moderately True	

Total No = 12 Participants

This table shows the level of agreement about the role of Attention as one of the strategies that have been applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 2.17 (43.4%) out of 5 to 3.83 (76.6%) out of 5.

In addition, the total degree of the dimension was 2.96 (59.2%). This result indicated that **"The role of Attention as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was moderately true from the respondents' point of view.**

B. Relevance

To determine the role of Relevance as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and the standard deviation to establish whether the average degree of approval of the study sample on the items of the second dimension (Relevance), had reached a higher degree than Neutrality. The following table (Table 5-11) illustrates these results.

TABLE 5-11: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE (1H) INDIVIDUALS ON THE ITEMS RELATED TO THE SECOND DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	**It is clear to me how the content of this material is related to things I already know.**	3.83	76.6%	1.11	**Mostly True**	3

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
2	**There were stories, pictures, or examples that showed me how this material could be important to some people.**	3.42	68.4%	1.08	**Mostly True**	7
3	**Completing this lesson successfully was important to me.**	3.83	76.6%	1.03	**Mostly True**	**3 rep.**
4	**The content of this material is relevant to my interests.**	2.75	55.0%	1.14	**Moderately True**	9
5	**There are explanations or examples of how people use the knowledge in this lesson.**	3.92	78.4%	**.**79	**Mostly True**	**1**
6	**The content and style of writing in this lesson convey the impression that its content is worth knowing.**	3.25	65.0%	1.42	**Moderately True**	8
7	**This lesson was not relevant to my needs because I already knew most of it.**	3.75	75.0%	1.29	**Slightly True (Rev.)**	**5**
8	**I could relate the content of this lesson to things I have seen, done, or thought about in my own life.**	3.92	78.4%	1.00	**Mostly True**	**1 rep.**
9	**The content of this lesson will be useful to me.**	3.58	71.6%	1.16	**Mostly True**	6
All items of the questionnaire		3.58	**71.6%**	**.**71	**Mostly True**	

Total No = 12 Participants

This Table (5-11) shows the level of agreement about the role of Relevance as one of the strategies that have been successfully applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 2.75 (55.0%) out of 5 to 3.92 (78.4%) out of 5.

In addition, the total degree of the dimension was 3.58 (71.6%). This result indicated that **"The role of Relevance as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was mostly true from the respondents' point of view.**

C. Confidence

To determine the role of Confidence as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and the standard deviation in order to find out whether the average degree of approval of the study sample on the items of the third dimension (Confidence), had reached a higher degree than neutrality. The following table (5-12) illustrates these results.

TABLE 5-12: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE (1H) INDIVIDUALS ON THE ITEMS RELATED TO THE THIRD DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	**When I first looked at this lesson, I had the impression that it would be easy for me.**	**3.42**	**68.4**%	**.90**	Mostly True	**5**
2	**This material was more difficult to understand than I would like for it to be.**	**4.33**	**86.6**%	.78	Not True	1
3	**After reading the introductory information, I felt confident that I knew what I was supposed to learn from this lesson.**	**3.42**	**68.4**%	**.51**	Mostly True	5 rep.
4	**Many of the pages had so much information that it was hard to pick out and remember the important points.**	**2.75**	**55.0**%	**1.48**	Moderately True	9
5	**As I worked on this lesson, I was confident that I could learn the content.**	**3.33**	**66.6**%	**1.15**	Moderately True	**8**
6	**The exercises in this lesson were too difficult.**	**3.58**	**71.6**%	**1.00**	Slightly True	4
7	**After working on this lesson for a while, I was confident that I would be able to pass a test on it.**	**4.00**	**8.0**%	**1.13**	Mostly True	2
8	**I could not really understand quite a bit of the material in this lesson.**	**3.67**	**73.4**%	**.89**	Slightly True	3
9	**The good organization of the content helped me be confident that I would learn this material.**	**3.42**	**68.4**%	**.90**	Mostly True	5 rep.
All items of the questionnaire		**3.55**	71.0%	**.422**	Mostly True	

Total No = 12 Participants

This table shows the level of agreement about the role of confidence as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 2.75 (55.0%) out of 5 to 4.33 (86.6%) out of 5.

In addition, the total degree of the dimension was 3.55 (71.0%). This result indicated that **"The role of Confidence as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was mostly true from the respondents' point of view.**

D. Satisfaction

In order to determine the role of satisfaction as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and the standard deviation to find out whether the average degree of approval of the study sample on the items of this fourth dimension had reached a higher degree than Neutrality. Table 5-13 illustrates these results.

TABLE 5-13:THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE (1H) INDIVIDUALS ON THE ITEMS RELATED TO THE FOURTH DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	**Completing the exercises in this lesson gave me a satisfying feeling of accomplishment.**	4.25	**85.0%**	1.14	**Very True**	**3**
2	**I enjoyed this lesson so much that I would like to know more about this topic.**	3.25	**65.0%**	.97	**Moderately True**	**5**
3	**I really enjoyed studying this lesson.**	2.83	**56.6%**	1.27	**Moderately True**	**6**
4	**The wording of feedback after the exercises, or of other comments in this lesson, helped me feel rewarded for my effort.**	3.33	**66.6%**	1.61	**Moderately True**	**4**
5	**It felt good to successfully complete this lesson.**	4.42	**88.4%**	.90	**Very True**	**1**
6	**It was a pleasure to work on such a well-designed lesson.**	4.33	**86.6%**	.77	**Very True**	**2**
All items of the questionnaire		3.74	74.8%	**.69**	**Mostly True**	

Total No = 12 Participants

This table shows the level of agreement about the role of Satisfaction as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 2.83 (56.6%) out of 5 to 4.42 (88.4%) out of 5.

The total degree of the dimension was 3.74 (74.8%). This result indicated that **"The role of Satisfaction as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was mostly true from the respondents' point of view.**

And therefore, the following table (Table 5-14) shows the degree of implementing strategies in Saudi universities to motivate students to use e-learning systems.

TABLE 5-14: THE MEAN FOR LEVEL OF IMPLEMENTING THE MOTIVATIONAL STRATEGIES FOR SAMPLE (1H)

No.	Dimension	Average	Level
1	**Attention**	2.96	**Medium Level**
2	**Relevance**	3.58	**Medium level**
3	**Confidence**	3.55	**Medium level**
4	**Satisfaction**	3.74	**High level**

5.4.2 Second sample: 2A

a. Attention

To determine the role of Attention as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and the standard deviation to establish whether the average degree of approval of the study sample (2A) on the items of the first dimension (Attention), had reached a higher degree than Neutrality. Table 5-15 illustrates these results.

TABLE 5-15: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE (2A) INDIVIDUALS ON THE ITEMS RELATED TO THE FIRST DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	**There was something interesting at the beginning of this lesson that got my attention.**	2.54	**50.8%**	1.10	**Slightly true**	11
2	**These materials are eye-catching.**	3.13	**62.6%**	.99	**Moderately true**	7
3	**The quality of the writing helped to hold my attention.**	3.83	**76.6%**	.92	**Mostly true**	1
4	**This lesson is so abstract that it was hard to keep my attention on it.**	3.38	**67.6%**	1.10	**Moderately true (reverse)**	4
5	**The pages of this lesson look dry and unappealing.**	3.58	**71.6%**	1.41	**Slightly true (reverse)**	3

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
6	**The way the information is arranged on the pages helped keep my attention.**	3.25	**65.0%**	1.03	**Moderately true**	**5**
7	**This lesson has things that stimulated my curiosity.**	3.00	**60.0%**	1.06	**Moderately true**	8
8	**The amount of repetition in this lesson caused me to get bored sometimes.**	2.71	**54.2%**	1.49	**Moderately true (reverse)**	**9**
9	**I learned some things that were surprising or unexpected.**	3.25	**65.0%**	.85	**Moderately true**	5
10	**The variety of reading passages, exercises, illustrations, etc., helped keep my attention on the lesson**	3.67	**73.4%**	1.31	**Mostly true**	2
11	**The style of writing is boring.**	2.46	**49.2%**	1.29	**Mostly true (reverse)**	12
12	**There are so many words on each page that it is irritating.**	2.63	**52.6%**	.97	**Moderately true (reverse)**	10
All items of the questionnaire		3.12	**62.4%**	**.83**	**Moderately true**	

Total No = 24 Participants

This table shows the level of agreement about the role of attention as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, where the meas of the items ranged between 2.46 (49.2%) out of 5 to 3.83 (76.7%) out of 5.

In addition, the total degree of the dimension was 3.12 (62.4%). This result indicated that "**The role of Attention as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was moderately true from the respondents' point of view.**

b. Relevance

To determine the role of Relevance as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and the standard deviation in order to find out whether the average degree of approval of the study sample (2A) on the items of the second dimension (Relevance), had reached a higher degree than Neutrality. The following table (Table 5-16) illustrates these results.

TABLE 5-16: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE (2A) INDIVIDUALS ON THE ITEMS RELATED TO THE SECOND DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	**It is clear to me how the content of this material is related to things I already know.**	3.00	60.0%	.98	**Moderately true**	9
2	**There were stories, pictures, or examples that showed me how this material could be important to some people.**	3.75	75.0%	.85	**Mostly true**	1
3	**Completing this lesson successfully was important to me.**	3.75	75.0%	1.36	**Mostly true**	**1 rep.**
4	**The content of this material is relevant to my interests.**	3.38	67.6%	1.17	**Moderately true**	8
5	**There are explanations or examples of how people use the knowledge in this lesson.**	3.75	75.0%	.74	**Mostly true**	**1 rep.**
6	**The content and style of writing in this lesson convey the impression that its content is worth knowing.**	3.75	75.0%	.68	**Mostly true**	**1 rep.**
7	**This lesson was not relevant to my needs because I already knew most of it.**	3.54	70.8%	1.10	**Slightly true**	**6**
8	**I could relate the content of this lesson to things I have seen, done, or thought about in my own life.**	3.46	69.2%	1.06	**Mostly true**	**7**
9	**The content of this lesson will be useful to me.**	3.75	75.0%	1.11	**Mostly true**	**1 rep.**
All items of the questionnaire		**3.57**	**71.4%**	**.47**	**Mostly true**	

Total No = 24 Participants

This table shows the level of agreement about the role of Relevance as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 3.00 (60.0%) out of 5 to 3.75 (75.0%) out of 5.

In addition, the total degree of the dimension was 3.57 (71.4%). This result indicated that **"The role of Relevance as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was mostly true from the respondents' point of view.**

c. Confidence

To determine the role of Confidence as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and the standard deviation to establish whether the average degree of approval of the study sample (2A) on the items of the third dimension Confidence had reached a higher degree than Neutrality. Table 5-17 illustrates these results.

TABLE 5-17: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE (2A) INDIVIDUALS ON THE ITEMS RELATED TO THE THIRD DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	**When I first looked at this lesson, I had the impression that it would be easy for me.**	3.33	66.6%	1.05	**Moderately true**	6
2	**This material was more difficult to understand than I would like for it to be.**	4.04	80.8%	.80	**Slightly true (reverse)**	**1**
3	**After reading the introductory information, I felt confident that I knew what I was supposed to learn from this lesson.**	3.75	75.0%	1.07	**Mostly true**	**3**
4	**Many of the pages had so much information that it was hard to pick out and remember the important points.**	3.17	63.4%	1.05	**Moderately true (reverse)**	**8**
5	**As I worked on this lesson, I was confident that I could learn the content.**	3.29	65.8%	.86	**Moderately true**	7
6	**The exercises in this lesson were too difficult.**	3.42	68.4%	.97	**Slightly true (reverse)**	**5**
7	**After working on this lesson for a while, I was confident that I would be able to pass a test on it.**	3.83	76.6%	.87	**Mostly true**	**2**
8	**I could not really understand quite a bit of the material in this lesson.**	3.17	63.4%	1.05	**Moderately true (reverse)**	**8 rep.**
9	**The good organization of the content helped me be confident that I would learn this material.**	3.67	73.4%	1.05	**Mostly true**	**4**
All items of the questionnaire		3.52	70.4%	.45	**Mostly true**	

Total No = 24 Participants

The above table shows the level of agreement about the role of Confidence as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 3.17 (63.4%) out of 5 to 4.04 (80.8%) out of 5.

In addition, the total degree of the dimension was 3.52 (70.4%). This result indicated that **"The role of Confidence as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was mostly true from the respondents' point of view.**

d. Satisfaction

To determine the role of satisfaction as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and the standard deviation to establish whether the average degree of approval of the study sample (2A) on the items of this dimension reached a higher degree than Neutrality. Table 5-18 illustrates these results.

TABLE 5-18: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE (2A) INDIVIDUALS ON THE ITEMS RELATED TO THE FOURTH DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	**Completing the exercises in this lesson gave me a satisfying feeling of accomplishment.**	3.95	79.0%	1.21	**Mostly true**	**2**
2	**I enjoyed this lesson so much that I would like to know more about this topic.**	3.67	73.4%	1.96	**Mostly true**	**4**
3	**I really enjoyed studying this lesson.**	3.21	64.2%	1.22	**Moderately true**	**6**
4	**The wording of feedback after the exercises, or of other comments in this lesson, helped me feel rewarded for my effort.**	3.54	70.8%	.88	**Mostly true**	**5**
5	**It felt good to successfully complete this lesson.**	3.79	75.8%	1.25	**Mostly true**	**3**
6	**It was a pleasure to work on such a well-designed lesson.**	4.17	83.4%	1.20	**Mostly true**	**1**
All items of the questionnaire		3.72	74.4%	.79	**Mostly true**	

Total No = 24 Participants

This table shows the level of agreement about the role of satisfaction as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 3.21 (64.2%) out of 5 to 4.17 (83.4%) out of 5.

In addition, the total degree of the dimension was 3.72 (74.4%). This result indicated that **"The role of Satisfaction as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was mostly true from the respondents' point of view.**

And therefore, the following table (Table 5-19) indicates the level of implementing motivational strategies used in Saudi universities to motivate students to use e-learning systems:

TABLE: 5-19: THE MEAN FOR LEVELS OF IMPLEMENTING THE MOTIVATIONAL STRATEGIES FOR SAMPLE (2A)

No.	Dimension	Average	Level
1	**Attention**	3.12	**Medium Level**
2	**Relevance**	3.57	**Medium level**
3	**Confidence**	3.52	**Medium level**
4	**Satisfaction**	3.72	**High level**

5.4.3 Third sample: 3M

a. Attention

In order to determine the role of Attention as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and the standard deviation to ascertain if the average degree of approval of the study sample (3M) on the items of this dimension had reached a higher degree than Neutrality. Table 5-20 illustrates these results.

TABLE 5.20: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE (3M) INDIVIDUALS ON THE ITEMS RELATED TO THE FIRST DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	**There was something interesting at the beginning of this lesson that got my attention.**	**3.00**	**60.0%**	**.91**	**Moderately true**	11
2	**These materials are eye-catching.**	**3.23**	**64.6%**	**1.09**	**Moderately true**	8

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
3	**The quality of the writing helped to hold my attention.**	**3.60**	**72.0%**	**1.26**	**Mostly true**	4
4	**This lesson is so abstract that it was hard to keep my attention on it.**	**3.69**	**73.8%**	**1.11**	**Slightly true (reverse)**	2
5	**The pages of this lesson look dry and unappealing.**	**3.77**	**75.4%**	**1.24**	**Slightly true (reverse)**	1
6	**The way the information is arranged on the pages helped keep my attention.**	**3.54**	**70.8%**	**1.20**	**Mostly true**	**5**
7	**This lesson has things that stimulated my curiosity.**	**3.46**	**69.2%**	**1.20**	**Mostly true**	**6**
8	**The amount of repetition in this lesson caused me to get bored sometimes.**	**3.15**	**63.0%**	**1.14**	**Moderately true (reverse)**	**10**
9	**I learned some things that were surprising or unexpected.**	**3.23**	**64.6%**	**1.09**	**Moderately true**	**8 rep.**
10	**The variety of reading passages, exercises, illustrations, etc., helped keep my attention on the lesson**	**3.62**	**72.4%**	**1.12**	**Mostly true**	3
11	**The style of writing is boring.**	**3.39**	**67.8%**	**1.45**	**Moderately true (reverse)**	**7**
12	**There are so many words on each page that it is irritating.**	**2.61**	**52.2%**	**1.45**	**Moderately true (reverse)**	12
All items of the questionnaire		**3.36**	**67.2%**	**.82**	**Moderately true**	

Total No = 13 Participants

This table shows the level of agreement about the role of Attention as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 2.61 (52.2%) out of 5 to 3.77 (75.4%) out of 5.

The total degree of the dimension was 3.36 (67.2%). This result indicated that "**The role of Attention as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was moderately true from the respondents' point of view.**

b. Relevance

To establish the role of Relevance as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and standard deviation to determine if the average degree of approval of the study sample (3M) on the items of this dimension (had reached a higher degree than Neutrality. The following table (Table 5-21) illustrates these results.

TABLE 5-21: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE (3M) INDIVIDUALS ON THE ITEMS RELATED TO THE SECOND DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	**It is clear to me how the content of this material is related to things I already know.**	**3.46**	**69.2%**	**1.13**	**Mostly true**	5
2	**There were stories, pictures, or examples that showed me how this material could be important to some people.**	**3.23**	**64.6%**	**1.09**	**Moderately true**	8
3	**Completing this lesson successfully was important to me.**	**3.92**	**78.4%**	**1.12**		**2**
4	**The content of this material is relevant to my interests.**	**3.15**	**63.0%**	**.99**	**Moderately true**	9
5	**There are explanations or examples of how people use the knowledge in this lesson.**	**3.39**	**67.8%**	**1.12**	**Moderately true**	**7**
6	**The content and style of writing in this lesson convey the impression that its content is worth knowing.**	**3.54**	**70.8%**	**1.27**	**Mostly true**	4
7	**This lesson was not relevant to my needs because I already knew most of it.**	**4.31**	**86.2%**	**.95**	**Not true (reverse)**	**1**
8	**I could relate the content of this lesson to things I have seen, done, or thought about in my own life.**	**3.46**	**69.2%**	**1.13**	**Mostly true**	**5 rep,**
9	**The content of this lesson will be useful to me.**	**3.77**	**75.4%**	**1.17**	**Mostly true**	3
All items of the questionnaire		**3.58**	**71.6%**	**.73**	**Mostly true**	

Total No = 13 Participants

This table shows the level of agreement about the role of Relevance as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 3.15 (63.0%) out of 5 to 4.31 (86.2%) out of 5.

In addition, the total degree of the dimension was 3.58 (71.6%). This result indicated that **"The role of Relevance as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was mostly true from the respondents' point of view.**

c. Confidence

As a means of determining the role of Confidence as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and the standard deviation to establish if the average degree of approval of the study sample (3M) on the items of this dimension, had reached a higher degree than Neutrality. Table 5-22 illustrates these results.

TABLE 5-22: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE (3M) INDIVIDUALS ON THE ITEMS RELATED TO THE THIRD DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	When I first looked at this lesson, I had the impression that it would be easy for me.	3.69	73.8%	1.18	Mostly true	2
2	This material was more difficult to understand than I would like for it to be.	3.62	72.4%	.96	Slightly true (reverse)	3
3	After reading the introductory information, I felt confident that I knew what I was supposed to learn from this lesson.	3.39	67.8%	1.26	Moderately true	6
4	Many of the pages had so much information that it was hard to pick out and remember the important points.	2.69	53.8%	1.44	Moderately true (reverse)	9
5	As I worked on this lesson, I was confident that I could learn the content.	3.08	61.6%	1.12	Moderately true	8
6	The exercises in this lesson were too difficult.	3.23	64.6%	1.30	Moderately true (reverse)	7
7	After working on this lesson for a while, I was confident that I would be able to pass a test on it.	3.92	78.4%	1.04	Mostly true	1
8	I could not really understand quite a bit of the material in this lesson.	3.46	69.2%	1.20	Slightly true (reverse)	5
9	The good organization of the content helped me be confident that I would learn this material.	3.62	72.4%	1.12	Mostly true	3 rep.
All items of the questionnaire		3.41	68.2%	.84	Mostly true	

Total No = 13 Participants

This table indicates the level of agreement about the role of Confidence as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 2.69 (53.8%) out of 5 to 3.92 (78.4%) out of 5.

The total degree of the dimension was 3.41 (68.2%). This result suggested that **"The role of Confidence as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was mostly true from the respondents' point of view.**

d. Satisfaction

To determine the role of Satisfaction as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and the standard deviation in order to establish if the average degree of approval of the study sample (3M) on the items of this dimension had reached a higher degree than Neutrality. Table 5-23 illustrates these results.

TABLE 5-23: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE (3M) INDIVIDUALS ON THE ITEMS RELATED TO THE FOURTH DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	Completing the exercises in this lesson gave me a satisfying feeling of accomplishment.	3.69	73.8%	1.25	Mostly true	3
2	I enjoyed this lesson so much that I would like to know more about this topic.	3.38	67.6%	1.26	Moderately true	4
3	I really enjoyed studying this lesson.	3.31	66.2%	1.25	Moderately true	5
4	The wording of feedback after the exercises, or of other comments in this lesson, helped me feel rewarded for my effort.	3.15	63.0%	1.07	Moderately true	6
5	It felt good to successfully complete this lesson.	4.23	84.6%	1.01	Very true	2
6	It was a pleasure to work on such a well-designed lesson.	4.53	90.6%	.78	Very true	1
All items of the questionnaire		3.72	74.4%	.85	Mostly true	

Total No = 13 Participants

The table indicates the level of agreement about the role of Satisfaction as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 3.15 (63.0%) out of 5 to 4.53 (90.6%) out of 5.

The total degree of the dimension was 3.72 (74.4%) which indicated that "**The role of Satisfaction as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was mostly true from the respondents' point of view.**

And therefore, the following table (Table 5-24) shows the level of implementing strategies in Saudi universities to motivate students to use e-learning systems:

TABLE 5-24: THE AVERAGE RANGE FOR LEVEL OF IMPLEMENTING THE MOTIVATIONAL STRATEGIES FOR SAMPLE (3M)

No.	Dimension	Average	Level
1	**Attention**	3.36	**Medium Level**
2	**Relevance**	**3.58**	**Medium level**
3	**Confidence**	**3.41**	**Medium level**
4	**Satisfaction**	**3.72**	**High level**

5.4.4 Comparison of the first three samples

The first three samples represent the different units from each university. One-way ANOVA comparisons were used to show these differences. Table 5-25 below shows the results of ANOVA comparisons for the Motivational Strategies Scale in the scores of students at each university in the different units (1H, 2A, 3M).

TABLE 5-25: Results of ANOVA for the Motivational Strategies Scale among the scores of students at each university in the different units (1H, 2A, 3M).

		Sum of Squares	df	Mean Square	F	Sig.
Attention	Between Groups	1.371	2	.686	1.850	.169
	Within Groups	17.045	46	.371		
	Total	18.417	48			
Relevance	Between Groups	.056	2	.028	.067	.936
	Within Groups	19.316	46	.420		
	Total	19.372	48			

		Sum of Squares	df	Mean Square	F	Sig.
Confidence	Between Groups	.034	2	.017	.034	.967
	Within Groups	23.331	46	.507		
	Total	23.365	48			
Satisfaction	Between Groups	.452	2	.226	.323	.725
	Within Groups	32.196	46	.700		
	Total	32.649	48			
Total score	Between Groups	.027	2	.013	.035	.966
	Within Groups	17.673	46	.384		
	Total	17.699	48			

Table 5-25 shows that the values of (F) indicating the variance of the Motivational Strategies Scale (sub-dimensions and the total score) indicated no statistically significant differences between the three groups of 1H, 2A and 3M. The values of F for Attention reached (F= 1.850; p=.169), Relevance (F=.067; p=.936), Confidence (F=.034; p=.967), Satisfaction (F= .323; p=.725) and Total Score (F= .035; p=.966).

5.4.5 Fourth sample: 1S

a. Attention

To determine the role of Attention as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and the standard deviation in order to establish if the average degree of approval of the study sample (1S) on the items of this dimension had reached a higher degree than Neutrality. Table 5-26 illustrates these results.

TABLE 5-26: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE (1S) INDIVIDUALS ON THE ITEMS RELATED TO THE FIRST DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	**There was something interesting at the beginning of this lesson that got my attention.**	**3.00**	**60.0%**	**1.30**	**Moderately true**	11
2	**These materials are eye-catching.**	**3.40**	**68.0%**	**1.26**	**Moderately true**	6
3	**The quality of the writing helped to hold my attention.**	**3.97**	**79.4%**	**1.08**	**Mostly true**	3
4	**This lesson is so abstract that it was hard to keep my attention on it.**	**4.24**	**84.8%**	**1.13**	**Not true**	1

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
5	**The pages of this lesson look dry and unappealing.**	**4.21**	**84.2%**	**1.12**	**Not true**	2
6	**The way the information is arranged on the pages helped keep my attention.**	**3.87**	**77.4%**	**.94**	**Mostly true**	**4**
7	**This lesson has things that stimulated my curiosity.**	**3.18**	**63.6%**	**1.27**	**Moderately true**	9
8	**The amount of repetition in this lesson caused me to get bored sometimes.**	**3.11**	**62.2%**	**1.31**	**Moderately true (reverse)**	**10**
9	**I learned some things that were surprising or unexpected.**	**3.29**	**65.8%**	**1.11**	**Moderately true**	8
10	**The variety of reading passages, exercises, illustrations, etc., helped keep my attention on the lesson**	**3.76**	**75.2%**	**1.20**	**Mostly true**	5
11	**The style of writing is boring.**	**2.66**	**53.2%**	**1.28**	**Moderately true (reverse)**	12
12	**There are so many words on each page that it is irritating.**	**3.37**	**67.4%**	**1.24**	**Moderately true (reverse)**	7
All items of the questionnaire		**3.50**	**70.0%**	**.56**	**Mostly true**	

Total No = 38 Participants

This table shows the level of agreement about the role of attention as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, where the means of the items ranged between 2.66 (53.2%) out of 5 to 4.24 (84.8%) out of 5.

The total degree of the dimension was 3.50 (70.0%) which indicated that **"The role of Attention as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was mostly true from the respondents' point of view.**

b. Relevance

To determine the role of Relevance as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and the standard deviation to ascertain whether the average degree of approval of the study sample (1S) on the items of this dimension had reached a higher degree than Neutrality. Table 5-27 illustrates these results.

TABLE 5-27: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE (1S) INDIVIDUALS ON THE ITEMS RELATED TO THE SECOND SUBSCALE

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	**It is clear to me how the content of this material is related to things I already know.**	**3.37**	**67.4%**	**.97**	**Moderately true**	8
2	**There were stories, pictures, or examples that showed me how this material could be important to some people.**	**4.13**	**82.6%**	**.81**	**Mostly true**	4
3	**Completing this lesson successfully was important to me.**	**4.32**	**86.4%**	**.84**	**Very true**	**1**
4	**The content of this material is relevant to my interests.**	**2.82**	**56.4%**	**1.01**	**Moderately true**	9
5	**There are explanations or examples of how people use the knowledge in this lesson.**	**3.84**	**76.8%**	**.97**	**Mostly true**	**5**
6	**The content and style of writing in this lesson convey the impression that its content is worth knowing.**	**3.74**	**74.8%**	**1.01**	**Mostly true**	7
7	**This lesson was not relevant to my needs because I already knew most of it.**	**4.24**	**84.8%**	**1.08**	**Not true**	**2**
8	**I could relate the content of this lesson to things I have seen, done, or thought about in my own life.**	**3.82**	**76.4%**	**.96**	**Mostly true**	**6**
9	**The content of this lesson will be useful to me.**	**4.24**	**84.8%**	**.97**	**Very true**	**2 rep.**
All items of the questionnaire		**3.83**	**76.6%**	**.61**	**Mostly true**	

Total No = 38 Participants

This table demonstrates the level of agreement about the role of Relevance as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 2.82 (56.4%) out of 5 to 4.32 (86.4%) out of 5.

The total degree of the dimension was 3.83 (76.4%). This result indicated that **"The role of Relevance as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was mostly true from the respondents' point of view.**

c. Confidence

In order to determine the role of confidence as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and the standard deviation to establish whether the average degree of approval of the study sample (1S) on the items of this dimension had reached a higher degree than Neutrality. Table 5-28 illustrates these results.

TABLE 5-28: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE (1S) INDIVIDUALS ON THE ITEMS RELATED TO THE THIRD DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	When I first looked at this lesson, I had the impression that it would be easy for me.	3.61	72.2%	.86	Mostly true	8
2	This material was more difficult to understand than I would like for it to be.	4.32	86.4%	.96	Not true	2
3	After reading the introductory information, I felt confident that I knew what I was supposed to learn from this lesson.	3.58	71.6%	1.27	Mostly true	9
4	Many of the pages had so much information that it was hard to pick out and remember the important points.	3.84	76.8%	.97	Slightly true	6
5	As I worked on this lesson, I was confident that I could learn the content.	3.63	72.6%	1.00	Mostly true	7
6	The exercises in this lesson were too difficult.	4.07	81.4%	1.08	Slightly true	3
7	After working on this lesson for a while, I was confident that I would be able to pass a test on it.	4.37	87.4%	.88	Very true	1
8	I could not really understand quite a bit of the material in this lesson.	3.92	78.4%	1.19	Slightly true	4
9	The good organization of the content helped me be confident that I would learn this material.	3.92	78.4%	1.00	Mostly true	4 rep.
All items of the questionnaire		3.91	78.2%	.66	Mostly true	

Total No = 38 Participants

This table shows the level of agreement about the role of Confidence as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 3.58 (71.6%) out of 5 to 4.37 (78.4%) out of 5.

In addition, the total degree of the dimension was 3.91 (78.2%). This result indicated that **"The role of Confidence as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was mostly true from the respondents' point of view.**

d. Satisfaction

To determine the role of Satisfaction as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and the standard deviation to establish whether the average degree of approval of the study sample (1S) on the items of this dimension had reached a higher degree than Neutrality. Table 5-29 shows these results.

TABLE 5-29: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE (1S) INDIVIDUALS ON THE ITEMS RELATED TO THE FOURTH DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	Completing the exercises in this lesson gave me a satisfying feeling of accomplishment.	4.55	91.0%	.69	Very true	3
2	I enjoyed this lesson so much that I would like to know more about this topic.	3.68	73.6%	1.07	Mostly true	5
3	I really enjoyed studying this lesson.	3.79	75.8%	1.12	Mostly true	4
4	The wording of feedback after the exercises, or of other comments in this lesson, helped me feel rewarded for my effort.	3.29	65.8%	1.33	Moderately true	6
5	It felt good to successfully complete this lesson.	4.74	94.8%	.69	Very true	1
6	It was a pleasure to work on such a well-designed lesson.	4.58	91.6%	.76	Very true	2
All items of the questionnaire		4.11	82.2%	.54	Mostly true	

Total No = 38 Participants

This table demonstrates the level of agreement about the role of Satisfaction as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 3.29 (65.8%) out of 5 to 4.74 (94.8%) out of 5.

The total degree of the dimension was 4.11 (82.2%). This result indicated that **"The role of Satisfaction as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was mostly true from the respondents' point of view.**

And therefore, the following table (Table 5-30) shows the level of implementation of strategies in Saudi universities to motivate students to use e-learning systems.

TABLE 5-30: THE AVERAGE FOR LEVEL OF IMPLEMENTING THE MOTIVATIONAL STRATEGIES FOR SAMPLE (1S)

No.	Dimension	Average	Level
1	**Attention**	3.50	**Medium level**
2	**Relevance**	3.83	**High level**
3	**Confidence**	3.91	**High level**
4	**Satisfaction**	4.11	**High level**

5.4.6 Fifth sample: 2S

a. Attention

To determine the role of Attention as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and the standard deviation to find out if the average degree of approval of the study sample (2S) on the items of the first subscale (Attention) had reached a higher degree than Neutrality. Table 5-31 illustrates these results.

TABLE 5-31: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE (2S) INDIVIDUALS ON THE ITEMS RELATED TO THE FIRST DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	**There was something interesting at the beginning of this lesson that got my attention.**	**2.77**	**55.4%**	**1.30**	**Moderately true**	11
2	**These materials are eye-catching.**	**3.41**	**68.2%**	**1.35**	**Mostly true**	3
3	**The quality of the writing helped to hold my attention.**	**3.71**	**74.2%**	**1.40**	**Mostly true**	2
4	**This lesson is so abstract that it was hard to keep my attention on it.**	**2.94**	**58.8%**	**1.41**	**Moderately true (reverse)**	9
5	**The pages of this lesson look dry and unappealing.**	**3.35**	**67.0%**	**1.56**	**Moderately true**	4
6	**The way the information is arranged on the pages helped keep my attention.**	**3.77**	**75.4%**	**1.21**	**Mostly true**	**1**
7	**This lesson has things that stimulated my curiosity.**	**3.27**	**65.4%**	**1.19**	**Moderately true**	6
8	**The amount of repetition in this lesson caused me to get bored sometimes.**	**2.53**	**50.6%**	**1.42**	**Mostly true (reverse)**	**12**
9	**I learned some things that were surprising or unexpected.**	**3.27**	**65.4%**	**1.36**	**Moderately true**	**6 rep.**
10	**The variety of reading passages, exercises, illustrations, etc., helped keep my attention on the lesson**	**3.29**	**65.8%**	**1.47**	**Moderately true**	5
11	**The style of writing is boring.**	**2.88**	**57.6%**	**1.32**	**Moderately true (reverse)**	10
12	**There are so many words on each page that it is irritating.**	**3.00**	**60.0%**	**1.30**	**Moderately true (reverse)**	8
All items of the questionnaire		**3.18**	**63.6%**	**.69**	**Moderately true**	

Total No = 34 Participants

This table shows the level of agreement about the role of Attention as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 2.53 (50.6%) out of 5 to 3.77 (75.4%) out of 5.

In addition, the total degree of the dimension was 3.18 (63.6%). This result indicated that **"The role of Attention as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was moderately true from the respondents' point of view.**

b. Relevance

To establish the role of Relevance as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and the standard deviation to find out if the average degree of approval of the study sample (2S) on the items of this dimension had reached a higher degree than Neutrality. The following table (Table 5-32) illustrates these results.

TABLE 5-32: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE (2S) INDIVIDUALS ON THE ITEMS RELATED TO THE SECOND DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	**It is clear to me how the content of this material is related to things I already know.**	**3.06**	**61.2%**	**1.35**	**Moderately true**	8
2	**There were stories, pictures, or examples that showed me how this material could be important to some people.**	**3.79**	**75.8%**	**1.18**	**Mostly true**	3
3	**Completing this lesson successfully was important to me.**	**3.85**	**77.0%**	**1.26**	**Mostly true**	**1**
4	**The content of this material is relevant to my interests.**	**2.94**	**58.8%**	**1.21**	**Moderately true**	9
5	**There are explanations or examples of how people use the knowledge in this lesson.**	**3.47**	**69.4%**	**1.14**	**Mostly true**	**5**
6	**The content and style of writing in this lesson convey the impression that its content is worth knowing.**	**3.44**	**68.8%**	**1.19**	**Mostly true**	7
7	**This lesson was not relevant to my needs because I already knew most of it.**	**3.82**	**76.4%**	**1.29**	**Slightly true (reverse)**	**2**
8	**I could relate the content of this lesson to things I have seen, done, or thought about in my own life.**	**3.50**	**70.0%**	**1.26**	**Mostly true**	4
9	**The content of this lesson will be useful to me.**	**3.47**	**69.4%**	**1.26**	**Mostly true**	**5 rep.**
All items of the questionnaire		**3.48**	**69.6%**	**1.68**	**Mostly true**	

Total No = 34 Participants

The table demonstrates the level of agreement about the role of Relevance as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 2.94 (58.8%) out of 5 to 3.85 (77.0%) out of 5.

The total degree of the dimension was 3.48 (69.6%). This result indicated that **"The role of Relevance as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was mostly true from the respondents' point of view.**

c. Confidence

To determine the role of Confidence as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and the standard deviation to ascertain if the average degree of approval of the study sample (2S) on the items of this dimension had reached a higher degree than Neutrality. Table 5-33 illustrates these results.

TABLE 5-33: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE (2S) INDIVIDUALS ON THE ITEMS RELATED TO THE THIRD DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	**When I first looked at this lesson, I had the impression that it would be easy for me.**	**3.18**	**63.6%**	**1.40**	**Moderately true**	6
2	**This material was more difficult to understand than I would like for it to be.**	**3.94**	**78.8%**	**1.34**	**Slightly true (reverse)**	**2**
3	**After reading the introductory information, I felt confident that I knew what I was supposed to learn from this lesson.**	**3.53**	**70.6%**	**1.33**	**Mostly true**	**3**
4	**Many of the pages had so much information that it was hard to pick out and remember the important points.**	**2.91**	**58.2%**	**1.36**	**Moderately true (reverse)**	**9**
5	**As I worked on this lesson, I was confident that I could learn the content.**	**3.15**	**63.0%**	**1.08**	**Moderately true**	7
6	**The exercises in this lesson were too difficult.**	**3.09**	**61.8%**	**1.33**	**Moderately true (reverse)**	**8**
7	**After working on this lesson for a while, I was confident that I would be able to pass a test on it.**	**3.97**	**79.4%**	**1.09**	**Mostly true**	**1**
8	**I could not really understand quite a bit of the material in this lesson.**	**3.27**	**65.4%**	**1.38**	**Moderately true (reverse)**	**5**
9	**The good organization of the content helped me be confident that I would learn this material.**	**3.44**	**68.8%**	**1.40**	**Mostly true**	**4**
All items of the questionnaire		**3.39**	**67.8%**	**.74**	**Moderately true**	

Total No = 34 Participants

This table shows the level of agreement about the role of Confidence as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 2.91 (58.2%) out of 5 to 3.97 (79.4%) out of 5.

In addition, the total degree of the dimension was 3.39 (67.8%). This result indicated that **"The role of Confidence as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was moderately true from the respondents' point of view.**

d. Satisfaction

To determine the role of Satisfaction as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and the standard deviation in order to establish if the average degree of approval of the study sample (2S) on the items of this dimension had reached a higher degree than Neutrality. Table 5-34 presents these results.

TABLE 5-34: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE (2S) INDIVIDUALS ON THE ITEMS RELATED TO THE FOURTH DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	Completing the exercises in this lesson gave me a satisfying feeling of accomplishment.	4.29	85.8%	1.09	Very true	3
2	I enjoyed this lesson so much that I would like to know more about this topic.	3.29	65.8%	1.32	Moderately true	4
3	I really enjoyed studying this lesson.	3.12	62.4%	1.45	Moderately true	5
4	The wording of feedback after the exercises, or of other comments in this lesson, helped me feel rewarded for my effort.	2.94	58.8%	1.37	Moderately true	6
5	It felt good to successfully complete this lesson.	4.53	90.6%	.83	Very true	1
6	It was a pleasure to work on such a well-designed lesson.	4.32	86.4%	.95	Very true	2
All items of the questionnaire		3.75	75.0%	.75	Mostly true	

Total No = 34 Participants

This table shows the level of agreement about the role of Satisfaction as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 2.94 (58.8%) out of 5 to 4.53 (90.6%) out of 5.

The total degree of the dimension was 3.75 (75.0%). This result indicated that **"The role of Satisfaction as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was mostly true from the respondents' point of view.**

Therefore, the following table (Table 5-35) demonstrates the level of implementing strategies in Saudi universities to motivate students to use e-learning systems:

TABLE 5-35: THE AVERAGE RANGE FOR LEVEL OF IMPLEMENTING THE MOTIVATIONAL STRATEGIES FOR SAMPLE (2S)

No.	Dimension	Average	Level
1	**Attention**	3.18	**Medium Level**
2	**Relevance**	**3.48**	**Medium level**
3	**Confidence**	**3.39**	**Medium Level**
4	**Satisfaction**	**3.75**	**High level**

5.4.7 Sixth sample: 3S

a. Attention

To determine the role of Attention as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and the standard deviation in order to establish if the average degree of approval of the study sample (3S) on the items of this dimension had reached a higher degree than Neutrality. The following table (Table 5-36) presents these results.

TABLE 5-36: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE (3S) INDIVIDUALS ON THE ITEMS RELATED TO THE FIRST DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	**There was something interesting at the beginning of this lesson that got my attention.**	**3.00**	**60.0%**	**1.43**	**Moderately true**	10
2	**These materials are eye-catching.**	**3.56**	**71.2%**	**.88**	**Mostly true**	8
3	**The quality of the writing helped to hold my attention.**	**3.59**	**71.8%**	**1.27**	**Mostly true**	7
4	**This lesson is so abstract that it was hard to keep my attention on it.**	**1.46**	**29.2%**	**.85**	**Very true (reverse)**	12
5	**The pages of this lesson look dry and unappealing.**	**1.92**	**38.4%**	**1.37**	**Mostly true (reverse)**	11
6	**The way the information is arranged on the pages helped keep my attention.**	**3.97**	**79.4%**	**.96**	**Mostly true**	**3**
7	**This lesson has things that stimulated my curiosity.**	**3.85**	**77.0%**	**1.09**	**Mostly true**	5
8	**The amount of repetition in this lesson caused me to get bored sometimes.**	**3.87**	**77.4%**	**1.15**	**Slightly true (reverse)**	**4**
9	**I learned some things that were surprising or unexpected.**	**3.54**	**70.8%**	**1.14**	**Mostly true**	9
10	**The variety of reading passages, exercises, illustrations, etc., helped keep my attention on the lesson**	**4.23**	**84.6%**	**1.16**	**Very true**	1
11	**The style of writing is boring.**	**4.23**	**84.6%**	**1.04**	**Not true (reverse)**	**1 rep.**
12	**There are so many words on each page that it is irritating.**	**3.80**	**76.0%**	**1.34**	**Slightly true (reverse)**	6
All items of the questionnaire		**3.42**	**68.4%**	**.47**	**Mostly true**	

Total No = 39 Participants

This table shows the level of agreement about the role of Attention as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 1.46 (29.2%) out of 5 to 4.23 (84.6%) out of 5.

The total degree of the subscale was 3.42 (68.4%), which indicated that **"The role of Attention as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was mostly true from the respondents' point of view.**

b. Relevance

To ascertain the role of Relevance as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and the standard deviation to establish if the average degree of approval of the study sample (3S) on the items of this dimension had reached a higher degree than Neutrality. Table 5-37 illustrates these results.

TABLE 5-37: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE (3S) INDIVIDUALS ON THE ITEMS RELATED TO THE SECOND DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	**It is clear to me how the content of this material is related to things I already know.**	**3.56**	**71.2%**	**.68**	**Mostly true**	9
2	**There were stories, pictures, or examples that showed me how this material could be important to some people.**	**3.95**	**79.0%**	**.97**	**Mostly true**	6
3	**Completing this lesson successfully was important to me.**	**4.39**	**87.8%**	**.88**	**Very true**	**2**
4	**The content of this material is relevant to my interests.**	**3.59**	**71.8%**	**1.09**	**Mostly true**	8
5	**There are explanations or examples of how people use the knowledge in this lesson.**	**3.67**	**73.4%**	**1.18**	**Mostly true**	**7**
6	**The content and style of writing in this lesson convey the impression that its content is worth knowing.**	**4.10**	**82.0%**	**.91**	**Mostly true**	5
7	**This lesson was not relevant to my needs because I already knew most of it.**	**4.46**	**89.2%**	**.94**	**Not true (reverse)**	**1**
8	**I could relate the content of this lesson to things I have seen, done, or thought about in my own life.**	**4.18**	**83.6%**	**.82**	**Mostly true**	**4**
9	**The content of this lesson will be useful to me.**	**4.31**	**86.2%**	**.92**	**Very true**	3
All items of the questionnaire		**4.02**	**80.4%**	**.67**	**Mostly true**	

Total No = 39 Participants

This table indicates the level of agreement about the role of Relevance as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 3.56 (71.2%) out of 5 to 4.46 (89.2%) out of 5.

The total degree of the dimension was 4.02 (80.4%), which indicated that **"The role of Relevance as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was mostly true from the respondents' point of view.**

c. Confidence

In order to determine the role of Confidence as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and the standard deviation to establish if the average degree of approval of the study sample (3S) on the items of Confidence had reached a higher degree than Neutrality. Table 5-38 illustrates these results.

TABLE 5-38: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE (3S) INDIVIDUALS ON THE ITEMS RELATED TO THE THIRD DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	**When I first looked at this lesson, I had the impression that it would be easy for me.**	**3.87**	**77.4%**	**1.06**	**Mostly true**	6
2	**This material was more difficult to understand than I would like for it to be.**	**1.69**	**33.8%**	**1.06**	**Very true (reverse)**	**9**
3	**After reading the introductory information, I felt confident that I knew what I was supposed to learn from this lesson.**	**3.97**	**79.4%**	**1.11**	**Mostly true**	**5**
4	**Many of the pages had so much information that it was hard to pick out and remember the important points.**	**2.18**	**43.6%**	**1.19**	**Mostly true (reverse)**	**8**
5	**As I worked on this lesson, I was confident that I could learn the content.**	**3.54**	**70.8%**	**1.02**	**Mostly true**	7
6	**The exercises in this lesson were too difficult.**	**4.21**	**84.2%**	**.98**	**Very true (reverse)**	**3**
7	**After working on this lesson for a while, I was confident that I would be able to pass a test on it.**	**4.64**	**92.8%**	**.67**	**Very true**	**1**
8	**I could not really understand quite a bit of the material in this lesson.**	**4.49**	**89.8%**	**.89**	**Very true (reverse)**	**2**

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
9	The good organization of the content helped me be confident that I would learn this material.	4.10	82.0%	1.05	Mostly true	4
All items of the questionnaire		3.63	72.6%	.44	Mostly true	

Total No = 39 Participants

Table 5-38 shows the level of agreement about the role of Confidence as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 1.69 (33.8%) out of 5 to 4.64 (92.8%) out of 5. The total degree of the dimension was 3.63 (72.6%), which indicated that **"The role of Confidence as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was mostly true from the respondents' point of view.**

d. Satisfaction

To establish the role of Satisfaction as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and the standard deviation in order to determine if the average degree of approval of the study sample (3S) on the items of this dimension had reached a higher degree than Neutrality. The following table illustrates these results.

TABLE 5-39: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE (3S) INDIVIDUALS ON THE ITEMS RELATED TO THE FOURTH DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	Completing the exercises in this lesson gave me a satisfying feeling of accomplishment.	4.51	90.2%	.64	Very true	3
2	I enjoyed this lesson so much that I would like to know more about this topic.	4.05	81.0%	1.10	Mostly true	5
3	I really enjoyed studying this lesson.	4.08	81.6%	1.13	Mostly true	4

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
4	**The wording of feedback after the exercises, or of other comments in this lesson, helped me feel rewarded for my effort.**	**3.95**	**79.0%**	**.95**	**Mostly true**	**6**
5	**It felt good to successfully complete this lesson.**	**4.82**	**96.4%**	**.39**	**Very true**	**1**
6	**It was a pleasure to work on such a well-designed lesson.**	**4.56**	**91.2%**	**.72**	**Very true**	**2**
All items of the questionnaire		**4.33**	**86.6%**	**.57**	**Very true**	

Total No = 39 Participants

Table 5-39 shows the level of agreement about the role of Satisfaction as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 2.83 (56.6%) out of 5 to 4.42 (88.4%) out of 5.

The total degree of the dimension was 4.33 (86.6%), indicating that **"The role of Satisfaction as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was very true from the respondents' point of view.**

Thus, the following table shows the level of implementing strategies in Saudi universities to motivate students to use e-learning systems:

TABLE 5-40: AVERAGE RANGE FOR LEVEL OF IMPLEMENTING THE MOTIVATIONAL STRATEGIES FOR SAMPLE (3S)

No.	Dimension	Average	Level
1	**Attention**	3.42	**Medium level**
2	**Relevance**	**4.02**	**High level**
3	**Confidence**	**3.63**	**Medium level**
4	**Satisfaction**	**4.33**	**High level**

5.4.8 Comparison of the second three samples

The second three samples represented similar units from each university. Table 5-41 below compares the results of the analysis of the second three samples of the same unit taught by different universities. One-way ANOVA comparison was used to indicate these differences. Table 5-41 shows the results of ANOVA for the Motivational Strategies Scale among the scores of students at each university in similar units (1S, 2S, and 3S).

TABLE 5-41: Results of ANOVA for the Motivational Strategies Scale among the scores of students at each university in similar units (1S, 2S, and 3S).

		Sum of Squares	df	Mean Square	F	Sig.
Attention	Between Groups	12.924	2	6.462	12.478	.000
	Within Groups	55.930	108	.518		
	Total	68.854	110			
Relevance	Between Groups	14.286	2	7.143	15.408	.000
	Within Groups	50.069	108	.464		
	Total	64.356	110			
Confidence	Between Groups	7.858	2	3.929	8.531	.000
	Within Groups	49.741	108	.461		
	Total	57.600	110			
Satisfaction	Between Groups	10.269	2	5.135	12.819	.000
	Within Groups	43.260	108	.401		
	Total	53.529	110			
Total score	Between Groups	11.050	2	5.525	16.260	.000
	Within Groups	36.696	108	.340		
	Total	47.746	110			

As this table demonstrates, the values of (F) indicating the variance of the Motivational Strategies Scale (subdimensions and the total score) were statistically significant at the level of (.001), The values of F for Attention reached (F= 12.478; p <.001), Relevance (F =15.408; p <.001), Confidence (F= 8.531; p <.001), Satisfaction (F= 12.819; <.001) and Total score (F= 16.260; p <.001). This indicated that there were statistically significant differences between the three groups in the total score of the motivation scale and its sub-dimensions. Therefore, it was necessary to conduct another statistical test to determine the direction of these differences. The Scheffe test was used for post-hoc comparisons. Table 5-42 shows the results.

Table 5-42: The significance of the differences in the motivational strategies scale between the average scores of students of the three groups (1S, 2S, 3S) using Scheffe test

			Mean differences and significance		
Variable	Groups	Mean of degrees	(1)	(2)	(3)
Attention	1S (n=38) (1)	3.504	-	-	-
	2S (n=34) (2)	3.181	.323	-	-
	3S (n=39) (3)	4.013	-.508*	-.831*	-
Relevance	1S (n=38) (1)	3.708	-	-	-
	2S (n=34) (2)	3.386	.322	-	-
	3S (n=39) (3)	4.256	-.549*	-.871*	-
Confidence	1S (n=38) (1)	3.559	-	-	-
	2S (n=34) (2)	3.484	.075	-	-
	3S (n=39) (3)	4.077	-.518*	-.593*	-
Satisfaction	1S (n=38) (1)	4.105	-	-	-
	2S (n=34) (2)	3.750	.355	-	-
	3S (n=39) (3)	4.500	-.395*	-.750*	-
Total score	1S (n=38) (1)	3.719	-	-	-
	2S (n=34) (2)	3.450	.269	-	-
	3S (n=39) (3)	4.213	-.494*	-.763*	-

*The mean difference is significant at the .05 level.

The results presented in this table indicated the following:

For all sub-dimensions and the Total score, 3S students scored significantly higher.

- There were statistically significant differences at the level of .05 between the average scores of 1S students and 3S students on **Attention** indicating that 3S students scored higher.

- There were statistically significant differences at the level of .05 between the average scores of 2S students and 3S students on **Attention** indicating that 3S students scored higher.

- There were statistically significant differences at the level of .05 between the average scores of 1S students and 3S students on **Relevance** indicating that 3S students scored higher.

- There were statistically significant differences at the level of .05 between the average scores of 2S students and 3S students on **Relevance** indicating that 3S students scored higher.

- There were statistically significant differences at the level of .05 between the average scores of 1S students and 3S students on **Confidence** indicating that 3S students scored higher.

- There were statistically significant differences at the level of .05 between the average scores of 2S students and 3S students on **Confidence** indicating that 3S students scored higher.

- There were statistically significant differences at the level of .05 between the average scores of 1S students and 3S students on **Satisfaction** indicating that 3S students scored higher.

- There were statistically significant differences at the level of .05 between the average scores of 2S students and 3S students on **Satisfaction** indicating that 3S students scored higher.

- There were statistically significant differences at the level of .05 between the average scores of 1S students and 3S students on **Total score** indicating that 3S students scored higher.

- There were statistically significant differences at the level of .05 between the average scores of 2S students and 3S students on **Total score** indicating that 3S students scored higher.

5.4.9 Comparison of Saudi University (1) units

This section compares the level of implementation of the two selected units provided by Saudi University (1). In this sample, the unit provided as an optional unit (1S) recorded a significantly higher level in three dimensions of the IMMS scale which were Relevance, Confidence, and Satisfaction. The other unit which was a mandatory specialised unit (1H) recorded a significantly higher level in the Satisfaction dimension while the other dimensions were on a medium level. Figure 5-1 illustrates these results.

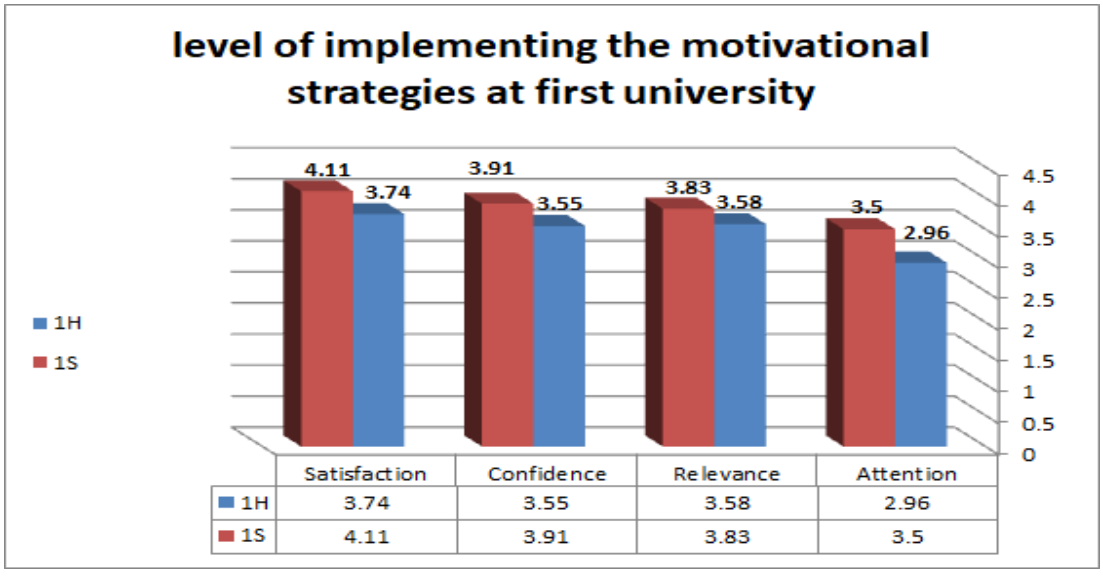

Figure 5-1: Level of implementing the motivational strategies at first university.

5.4.10 Comparison of Saudi University (2) units

In this sample, it was noticed that the unit provided as an optional unit (2S) and the mandatory specialised unit (2A) recorded similar medium levels in three dimensions of the IMMS scale which were Attention, Relevance, and Confidence, while the respondents were highly satisfied with their achievement in these units, as Figure 5-2 illustrates.

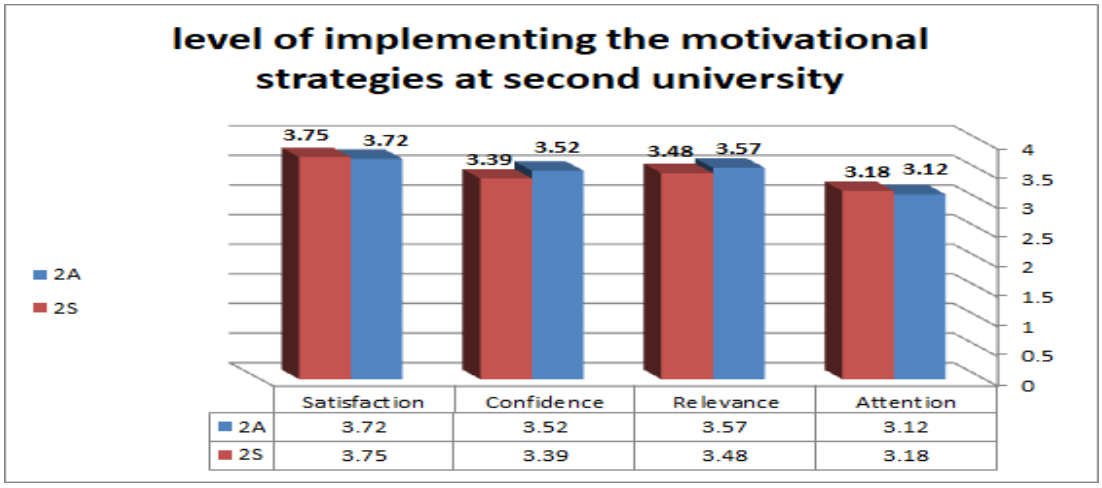

Figure 5-2: level of implementing the motivational strategies at second university.

5.4.11 Comparisons of Saudi University (3) units

In this sample, the unit that was provided as an optional unit (3S) and the mandatory specialised unit (3M) recorded similar medium levels in only one dimension of the IMMS scale which was Attention. While the respondents were highly satisfied with their achievement in these units, they recorded medium to high levels in the Relevance and Confidence dimensions. Figure 5-3 illustrates the results.

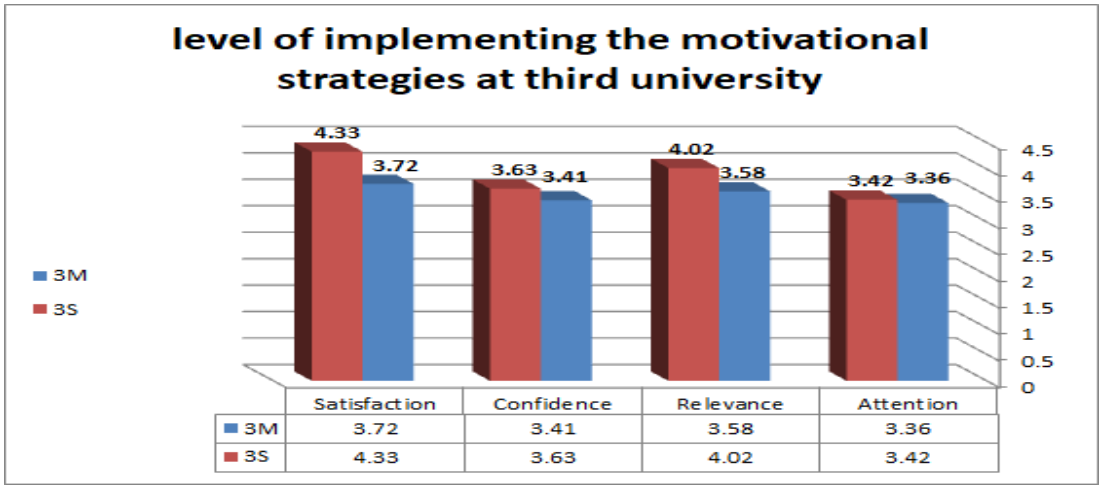

Figure 5-3: Level of implementing the motivational strategies at third university

5.4.12 Saudi University (1) sample

In this section, I analyse the sample of the selected units in Saudi University (1). This means the samples collected from the students in each unit were gathered and used as one sample.

a. Attention

In order to determine the role of Attention as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and the standard deviation to establish if the average degree of approval of the study sample on the items of the first dimension (Attention) had reached a higher degree than Neutrality. Table 5-45 illustrates these results.

TABLE 5-43: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE INDIVIDUALS (FIRST UNIVERSITY) ON THE ITEMS RELATED TO THE FIRST DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	**There was something interesting at the beginning of this lesson that got my attention.**	2.80	56.00%	1.37	**Moderately true**	11
2	**These materials are eye-catching.**	3.32	66.40%	1.19	**Moderately true**	6
3	**The quality of the writing helped to hold my attention.**	3.82	76.40%	1.10	**Mostly true**	3
4	**This lesson is so abstract that it was hard to keep my attention on it.**	4.14	82.80%	1.09	**Slightly true (reverse)**	1
5	**The pages of this lesson look dry and unappealing.**	4.10	82.00%	1.18	**Slightly true (reverse)**	**2**
6	**The way the information is arranged on the pages helped keep my attention.**	3.68	73.60%	1.04	**Mostly true**	**4**
7	**This lesson has things that stimulated my curiosity.**	3.08	61.60%	1.23	**Moderately true**	9
8	**The amount of repetition in this lesson caused me to get bored sometimes.**	3.02	60.40%	1.30	**Moderately true (reverse)**	**10**
9	**I learned some things that were surprising or unexpected.**	3.26	65.20%	1.14	**Moderately true**	7
10	**The variety of reading passages, exercises, illustrations, etc., helped keep my attention on the lesson**	3.58	71.60%	1.16	**Mostly true**	5
11	**The style of writing is boring.**	2.56	**51.20%**	1.26	**Moderately true**	12

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
					(reverse)	
12	**There are so many words on each page that it is irritating.**	3.12	**62.40%**	1.32	**Moderately true (reverse)**	8
	All items of the questionnaire	3.37	67.40%	.58	Moderately true	

Total No = 50 Participants

This table indicates the level of agreement about the role of Attention as one of the strategies successfully applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 2.56 (51.20%) out of 5 to 4.14 (82.8%) out of 5.

The total degree of the dimension was 3.37 (67.4%) which indicated that "**The role of Attention as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was moderately true from the respondents' point of view.**

b. Relevance

To determine the role of Relevance as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and the standard deviation to establish if the average degree of approval of the study sample on the items of this dimension had reached a higher degree than Neutrality. Table 5-46 presents these results.

TABLE 5-44: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE (FIRST UNIVERSITY) INDIVIDUALS ON THE ITEMS RELATED TO THE SECOND DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	**It is clear to me how the content of this material is related to things I already know.**	3.48	**69.60%**	1.02	**Mostly true**	7
2	**There were stories, pictures, or examples that showed me how this material could be important to some people.**	3.96	**79.20%**	.93	**Mostly true**	3

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
3	**Completing this lesson successfully was important to me.**	4.20	**84.00%**	**.**90	**Mostly true**	**2**
4	**The content of this material is relevant to my interests.**	2.80	**56.00%**	1.03	**Moderately true**	8
5	**There are explanations or examples of how people use the knowledge in this lesson.**	3.86	**77.20%**	**.**93	**Mostly true**	**4**
6	**The content and style of writing in this lesson convey the impression that its content is worth knowing.**	3.62	**72.40%**	1.12	**Mostly true**	6
7	**This lesson was not relevant to my needs because I already knew most of it.**	3.84	**76.80%**	**.**96	**Slightly true (reverse)**	**5**
8	**I could relate the content of this lesson to things I have seen, done, or thought about in my own life.**	4.12	**82.40%**	1.14	**Mostly true**	**1**
9	**The content of this lesson will be useful to me.**	2.20	**44.00%**	1.28	**Slightly true**	9
All items of the questionnaire		3.56	**71.20%**	**.52**	**Mostly true**	

Total No = 50 Participants

This table shows the level of agreement about the role of Relevance as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 2.20 (44.0%) out of 5 to 4.12 (82.4%) out of 5.

The total degree of the dimension was 3.56 (71.2%) which indicated that "**The role of Relevance as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was mostly true from the respondents' point of view.**

c. Confidence

To establish the role of Confidence as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and the standard deviation to find out whether the average degree of approval of the study sample on the items of this dimension had reached a higher degree than Neutrality. The following table illustrates these results.

TABLE 5-45: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE INDIVIDUALS (FIRST UNIVERSITY) ON THE ITEMS RELATED TO THE THIRD DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	**When I first looked at this lesson, I had the impression that it would be easy for me.**	3.56	**71.20%**	**.**86	**Mostly true**	6
2	**This material was more difficult to understand than I would like for it to be.**	4.32	**86.40%**	**.**91	**Not true (reverse)**	**1**
3	**After reading the introductory information, I felt confident that I knew what I was supposed to learn from this lesson.**	3.54	**70.80%**	1.13	**Mostly true**	**8**
4	**Many of the pages had so much information that it was hard to pick out and remember the important points.**	3.58	**71.60%**	1.20	**Slightly true (reverse)**	**5**
5	**As I worked on this lesson, I was confident that I could learn the content.**	3.56	**71.20%**	1.03	**Mostly true**	6**Rep.**
6	**The exercises in this lesson were too difficult.**	3.92	**78.40%**	1.07	**Slightly true (reverse)**	**3**
7	**After working on this lesson for a while, I was confident that I would be able to pass a test on it.**	4.28	**85.60%**	**.**95	**Very true**	**2**
8	**I could not really understand quite a bit of the material in this lesson.**	2.46	**49.20%**	1.31	**Mostly true (reverse)**	**9**
9	**The good organization of the content helped me be confident that I would learn this material.**	3.80	**76.00%**	99.	**Mostly true**	**4**
All items of the questionnaire		3.67	**73.40%**	**.51**	**Mostly true**	

Total No = 50 Participants

This table shows the level of agreement about the role of Confidence as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 2.46 (49.2%) out of 5 to 4.32 (86.4%) out of 5.

The total degree of the dimension was 3.55 (71.0%), indicating that "**The role of Confidence as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was mostly true from the respondents' point of view.**

d. Satisfaction

To determine the role of Satisfaction as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and the standard deviation

to find out if the average degree of approval of the study sample on the items of this dimension had reached a higher degree than Neutrality. Table 5-46 presents these results.

TABLE 5-46: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE INDIVIDUALS (FIRST UNIVERSITY) ON THE ITEMS RELATED TO THE FOURTH DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	**Completing the exercises in this lesson gave me a satisfying feeling of accomplishment.**	4.48	**89.60%**	**.**81	**Very true**	**3**
2	**I enjoyed this lesson so much that I would like to know more about this topic.**	3.58	**71.60%**	1.05	**Mostly true**	**4**
3	**I really enjoyed studying this lesson.**	3.56	**71.20%**	1.22	**Mostly true**	**5**
4	**The wording of feedback after the exercises, or of other comments in this lesson, helped me feel rewarded for my effort.**	3.30	**66.00%**	1.39	**Moderately true**	**6**
5	**It felt good to successfully complete this lesson.**	4.66	**93.20%**	**.**75	**Very true**	**1**
6	**It was a pleasure to work on such a well-designed lesson.**	4.52	**90.40%**	**.**76	**Very true**	**2**
All items of the questionnaire		4.02	**80.40%**	**.59**	**Mostly true**	

Total No = 50 Participants

This table shows the level of agreement about the role of Satisfaction as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 3.30 (71.2%) out of 5 to 4.66 (93.2%) out of 5.

The total degree of the dimension was 4.02 (80.40%) which indicated that **"The role of Satisfaction as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was mostly true from the respondents' point of view.**

Thus, the following table indicates the level of implementing strategies in Saudi universities to motivate students to use e-learning systems. It is noted that students were satisfied and confident about their achievement in the unit, while they scored a medium level for attention and relevance.

TABLE 5-47: AVERAGE RANGE FOR LEVEL OF IMPLEMENTING MOTIVATIONAL STRATEGIES FOR SAMPLE (FIRST UNIVERSITY)

No.	Dimension	Average	Level
1	**Attention**	3.37	**Medium**
2	**Relevance**	3.56	**Medium**
3	**Confidence**	3.67	**High**
4	**Satisfaction**	4.02	**High**

5.4.13 Saudi University (2) sample

In this section, I analyse the sample of the selected units in Saudi University (2). The samples collected from the students in each unit were gathered and used as one sample.

a. Attention

To establish the role of Attention as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and the standard deviation to find out if the average level of approval of the study sample (second university) on the items of this dimension had reached a higher degree than Neutrality. Table 5-48 illustrates these results.

TABLE 5-48: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE INDIVIDUALS (SECOND UNIVERSITY) ON THE ITEMS RELATED TO THE FIRST DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	**There was something interesting at the beginning of this lesson that got my attention.**	2.76	**55.20%**	1.13	**Moderately true**	10
2	**These materials are eye-catching.**	3.31	**66.20%**	1.19	**Moderately true**	5
3	**The quality of the writing helped to hold my attention.**	3.76	**75.20%**	1.22	**Very true**	1
4	**This lesson is so abstract that it was hard to keep my attention on it.**	3.12	**62.40%**	1.30	**Moderately true (reverse)**	8
5	**The pages of this lesson look dry and unappealing.**	3.45	**69.00%**	1.49	**Slightly true (reverse)**	4

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
6	**The way the information is arranged on the pages helped keep my attention.**	3.55	**71.00%**	1.16	**Very true**	**2**
7	**This lesson has things that stimulated my curiosity.**	3.21	**64.20%**	1.06	**Moderately true**	7
8	**The amount of repetition in this lesson caused me to get bored sometimes.**	2.60	**52.00%**	1.44	**Mostly true (reverse)**	**12**
9	**I learned some things that were surprising or unexpected.**	3.26	**65.20%**	1.16	**Moderately true**	6
10	**The variety of reading passages, exercises, illustrations, etc., helped keep my attention on the lesson**	3.48	**69.60%**	1.35	**Very true**	3
11	**The style of writing is boring.**	2.71	**54.20%**	1.31	**Moderately true (reverse)**	11
12	**There are so many words on each page that it is irritating.**	2.85	**57.00%**	1.18	**Moderately true (reverse)**	9
All items of the questionnaire		3.17	**63.40%**	**.57**	**Moderately true**	

Total No = 58 Participants

This table shows the level of agreement about the role of Attention as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 2.60 (52.0%) out of 5 to 3.76 (75.20%) out of 5.

The total degree of the dimension was 3.17 (63.4%), indicating that "**The role of Attention as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was moderately true from the respondents' point of view.**

b. Relevance

To determine the role of Relevance as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and standard deviation in order to find out whether the average degree of approval of the study sample (second university) on the items of this dimension had reached a higher degree than Neutrality. Table 5-49 illustrates these results.

TABLE 5-49: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE INDIVIDUALS (SECOND UNIVERSITY) ON THE ITEMS RELATED TO THE SECOND DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	**It is clear to me how the content of this material is related to things I already know.**	3.05	**61.00%**	1.18	**Moderately True**	9
2	**There were stories, pictures, or examples that showed me how this material could be important to some people.**	3.78	**75.60%**	1.04	**Mostly True**	2
3	**Completing this lesson successfully was important to me.**	3.86	**77.20%**	1.19	**Mostly True**	**1**
4	**The content of this material is relevant to my interests.**	3.14	**62.80%**	1.18	**Moderately True**	8
5	**There are explanations or examples of how people use the knowledge in this lesson.**	3.59	**71.80%**	1.81	**Mostly True**	**5**
6	**The content and style of writing in this lesson convey the impression that its content is worth knowing.**	3.57	**71.40%**	1.01	**Mostly True**	**6**
7	**This lesson was not relevant to my needs because I already knew most of it.**	3.71	**74.20%**	1.21	**Slightly true (reverse)**	**3**
8	**I could relate the content of this lesson to things I have seen, done, or thought about in my own life.**	3.50	**70.00%**	1.14	**Mostly True**	**7**
9	**The content of this lesson will be useful to me.**	3.60	**72.00%**	1.17	**Mostly True**	**4**
All items of the questionnaire		3.53	**70.60%**	**.59**	**Mostly True**	

Total No = 58 Participants

This table presents the level of agreement about the role of Relevance as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 3.05 (61.0%) out of 5 to 3.86 (77.2%) out of 5.

The total degree of the dimension was 3.53 (70.6%) which indicated that "**The role of Relevance as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was mostly true from the respondents' point of view.**

c. Confidence

To determine the role of Confidence as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and standard deviation to

establish if the average level of approval of the study sample (second university) on the items of this dimension had reached a higher degree than Neutrality, as the following table illustrates.

TABLE 5-50: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE INDIVIDUALS (SECOND UNIVERSITY) ON THE ITEMS RELATED TO THE THIRD DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	**When I first looked at this lesson, I had the impression that it would be easy for me.**	3.26	**65.20%**	1.24	**Moderately true**	**5**
2	**This material was more difficult to understand than I would like for it to be.**	3.98	**79.60%**	1.15	**Slightly true (reverse)**	**1**
3	**After reading the introductory information, I felt confident that I knew what I was supposed to learn from this lesson.**	3.66	**73.20%**	1.16	**Mostly True**	**3**
4	**Many of the pages had so much information that it was hard to pick out and remember the important points.**	3.02	**60.40%**	1.24	**Moderately true (reverse)**	**9**
5	**As I worked on this lesson, I was confident that I could learn the content.**	3.22	**64.40%**	1.20	**Moderately true**	6
6	**The exercises in this lesson were too difficult.**	3.21	**64.20%**	.99	**Moderately true (reverse)**	**8**
7	**After working on this lesson for a while, I was confident that I would be able to pass a test on it.**	3.91	**78.20%**	1.00	**Mostly True**	**2**
8	**I could not really understand quite a bit of the material in this lesson.**	3.22	**64.40%**	1.24	**Moderately true (reverse)**	**6 rep.**
9	**The good organization of the content helped me be confident that I would learn this material.**	3.54	**70.80%**	1.26	**Mostly True**	**4**
All items of the questionnaire		3.45	**69.00%**	**.63**	**Mostly True**	

Total No = 58 Participants

This table shows the level of agreement about the role of Confidence as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 3.02 (60.4%) out of 5 to 3.98 (79.6%) out of 5.

The total degree of the dimension was 3.45 (69.00%), indicating that "**The role of Confidence as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was mostly true from the respondents' point of view.**

d. Satisfaction

To establish the role of Satisfaction as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and standard deviation to find out whether the average degree of approval of the study sample (second university) on the items of this dimension had reached a higher degree than Neutrality. Table 5-51 below presents these results.

TABLE 5-51: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE INDIVIDUALS **(SECOND UNIVERSITY) ON THE ITEMS RELATED TO THE FOURTH DIMENSION**

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	**Completing the exercises in this lesson gave me a satisfying feeling of accomplishment.**	4.16	**83.20%**	1.11	**Mostly True**	**3**
2	**I enjoyed this lesson so much that I would like to know more about this topic.**	3.47	**69.40%**	1.16	**Mostly True**	**4**
3	**I really enjoyed studying this lesson.**	3.21	**64.20%**	1.28	**Moderately True**	**5**
4	**The wording of feedback after the exercises, or of other comments in this lesson, helped me feel rewarded for my effort.**	3.21	**64.20%**	1.20	**Moderately True**	**5 rep.**
5	**It felt good to successfully complete this lesson.**	4.22	**84.40%**	1.08	**Very True**	**2**
6	**It was a pleasure to work on such a well-designed lesson.**	4.28	**85.60%**	1.01	**Very True**	**1**
All items of the questionnaire		3.76	**75.20%**	**.73**	**Mostly True**	

Total No = 58 Participants

This table shows the level of agreement about the role of Satisfaction as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 3.21 (64.2%) out of 5 to 4.28 (86.6%) out of 5.

The total degree of the dimension was 3.76 (75.2%) indicating that **"The role of Satisfaction as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was mostly true from the respondents' viewpoint.**

Therefore, the following table shows the level of implementing strategies in Saudi universities to motivate students to use e-learning systems. It is noted that students were satisfied with their achievement in this unit, while other dimensions scored a medium level.

TABLE 5-52: AVERAGE RANGE FOR LEVEL OF IMPLEMENTING THE MOTIVATIONAL STRATEGIES FOR SAMPLE (SECOND UNIVERSITY)

No.	Dimension	Average	Level
1	**Attention**	**3.17**	**Medium**
2	**Relevance**	3.53	**Medium**
3	**Confidence**	3.45	**Medium**
4	**Satisfaction**	3.76	**High**

5.4.14 Saudi University (3) sample

In this section, I analysed the sample of the selected units in the third Saudi University. The samples collected from the students in each unit were gathered and used as one sample.

a. Attention

To determine the role of Attention as one of the strategies successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and standard deviation to establish if the average degree of approval of the study sample (third university) on the items of this dimension had reached a higher degree than Neutrality. Table 5-53 illustrates these results.

TABLE 5-53: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE INDIVIDUALS (THIRD UNIVERSITY) ON THE ITEMS RELATED TO THE FIRST DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	**There was something interesting at the beginning of this lesson that got my attention.**	2.96	**59.20%**	1.36	**Moderately True**	12
2	**These materials are eye-catching.**	3.48	**69.60%**	.94	**Mostly True**	10
3	**The quality of the writing helped to hold my attention.**	3.58	**71.60%**	1.29	**Mostly True**	8
4	**This lesson is so abstract that it was hard to keep my attention on it.**	4.33	**86.60%**	.99	**Not true (reverse)**	1
5	**The pages of this lesson look dry and unappealing.**	4.00	**80.00%**	1.33	**Slightly true (reverse)**	4
6	**The way the information is arranged on the pages helped keep my attention.**	3.87	**77.40%**	1.03	**Mostly True**	6
7	**This lesson has things that stimulated my curiosity.**	3.75	**75.00%**	1.12	**Mostly True**	7
8	**The amount of repetition in this lesson caused me to get bored sometimes.**	3.69	**73.80%**	1.18	**Slightly true (reverse)**	5
9	**I learned some things that were surprising or unexpected.**	3.44	**68.80%**	1.16	**Mostly True**	11
10	**The variety of reading passages, exercises, illustrations, etc., helped keep my attention on the lesson**	4.06	**81.20%**	1.21	**Mostly True**	2
11	**The style of writing is boring.**	4.01	**80.20%**	1.20	**Slightly true (reverse)**	3
12	**There are so many words on each page that it is irritating.**	3.50	**70.00%**	1.45	**Slightly true (reverse)**	9
All items of the questionnaire		3.87	**77.40%**	**.93**	**Mostly True**	

Total No = 52 Participants

This table reveals the level of agreement about the role of Attention as one of the strategies successfully applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 3.50 (70.0%) out of 5 to 4.33 (86.6%) out of 5.

The total degree of the dimension was 3.87 (77.4%) which indicated that "**The role of Attention as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was mostly true from the respondents' point of view.**

b. Relevance

To establish the role of Relevance as one of the strategies successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and the standard deviation to find out whether the average degree of approval of the study sample (third university) on the items of this second dimension had reached a higher degree than Neutrality, which is illustrated in following table.

TABLE 5-54: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE INDIVIDUALS (THIRD UNIVERSITY) ON THE ITEMS RELATED TO THE SECOND DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	**It is clear to me how the content of this material is related to things I already know.**	3.54	**70.80%**	**.**80	**Mostly True**	8
2	**There were stories, pictures, or examples that showed me how this material could be important to some people.**	3.75	**75.00%**	1.08	**Mostly True**	6
3	**Completing this lesson successfully was important to me.**	4.27	**85.40%**	**.**95	**Very True**	**2**
4	**The content of this material is relevant to my interests.**	3.44	**68.80%**	1.15	**Mostly True**	9
5	**There are explanations or examples of how people use the knowledge in this lesson.**	3.56	**71.20%**	1.23	**Mostly True**	**7**
6	**The content and style of writing in this lesson convey the impression that its content is worth knowing.**	3.94	**78.80%**	1.07	**Mostly True**	5
7	**This lesson was not relevant to my needs because I already knew most of it.**	4.42	**88.40%**	**.94**	**Not true (reverse)**	**1**
8	**I could relate the content of this lesson to things I have seen, done, or thought about in my own life.**	4.00	**80.00%**	**.**95	**Mostly True**	**4**
9	**The content of this lesson will be useful to me.**	4.15	**83.00%**	1.06	**Mostly True**	3
All items of the questionnaire		3.94	**78.80%**	**.92**	**Mostly True**	

Total No = 52 Participants

This table shows the level of agreement about the role of Relevance as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 3.44 (68.8%) out of 5 to 4.42 (88.4%) out of 5.

The total degree of the dimension was 3.94 (78.8%), indicating that "**The role of Relevance as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was mostly true from the respondents' viewpoint.**

c. Confidence

To determine the role of Confidence as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and standard deviation to find out if the average degree of approval of the study sample (third university) on the items of this dimension has reached a higher degree than Neutrality. Table 5-55 presents these results.

TABLE 5-55: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE INDIVIDUALS (THIRD UNIVERSITY) ON THE ITEMS RELATED TO THE THIRD DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	**When I first looked at this lesson, I had the impression that it would be easy for me.**	3.81	**76.20%**	1.12	**Mostly True**	6
2	**This material was more difficult to understand than I would like for it to be.**	4.14	**82.80%**	1.07	**Slightly True (reverse)**	**3**
3	**After reading the introductory information, I felt confident that I knew what I was supposed to learn from this lesson.**	3.81	**76.20%**	1.21	**Mostly True**	**6 rep.**
4	**Many of the pages had so much information that it was hard to pick out and remember the important points.**	3.54	**70.80%**	1.34	**Slightly True (reverse)**	**8**
5	**As I worked on this lesson, I was confident that I could learn the content.**	3.37	**67.40%**	1.16	**Moderately True**	9
6	**The exercises in this lesson were too difficult.**	3.96	**79.20%**	1.14	**Slightly True (reverse)**	**5**
7	**After working on this lesson for a while, I was confident that I would be able to pass a test on it.**	4.46	**89.20%**	**.**83	**Very True**	**1**
8	**I could not really understand quite a bit of the material in this lesson.**	4.23	**84.60%**	1.06	**Not True (reverse)**	**2**
9	**The good organization of the content helped me be confident that I would learn this material.**	3.98	**79.60%**	1.08	**Mostly True**	**4**
All items of the questionnaire		4.06	**81.20%**	**.90**	**Mostly True**	

Total No = 52 Participants

This table demonstrates the level of agreement about the role of Confidence as one of the strategies successfully applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 3.37 (67.4%) out of 5 to 4.46 (79.2%) out of 5.

The total degree of the dimension was 4.06 (81.2%), indicating that **"The role of Confidence as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was mostly true from the respondents' point of view.**

d. Satisfaction

To determine the role of Satisfaction as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning, I calculated the mean and standard deviation to find out if the average degree of approval of the study sample (third university) on the items of this dimension had reached a higher degree than Neutrality. The following table illustrates these results.

TABLE 5-56: THE MEAN, THE STANDARD DEVIATION AND THE RELATIVE WEIGHT OF THE RESPONSES OF THE STUDY SAMPLE INDIVIDUALS (THIRD UNIVERSITY) ON THE ITEMS RELATED TO THE FOURTH DIMENSION

No.	Item	Mean	Percentage	Std. Deviation	Agreement Level	Rank
1	**Completing the exercises in this lesson gave me a satisfying feeling of accomplishment.**	4.31	**86.20%**	**.90**	**Very True**	**3**
2	**I enjoyed this lesson so much that I would like to know more about this topic.**	3.85	**77.00%**	1.24	**Mostly True**	**5**
3	**I really enjoyed studying this lesson.**	3.89	**77.80%**	1.20	**Mostly True**	**4**
4	**The wording of feedback after the exercises, or of other comments in this lesson, helped me feel rewarded for my effort.**	3.71	**74.20%**	1.11	**Mostly True**	**6**
5	**It felt good to successfully complete this lesson.**	4.67	**93.40%**	**.65**	**Very True**	**1**
6	**It was a pleasure to work on such a well-designed lesson.**	4.56	**91.20%**	**.73**	**Very True**	**2**
All items of the questionnaire		4.26	**85.20%**	**.87**	**Very True**	

Total No = 52 Participants

This table shows the level of agreement about the role of Satisfaction as one of the strategies successfully applied in Saudi universities to motivate learners to adopt e-learning, where the mean of the items ranged between 3.71 (74.2%) out of 5 to 4.67 (93.4%) out of 5.

The total degree of the dimension was 4.26 (85.2%) which indicated that "**The role of Satisfaction as one of the strategies that has been successfully applied in Saudi universities to motivate learners to adopt e-learning" was very true from the respondents' point of view.**

Therefore, the following table shows the level of implementing strategies in Saudi universities to motivate students to use e-learning systems. It should be noted that all dimensions of motivational strategies were high, which indicated the extent to which the units motivated students in the third Saudi University.

TABLE 5-57: AVERAGE RANGE FOR LEVEL OF IMPLEMENTING MOTIVATIONAL STRATEGIES FOR SAMPLE (THIRD UNIVERSITY)

No.	Dimension	Average	Level
1	**Attention**	**3.78**	**High**
2	**Relevance**	3.94	**High**
3	**Confidence**	4.06	**High**
4	**Satisfaction**	4.26	**High**

5.4.15 Comparison of the three universities

This section compares the samples of the three universities. One-way ANOVA comparisons were used to show these differences. The next Table (Table 5-57) shows the results of ANOVA for the Motivational Strategies Scale in the scores of students at the three Saudi universities (Uni1, Uni2, Uni3).

Table 5-58: Results of ANOVA for the Motivational Strategies Scale in the scores of students at three Saudi universities (Uni1, Uni2, and Uni3).

		Sum of Squares	Df	Mean Square	F	Sig.
Attention	Between Groups	13.766	2	6.883	13.663	.000
	Within Groups	79.095	157	.504		
	Total	92.861	159			
Relevance	Between Groups	10.399	2	5.199	10.729	.000
	Within Groups	76.086	157	.485		

	Total	86.484	159			
Confidence	Between Groups	5.503	2	2.752	5.677	.004
	Within Groups	76.101	157	.485		
	Total	81.604	159			
Satisfaction	Between Groups	6.979	2	3.489	6.391	.002
	Within Groups	85.715	157	.546		
	Total	92.694	159			
Total score	Between Groups	8.677	2	4.338	11.329	.000
	Within Groups	60.122	157	.383		
	Total	68.799	159			

This table showed that the values of (F), indicating the variance of the Motivational Strategies Scale (subdimensions and the total score), were statistically significant, whereas the values of F for Attention reached (F= 13.663; p <.001), Relevance (F =10.729; p <.001), Confidence (F= 5.677; p <.004), Satisfaction (F= 6.391; <.002) and Total score (F= 11.329; p <.001). This demonstrates that there were significant differences between the three groups in the total score of the motivation scale and its sub-dimensions, which made it necessary to conduct another statistical test to determine the direction of these differences. Scheffe test was used for post-hoc comparisons, and Table 5-59 shows the results.

Table (5-59): The significance of the differences in the motivational strategies scale between the average scores of students of the three groups (Uni1, Uni2, Uni3) using Scheffe test.

			Mean differences and significance		
Variable	groups	Mean of degrees	(1)	(2)	(3)
Attention	Uni1 (n=50) (1)	3.373	-	-	-
	Uni2 (n=58) (2)	3.171	.202	-	-
	Uni3 (n=52) (3)	3.865	-.492*	-.694*	-
Relevance	Uni1 (n=50) (1)	3.669	-	-	-
	Uni2 (n=58) (2)	3.446	.223	-	-
	Uni3 (n=52) (3)	4.058	-.389*	-.611*	-
Confidence	Uni1 (n=50) (1)	3.564	-	-	-
	Uni2 (n=58) (2)	3.533	.032	-	-
	Uni3 (n=52) (3)	3.942	-.378*	-.410*	-
Satisfaction	Uni1 (n=50) (1)	4.017	-	-	-
	Uni2 (n=58) (2)	3.756	.261	-	-
	Uni3 (n=52) (3)	4.260	-.243	-.504*	-
Total score	Uni1 (n=50) (1)	3.656	-	-	-
	Uni2 (n=58) (2)	3.476	.179	-	-
	Uni3 (n=52) (3)	4.031	-.375*	-.555*	-

*The mean difference is significant at the .05 level.

The results presented in the above table indicated the following:

For all sub-dimensions and the total score, students from Uni3 scored significantly higher.

- There were statistically significant differences at the level of .05 between the average scores of Uni1 students and Uni3 students on **Attention,** indicating that Uni3 students scored higher.

- There were statistically significant differences at the level of .05 between the average scores of Uni2 students and Uni3 students on **Attention** indicating that Uni3 students scored higher.

- There were statistically significant differences at the level of .05 between the average scores of Uni1 students and Uni3 students on **Relevance** indicating that Uni3 students scored higher.

- There were statistically significant differences at the level of .05 between the average scores of Uni2 students and Uni3 students on **Relevance** indicating that Uni3 students scored higher.

- There were statistically significant differences at the level of .05 between the average scores of Uni1 students and Uni3 students on **Confidence** indicating that Uni3 students scored higher.

- There were statistically significant differences at the level of .05 between the average scores of Uni2 students and Uni3 students on **Confidence** indicating that Uni3 students scored higher.

- There were statistically significant differences at the level of .05 between the average scores of Uni2 students and Uni3 students on **Satisfaction** indicating that Uni3 students scored higher.

- There were statistically significant differences at the level of .05 between the average scores of Uni1 students and Uni3 students on the **Total score** indicating that Uni3 students scored higher.

- There were statistically significant differences at the level of .05 between the average scores of Uni2 students and Uni3 students on the **Total score** indicating that Uni3 students scored higher.

5.5 Chapter Summary

This chapter analysed data resulting from the questionnaires completed by students for six units in three Saudi universities. It explained the Instructional Materials Motivation Survey (IMMS), which included 36 items, and how the survey was analysed. It used Keller's four dimensions of motivational design – Attention, Relevance, Confidence, and Satisfaction – to measure the sample findings of each unit. The chapter then analysed data resulting from the questionnaires for the six units in three Saudi universities.

Two units were collected from each university –one was optional and the other was a specialist unit. The optional units were similar across the three universities while the other three units were different.

For analysis, the data validity and consistency were measured using Pearson's correlation and Cronbach's Alpha. Then, different ways were used to analyse the data. First, each unit was analysed separately and then compared together. After that, the units from each university were compared against each other. Finally, each university was compared against the other two universities.

The findings of the study indicated that the three Saudi universities provided motivation, and the degree of motivation was estimated to be between intermediate and high. The satisfaction dimension was consistently high across units, while the other dimensions varied depending on the unit.

Regarding the differences between the units on the IMMS scale, the results found that some optional and mandatory units recorded similar medium levels in three dimensions of the IMMS scale – Attention, Relevance, and Confidence – while the respondents were highly satisfied by their achievement in these units.

Overall, this chapter provided valuable insights into the motivation of students to engage with online learning in Saudi universities. The findings of the study can be used to improve the design of online courses and enhance the motivation of students to engage with e-learning. More analysis of these results will be presented in the discussion chapter.

Chapter 6: Qualitative Data Findings

6.1 Overview

The previous chapter focused on analysis of the quantitative data from the questionnaires which were filled out by university students at three universities who participated in the study. These questionnaires measured motivation strategies applied in the online learning environment, using Keller's ARCS Model of Motivation (Keller, 2010). This chapter analyses the qualitative data obtained from the same Saudi universities. The data was collected through personal interviews and focus groups. Semi-structured interviews were conducted with academic staff and e-learning specialists at the three universities. The focus groups were used to collect data from students who enrolled in the online units at these universities (See Chapter 4 Research Methodology).

In this chapter the qualitative data collected at the three sites will be analysed and these findings will be compared and contrasted with the results of the quantitative data analysis. The chapter also aims to answer the main research question as well as two of the sub-questions, as shown in Table 6-1.

Table 6-1: Main research question and sub-questions discussed in this chapter

Main research question	
To What Extent Do Saudi Universities Motivate Students to Benefit from and Engage in E-Learning Systems?	
Sub-questions	
2	How do academic staff and e-learning specialists in Saudi universities perceive the importance of motivating and engaging students in e-learning activities? What strategies do academic staff employ, and what are students' opinions on motivation in e-learning?
3	What are the most prominent barriers to the implementation of e-learning in Saudi universities?

6.2 Data Analysis

In this study, thematic analysis was adapted from Braun and Clarke (2005) who identified six stages in the analysis: 1) familiarization, 2) generating initial codes, 3) searching for themes, 4) reviewing themes, 5) defining themes, and 6) writing. Initially, interviews with each stakeholder group underwent transcription and coding utilizing Quirkos software (which is qualitative analysis software). A

comprehensive review of all transcripts was undertaken to comprehend the perspectives of stakeholders and to acquaint myself with the content. Subsequently, the text was systematically coded according to the unique characteristics of each stakeholder group. When discussing motivation during the interviews, emergent codes were linked to the main dimensions of Keller's ARCS model of motivation which are: attention, relevance, confidence, and satisfaction. The codes were grouped together under a subcategory/category to come up with final reviewed themes. Section 6.4.4 will discuss emerging themes related to Keller's ARCS model.

Table 6-2 demonstrates how results are presented in this chapter. It is divided into five sections; each containing several parts, according to the findings of the interviews conducted with participants. The first section presents the findings of interviews with academic staff participants. The second section analyses the views of e-learning specialists. The third section presents the findings of the focus groups with students, while the fourth section discusses the emerging themes related to Keller's model. The final section compares the views of participants from all three categories on what distinguished e-learning from traditional education and what were the main obstacles and difficulties they faced in using e-learning.

Table 6-2: The outline of interview and focus group findings with each stakeholder group

No.	Category	Sub-category
1	**Interviews with academic staff**	• Tasks assigned to the academic staff. • Technical support for academic staff. • The lecturers' motivation for students to use and take full advantage of e-learning systems. • Measuring students' understanding and assimilation of the lesson.
2	**Interviews with e-learning specialists**	• Tasks assigned to the e-learning specialists. • Support provided to the academic staff from the point of view of e-learning specialists. • Support provided to students from the point of view of e-learning specialists. • E-learning specialists' motivation for students and academic staff and the idea of the student assistant project.
3	**Focus groups with students**	• How easy or difficult it is to use and browse the content in the Blackboard system from the students' point of view. • Services provided by technical support from the students' point of view. • Motivation in e-learning from the students' point of view. • The advantages of e-learning from the students' point of view and students' preferences between e-learning and traditional education. • Problems of e-learning systems from the students' point of view. • Problems facing King Saud University students. ○ Problems relating to exams.

		○ Problems relating to lectures. ○ Poor internet performance problems. • Problems facing King Khalid University students. • Problems facing Saudi Electronic University students. • The method of communication between students and academic staff from the students' point of view.
4	**Emerging themes related to Keller's ARCS model**	• Attraction • Relevance • Confidence • Satisfaction
5	**The opinions of the study participants in general**	• Difficulties in using the e-learning system. • Advantages of e-learning. • Disadvantages of e-learning. • Obstacles to e-learning. • Advantages of traditional education. • Unit development and quality. • E-learning development.

6.3 Case Studies and Participants

As explained in chapter four, two units were chosen in each university (a total of six units) and qualitative data was collected on them through interviews. The interviews were conducted with six academic staff members who provided these units and five e-learning specialists. In addition, six focus groups were organised (each group consisted of three to five students) (see Table 6.3).

Table 6-3: Number of Participants from Each University

No.	University Name	Academic staff	e-learning specialists	Students (Focus Group) First unit	Students (Focus Group) Second unit
1	Saudi University 1	2	2	4	4
2	Saudi University 2	2	2	3	5

3	Saudi University 3	2	1	5	5
Total		6	5	12	14
				26	

6.4 Findings

6.4.1 Academic staff

Semi-structured interviews were conducted with each of the six academic staff at the three Saudi universities (see Appendix 4). They were asked to provide an overview of the unit, then the interview focused on specific questions, exploring academic staff responsibilities, the support they received, how they motivate students, and the assessments used to measure the students' understanding of the lectures. The responses of the academic staff differed from one university to another on some questions, but were similar on others, perhaps due to the different educational systems in each university.

a. Uploading the content of the lecture on the Blackboard

During the interviews, I explored the importance of designing the pedagogy and online content in a way that might engage the students' attention and motivate them to focus on the lecture. The academic staff were asked questions about their role in designing the content of the unit on the university's learning management system. Was the academic staff member responsible for creating and uploading the content? Was the online unit content presented in a way that motivated students?

Academic staff at Saudi University 2 were given the unit content by the Deanship of E-Learning, as the following participant (A38) explained: "In the past, we were responsible for creating and uploading the content, and it took us more than three hours to create the content. This was about ten years ago; but later, each college worked in coordination with the Deanship of E-Learning in making comprehensive and general content so that the pedagogy and the content are sent to us at the beginning of each semester; and this is what we have been working on now for years". Similarly, another participant (A35) confirmed that: "The role of the unit coordinator has now become supervisory; even the activities are sent to us ready. As for the duties and tasks, the unit coordinator is the one who uploads them to the students and divides them throughout the semester".

Academic staff at Saudi University 3 academic staff were also given content for their unit: “The unit pedagogy and online content is sent to us from the college completely ready; and we upload it to the Blackboard system for students at the beginning of each lecture” (A33), which another participant (A32) thought worked well: “Our university is distinguished by the absence of anarchy regarding the matter of setting the curricula as the curriculum exists in the form of a book on the Blackboard system and the unit coordinator must adhere to the pedagogy provided and must commit to explaining and completing it during the semester”. It therefore became clear that academic staff in these two universities were not involved in the design of the unit content and pedagogy, and did not have a role in producing content that would motivate students because they did not design the content. Their task was to upload each part or lesson before the start of the lecture or at the beginning of each week.

However, at Saudi University 1 academic staff were responsible for setting the pedagogy, designing the content, and producing it in the final form for students, as this participant (A37) explained: “We are responsible for designing and the final presentation for students and uploading the lesson or content on the Blackboard system. … Finalizing the content takes us a lot of time”.

All academic staff in the three Saudi universities agreed that they were responsible for setting assessments and tasks and facilitating discussion among students on the Blackboard system which each of these universities used for e-learning. Saudi University 1 did not operationalize its e-learning system until about 2020, according to one participant (A37): “E-learning is considered long-standing as it was established long ago in the university, but it was not implemented until the past two years”. Hence, it was not fully applied during the data collection stage in 2020, and it was even considered new to some colleges that had not yet begun to implement it.

b. Technical support for academic staff (from their point of view)

In the past, lecturers may not have needed assistance in presenting the lesson to students. However, in e-learning, the lecturer is likely to need assistance from an e-learning specialist or from the Technical Support Department when a malfunction or technical issue occurs in the system. Throughout the interviews with academics, some questions focused on the assistance that e-learning specialists or by the university's Technical Support Department provided. They all reported that they received technical support both directly and indirectly, whether for some technical malfunction that occurred in the e-learning system, or for obtaining training to help them become familiar with it.

As one lecturer (A37) explained: “The Technical Support Department at the university provides everything that helps me in using the Blackboard system. … They applied a new service called ‘the Student Assistant’, which focuses on training a student from each discipline on how to help the lecturer

upload assignments and grades, in addition to recording attendance, absence, and every aspect relating to dealing with the Blackboard system". Some academic staff at Saudi University 1 liked the Student Assistant, as it performed many of the tasks assigned to the lecturer and assisted them with their workload; for example: "I have about six classes in this unit, and the student numbers in each class are about 100 students, making a total of about 600 students in all classes; this number makes it difficult to deal with all the students. Thus, the idea of the Student Assistant is a good one" (A37). Another participant (A36) valued the training provided: "I have taken three training courses about e-learning, and they have been very useful to me". Academic staff reported that the universities were now offering most training courses in how to use the Blackboard system throughout the year as participant A32 described: "In the past, the training courses were offered through physical attendance and face-to-face, but now we attend them online".

At Saudi University 2, training courses were offered to new academic staff members who needed to successfully complete them before teaching online units to students. As A34 reported: "There are training courses on how to design an assignment and how to send it to students or how to design a virtual class and the evaluation is set at 100 score. … "The university has set up a channel which contains videos that offer educational explanations, and I have benefited a lot from them in dealing with the Blackboard system". Thus, technical support or e-learning specialists in Saudi universities played a direct and supportive role in solving problems facing the system users.

c. The Academic staff strategies to motivate students to use and take full advantage of e-learning systems.

According to Keller and Suzuki (2004), studies indicate that motivation plays an important role in the development and improvement of student performance; if there is no motivation and innovation in using e-learning, students may not gain from using it and may become bored over time (Keller & Suzuki, 2004). This section will examine the methods used by academic staff to motivate students in the three Saudi universities.

Many of the academic staff were keen for students to fully benefit from the diverse content on the e-learning system, rather than from just attending lectures or submitting assignments. They mentioned some of the methods they used to motivate students. For example, most used educational videos and links: "The students often look for information when I upload a video on a topic relating to the lesson, for example, and I ask the students to watch and listen to this video, and then I give them some questions to assess their understanding of the video content; I see that this motivates them" (A34). Similarly, participant A36 "found that the students are motivated by the videos relating to the subject I am teaching. I found much interaction from the students. So, I divided the lecture into two parts: the first

part for the explanation and the second for those who wanted to watch the videos". Another (A32) reported that his university included in the educational content of videos explanations filmed by academic staff from the same university. However, an examination of the videos made by one of the universities revealed that several had been recorded more than eleven years ago but were still being used for online units.

Some academic staff indicated that extra marks were one of the best motivators for students to engage in the learning process, as one explained "I motivate my students with grades to attend lectures, so I tell them: whoever attends more than sixty percent of the lectures, I will give him additional marks" (A37). Likewise, participant A32 described how he divided: "the students into four groups and make a competition among them, and the winning group obtains the full marks". But some academic staff members had a different approach; for example, participant A35 argued that: "Marks are not everything, but my duty as a lecturer is to encourage students to attend; students differ indeed, some of them are diligent while others are not, and the extra marks students obtained come from three parts: exams, participation, and assignments; thus, there are no marks left to grade students for attendance for example".

The lecturer's approach was considered important. Participant 34 at Saudi University 2 argued that this was the main motivator for students to participate in the lecture on the system and contribute to the discussion page. The lecturer's teaching method may thus be one of the most important motivators. As well, lecturers should be flexible in their approach: "Through my experience in e-learning, I found that one of the most important motivators for students is not to restrict lectures to a specific time, but there should be flexibility in attending the lecture or the activity at any time, as there are students who may have a heavy study load or internship or tests in other units, such as medical and engineering students, for instance" (A35). This comment was about optional units more than specialised units.

Therefore, it seems that each staff member had various methods for motivating his students to take full advantage of the e-learning systems. Some added that attracting the students' attention and motivating them to attend lectures was one of the most important motivators (A35, A37, A33). Participant A37 described how he tried: "to make the students always ready to answer or participate; for that, I open conversations and voice interventions, and sometimes, I call the students by their names to hear something from them". Another lecturer (A36) had a similar approach: "Sometimes I go out of the lecture's topic and ask the students a question that attracts their attention or a question which is related to their own matters; and I find them interacting and focusing this way", while participant A35 admitted that: "Students undoubtedly get bored, and if the lesson is not attractive and appealing to the students, they will not focus on the lecture or may not attend it at all even". Another strategy was: "Arousing the

students' curiosity [which] motivates them to be mentally present in the lecture and sometimes makes them engage and participate", (A35). Directly engaging students in the lecture could also a motivator: "I assign some students to present the lecture, and this makes the students familiar with the content of the lesson and thus prepare for participation" (A35). Other approaches of academic staff included giving assignments to students and using images, colours, and discussion forums as motivators that make students spend a lot of time on the Blackboard system to solve assignments, share with their colleagues in the forums, and express their opinions (A32, A33, A35).

In essence, each lecturer had strategies to motivate students to take full advantage of these educational systems and to stay in constant contact with their lecturers and fellow students. Some participants agreed that motivators such as placing videos in the lesson, for example, benefited students. Later in the chapter, when analysing the views of students in focus groups, we will examine if the motivators reported by the academic staff had an effect on students and if they benefited from them.

d. Measuring the students' understanding and assimilation of the lesson

Academic staff at the three Saudi universities were asked if there was a method or standard on which they relied to ensure that all students comprehended the lesson. As most virtual classes have up to one hundred students (A34, A37), each academic had his own way of ensuring that students understood and assimilated lessons. Participant A37) explained that: "It is difficult to ensure that each student has understood the lesson because their numbers are large, but some indications which make me feel that the students have begun to understand and that their minds assimilated the topic is when they ask questions and make interventions which are related to the topic of the lesson". Similarly participant A36 reported: "I ask the students a question/questions during the lecture to see if they have understood the lesson" and added, "I give them every two weeks a quiz in no more than twenty minutes to see if they were following and understanding the previous content or not". (A36). A third lecturer also used continuous assessment: "Tests are the basis for me. Every time I upload content to the Blackboard system, I put a test on it because it's likely a helpful way to guarantee that the students have seen the content and understood it" (A36).

However, research projects rather than examinations could provide the best evidence of how students understood and assimilated the unit: "After I explain the project concept and how it works to the students, I ask them to do a project, for example; thus, I find that some students have come up with something better than what I explained to them, and this is certainly in my opinion an evidence that the students have understood". Discussion at the end of the lecture could also enhance and assess the students' understanding of the content: "After I finish the lecture, I hide some information from the presentation slide and ask the students about the missing words, or I draw a mind map and ask them to

fill it in with the main ideas that were explained to them. Thus, I assess their understanding and ensure that they have understood the lesson and that they were paying attention during the lecture". In sum, academic staff participants reported a variety of methods that benefitted students and could evaluate the extent to which they understood the scientific material presented through the e-learning systems.

6.4.2 The results of the interviews with the e-learning specialists

Interviews were conducted with each of the five e-learning specialists at the three Saudi universities, as detailed in the third chapter (see Appendix 6). The questions began with an overview of their work and then focused on the following topics:

a. The tasks assigned to e-learning specialists

The e-learning specialists provided services and technical support to the academic staff and students to keep them in constant contact with the e-learning systems and to solve their technical problems as required. One e-learning specialist (E31) explained: "We are responsible for the LMS in our university, which is available to more than sixty thousand student users and four thousand academic staff users". Other participants (E30 and E27) added: "We provide direct and indirect technical support through live chats during the official working hours" and "Our role is specified in solving students' and lecturer's technical problems, as well managing, preparation, and maintenance of servers on a continuous basis, especially before exam days". E-learning specialists also offered training: "One of the tasks assigned to us is to provide introductory training courses for students at the beginning of each semester on how to use the Blackboard system, as well as training courses for the academic staff throughout the academic year" (E29). These specialists worked under pressure, and most worked outside office hours to solve technical problems facing users, especially students (E27, E29).

b. Support that e-learning specialists provided to academic staff

Some e-learning specialists reported that they provided various services and training courses to academic staff, including a course on how to use the learning management system, and another about the system and the work of virtual classrooms. In addition, they presented lecturers with certificates for attending these courses to encourage their participation (E28, E29). The services also included assisting in developing courses and units, and solving any technical problems which the academic may face (E28, E29).

c. Support e-learning specialists provided to students.

The e-learning specialists reported that they provided students with various services, such as:

> We designed a simple interface for students that differs from the interface of the academic staff, where the students can access the Blackboard system from their computers. That is why we designed an application for them on the mobile phone in order to facilitate access to the Blackboard system. Through this application, the students can communicate with us to solve any problem facing them either by opening a help ticket, by instant chatting, or by calling us through the provided phone numbers(E31).

Most of the student's problems with the system were simple and could be easily solved (E27). They included difficulties with doing assignments, browsing, attending lectures, and answering quizzes: "We go under pressure from new students at the beginning of each semester, as they ask for help about almost all aspects and have many inquiries, and then the pressure on us decreases as the academic year progresses" (E28). The Training Department at the Deanship of E-Learning at Saudi University 2 had established a channel that offered training, and introductory programs on how to use the Blackboard system, as well as different courses where, upon completion, the student received a certificate of attendance (E28). These responses of the e-learning specialists indicated that they kept students engaged and connected to e-learning systems.

d. E-learning specialists' motivation for students and the idea of the student assistant project

The answers of the e-learning specialists regarding the motivation they provided to university students and academic staff varied. Some reported that they had no direct contact with students except when contacted, and therefore did not directly motivate students; rather, they motivated academic staff who in turn motivated the students (E29, E30). One e-learning specialist from another university explained that they motivated "students through the advertising messages on social media, in order to make students participate and benefit from the services, courses, and competitions that we provide through the Blackboard system". In addition, the Technical Support Department at Saudi University 1 introduced a project called the 'Student Assistant' which provided training for one student in each unit to become an assistant to the lecturer and upload content and assignments, record attendance and absence in lectures, and solve simple technical problems. The e-learning specialists reported that the assistant project motivated both students and lecturers and especially benefited older academic staff who had little experience in dealing with the Blackboard system, which was a relatively new application at Saudi University 1 (E30, E31).

e. E-learning specialists' motivation for academic staff

Participant (E29) reported that a team from the Deanship of E-learning evaluated the performance of academic staff with the Blackboard system and awarded encouragement cards for those who performed well, and these awards were announced at the Deanship of e-learning, college, and university level.

The E-learning Department at Saudi University 2 was unique in providing open courses (MOOC) which consisted of more than 220 units from various disciplines and colleges that were recorded by video and uploaded to the Blackboard system, and published on YouTube for the benefit of those who wanted to take advantage of or use them worldwide. In addition, there was a specific department for designing and developing courses, as well as a department for scientific experiments conducted at the College of Science, Medicine, Physics, and Chemistry. Several universities around the world teach some of these units after obtaining approval from officials at Saudi University 2 (E28).

6.4.3 The results of the student focus groups

Focus groups have been defined as: "A type of group discussion about a topic under the guidance of a trained group moderator" (Stewart, 2018, p. 687). The duration of each focus group in this study was between forty and fifty minutes; some were face-to-face, while others were conducted through the Blackboard system. The number of students who participated in each focus group ranged from three to five students. Two groups were conducted in each of the three universities, making a total of six focus groups and the total number of participants in all groups was twenty-six students. I was keen to engage participants during the focus groups through listening, smiling, and nodding, and giving them the space to speak (Irvine, Drew, & Sainsbury, 2013). Focus groups were distinguished from the individual interviews previously discussed, as participants were more interactive, and answered the questions in different ways that often led to some agreeing and other disagreeing with the views of other participants, as will be seen in some responses. The focus group began with me asking general questions about the units they were studying through the e-learning system, then concentrated on the following topics:

a. How easy or difficult was it to use and browse the content in the Blackboard system from the students' point of view

At the beginning of each focus group, the participants in this study were asked about the e-learning system used by their university, their opinions about the ease or difficulty of dealing with it, and if they had taken training courses at the start of their study on how to use it? Most of the participants agreed that this system was easy to use for browsing content, uploading assignments, and logging onto lectures (S1, S10, S14, S18, S20, S25, S26).

However, some students at one university reported that they had difficulty browsing the content on the Blackboard system for one of the units, which was an e-book. They could not move from one page to another, which was possibly due to the large size of the book (S3, S8). And as a result, “Because of the difficulty to browse, we had to buy the paperback book” (S8).

However, all participants confirmed that their universities provided them with videos and training courses about the basics of using the Blackboard system, especially for first year students, although the courses were not compulsory in all universities (S2, S13, S16). One participant (S19) explained that: “These training courses are not mandatory, but some of lecturers require us to take them. The course presenter on the training platform sent us two courses and required us to attend them on the first week before the lecture began”. Then I asked the same participant: ‘Did you benefit from this training course’? He replied: “Yes, because it was my first lecture on the Blackboard system; I learned how to log onto the class and how to activate the microphone because these things were new to me”. Some lecturers in the three universities encouraged first-year students to attend such courses, while others did not. Several participants reported that they had not attended any courses on using the Blackboard system because, as participants S18 and S16 commented: “With practice, I knew how to do the assignment and how to log onto lectures; I don’t think that I need the course” and “With time and practice, I learnt on my own, I didn't need to attend the extra training course".

b. Services provided by technical support staff from the students' point of view

Participants reported that technical support staff in their universities provided them with assistance if they encountered problems using the Blackboard system. For example: “The technical support at the university is very cooperative, I had a problem regarding the unit, and it was solved immediately” (S25); “The response from the technical support was quick” (S10); and “Whenever I am faced with a problem, I log in from another device, and if the problem persists, then I ask the Technical Support Department to solve the problem” (S17). These responses indicated that students in different disciplines, time zones, and geographical locations need the e-learning system to be available around the clock. Therefore, promptly solving technical issues kept students connected to the e-learning system and could motivate them to engage with it.

c. Motivation in e-learning from the students' point of view

Lucia and Martina (2014, p. 417) suggested that an e-learning system may be ineffective if motivators were not developed to make it interesting to the recipient.

Thus, this section aims to determine if students considered there were incentives that made them part of the educational process, especially in the e-learning environment. Several questions were asked, including: Do you see that there are things that attract your attention in the lesson or in the learning management system? Do you think that this system helps you learn? During the lecture, do you see that there are motivators from the lecturer that might help you participate and follow the lesson? Can you participate or express your scientific opinion? At the end of the lecture, do you feel confident that you will answer the exercises and assignments, as well as the test questions?

Some participants from Saudi University 2 and Saudi University 3 agreed that they did not find anything motivating in the content presented to them. Participants S17 and S9 explained that: "There is nothing motivating or striking" and "As a whole there is no motivator', while another added: "For me, I log onto the blackboard system in the first three days of the week to answer the assignments only, then I log out without finding anything that attracts my attention in order to stay" (S18). However, other participants reported that the system helped them learn, but the content provided to them needed updating (S13, S16). What worked well for this student was having a pdf of the subject uploaded: "Some professors put the entire subject for us on a PDF file, and I think that this motivates me to learn; this is because PDF format allows having it available to me in case I cannot access the system for any reason, such as the lack of the internet or the poor network, and some students are also accustomed to using the paper book and for this I think that the PDF will motivate them to learn" (S13).

Some students thought that the Blackboard system was only for assignments, even though they could only attend lectures through this system. Saudi University 2 was the only university where attending lectures was not compulsory, which may explain why some students did not log onto the system. But at Saudi University 1 and Saudi University 3 attending lectures formed part of assessment. Thus, if a student's attendance fell below a certain percentage, he could not log on to undertake assessment for the subject and would be deemed to have failed the unit (A32, A36, A37). Some participants from these universities reported that although the content was inactive, it was straightforward and did not pose any difficulty (S5, S24, S20).

Participant S25 from Saudi University 1 identified motivators that encouraged him to log onto and benefit from the e-learning platform, including lecturers recommending students attend training courses on the learning management platform, and "One of the lecturers gives us questions at the end of each lecture and this motivates us and pushes us to be mentally present and focused during the lecture, so that we can answer the questions expected at the end of the lecture."

During the focus groups participants used various words to indicate their personal feelings or impressions such ”for me”, “in my point of view”, “according to my experience”, and most answers were either confirmed of refuted by other students. All agreed that they could express their opinion during the lecture; for example: “I found some motivators in the Blackboard system, including that I can express my opinion during the lecture, participate in the comments, or ask a question, and the beautiful thing is that I do not stop or interrupt the lesson” (S17), and “Yes, I can express my opinion easily" (S22). One participant added that the lecturer left the audio open, so that students could ask questions at any time during the lecture (S7), while others explained that: “According to my knowledge, if the number of the students in the lecture is large, the lecturer turns the microphone off and at the end of the lecture he gives time for questions” (S9) and “The students can present their opinion and their names appear on the system, and that sound, image and writing are available to share for everyone” (S1).

Some participants reported that at the end of the lecture they could do the assignment and answer quizzes, especially if the lectures were recorded (S24, S26). Recording lectures can be very important, because a student may need to listen to the lecture again in order to answer the questions, and this may constitute another motivator to understanding the lesson. A good lecture could also motivate students: “When the lecture’s content is well-explained and clear, and there is no distraction or interruptions from the students, I can answer the questions” (S16).

However, it was also important for students to concentrate during the lecture (S22) in order to answer the questions: “Depending on the concentration in the lecture, I can answer seventy percent to eighty percent of the questions” (S11).

In sum, opinions differed about the extent to which students felt motivated by the lecturers in benefiting from and participating in the e-learning systems. Some reported that there was nothing motivating them to stay on and benefit from the learning management system, and that there was no motivation from the lecturer.

Others indicated that the system helped them, and that the lecturer also motivated them to learn in different ways, and that they could answer the test questions. They confirmed that despite the inertness of e-learning systems, the lectures and lessons were clear and easy to follow.

d. **The advantages of e-learning from the students' point of view and students’ preferences between e-learning and traditional education**

The students in the focus groups identified how e-learning differed from traditional education. It helped them learn: “Yes, it makes learning easier, and the activities help us learn more” (S11) and provided more flexibility: “Certainly, there are those who want to learn but they do not have the ability, whether because of time or because they cannot attend the university, so this university gave them the opportunity to learn while taking into consideration other commitments in their life” (S5). Thus e-learning motivated students to continue their education even if they were working; for example, Saudi University 3 presented all its lectures in the evening.

One advantage of e-learning was that it saved both the student’s time (S2, S11). One participant (S26) explained that: “Attending lectures online saves my time and enables me to benefit from the rest of my day”, while another said it cut down on travel: “e-learning is very useful for me as it saves me from traffic and from searching for a parking space” (S13) Some students observed that academic staff were usually on time or even a little before the time set for online lectures, but if lectures were in a classroom, they might be late due to moving from one college or one classroom to another. Therefore, they considered that e-learning saved time (S19, S25). Among the other advantages of e-learning were recording the lectures: “we can watch them at any time” (S24), and again flexibility: “The lecturer engages us in choosing and determining the time of the lecture, and this helps us in choosing the most appropriate time for all of us, which undoubtedly motivates us to attend all the lectures” (S22).

Other advantages were tests (S20), quick results (S20) and minimal waste: “One of the most important advantages of the e-learning, in my opinion, is the preservation of the environment from waste papers, because there will be no waste as everything is digital on the learning management system” (S21)

In addition, participants were asked if they preferred face to face or online teaching. Their answers varied. Several identified impediments to e-learning: “e-learning is more flexible, but it is not suitable for all units” (S3), and “I believe that the e-learning is suitable for theoretical subjects only (S10).”

Similarly, participant S22 stated: “In my opinion, it may suit scientific units, but on condition that the units are explained to the students live on the whiteboard as if they were in the classroom.” However, some students preferred face-to-face learning over e-learning because physical attendance was more useful, and they interacted and engaged more than in e-learning (S4, S6).

e. Problems of e-learning systems from the students’ point of view

Given that e-learning in Saudi universities was provided through the Blackboard system, the problems reported by the students related to this system as well as to e-learning in general.

In this section, the views of students in each university on the problems with e-learning are considered separately.

1) Problems facing Saudi University 1 students

Three types of issues will be considered here: those related to examinations, to academic staff, and to internet connection. The most common problems related to examinations at Saudi University 1. For example: “In quizzes, sometimes the system does not count the correct answer, and when we click ‘next’ we lose the score” (S24) And some students had the Arabic language as the default display language, while for the lecturer it was English. Thus, when the student answered questions, they appeared in a different way in terms of the number order and order of the answers. So, the problem was in the display language and the interfaces of the e-learning system (S23). When were students asked ‘Was the problem discussed with the unit coordinator?’ they answered yes. Some lecturers were using Exam File, and all the monthly and final exams were through this application, while the assignments were via the Blackboard system (S24, S26).

Several participants claimed that some academic staff did not know how to use the Blackboard system: “One of the difficulties facing us sometimes is that a lecturer uploads a file to the system in a format that we cannot open either because of the large file size or the difference in the file formats supported” (S23) and: “The cause maybe that they did not receive sufficient training, or it may be due to the age of the lecturer and the difficulty he finds in dealing with the electronic systems in general” (S25).

The students from Saudi University 1 reported slow internet provided by the university (S19, S23, S21). One explained: “The problem I am faced with is the slow and ineffective internet at the university, and this will be difficult during exams” (S23), while another noted: “Yesterday we lost half of the lecture because the lecturer was using the university's internet network, and we could not hear his voice well, due to the frequent and repeated interruptions of the voice” (S22).

The solution was to equip all classrooms with strong and modern Wi-Fi devices, or before logging onto the lecture or the test, measuring the internet speed through the internet speed test application and then choosing the best and fastest network available (S26).

2) Problems facing Saudi University 2 students.

Some of the students from Saudi University 2 mentioned issues with the Blackboard system, including the delay in loading the page to access the student's account, even if the Internet was fast: “I encounter a delay every time I try to access my account on the Blackboard system (S18). However, participant

S16 disagreed: “I access the system quickly and I do not find any obstacles”. During the discussion, it became clear that participant S18 accessed the Blackboard system through his mobile phone application. A student in the same focus group agreed that logging on using a mobile phone application would indeed delay accessing the system.

Some participants mentioned that the internet speed varied from one place to another and from one classroom to another, and that the poor network caused embarrassment because if the internet was slow, the Blackboard system session could time out and would need to be logged onto again and again, and this impeded them from attending the full lecture (S12, S14, S18). This frustration was compounded if the lecturer also had slow internet: “The lecturer may have slow internet too, and still continues explaining the lesson, but the benefit is little for the students due to the frequent voice interruptions” (S13).

3) Problems facing Saudi University 3 students.

The views of students from the Saudi University 3 concurred with those of participants from Saudi University 2 and Saudi University 1. Their main problems were the Blackboard system, including difficulty in logging onto it and browsing the subject, as the following participants reported: “After I try more than one browser and more than one network, I become sure that the problem is in the system and not in the other components” (S1) and “I think the system either needs update or there is much pressure utilized on it from the users” (S7) and needed to be more interactive (S6). The difficulty of browsing books on the Blackboard system led some students to resort to buying the paper book of the subject (S3, S8). The presentation of lecturers could also be a problem: “I feel that the lecturer has memorized the lesson, but he does not understand it” (S9) and: “I feel that his words are not related to what exists in the book” (S4).

In conclusion, the main issues students reported related to internet connection and the LMS interfaces. Weak university internet made it difficult for academic staff to provide a stable online lecture where the screen did not freeze; consequently, students often became disengaged. In addition, technical issues related to LMS interfaces with inconsistent design led to the use of two languages in Saudi universities that differed in text direction.

f. The method of communication between students and lecturers from the students’ viewpoint

Participants were asked about role of the learning management system in communicating with lecturers. They mentioned that there was an icon in the Blackboard system through which they could send a

message to the lecturer, but this was not used very often. The most popular method of communication was in-person or more frequently through social media platforms, especially WhatsApp and Telegram.

Another means of communication was university email; however, it was not the favoured option, given the potential for delays in responses from both parties. Some lecturers were keen to respond to students as soon as possible and provided their personal phone numbers to communicate through WhatsApp: "The lecturer used WhatsApp at the beginning of the semester, then he moved to Telegram, and the latter was more organized in communication; and in my opinion, Telegram is better and faster than the university email and the conversation forums on the Blackboard" (S24).

some participants reported that lecturers assigned one student from each subject to act as a coordinator between them and the students, and they give him their personal phone numbers to avoid the inconvenience of being contacted by many students (S10, S17). Another approach was: "When I have a general question about the subject or assignments, I ask it on the discussion forum in the Blackboard system and receive the answer from the lecturer, and at the same time the rest of my colleagues benefit from the answer" (S16). When this failed, "The only option was to go to his office directly to get help from him" (S18).

Academic staff in the three Saudi universities tried to be accessible to students, answer their questions, clarify any confusion they may have, and provide their personal numbers to communicate via social media, as well as through their university email and the Blackboard system, but the latter two were used less frequently.

6.4.4 The comparison to Keller's ARCS model

This section reviews the interviews with academic staff and specialists and focus groups with students against Keller's ARCS model of motivation to assess the strategies used in this study compared to those in the Keller model.

a. Attention

It was noted in interviews that academic staff adopted many strategies that met the attention dimension. These included perceptual arousal, inquiry arousal, and variability.

For perceptual arousal, some academic staff gave assignments to students and used images, colours, and discussion forums as motivators to encourage them to spend a lot of time on the Blackboard system to solve assignments, share with their colleagues in the forums, and express their opinions (A32, A33, A35). They also tried: "to make the students always ready to answer or participate; for that, I open

conversations and voice interventions, and sometimes, I call the students by their names to hear something from them" (A37).

For diversity, academic staff participants mentioned that they used videos and links to other websites to explain the lecture to students. This was usually followed by asking them what they learned from the videos or the links which also provided a form of inquiry arousal. For example: "It is not possible to explain everything to them because the lecture time is limited, so I give the students on the blackboard system additional information in attractive media and videos to learn more about what I explained during the lecture" (A34).

Another form of variability in the attention dimension was providing students with a pdf of the content to allow them to access it offline: "Some professors put the entire subject for us on a PDF file, and I think that this motivates me to learn" (S13).

It should be mentioned here that using videos and images did not necessarily mean that the content was attractive; student participants mentioned boring content that was old and needed to be updated.

b. Relevance

The second dimension of the ARCS model is relevance which could be met through three strategies: goal orientation, motive matching, and familiarity.

The responses of interviewees reflected these strategies. For example: "I assign some students to present the lecture, and this makes the students familiar with the content of the lesson and thus prepare for participation" (A32). The importance of flexibility was also noted: "Through my experience in e-learning, I found that one of the most important motivators for students is not to restrict lectures to a specific time, but there should be flexibility in attending the lecture or the activity at any time" (A35).

Another approach was to engage students in a project: "After I explain the project concept and how it works to the students, I ask them to do a project. Thus, I find that some students have come up with something better than what I explained to them, and this is certainly in my opinion evidence that the students have understood" (36), or to use the discussion method at the end of the lecture to enhance and assess their understanding of the content: "After I finish the lecture, I hide some information from the presentation slide and ask the students about the missing words, or I draw a mind map and ask them to fill it in with the main ideas that were explained to them" (A33).

The interviews with the academic staff mostly did not appear to relate to the relevance dimension. They did not talk about linking the content of lectures to the student's present or future experience.

c. **Confidence**

The third dimension in the ARCS model is confidence which refers to the students' belief in achieving learning goals and being confident in their ability. There are three aspects: learning requirements, success opportunities, and personal responsibilities. Academic staff mentioned that the learning management system clearly outlined the learning goals and assessment methods so that students could understand how they achieve success in the subject (specifically Saudi University 2).

Students demonstrated their confidence in solving quizzes and completing assignments for their online units. For example: "One of the lecturers gives us questions at the end of each lecture and this motivates us and pushes us to be mentally present and focus during the lecture, so that we can answer the questions expected at the end of the lecture" (S25).

In addition, participant S22 said that understanding the lecture and answering the questions depended on the students' concentration during the lecture.

d. Satisfaction

The fourth dimension of ARCS model is satisfaction which can be achieved through strategies such as intrinsic reinforcement, extrinsic reward, and equity.

Interviewees provided many examples. Extra marks provided extrinsic reward: "I motivate my students with grades to attend lectures, so I tell them: whoever attends more than sixty percent of the lectures, I will give him additional marks" (A37). Another described how: "I divide the students into four groups and make a competition among them, and the winning group obtains the full marks" (A32).

Another lecturer provided an example of intrinsic reinforcement: "my duty as a lecturer is to encourage students to attend; students differ indeed, some of them are diligent while others are not, and the extra marks students obtained come from three parts: exams, participation, and assignments; thus, there are no marks left to grade students for attendance for example" (A35). A lecturer at Saudi University 2 maintained that the teacher's behaviour could be the main motivator for students to attend on-line classes (A34).

To sum up, while participants mentioned many strategies that aligned with the ARCS model, they emphasised their personal efforts to encourage and motivate students to engage with the content of the learning management systems.

6.4.5 The opinions of the study participants in general

As mentioned earlier, the qualitative data collection was through interviews with two different groups from each university and focus groups with students. Each academic staff member and e-learning specialist was interviewed separately, while students discussed e-learning in focus groups. There were both similarities and differences in the views expressed. Because of the importance of these opinions, and for the integrity of this research, and to preserve the rights of the participants, the key themes are listed below. This section has been divided into several parts, as follows:

a. Difficulties in using the e-learning system.
b. Advantages of e-learning
c. Disadvantages of e-learning
d. Obstacles to e-learning
e. Advantages of traditional education
f. Unit development and quality
g. E-learning development

a. Difficulties in using the e-learning system

Some of the academic staff members mentioned difficulties in using the LMS. One noted that: "The students' engagement in the Blackboard system is mandatory and they cannot deliver the assignment except through it, but there is a problem that usually appears in the first weeks of the beginning of each semester; the problem is that some students cannot upload the assignment through this system or may be faced with some difficulties in dealing with the Blackboard system, but this problem soon disappears over time" (A37). Another lecturer from a different university found that: "First-level students are communicating with us about their lack of knowledge about how to log onto the system and how to deal with it. On the other hand, there are active students who have full knowledge of the learning management system" (A35).

For students there were often problems accessing the online lecture: "Sometimes, around fifteen minutes of lecture time are lost trying to log onto the system" (S5).

Thus, the difficulties of the e-learning system were not major and were usually resolved by the academics.

b. Advantages of e-learning

Most participants saw advantages in using e-learning systems over traditional education. One advantage was sharing additional resources and creative activities, as the following lecturer (A37) explained:

> In the past, we used to present the lecture face to face and offer few activities due to the lack of lecture time. However, with the e-learning, we are now able to provide an enriching topic related to the lesson before the beginning of the lecture, then we present the lecture. After the lecture we offer many activities, as the e-learning facilitated the way between us and the student and linked between us and them all the time. This was not present in the traditional education as everything ends with the end of the lecture.

Another advantage was providing additional information: “When I talk about the World Trade Organization or the European Union, for example, it is not possible to explain everything to them because the lecture time is limited, so I give the students on the blackboard system additional information in attractive media and videos to learn more about what I explained during the lecture; and this is one of the advantages of the e-learning in my opinion” (35).

Saving time was identified as an advantage by both academic staff and students. One lecturer talked about “Giving the students the freedom to attend the lecture at the time they want to make them feel a sense of confidence, and desire to attend the lecture and focus on it” (A37). Similarly, students mentioned “There is flexibility in attending lectures” (S21) and “I took advantage of these hours to go to the gym to practice. If the lecture was traditional, a lot of time would have been taken in preparing, going to the university, searching for a parking space for my car and the traffic jam. Also, I will not be able to go to the gym centre until after five o'clock in the evening with the traditional education” (S26).

Another advantage of e-learning was reducing the stress of talking in front of other students:

> e-learning removed the barrier of fear and dread of error among many students; this is because when I ask a question, I find that most students want to answer unlike face-to-face education. I think the reason for this is that the students through e-learning do not see each other. So, if they make a mistake in the answer, they do not feel embarrassed as they would feel in front of their classmates in the classroom (A36).

Meanwhile, students reported that e-learning facilitated their learning; recording lectures enabled them to stay connected and return to the lectures whenever it suited them when preparing for assignments or examinations (S7, S12, S20). An e-learning specialist (E28) explained how: "We recorded most of the lectures, developed them, and uploaded them to YouTube."

A further advantage of e-learning was flexibility in attending lectures: "I can attend the lecture from anywhere and at any time, provided that the internet is available" (S24). This flexibility also related to geographic distance: "E-learning does not prevent a student who is in another city from attending the lecture even if he cannot attend physically, and this advantage is not offered in the traditional education" (A34).

e-learning systems also made it easier for students to attend the training courses offered by the university; previously they were offered face-to-face, which made it difficult for academic staff to attend because of other commitments or for students due to the distance between the training course and where they lived (E29).

Other advantages for students were saving the effort and cost of transportation to and from the university, as well as the cost of printing papers (S19, S25).

Finally, some lecturers considered that e-learning facilitated examinations for students, as well as marking. Moreover, the discussion forums in the e-learning systems made it easier for students to ask questions at any time (A34, A36).

c. Disadvantages of e-learning

Participants also reported disadvantages of e-learning. One disadvantage concerned transmission of values to students: "With regard to the units that I present to students, there are values and emotional goals that need to be addressed in a face-to-face manner in order to reach the recipient directly but presenting them through e-learning weakens them and does not reach the students as they should" (A37). Another was that "we lose some social ties between students, because creating a friendly relationship between students is very important" and e-learning "may cause introversion and isolation for some students, and this is what we really see in some students when we ask them to work in groups or in pairs, which result in complaints from some students that one of them does not work with the group, because they do not know each other, and there is no coalition or harmony between them" (A36). Moreover, in small classes some students became isolated and did not participate in the lecture (A37).

Other disadvantages were poor internet or frequent interruptions that could lead to students absenting themselves from lectures due to unsuccessful attempts to log onto the system (S10, S23, A34, A36).

Moreover, large classes of over 100 students prevented lecturers from knowing if students had understood the lesson.

d. Obstacles to e-learning

Participants were asked about obstacles that might impede or weaken e-learning performance. The most important obstacle reported was poor internet. For example: “We receive many complaints about the poor or non-existent internet, especially in the university's branches that are located in remote areas and villages in Saudi Arabia. Therefore, the university decided to convert some of the subjects in those branches to face-to-face lectures” (E28).

Other obstacles for e-learning specialists were poor infrastructure of the e-learning system which resulted in frequent server disruptions (E27) which could “impede some lectures and lower the level of interest” (A34) and lead to students losing up to half the lecture which could affect attendance and even prevent them from taking exams (S3, S10, S23).

But the main obstacle facing e-learning specialists was lack of interaction between the lecturers and students. For example: “Some students, especially the older ones of them (Who are almost between 35 to 40 years old), are demanding to have paper exams, but the university allows electronic exams. We try to help them with that. They find some difficulties at first, but later they overcome those difficulties” (E30). Another key obstacle was that students in pre-university stages were accustomed to traditional education. Therefore, when they started undergraduate studies and discovered that everything was through electronic systems, it took time for them to adjust (E28). Lecturers also needed to adjust because some were “not interested in using e-learning in presenting their lectures, either because they do not have sufficient skills in using computers, or because they believe that e-learning will increase the burden on them to follow the students in the forums and answer their inquiries. However, concerning the new generation of the academic staff, we do not find any difficulties in dealing with them, but rather they are creative” (E28).

For academic staff “Large numbers of students is an obstacle to e-learning” (A34) Moreover, students were seeking external assistance with assignments:

> as well as writing research and submitting them on the system. Some students even give their username and password to these people in order to log onto the student's account in the

> Blackboard system. They submit assignments and research on students' behalf. I have many stories in this respect, including a funny story that one of the students agreed with one of those who do assignments for money, and he thought that he will take care of everything in this subject and that he will answer it in the final examination, but he was surprised that the grade of the semester examination was not monitored for him and when he asked me I told him 'You did not attend the final exam here at the university'. Then he told me the truth which was that he paid someone to do everything on his behalf, and he thought that he will also set for the exam on his behalf; but on the other hand, we have distinguished students who attend and engage in lectures, and they constitute the majority (A35).

This problem was only common among some students at Saudi University 2. Academic staff, as well as officials in the Deanship of E-Learning have been trying to deter students from resorting to using external parties to write assignments.

e. Advantages of traditional learning (face-to-face)

During the interviews and focus groups, participants talked about the advantages of face-to-face education over e-learning. One lecturer found "emotional or human bonds and rapprochement with students in face-to-face education" and preferred "traditional education in terms of dialogue or conversation, as I see all the students face-to-face, and I see those who answer and those who do not. Those who participate and those who do not. However, in e-learning, I only see conversations and hear some voices from some of the participating students, not everyone" (A37). Similarly, students benefitted "more from face-to-face education and interact and participate with the lecturer more" (S5). and found e-learning "not the same as its strength and impact through traditional face-to-face education" (S24).

Teaching staff had "become accustomed to traditional education and find social communication in it. It is difficult to change because we did not find that in e-learning" (A34). They found

> that the classroom is full of students with their presence, but in the e-learning, if the student numbers in a class is one hundred for example, it does not actually exceed twenty students at best who attend, because attendance is not mandatory for students at our university … students in traditional education are immersed into the lecture and want to participate, and the lecture time may sometimes end, and we do not feel that because everyone interacts with the lecture (A35).

In essence, traditional education had several advantages over e-learning. But each method had advantages, disadvantages, and supporters and opponents.

f. The unit pedagogy development and quality

Some universities were keen to develop and assure the quality of their subjects on a regular basis, and they even established an integrated department to promote these tasks. Among the quality standards adopted in the design and development of a unit's pedagogy were motivational activities and interaction in the online unit; the students' interaction with the content; and students' interaction with each other or with the lecturer. All these activities helped to motivate students (E28). One of the universities in this study had an "integrated team … that is concerned with evaluating the units every month. The evaluation is done on the quality of the unit, the number of lectures held, the questions asked in the discussion board, how the discussion was, and how the lecturer interacted" (E29). But some academics did not see the importance of quality standards: "they simply put content in Word or PDF files which I call the silent content" (E28). An e-learning specialist from another university mentioned that: "In the Development and Quality Department, we have developers and designers for learning and graphics, who take the content and develop it, then present it to the evaluation committee for comments and improvements, if any, to be finally handed over to the college that requested the development of the unit" (E31). All participants in this study praised e-learning specialists, whether in solving problems they faced or their prompt responses. Thus, e-learning specialists were key to the success of e-learning.

g. E-learning development

Participants discussed the recent development in e-learning (E31). One e-learning specialist described how it had "become much easier than it was in previous years. The percentage of users' visits from university students and the academic staff in 2014 was about forty percent, and in 2020 it amounted to around eighty percent; and a member of the academic staff is now able to upload the content of the lesson through his mobile phone from anywhere, not like before" (E35). Another explained how "tests and examinations have developed as the results are available for the students to see as soon as they submit the answers, the result is announced to them directly. This was not the case in the past" (E30). Academic staff also noted how e-learning had developed in stages: "the most important of which is that it broke the previously established routine, which was focusing on teaching and presenting the lessons only, as it added wide options ... students can send, talk, request support, express remarks, evaluate the lesson and the lecturer ... these options made it easier for students and the lecturers and saved their efforts and time" (A32).

However, students anticipated further developments and improvements and hoped that their university would expand the units provided through the e-learning (S21). E-learning became even more necessary, especially during the COVID-19 crisis which caused a total shutdown of face-to-face education in most countries around the world.

6.5 Chapter Summary

This chapter presented the results of the interviews and focus groups with participants from the three Saudi Universities. They provided valuable reflections on their experience of using the e-learning management system in the Saudi universities, which became an essential tool for many educational sectors during the COVID-19 pandemic. This chapter was divided into five sections.

The academic staff were the first group in the interviews. The questions they were asked focused on the content of lessons on the e-learning system, the role provided by the Technical Support Department, the most important methods they used to motivate students to take full advantage of e-learning, and the key methods they used to ensure that they understood the lesson. The results showed that some of the colleges affiliated to these three Saudi universities were responsible for developing and producing the content of lessons for students. Academic staff were only responsible for uploading the content to students on the Blackboard system and managing the subject, with no opportunity to produce content to motivate students.

However, one of the three universities assigned this role to an online unit presenter who created, added, and finalized content on the learning management system. Unit presenters reported that they tried to motivate their students to attend and engage in the lesson and included pictures and videos (related to the lesson) in the content. They also added short tests at the end of the lecture or assigned small projects.

For e-learning specialists questions centred on the services provided and motivators for academic staff and students. One of the most important services was providing technical support, solving technical problems, providing training courses, helping academic staff with virtual classrooms, developing their units, and evaluating their interaction with the system and with students. The results indicated that e-learning specialists perform their role professionally.

The third section presented the results of focus groups with students. The questions they were asked focused on their views on e-learning systems at their universities, and motivators offered to them by academic staff and e-learning specialists.

The results indicated that some students reported the content did not motivate them or attract their attention, and that it was considered inert. Others mentioned that their access to the Blackboard system was limited to uploading assignments or solving short quizzes. However, some students found the units on the Blackboard system easy, even though the video-recorded units were often old. Academic staff motivated them to learn, and the system also helped, and they could answer the test questions with ease.

These results highlighted the advantages of e-learning, and how students have benefited through saving time, assessment methods, and the speed of results. However, they also reported poor internet performance, especially in university campuses located outside the main cities.

The next section focused on comparing the interviews against Keller's ARCS model of motivation. Many of ARCS strategies were applied in this study. While these mostly related to the personal efforts of academic staff, improvement and guidance are necessary to ensure the effectiveness of these strategies to motivate students.

Finally, the opinions of participants from each of the three categories were analysed. This revealed that while academic staff had some difficulties with e-learning, these were quickly resolved. They included students' lack in knowledge about how to use the learning management system, and difficulties in accessing it. Some of academic staff saw e-learning as leading to isolation of students and weakened social relations between them. Another important obstacle reported was lack of student interaction; and paying external parties to write their assignments.

The results showed the enthusiasm of some universities to develop online units, follow-up with the academic staff, and evaluate their performance. Participants also reported that e-learning and examination systems had developed significantly. More importantly, one of the main motivators for using e-learning was its flexibility and it saved effort, money, and time.

The next chapter will discuss the main results from the quantitative and qualitative data and answer research questions by comparing the results, based on Keller's Instructional Model of Motivation (ARCS Model) (Keller, 2010).

Chapter 7: Discussion

7.1 Overview

The previous chapter presented qualitative data from interviews with academic staff and e-learning specialists, and from focus groups with students at the three Saudi universities in this study. The literature review, Chapter three, illustrated that there are few studies focused on motivating students in Saudi universities, and almost no studies on motivating students to benefit from e-learning systems. This research, as outlined in chapter one, aimed to explore the strategies used by Saudi universities to motivate students to use, engage in, and benefit from e-learning systems. Three Saudi universities were identified from which to collect data. Qualitative data were collected from three categories at each university through open, semi-structured interviews with six academic staff participants, with an average of two participants from each university, as well as five e-learning specialists. In addition, twenty-six students participated in focus groups, with an average of three to five students in each of two units selected from each of the three universities, making a total of six units. As for quantitative data, 160 responses were obtained from students through questionnaires distributed during the same period as qualitative data collection across the three universities, which aimed to measure the level of motivation among students using Keller's ARCS motivational model, which included 36 items (IMMS) (Keller, 2010). A triangulation method was used in collecting mixed data to achieve greater credibility in interpreting and supporting the results, as suggested by Cresswell, (2009).

This chapter presents a discussion of the results of this study in order to answer the research questions through analysing and comparing quantitative and qualitative results. Cresswell (2009) noted that mixed methods research that uses a triangulation approach seeks similarities and convergence in data findings, which this chapter will try to achieve. Then, after discussing the most significant results, they will be compared to previous studies – mentioned in Chapter Three –to ascertain the prevailing approach in the three Saudi universities participating in this study and to verify if there were specific strategies used by these universities to motivate students to use, engage in, and benefit from e-learning. Figure 7.1 shows the structure of this chapter.

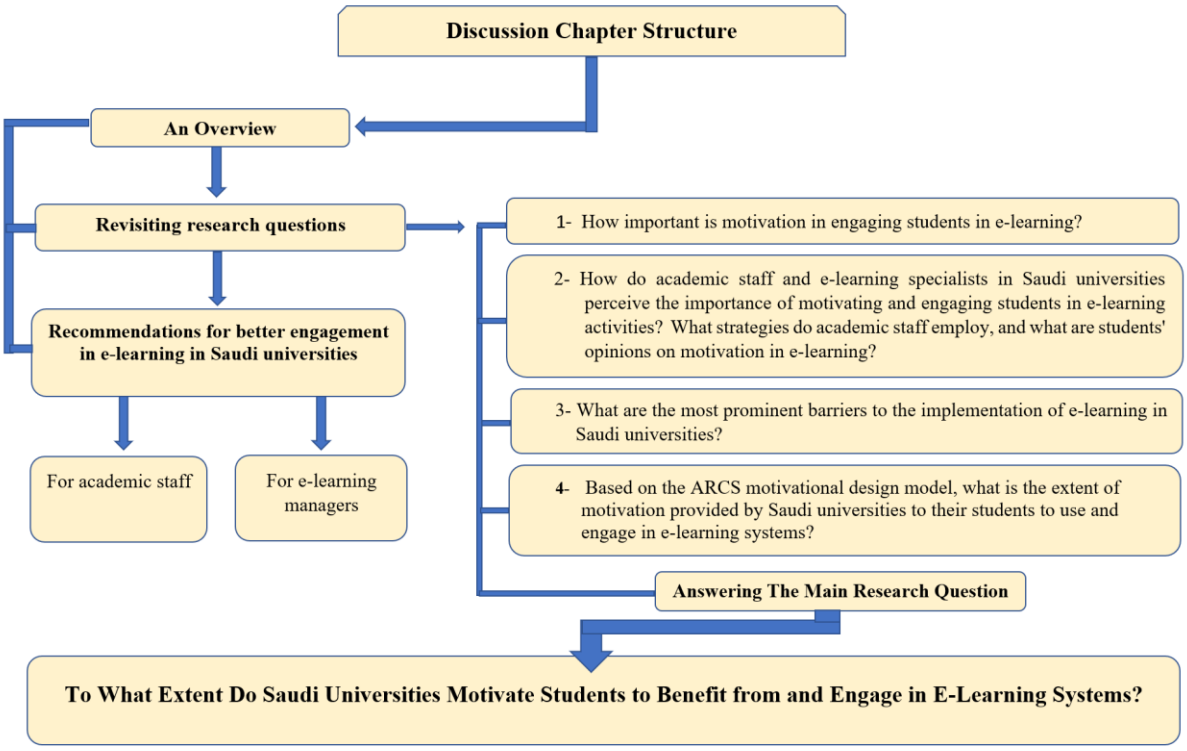

Figure 7-1: Structure of the discussion chapter

7.2 Revisiting the Research Questions

In this section, the sub-research questions will be answered through discussing the results of the study and comparing them with existing literature that may be consistent with the thesis results of the study, or this study may add new insights. At the end of this discussion, the main research question will be answered. After that, recommendations drawn from the results of the study will be proposed and directed to key stakeholders – academic staff and e-learning officials in Saudi universities –to improve the experience of using e-learning.

7.2.1 Question one: What is the importance of motivation in engaging students in e-learning?

To answer this question, we first need to know that motivation in e-learning plays a crucial role in influencing student engagement and their academic progress (Alhabeeb & Rowley, 2018). As discussed in Chapter 3, motivation can be intrinsic or extrinsic, and it greatly influences students' level of enthusiasm and commitment to the learning process (Ryan & Deci, 2000). Various studies, including those of Al-Jaberi (2018), Kaid Mohammed and Ali (2017), and Kew Si et al. (2018), confirmed that

e-learning environments can promote students' motivation. When students are motivated to learn, they show increased interest and active engagement in their learning activities.

This is consistent with the results of the present study, as one of the academic staff (A36) participants indicated that his students were motivated through using videos related to the unit he was teaching, which led to greater interaction by the students.

The importance of motivation in e-learning is further highlighted by Al-Shehri, (2010), Alhabeeb and Rowley (2018), and Federico, (2000), who emphasised the need to understand students' impressions, perceptions, and motivation towards e-learning. Tailoring e-learning experiences to match students' motivational needs and preferences can lead to successful e-learning implementation. In addition, Almaiah & Alyousef (2019) stressed that well-designed e-learning systems that facilitate clear understanding of unit content and assignments were more likely to effectively motivate students to engage.

Nevertheless, it is necessary to recognise the potential challenges associated with e-learning, as highlighted by Abou El-Seoud et al. (2014). Students who lack motivation may struggle in lessons provided via e-learning systems, which may lead to weak or lack of engagement in lectures and thus to failure.

Students from one of the three universities indicated that they did not feel motivated; Q17 complained: "There is nothing motivating or eye-catching", while Q18 commented: "For me, I log into the Blackboard system at the beginning of each week to answer assignment questions then I log out, but I do not find anything motivating to keep logged in".

To address this lack of motivation, it is advisable for educators to take into consideration the recommendations of Nehme (2010), such as providing an explanation of the e-learning environment for new students, promoting interaction between students, and alleviating students' fear and anxiety.

Other students participating in the study indicated that one of the academic staff advised them to attend training courses on the Blackboard system in the first year, which motivated them and alleviated their fear and anxiety about the e-learning system through which they would learn (Q25), (Q17).

Through actively interacting with students and addressing their concerns, teachers can create a motivating, enjoyable e-learning environment that promotes engagement and success.

Motivation in e-learning is not limited to students' enthusiasm but extends as well to the quality of the learning experience. Hu et al. (2016) pointed out that e-learning tools and infrastructure, although important, may not be fully utilised without motivating students and emphasised the importance of motivation to ensure they benefit from available resources and technologies. Furthermore, Hunget al.

(2010) demonstrated that students who are intrinsically motivated tend to excel in e-learning environments. We therefore find that intrinsic motivation fosters a deeper commitment to learning, which makes it an integral part of student engagement.

Consistently, one of the academic staff in this study discovered that some students had intrinsic motivation that pushed them to try to learn more about the unit he was delivering; so, he cooperated with an American company that offered educational videos related to the unit and provided his students with more knowledge about it (A36).

Student engagement in e-learning is pivotal to effective learning experiences. Engagement refers to the time and effort students invest in learning tasks and activities, both inside and outside the virtual classroom (Kuh & Umbach, 2004). Student engagement in the learning process enhances their sense of belonging and motivation and encourages them to interact with their peers and teachers.

This seems consistent with the results of the current research. One academic staff (A32) participant described how he assigned "some students to present the lecture, and this makes them aware of the content of the lesson and thus ready to participate", while another (A35) indicated that arousing the students' curiosity motivated them to be mentally present in the lecture, and sometimes triggered their willingness to engage in the learning process. This engagement is crucial in e-learning environments, as students may experience feelings of isolation through distance education (Kuh & Umbach, 2004). Therefore, various methods, such as incorporating discussion forums and asynchronous communication, have been applied to promote student engagement and create a sense of community in e-courses (Alshehri et al., 2019).

The responsibility for promoting student engagement in e-learning is a topic of debate among researchers (Lonn, & Teasley, 2009; Zanjani et al., 2012; Rubin et al., 2010; Nicol & Macfarlane-Dick, 2006). Some argue that academic staff have prime responsibility for engaging students because of their experience and understanding of the benefits of e-learning (Lonn & Teasley, 2009). Others see that students should actively engage themselves, taking advantage of the flexibility offered by e-learning platforms to engage in the units' materials and with peers (Zanjani et al., 2012; Rubin et al., 2010). A balanced perspective, which emphasises shared responsibility between teachers and students, seems wise, as Nicol and Macfarlane-Dick (2006) assert. Thus, an effective collaboration and clear communication between academic staff and students in a unit can create an engaging e-learning environment.

Ultimately, motivation and student engagement in the educational process are an integral part of the successful e-learning experience. Motivated students are more likely to engage in academic units and activities, leading to improved academic performance. However, it is essential for the academic staff to

create an engaging learning environment that encourages active engagement, interaction, and a sense of belonging which ultimately facilitates the success of e-learning initiatives.

7.2.2 Question two: How do academic staff and e-learning specialists in Saudi universities perceive the importance of motivating and engaging students in e-learning activities? What strategies do academic staff employ, and what are students' opinions on motivation in e-learning?

The answer to this question has been divided to cover several aspects, as follows:

a- Academic staff perceptions of motivating and engaging students in e-learning in Saudi universities

Reviewing previous literature in the Saudi context, indicated that there were only a few studies focused on motivation in education, especially in higher education, and on motivating students to use e-learning and engage in it.. Some studies dealing with motivation were found but related to other aspect of education; for example – as mentioned in Chapter 3 – one study that focused on motivating students to use English as a second language (Kaid Mohammed & Ali, 2017), and another that focused on motivating academic staff to develop an electronic course (Salloum et al., 2019). Given the results of the interviews conducted with academic staff in the current study, light was shed on the strategies they used to motivate students and engage them in the educational process through the e-learning system. It is important to realise that the methods of organising e-learning in these universities differed according to the policies of each university and were affected by the role of the academic staff, and educational factors and systems applied in each university. Therefore, the answer to this question will be discussed from several perspectives:

First: Creating the content of the unit and uploading it to the Blackboard system

One difference between the universities related to the responsibility of academic staff in creating and designing the content of the unit. Saudi Universities 2 and 3 followed a model in which the academic staff were not directly involved in designing e-learning content, as one participant(A33) explained: “The unit and electronic content are sent to us completely ready; and we only upload them to the students’ Blackboard system at the beginning of each lecture”. The academic staff received the entire unit’s content from the Deanship of E-Learning, which minimised their role in being able to formulate content that might motivate students and engage them in the educational process, as interviewee A35 confirmed: “The role of the unit coordinator has now become supervisory”. This may be consistent with

Al-Jaber's (2018) observation that: "the academic staff do not motivate students to engage in e-learning activities, and this leads to students' perception that the e-learning system is complex and difficult to use, which is reflected on their acceptance of e-learning and their engagement in it". In contrast, academic staff at Saudi University 1 played a more active role; they were responsible not only for establishing teaching methods, but also for designing and presenting the content as they saw fit, giving them greater control over the delivery of content and the ability to engage students and draw their attention to the lesson.

Second: Strategies to motivate students

Data derived from interviews with academic staff in Saudi universities indicated that there were no strategies developed by their universities to motivate students to use e-learning systems and engage in them. However, they tried to motivate students in the e-learning environment through different methods that they considered appropriate, based on their experience; to engage students in the educational process. One common strategy reported by some academic staff was using educational videos and links which they found made the content more appealing and increased students' engagement, as participant A34 described: "… they are keen to watch the video clips that I upload for them ... I see that this motivates them". Al-Shehri (2010) emphasised that academic staff need to understand what motivates students to engage in the e-learning environment, as student motivation and engagement may determine the success or failure of e-learning.

Offering incentives, such as extra marks for attending lectures, was another strategy to encourage motivation, as participant A37 reported: "I motivate my students... I tell them: Those who attended more than sixty percent of the lectures will get extra marks". However, not all academic staff relied on this approach; for example, participant A35 explained that: "Marks are not everything... marks are obtained through three components: exams, engagement, and assignments; therefore, there are no additional marks left for students' attendance at lectures, but it is my duty as a lecturer to encourage them to attend".

Flexibility in scheduling lecture times, given the other commitments of students, was a further strategy used by some academic staff In addition, some lecturers used Blackboard technologies, such as chat boards and audio to engage students and keep them attentive, and considered that this motivated students. Innovative teaching methods, including assigning students to deliver lectures, using pictures and colors, and making use of discussion forums, were also used to motivate students.

These strategies were consistent with the findings of other studies (Almaiah & Almulhem, 2018; Alhabeeb & Rowley, 2018) which concluded that integrating different multimedia components such as videos, animation, and audio recordings to illustrate the course and represent complex concepts in the course was essential, and a well-prepared e-learning unit had a significant impact on its actual use and the desired results. Such strategies promoted the learning process and encouraged students to accept and use the e-learning system.

Overall, these strategies reflected the adaptability and creativity of the academic staff in the e-learning environment.

Some of the initiatives of academic staff seemed to be fruitful in motivating students and thus in interacting and engaging in the e-learning environment. The results of the students' questionnaires in this study showed that their satisfaction rate with the motivation provided to them recorded the highest average score in the ARCS four aspects – Attention, Relevance, Confidence, and Satisfaction – where satisfaction reached a score of 4.33 (on a scale of 1-5). This indicated a high level of agreement among participants that e-learning units gave them a sense of satisfaction and accomplishment in some universities. The satisfaction rate among the participants from the Saudi University 1, as in Figure 5.1, reached (4.11), while the highest score at Saudi University 3 was 4.33, (Figure 5.3), and 3.75 at the Saudi University 2 (Figure 5.2).

Third: Measuring the student's understanding of the lesson presented through the e-learning system

Assessing student understanding in e-learning environments presented significant challenges for most academic staff due to the huge number of students in virtual classrooms, as participant A34 explained: "I have six classes…each class has a hundred students". The academic staff at the universities participating in this study used a variety of methods to ensure students' understanding of the unit content, including encouraging them to ask questions and opening space for contributions related to the lesson. This enabled the lecturer to measure and know the extent of their understanding. It is necessary to motivate students in the educational process by engaging them in the lecture, which contributes to improving their learning performance and eliminating dropout from virtual lectures (Wang & Eccles, 2012). Quizzes were often used to assess understanding. Presenting research projects also helped students apply what they understood about the lesson, which reflected the extent of their assimilation of the content. In addition, discussion was used at the end of lectures to evaluate students' understanding. One academic staff member (A33) described his method: "After I finish the lecture, I hide some information from the presentation slide and ask the students about the missing words, or I draw a mind

map and ask them to fill it out with the main ideas that were explained to them. This is how I evaluate their understanding and make sure that they understood the lesson, and that they were attentive during the lecture". The importance of this approach was affirmed by Kuh and Umbach (2004) who demonstrated that engaging students and discussing the lesson made them feel a sense of belonging, motivated them to interact with their colleagues and teachers, and saved them from feelings of isolation that may arise from learning behind computer screens. This in turn kept them attentive throughout the lecture. In general, the methods used to measure students' understanding and assimilation of the lesson differ, given that they rely on the personal diligence and efforts of the academic staff. These methods may generally contribute to assessing students' engagement and understanding, and identifying the challenges posed by virtual classes with large numbers of students.

b- The opinion of e-learning specialists on motivating students

The perception of e-learning specialists in Saudi universities regarding the importance of motivating and engaging students in e-learning activities is a crucial aspect of their roles and responsibilities. Interviews conducted with them yielded many key ideas and opinions.

E-learning specialists are primarily responsible for ensuring that academic staff and students remain connected to e-learning systems by addressing their technical issues. One participant highlighted the scope of their tasks and responsibilities: "We are responsible for the learning management system at our university, which is available to more than sixty thousand student users and four thousand users from the academic staff" (E31). This demonstrates their vital role in ensuring an e-learning experience runs smoothly. They know that a negative e-learning experience can result from lack of technical support, or weak information security in the e-learning system (Zwaid, 2012; Bin Abdul Aziz Al-Sadhan et al., 2021).

As well, e-learning specialists provide great support to students. They have designed user-friendly interfaces and mobile applications to facilitate access to e-learning systems and enable students to easily seek help. As one participant explained, "Through this application, students can communicate with us to solve any problem they may be faced with, either through opening a help ticket, instant chat, or through calling us via the phone numbers provided" (E31). This highlights their commitment to ensuring students' access to the necessary support mechanisms, and underlines the importance of investing in continuous improvement in e-learning systems to overcome challenges and obstacles or to minimise their effects (Al-Asmari & Rab Khan, 2014).

Motivating students is a challenge for e-learning specialists. While some participants indicated that their direct contact with students was limited, others actively promoted services and units through social media and other means to encourage student engagement (E28). In addition, some universities had introduced innovative initiatives such as the 'Student Assistant' project, where students were trained to assist lecturers and assume specific responsibilities within the units. This project was perceived as a means of motivating both students and lecturers, which promoted a sense of engagement and cooperation in the e-learning environment (E30, E31).

c- The opinion of student participants on e-learning motivation

Students' opinions regarding motivation in e-learning at the Saudi universities in this study reflected a variety of experiences and perceptions. They highlighted an important issue that deserves attention. Students' perceptions of the motivational aspect of the content directly affected their engagement and learning outcomes and thus the success of e-learning, and this was consistent with other studies (Almaiah & Almulhem, 2018; Alhabeeb & Rowley, 2018).

Some students expressed dissatisfaction with the motivational strategies, or lack of them, in e-learning platforms. Participant S17 complained: "There is nothing motivating or eye-catching", a sentiment that may reflect some students' awareness of the importance of motivation, and the lack of motivation in some aspects in the e-learning environment. Lack of motivation may result in loss of interest, which led some students to use the e-learning system only to complete assignments, without any intrinsic interest in the content provided, as the following participant (S18) explained: "For me, I log into the Blackboard system just to answer assignment questions, and then I log out without finding anything that catches my attention". It was as if some students believed that there was little to trigger self-motivation in the e-learning platform. I was therefore keen to examine some of these courses during the data collection period at one of the universities. It became clear that the content was generally old, produced more than eleven years ago, and was presented to students every semester. One academic staff member (A32) agreed that: "It is old and must be considered for renewal". Al-Shehri et al. (2019) confirmed that poor design of some units can impact on students' interest in engaging in e-learning systems.

However, it is important to note that not all students shared this view. Some found motivation in specific aspects of the e-learning experience. For example, participant S25 highlighted the positive effect of lecturers who recommended attending training courses within the platform, which then encouraged some students to actively engage in and utilise the learning opportunities available to them.

In addition, interactive features of the platform, such as the use of microphones and chat to engage in discussions during the lecture, and opportunities for students to express their opinions and ask questions,

can significantly influence students' attitudes to engaging in the content and with their peers, thus raising their motivation levels. As participant S22 commented: “Yes, I can express my opinion easily”. Skinner & Pitzer (2012) noted that student engagement is fundamental to learning, while a study in Saudi Arabia indicated that engaging students in discussing the content of the lecture may help them exchange ideas and experiences with their teacher, whether the lecture was held synchronously or asynchronously (AlShehri et al., 2019). Moreover, it can promote their sense of community and engagement in the unit. This type of interaction can also help address any questions or concerns students may have and can lead to increased satisfaction with the unit and thus students' sense of the practicality of the e-learning system.

Some students who participated in this study recognised the potential of the e-learning management system, noting that revamping and improving the content could make it more motivating. Therefore, it is necessary to work on continuous improvement, keep pace with modern teaching methods, and provide training courses and support for teachers and students (Nasrallah, 2018). The current study revealed the importance of organised and clear lectures in motivating students, especially when lectures were presented coherently, without distracting attention. As student S16 confirmed, “When the lecture content is clear, I can answer the questions”. This indicates that when students feel more confident in understanding the content of the lesson, it leads to positive results, including their ability to answer assignments and tests properly. Furthermore, students found that making recorded lectures available was a motivating strategy as they could refer to them at any time, and it enhanced the use of the e-learning system. Participant S13 highlighted that those lecturers who provided lessons, references, and activities on PDF files within the e-learning management system, motivated students to access the curriculum and activities at any time, especially if needed offline.

The study also revealed that there was variation between universities in terms of attendance policies, which clearly affected students’ perceptions of motivation. Saudi University 1 and Saudi University 3 imposed mandatory attendance at lectures, which motivated students to engage in the e-learning environment. However, the lack of mandatory attendance at lectures at Saudi University 2 caused many students not to attend and interact in the lecture, as one academic staff member (A35) observed: “In the lecture that I give through the e-learning system, if the number of students registered for the unit is one hundred students, for example, the actual attendance usually does not exceed twenty students at best, because attendance is not mandatory for students at our university.”

In essence, students' views on motivation in e-learning platforms were multi-pronged. Although there was a notable sense of dissatisfaction among some students about not being motivated, interactive features, well-presented lectures, and personal efforts and diligence by some academic staff constituted

a source of considerable motivation for other students. These views emphasised the need for continuous improvement and innovation of e-learning environments, highlighting the importance of providing engaging content and utilising interactive tools to promote motivation among students. Addressing these simple issues will not only enhance students' academic progress but will also contribute to making full use of e-learning platforms in Saudi universities.

7.2.3 Question three: What are the most prominent barriers to the implementation of e-learning in Saudi universities?

Based on feedback from participants, the results of this study showed that there are several barriers that may hinder e-learning. As mentioned earlier, all Saudi universities use the Blackboard system for e-learning. This may indicate that the barriers identified by participants may apply to most Saudi universities. It is therefore important to uncover and list these barriers and seek appropriate solutions to them. One of the most prominent barriers mentioned by participants was weak internet infrastructure, especially at university branches located in remote areas, which led to difficulty in accessing educational resources and implementing e-lessons. Some considered it was a major barrier, especially during decisive activities such as exams. Academic staff also expressed their dissatisfaction with interruptions or poor communication during lectures, which wasted lecture time and reduced the level of interest among students. In addition, student participants (S3, S10, S23) reported that weak internet caused difficulty logging into the Blackboard system and browsing e-books at times, and could also lead to the poor quality of the lecture being presented, and in some instances caused them to lose half the lecture, which could affect their lecture attendance, which in turn could disqualify them from taking exams.

These findings concur with Kew Si et al.'s (2018) study that highlighted poor ICT infrastructure as a barrier to using e-learning systems for Thai university students.

One e-learning specialist (E27) in the current study indicated that weaknesses in internet infrastructure led to frequent downtime of servers, which was a barrier to e-learning. Al-Asmari & Rab Khan (2014) recommended the need for continuous development and improvement of e-learning systems to overcome barriers. E-learning specialists were acutely aware of the technical problems in universities which could hinder the use of e-learning and might even lead to teachers resorting to traditional teaching methods (face-to-face) in some units. especially in some remote areas (E28, E27).

Furthermore, the lack of interaction between lecturers and students could result in barriers to properly implementing e-learning, as e-learning specialists E30 and E27 acknowledged. This finding reflects Al-Jaber's (2018) view that lack of academic staff motivation to engage students in e-learning activities

contributes to students' misperception that e-learning is too complex, which inhibits their acceptance and engagement. Moreover, the reluctance of some older students to take tests on e-learning systems and their preference for paper tests may cause confusion in the exam room, which is consistent with Rahmatullah's (2021) finding that student dissatisfaction with the e-learning system at King Khalid University led to a low level of engagement in e-classrooms, and lack of academic integrity in test scores. In addition, several students in this study reported concerns about test scores within the Blackboard system, maintaining that correct answers were not consistently graded. But the problem was in the difference in the default display language between the student's device and the lecturer's display language, which affected the order of answers and their display on the system. The lack of interaction and communication between lecturers and students led to the emergence of such problems and could have been avoided through more effective communication. If not addressed, these issues can become barriers to properly implementing e-learning.

Another barrier inhibiting implementation of e-learning in the Saudi university education environment, as participants emphasised, was the refusal of some academic staff to present their lectures through the Blackboard e-learning system. in this respect, one e-learning specialists (E28) thought that some academic staff lacked adequate computer skills or believed that e-learning would increase their task of following up students in forums and discussions, and answering their questions. These findings concur with Kew Si et al.'s (2018) conclusion that the lack of teachers with experience in providing educational content and teaching online is one of the main barriers to e-learning, and also with Zewayed's (2012) view that teachers need experience and skills in using technology. Further studies have indicated that there are other barriers to e-learning including lack of technical support, weak system and information security, lack of teacher training, and lack of motivation (Zewayed, 2012; Bin Abdulaziz Al-Sadhan et al., 2021).

One additional barrier to e-learning was: "The large number of students" (A34). This academic considered that large classes were too hard to manage. He had six classes amounting to a total of six hundred students. He added: "On the other hand, I have a class of twenty master's students, and I have the ability to managing them completely, whether in terms of answering their questions, their attendance, or their research" (A34). Another academic (A35) added that a further barrier was external parties who help students with assignments for money as well as writing research and submitting it on the system. Some students even gave their username and password to these people to enable them to log onto the student's account in the Blackboard system. They then submitted assignments and research on the students' behalf. This problem was common at one of the universities in the study and some academic staff, as well as officials in the Deanship of E-Learning, were keen to ban this practice.

These were the most prominent barriers to implementing e-learning identified in the current research and aligned with the literature which also emphasised the need to develop strategies to remediate not only technical issues, but also educational and skill considerations to properly implement e-learning. This requires continuous development of the system, training for academic staff, and bridging the gaps to ensure the sustainability and effectiveness of e-learning in Saudi universities.

7.2.4 Question four: Based on the ARCS motivational design model, what is the extent of motivation provided by Saudi universities to motivate their students to use and engage in e-learning systems?

Creswell & Plano Clark (2017) drew attention to the benefit of a mixed methods research framework which is widely recognised among researchers as leading to convincing, supported conclusions. To answer question four, the main quantitative results obtained through analysing the academic units at the three Saudi universities were presented in Chapter Five and divided into four sections: The first section compared the results of dissimilar units at each university. The second section compared the results between similar units at each university. The third section presented the results of measuring motivation at each university separately, while the fourth section compared the level of motivation between the three universities in the study. Then, the results of the quantitative and qualitative data and previous literature were compared.

First: Comparing the dissimilar units in the three Saudi universities

The results of comparing the three dissimilar units showed that the strategies used in the three universities to motivate students to use e-learning systems were effective to some extent. The level of motivation ranged between medium to high, where the satisfaction dimension recorded the highest level of motivation at an average of 3.72, while the attention dimension received the lowest level at an average of 3.36. The dimensions of relevance and confidence were also found to be at a medium level, with average levels of 3.58 and 3.41 respectively (as depicted in Table 5-24 in Chapter Five). One of the indications that can be elicited from these results is that there is an apparent need for improvement in some areas of motivational strategies used in e-learning systems in Saudi universities, especially for the dimensions of attention and confidence.

Second: Comparing the similar units in the three Saudi universities

After comparing the three similar units in the three universities, the results showed across the four dimensions – attention, relevance, confidence, and satisfaction – that the average level of motivating

students to benefit from e-learning again ranged between medium to high. The study found that the average score for each dimension ranged from 2.66 out of 5 (53.2%) to 4.33 (86.6%). For example, the highest average score of 4.33 (86.6%) was for the satisfaction dimension, which indicated a high level of agreement among participants that e-learning courses yielded a feeling of satisfaction and accomplishment. In contrast, the attention dimension recorded the lowest average score of 3.42 (68.4%), which reflected a moderate level of agreement among respondents that attention-grabbing methods were used effectively in e-learning courses.

Third: Comparing the results of the optional and mandatory units at each university separately

a. Saudi University 1

The results of the comparison between the units of Saudi University (1) showed that the optional unit recorded high levels in relevance, confidence, and satisfaction, while the mandatory specialisation unit only recorded high levels in the satisfaction dimension. For example, Table 5-42 in Chapter Five demonstrated that the optional unit scored 3.83 for relevance, 3.91 for confidence, and 4.11 in the satisfaction dimension (on a scale of 1-5), while the mandatory specialisation unit scored 3.58 for relevance, 3.55 for confidence, and 3.74 for satisfaction.

b. Saudi University 2

The results of the analysis of the units at Saudi University 2 demonstrated that the optional and mandatory units recorded similar average levels in the attention, relevance, and confidence dimensions of the ARCS model scale. However, respondents were highly satisfied with their achievements in these modules. Table 5-43 showed that the optional unit scored 3.12 in the attention dimension, 3.57 in relevance, and 3.52 in confidence (on a scale of 1-5). However, the mandatory unit scored closely similar averages – 3.18 in the attention dimension, 3.48 in relevance, and finally 3.39 in confidence. As for satisfaction, it recorded the highest scores, which ranged between 3.72 and 3.75 for optional and mandatory units respectively.

c. Saudi University 3

The results of the comparison between the units at Saudi University 3 demonstrated high levels in all four dimensions of Keller's ARCS model. As depicted in Table 5-44, the scores for the mandatory unit were 3.36 in the attention dimension, 3.58 in relevance, 3.41 in confidence, and 3.72 in satisfaction (on a scale of 1-5). The optional unit's scores were also similar to the mandatory units with attention 3.42,

relevance 4.02, confidence 3.63, and satisfaction at 4.33 representing the highest score of the four ARCS' dimensions.

Four: Cross comparison of the results of the three universities

A cross comparison was made between the results of the three universities in the study which revealed that Saudi University 3 showed the highest level in all four dimensions of the Keller's ARCS model, followed by Saudi University 1. For the Saudi University 2, the comparison showed a high level of satisfaction of students with the content of the online unit, while the remaining three ARCS dimensions recorded an average level. Table 5-60 demonstrated that Saudi University 3 scored the highest level in all four dimensions, with scores of 3.78 for attention, 3.94 for relevance, 4.06 for confidence, and 4.26 for satisfaction (on a scale of 1-5). Saudi University 1 also recorded high scores ranging from 3.37 to 4.0, while Saudi University 2 received lower scores ranging from 3.17 to 3.76.

Comparison of the results of quantitative and qualitative data and previous literature

Cresswell (2009) noted that many articles which have used a triangulation approach in mixed methods research have compared the two types of data and presented the quantitative findings first in the discussion section, followed by relevant qualitative citations that support or contradict these findings. The comparison between the results of quantitative and qualitative data provides valuable insights into the motivation to use e-learning systems in the three Saudi universities in this study. Quantitative data, represented by scores obtained from the Keller's IMMS tool (Instructional Materials Motivation Survey), revealed varying differences in levels of satisfaction and engagement between the three universities.

As revealed by the quantitative results above, Saudi University 3 showed the highest level of satisfaction across all four dimensions of motivating students to use e-learning – attention, relevance, confidence, and satisfaction. This may indicate that students at Saudi University 3 perceived the content of the online unit was engaging, relevant to their studies, instilled confidence in their abilities, and ultimately their learning experience was satisfying. Saudi University 1 also received high scores on the ARCS dimensions scale, albeit slightly lower than Saudi University 3. However, Saudi University 2 scored lower on the ARCS dimensions scale, indicating a relatively lower level of satisfaction and engagement among its students.

Qualitative data, collected through interviews with academic staff and e-learning specialists and focus groups with students, provided a better understanding of the factors that influenced students' perceptions

and their experience of e-learning. The interviews and focus groups highlighted several important points that complemented the quantitative findings.

Regarding the role of academic staff, qualitative data revealed that the content of lessons in e-learning systems was primarily developed and produced by the colleges themselves, and thus academic staff took no part in developing, creating, or participating in it, which may have negatively affected their ability to come up with engaging and creative content for students. However, at the Saudi University 1, the creation, development, uploading, and finalisation of lesson content was assigned to the unit presenter, allowing for a more engaging learning experience for students. This result from the qualitative data was consistent with the higher scores obtained by Saudi University 1 in the attention dimension, as it may also have provided more resources and support for content development.

Qualitative data also highlighted the role of e-learning specialists in providing services and support to users. The results indicated that e-learning specialists provided technical support, solved problems, delivered training courses, and helped academic staff develop their courses. Participants revealed that e-learning specialists carried out their roles effectively, which may have contributed to the higher levels of satisfaction reported by students at Saudi University 3 and Saudi University 1.

Focus groups with students provided insight into their motivation and experience of e-learning. Some students said that in using the e-learning system they lacked motivation in the lesson content, while others found the lesson content as well as the e-learning system easy and clear. The qualitative data also highlighted the advantages of e-learning, such as saving time, testing methods, and immediate declaration of results. However, the students identified challenges such as weak systems or poor internet performance, especially at campuses outside large cities, as barriers to the effective use of e-learning.

Integrating quantitative and qualitative findings provided a more comprehensive understanding of participants' experiences of using e-learning at the three universities and the extent to which they felt motivated. The higher scores noted for Saudi University 3 and Saudi University 1 in the ARCS dimensions were consistent with the positive feedback elicited from interviews with the academic staff and focus groups with students. The qualitative data also revealed information about the roles of academic staff and e-learning specialists and their effect on students' motivation and the challenges they faced with e-learning systems.

It is noteworthy that only a few studies have focused on motivation in higher education in Saudi Arabia. Furthermore, there is a lack of research that specifically addresses students' motivation towards using and engaging in e-learning. However, previous studies have highlighted the importance of

understanding students' impressions, perceptions, and motivation for effective implementation of e-learning systems (Al-Jaberi, 2018; Iffat Rahmatullah, 2021; Hu et al., 2016; Al-Shehri, 2010; Alhabeeb & Rowley, 2018; Federico, 2000).

To bridge the gaps in this research, the current study aimed to investigate students' motivation in the context of e-learning systems and compare the results with previous studies. The findings of this study elicited from questionnaires revealed that Saudi universities used effective motivation strategies in promoting students' use of and engagement in e-learning systems. However, the results of the qualitative data indicated that the opinions of students who participated in this study were divided. Several confirmed that there were no motivating factors that would make them stay and benefit from the e-learning system; therefore, they logged into the system only if there was an assignment. This was evident in one university that did not make attending lectures mandatory. So, students only logged in to do an assignment, and some hired external parties to do their assignments. In contrast, the second group of participants found motivation through the lecturers' encouragement for them to take training courses on the system and to participate in forums. Nevertheless, there is a room for improvement, specifically in the dimensions of attention and relevance. The findings emphasise the need for further research to promote understanding of students' motivation and achieving successful implementation of e-learning systems in Saudi Arabia.

7.3 Answering the Main Research Question

To What Extent Do Saudi Universities Motivate Students to Benefit from and Engage in E-Learning Systems?

The results of the study revealed that there were no specific strategies developed by Saudi universities to motivate students to use and engage in e-learning systems. However, academics strove to motivate students in the e-learning environment through different methods that they deemed appropriate, based on their experience. One common strategy reported by academics was using educational videos and links which made the content more engaging and increased students' engagement.

Moreover, the results revealed that lecturers' encouragement of students to take training courses through the Blackboard system and to participate in forums was an important motivating factor for students to engage in e-learning. However, the study also identified challenges such as weak systems or poor internet performance, especially in campuses outside big cities, which were considered barriers to the effective use of e-learning.

In this study data was presented that suggested Saudi universities need to develop specific strategies to motivate students to use and engage in e-learning systems. The study recommends that academic staff should be involved in developing and creating e-learning content to ensure its attractiveness to students. In addition, it highlighted the need for further research to promote understanding of students' motivation and to achieve successful implementation of e-learning systems in Saudi Arabia.

Recommendations proposed for academic staff and e-learning officials in Saudi universities to promote engagement

As a restatement of the research focal point, this research focused on exploring the motivations used by Saudi universities to trigger students' desire to use the e-learning system and engage in it. Therefore, comparison between universities in terms of shedding light on the best and worst student experiences in e-learning is not applicable in this research.

.First: Recommendations to promote academic staff engagement in e-learning in light of the results of this study

1. Incorporating images, videos, and educational links into the lesson content has a significant impact on motivating students to interact and engage in the unit. It also attracts their attention and motivates them to learn more about the unit. This was confirmed by the students who participated in this study from the two Saudi universities 1 and 2.
2. Well-designed and clear lessons give students confidence and promote their sense of belonging and engagement in the unit. This was indicated by the quantitative results, which demonstrated that Saudi universities 1 and 3 recorded high levels in the dimension of confidence among students, as a result of efforts of some academic staff.
3. Encouraging students to attend and engage in the lesson through the e-learning system made them recognize and appreciate the importance of their engagement in the lesson and made them feel part of the lecture. This is highlighted by one of the academic staff who participated in the study, whose task is providing some lessons to the students. Another participant stressed to the students the importance of attendance using the incentive of obtaining full mark for participation for students who attend most of the lectures.
4. Providing clear guidelines and instructions on how to use the Blackboard system gives students the confidence and ability to use it and engage in it properly, as indicated by the student participants.

5. It is important to maintain constant communication with e-learning specialists to solve any problem lecturers may be faced with, or solve any issue negatively affecting the students, or the course of the educational process. This in turn is affirmed by all participants in this research.
6. Motivating students to benefit from the educational channels and training courses provided by the Deanship of E-Learning has had a positive impact on their progress and skills. This was confirmed by the students participating in this research at Saudi Universities 1 and 2.

Second: Proposed recommendations for e-learning officials in Saudi universities to foster engagement

1. The results of the interviews showed that using innovative and different methods in providing technical support and solving problems of the e-learning system users are faced with encourages users to continue using these systems. These methods include, for example: making 'help' icon available on the system interface, direct chat, making contact numbers available and sharing them with students and lecturers in classrooms, in addition to enabling "open e-ticket" to request help - as in the Saudi University 2 and using social media such as WhatsApp for example, as a modern and fast means of communication to solve problems as swiftly as possible.
2. Establishing a channel specialized in issues related to the field of e-learning, such as providing specialized training courses throughout the year and granting certificates to attendees in various specializations, motivates the academic staff and students to benefit from the e-learning system and activate it more. And this feature is what distinguished the Saudi University 2.
3. The research found that monitoring the performance of the academic staff regarding the use of the Blackboard system, and granting motivational cards to distinguished academic staff, motivated everyone to be creative, as in the Saudi University 2.
4. Lecturers' engagement in creating, adding and finalizing student content on the learning management system has a positive impact on their confidence that the lesson content will appeal to students and motivate them to learn, as demonstrated by the Saudi University 1.
5. Supporting the academic staff by providing continuous assistance, improving communication methods, and solving problems faster facilitates the educational process more.

7.4 Chapter Summary

In conclusion, this chapter has emphasised the fundamental importance of motivation in the success of e-learning, which will lead implicitly to promote students' engagement, given that motivation can be

considered one of the starting points towards achievement. The discussion highlighted the importance of motivation as an element constituting the first step in engaging students in the educational process. The chapter discussed the challenges facing e-learning, the need to find solutions to them, and the importance of focusing on the reciprocal relationship between motivation and effective use of educational resources.

The experiences of academic staff, e-learning specialists, and students at the three Saudi universities were explored. Some Saudi universities allowed academics to create content and use strategies such as educational videos and images. E-learning specialists contributed significantly to system functionality and engagement, through initiatives such as the Student Assistant project. Students' opinions on motivation ranged from dissatisfaction to being motivated by interactive features and well-presented lectures. The results revealed the need for continuous improvement and innovation in e-learning environments to promote engagement and motivation in Saudi universities.

Participants identified barriers to implementing e-learning in Saudi universities, including weak internet infrastructure, interruptions during lectures, lack of interaction, and large numbers of students in some e-classes. The study stressed the need for comprehensive strategies to address technical, education and skills-related barriers towards the sustainable and effective implementation of e-learning in the Saudi education environment.

The ARCS Motivational Design Model to assess motivation across the three Saudi universities using a mixed methods research approach provided clear insights. The study revealed differences in levels of motivation across the four dimensions, where University 3 ranked first with the highest levels of motivation. Integrating quantitative and qualitative data also provided a comprehensive understanding, indicating higher levels of satisfaction and engagement at specific universities, as denoted by the quantitative results.

The final section presented recommendations derived from the qualitative data, aimed at improving the e-learning experience in Saudi universities. These recommendations, directed to decision makers, academic staff, and e-learning officials, have the potential to contribute to the existing literature on the Saudi e-learning environment and to promote better student engagement and motivation.

Chapter 8: Conclusion

Chapter seven presented a discussion of the quantitative and qualitative results derived from interviews with academic staff and e-learning specialists at the three Saudi universities in this study, as well as focus groups with students. In addition, quantitative data were analysed through questionnaires answered by 160 student participants. The results of the quantitative and qualitative data were compared separately and then compared to previous literature. The chapter then made recommendations to stakeholders in the three universities, including academic staff and e-learning officials, to benefit from the results of this research and from the experiences of other universities.

This chapter aims to provide a summary of the key findings of this research, examine its contribution and limitations, and make recommendations for further research.

8.1 Summary of Key Findings

The results of this research revealed that motivation plays a pivotal role in the success of e-learning, as it positively impacts on students' engagement and academic progress. Results also showed the significance of the relationship between motivation and the use of educational resources available on the Blackboard system. In addition, the study discussed the responsibility for engagement in lectures, emphasising a balanced approach where both academic staff and students have a shared responsibility, which can create an attractive learning environment to facilitate effective collaboration between academic staff and the students. Another salient point derived from this research is the emphasis on the major role of motivation and engagement in the success of e-learning initiatives developed by universities.

Academic staff, e-learning specialists, and students in Saudi universities also emphasised the importance of motivating students and engaging them in e-learning. The academic staff demonstrated diverse roles in creating e-learning content with varying degrees of control across the three universities. The strategies they used included pictures, educational videos, and providing incentives such as extra marks to encourage students to engage more. Some of their efforts proved successful and were reflected in high student satisfaction rates. In addition, e-learning specialists demonstrated a vital role in ensuring system functionality, providing technical support, and introducing initiatives such as the Student Assistant project to promote engagement. Students' views about motivation ranged from dissatisfaction with perceived defects to finding motivation in interactive features, well-presented lectures, and the

efforts of academic staff. These views emphasised the need for continuous improvement and innovation in e-learning environments to foster engagement and motivation across Saudi universities.

But the research results also revealed major barriers to successful implementation of e-learning in Saudi universities. The main barriers included weak internet infrastructure, especially in remote university campuses, which caused difficulties in accessing resources and taking lessons electronically. As well, the lack of interaction between lecturers and students could contribute to students' perception of the e-learning system as far too complex to use. The unwillingness of some academic staff to deliver lectures through e-learning systems, often due to poor computer skills or workload concerns, was another barrier. The large number of students in online classrooms was a challenge for effective management of students, as was academic dishonesty when some students paid external parties to write their assignments.,

This study used Keller's (2010) ARCS Motivational Design Model to evaluate the motivation provided by the three Saudi universities to encourage students to engage in e-learning systems. A mixed methods research approach which combined quantitative and qualitative data was used to analyse the effectiveness of motivational strategies at these universities.

The first part of the study compared dissimilar units at the three universities, revealing that levels of motivation varied across the four dimensions, indicating the need for improved attention and confidence strategies. The second part compared similar units and showed medium to high levels of motivation across the four dimensions, where satisfaction was the highest and attention the lowest. The third part compared the optional and mandatory units within each university and showed variances in levels of motivation. The fourth part presented a cross-comparison of the results between the three universities, where University 3 scored the highest levels of motivation in all dimensions.

Integrating quantitative and qualitative data provided a comprehensive understanding of student motivation. Quantitative results indicated that University 3 and University 1 scored higher levels of satisfaction and engagement compared to University 2. Qualitative data highlighted the role of academic staff and e-learning specialists in developing content and providing support services, which impacted on student experience. Some students expressed dissatisfaction and lack of motivation, while others reported that they were motivated throughout the courses by stimulating and structured content, and satisfaction with the examination method.

Ultimately, the research results revealed the need for further research to understand students' motivation and promote successful implementation of e-learning systems in Saudi universities. The research also

concluded that there was a need for comprehensive strategies to address technical, education and skills-related barriers to ensure the sustainable and effective implementation of e-learning in Saudi universities. Finally, based on the results of the research data, several recommendations were proposed to decision makers in the three universities in this study, including academic staff and e-learning officials in Saudi universities, which may contribute to providing better engagement in improving the experience of e-learning in Saudi universities, and hence motivate students. As stated at the beginning of the thesis, some universities may benefit from the experience of other universities through the results of this study. Moreover, this research will make a significant contribution to the existing literature in the Saudi e-learning environment.

8.2 Summary of the Contributions

In general, this research sheds light on the current situation of e-learning in Saudi universities and provides valuable insights into the strategies academic staff and e-learning specialists used to motivate students and engage them in e-learning activities. The results of the study, in the context of e-learning, provide a reference point for developing effective motivational strategies that can promote student engagement and academic progress in e-learning systems in Saudi Arabia.

This research contributes to knowledge in the context of Saudi universities which may not be applicable in other cultures. However, more research would help to clarify this point. In general, some benefits are found as a result of this research which are listed below.

First, this research contributes to Alhabeeb and Rowley's study (2017) by many points:

· The sample is expanded to include universities that were not included in their study.

· Findings in this research support most of the findings of Alhabeeb and Rowley's study (2017). Acknowledging that there is a gap of more than 5 years between the two studies could refer to the lack of any improvement of e-learning environments regarding motivation.

· This study found that including the academic staff in designing the content of the online unit has a positive impact on their level of confidence as they address and understand what motivates their students to engage.

· This study contributes to the knowledge by finding that well-prepared content would help students feel confident about their performance and their ability to pass the subject.

Second, this research contributes to the knowledge by addressing the obstacles to engagement in the e-learning environment in Saudi Universities including weak internet infrastructure, interruptions during lectures, lack of interaction, and large numbers of students in some e-classes. This adds to the obstacles pointed out by the literature (Al-Ahmari & Amirault, 2017; Al-Jaber, 2018).

Third, this research contributes to the knowledge by applying Keller's model in Saudi Universities in the context of studying motivation for engaging with e-learning systems. Previous applications were limited to studies about teaching specific subjects in Saudi Schools.

Fourth, as I focus on motivations in the e-learning environment and how the nature of Saudi culture may affect the results, I found that there is a rare interaction between the instructors and the students (which is commonly happening in the classrooms) which consequently affects how students are motivated to engage with online content. This issue is facilitated by academic staff by providing multimedia, images and colours besides encouraging students to use discussion forums to get bonus. This contribution supports and extends what was found by Alshehri et al. (2019).

Fifth, this research differs from previous studies as it focuses on a very important topic which is motivating university students to benefit from e-learning systems and participate in it. As the Saudi Ministry of Education spends a lot in the field of e-learning, some studies on Saudi Universities, indicated that "Faculty members do not motivate students to participate in the e-learning activities, and this leads to the student's perception that the e-learning system is difficult to deal with." (Al-Jaber, 2018).8.3

Limitations

The size of study sample may be considered relatively small, as it includes only three out of the twenty-nine universities in the Kingdom of Saudi Arabia; and this may not allow for wider generalising of the results to other universities in the country. In addition, the study focused only on the perspectives of academic staff, e-learning specialists, and students; it did not include the perspectives of other stakeholders such as university administrators, educational policy makers, or those e-learning systems officials in the Kingdom of Saudi Arabia, such as the National Center for e-Learning in Riyadh. Moreover, the study was limited to using questionnaires, interviews and focus groups as data collection

methods, which may not cover the full range of factors affecting students' motivation and engagement in e-learning.

Another limitation was that the study focused only on the use of e-learning systems in higher education and did not include other levels of education such as primary, elementary, and secondary school levels. Therefore, the results of the study may not be applicable to other educational levels in the Kingdom of Saudi Arabia.

Finally, the study acknowledges that the effectiveness of motivational strategies may vary depending on the type of e-learning provided at each university, whether it is synchronous or asynchronous, as well as the type of unit offered and the number of students in the virtual classroom. Therefore, the study recommends that further research should explore the effectiveness of different motivational strategies in different contexts to develop a more comprehensive understanding of students' motivation in e-learning systems.

8.4 Recommendation for Further Research

The results of this research revealed that Saudi universities employ effective motivational strategies in promoting students' use of and engagement in e-learning systems through the efforts of academic staff. However, there is a need for improvement, particularly in the dimensions of attention and relevance. Regarding future directions, the study recommends several areas for further research:

1. The research proposes that future research explore the role of university administrators and policy makers in promoting students' engagement and academic progress in e-learning systems.
2. Research in the use of modern technologies such as Artificial Intelligence, Augmented Reality, and Virtual Reality –which seem a promising research field – and their use in e-learning systems may constitute a motivator for students to engage; and
3. Addressing the potential challenges that may face academic staff in adapting to modern technology-based teaching methods can also be a key area for exploration.

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Appendices

Appendix 1

VICTORIA UNIVERSITY

THE NEW WAY TO DO UNI

Associate Professor
Deborah Zion
Chair, VU Human Research
Ethics Committee

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29 October 2019

Dear Dr John Martino

Re: HRE19-171 HR Quest Ethics Notification - Application Process Finalised
- Application Approved

Your ethics application has been formally reviewed and finalised.

» Application ID: **HRE19-171**
» Chief Investigator: DR JOHN MARTINO
» Other Investigators: MR SAAD OTHMAN M ALAMREI, DR PETER THOMAS »
Application Title: How Are E-Learning Activities Structured to Motivate and Engage Students in Saudi Universities?
» Form Version: 13-07

The application has been accepted and deemed to meet the requirements of the National Health and Medical Research Council (NHMRC) 'National Statement on Ethical Conduct in Human Research (2018)' by the Victoria University Human Research Ethics Committee. Approval has been granted for two (2) years from the approval date; 28/10/2019.

Continued approval of this research project by the Victoria University Human Research Ethics Committee (VUHREC) is conditional upon the provision of a report within 12 months of the above approval date or upon the completion of the project (if earlier). A report proforma may be downloaded from the Office for Research website at: http://research.vu.edu.au/hrec.php.

Please note that the Human Research Ethics Committee must be informed of the following: any changes to the approved research protocol, project timelines, any serious events or adverse and/or unforeseen events that may affect continued ethical acceptability of the project. In these unlikely events, researchers must immediately cease all data collection until the Committee has approved the changes. Researchers are also reminded of the need to notify the approving HREC of changes to personnel in research projects via a request for a minor amendment. It should also be noted that it is the Chief Investigators' responsibility to ensure the research project is conducted in line with the recommendations outlined in the National Health and Medical Research Council (NHMRC) 'National Statement on Ethical Conduct in Human Research (2018).'

Appendix 2

Kingdom of Saudi Arabia
Ministry of Higher Education
Saudi Electronic University
Deanship of scientific researches

2011 1432

المملكة العربية السعودية
وزارة التعليم العالي
الجامعة السعودية الإلكترونية
عمادة البحث العلمي

سعادة الأستاذ/ سعد عثمان محمد العمري حفظه الله **تاريخ الموافقة : 22/06/1441**

السلام عليكم ورحمة الله وبركاته ... وبعد:

إشارة إلى موافقة سعادة مدير الجامعة على ضوابط تعبئة أدوات جمع البيانات للباحثين المرفوعة بالخطاب

رقم 4239 وتاريخ 15/3/1436هـ، وبناء على توصية لجنة أدوات جمع البيانات للطلبات المقدمة إليها ومنها

طلبكم المقدم بعنوان: **كيف يتم تنظيم أنشطة التعلم الإلكتروني في الجامعات السعودية لتحفيز وإشراك الطلاب؟**

أفيدكم بصدور الموافقة على توصية اللجنة، وبإمكانكم البدء بالعمل.

نأمل منكم تزويد الجامعة لاحقاً بنسخة من البحث وأي بحوث منشورة بناء على هذه الدراسة.

هذا الخطاب صالح لمدة ستة أشهر من تاريخة.

وتقبلوا خالص التحية والتقدير ،،،

عميد البحث العلمي

د. أديب محمد الحمود

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سعادة الباحث/ سعد عثمان العمري **حفظه الله**

السلام عليكم ورحمة الله وبركاته

إشارة إلى توصية اللجنة الفرعية لأخلاقيات البحوث الإنسانية والاجتماعية في جلستها الأولى بتاريخ ١١/ ٠١/ ١٤٤١هـ، الموافق ١٠ / ٠٩ / ٢٠١٩ م.

نفيدكم بموافقة اللجنة الدائمة لأخلاقيات البحث العلمي على إجراء البحث الموضح بالجدول الآتي خلال الفترة من ٢٠١٩/٩/١٠م إلى ٢٠٢٠/٩/٩م:

م	اسم الباحث	البحث	الأداة	الحالة
١	**سعد عثمان العمري**	" كيف يتم تنظيم أنشطة التعلم الإلكتروني في الجامعات السعودية لتحفيز وإشراك الطلاب "	**مسح مقابلة**	**الموافقة**

وعليه نأمل من الجهات المعنية بالجامعة تسهيل مهمة الباحث.

وتفضلوا بقبول وافر الاحترام

عميد البحث العلمي المكلف

نائب رئيس اللجنة الدائمة لأخلاقيات البحث العلمي

أ.د محمد بن إبراهيم الوابل

صورة إلى سكرتير اللجنة الدائمة لأخلاقيات البحث العلمي

٤/٦٧/١٥٩٧٩٤
١٤٤١/٤/١٣هـ

KINGDOM OF SAUDI ARABIA
Ministry Of Education
King Khalid University
Deanship of Scientific Research
Research Ethics Committee

المملكة العربية السعودية
وزارة التعليم
جامعة الملك خالد
عمادة البحث العلمي
اللجنة الدائمة لأخلاقيات البحث العلمي

Certificate for Ethical Clearance

Dear Saad Othman Alamrei
The Ethical Committee of the Scientific Research, King Khalid University, has reviewed and discussed your proposal titled "***How Are E-Learning Activities Structured to Motivate and Engage Students in Saudi Universities?.***". Your proposal has been adjudged to meet the requirements of the Ethical Committee of Scientific Research and has been **approved**.

Approval Number	**(ECM#2019-49)—(** HA-06-B-001)
Research Title	***How Are E-Learning Activities Structured to Motivate and Engage Students in Saudi Universities?*".**
Approval date	04/09/2019
Expiry date	04/09/2020
Decision	Approved

Conditions of This Approval:

1) The conduct of research should be strictly in accordance with the approved proposal.
2) Principal Investigator has to report any serious adverse event or any other issues related to the research project immediately to the Ethical Committee of Scientific Research
3) Any amendments to the approved proposal require the submission and approval from the research committee before implementation.
4) The Principal Investigator has to provide the progress report during the study period and a final report after the project completion.
5) Immediate notification in writing has to be conveyed if the project is discontinued.

Failure to comply with the approval conditions may result in withdrawal of ethical permission of the research proposal.

WE WISH YOU THE BEST OF LUCK FOR THE CONDUCT OF THE RESEARCH

Dr. Mohammed. S. Abohashrh

Chairperson of Ethical Committee of the Scientific Research
King Khalid University
Kingdom of Saudi Arabia

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Appendix 3

عزيزي الطالب المشارك

- **أرجو منك أن تجيب الإجابة التي تراها صحيحة وتنطبق عليك، وليس ما تريده أن يكون صحيحاً.**
- **فقط ضع علامة صح تحت الخانة التي تراها صحيحة بالنسبة لرأيك.**
- **آمل منك الإجابة عليها بناءً على المحاضرة الأخيرة التي درستها.**

اسم الجامعة: .....الكلية: ..... التخصص: ..... المادة: .....

	الاستبيان	أوافق بشدة	أوافق بنسبة كبيرة	أوافق إلى حد ما	أوافق قليلاً	لا أوافق
1	النظرة العامة لمحتوى المحاضرة، أعطتني انطباعاً بأنها ستكون سهلاً بالنسبة لي					
2	هناك شيءٌ لفت انتباهي في بداية هذه المحاضرة					
3	**بالنسبة لي** تعتبر هذه المادة أصعب مما كنت أتوقعها عليه					
4	اطلاعي المسبق على المحاضرة أعطاني الثقة في معرفة الدرس بشكل عام، وما يجب عليّ معرفته					
5	استطاعتي لحل التمارين أو الواجبات المتعلقة بالمحاضرة يعطيني شعورًا مرضيًا بالإنجاز					
6	من خلال هذا الدرس اتضح لي ارتباط محتوى هذه المحاضرة بالأشياء التي أعرفها بالفعل					
7	تحتوي هذا المحاضرة على العديد من الصفحات والكثير من المعلومات التي يصعب عليّ فهمها، كما يصعب عليّ تذكر النقاط المهمة فيها					
8	هذه المحاضرة تحتوي على العديد من الأشياء التي تلفت النظر					
9	الأمثلة الواردة في هذه المحاضرة وضّحت أهمية هذا الدرس					
10	يعتبر فهم في هذا الدرس أمراً مهما بالنسبة لي					
11	**جودة الكتابة والتنسيق** ساعد في لفت انتباهي					
12	طريقة شرح المحاضرة كانت صعبةً بالنسبة لي، ولذلك لم أستطع التركيز					
13	من خلال المحاضرة كانت لدي الثقة بمعرفة محتوى الدرس					
14	استمتعت بهذه المحاضرة، وأتمنى أن أعرف المزيد حول هذا الموضوع					
15	كانت طريقة عرض هذه المحاضرة مملة ولا تشجع على المتابعة					
16	محتوى هذه المحاضرة وثيق الصلة باهتماماتي					
17	طريقة ترتيب المعلومات في المحاضرة ساعدتني على التركيّز والانتباه					
18	بيّنت هذه المحاضرة طرق الحصول على المعرفة من خلال الأمثلة والتفسيرات					
19	الأسئلة في هذه المادة بشكل عام صعبة جداً					
20	قدّمت هذه المحاضرة أشياءً حفزتني على التعلّم ورغّبتني في معرفة المزيد عنها					
21	لقد استمتعت كثيراً في المحاضرة					
22	التكرار في المحاضرة يجعلني أشعر بالملل أحيانًا					
23	محتوى وأسلوب الكتابة في هذه المحاضرة يجعلني أشعر بأن محتواها يستحق المعرفة					
24	من خلال هذه المحاضرة تعلمت بعض الأشياء التي كانت مفاجئة أو غير متوقعة					
25	لدي الثقة بأنني سأتمكن من اجتياز الاختبار في هذه المادة					
26	**لا** أهتم كثيرا لهذه المحاضرة لأنني أعرف معظمها					
27	ساعدتني كتابة التعليقات والملاحظات على الشعور بالرضى وفهم الدرس					
28	ساعدتني الأمثلة والتمارين والرسوم التوضيحية على إبقاء انتباهي للمحاضرة					
29	كثرة كتابة الطالب في الحاضرة تعتبر متعبة ومملة					
30	أستطيع ربط محتوى هذه المحاضرة بأشياء رأيتها أو قمت بها أو فكرت بها في حياتي الخاصة					
31	كثرة الكلمات في كل صفحة يجعلها مزعجة بالنسبة لي					
32	أشعر بالرضا إذا أكملت هذا المادة بنجاح					
33	سيكون محتوى هذه المحاضرة مفيدًا لي					
34	**لم أفهم** الكثير من المواضيع في هذه المحاضرة					
35	التنظيم الجيد لمحتوى المحاضرة ساعدني على فهم هذه المادة ببساطه					
36	أكون مسرورا دائماً إذا كانت المحاضرة مصممةً بشكل جيد وواضح					

أسئلة المقابلة الشخصية مع عضو هيئة التدريس بالجامعة:

1. ما هي المادة التي تقدمها للطلاب عن طريق نظام التعليم الإلكتروني؟
2. كم تستغرق من الوقت تقريباً لإخراج الدرس على نظام إدارة التعلّم الإلكتروني بالشكل النهائي؟ وهل لمشرفي التعليم الإلكتروني دور مساعد في ذلك؟
3. هل تحرص على إخراج الدرس بشكل محفز للطالب؟ بمعنى أن يكون لديك الثقة التامة بأن محتوى الدرس سيلفت انتباه الطالب ما يجعله يستمر في متابعة الدرس إلى نهايته؟
4. هل تستطيع أن تذكر لي عدد من المحفزات التي ترون أنها ناجحة في إشراك الطلاب في المادة التعليمية من خلال نظام التعليم الإلكتروني؟ وهل ترى أن التحفيز مهم بدرجة كبيرة؟
5. ماهي المميزات وماهي العيوب التي تواجهونها في استخدام أنظمة التعليم الإلكتروني؟
6. هل تعتقد أن تحفيز الطلاب يجعلهم يشاركون في نظام التعليم الإلكتروني بشكل مستمر؟
7. من خلال خبرتكم في مجال التعليم كيف تعرفون أن الطلاب قد استوعبوا وفهموا الدرس بالشكل الصحيح؟ وهل تُعتبر الاختبارات مقياس كافٍ؟
8. من خلال خبرتكم كذلك هل تعتقد أن جودة التعليم الإلكتروني تُعتبر أفضل من طريقة التعليم التقليدي؟ وبالنسبة لكم ماذا تفضلون؟
9. هل حصلتم على دورات في مجال التعليم الإلكتروني؟ إذا كان الجواب نعم؟ هل هناك دورات تقدمها الجامعة أو مسؤولي التعليم الإلكتروني بشكل مستمر؟
10. هل تعتقدون أن التعليم الإلكتروني خلق فجوة بينكم وبين الطلاب؟
11. هل تعتقدون أن التعليم الإلكتروني سبَب الانطوائية أو العزلة الاجتماعية لبعض الطلاب؟ أو جعل بعض الطلاب لا يستطيع أن يبرز إمكانياته الفكرية والعلمية بشكل مباشر؟
12. كيف يتم تقييم الطلاب سواءً للأعمال الفصلية أو نهاية الفصل الدراسي؟ وهل هناك تقييم للحضور؟

أسئلة المقابلة الشخصية مع مسؤولي التعليم الإلكتروني:

1. ما هي أهم الأعمال التي تقومون بها؟
2. هل هناك دورات في التعليم الإلكتروني تقدمونها للطلاب وأعضاء هيئة التدريس بالجامعة؟
3. كيف تستطيعون توفير بيئة تعليمية إلكترونية محفزة للطلاب وداعمة للأداء؟
4. هل أعضاء هيئة التدريس هم المسؤولون عن إضافة الدروس وإخراجها بطرق محفزة أم أنكم أنتم من يعمل ذلك؟
5. هل يدخل تحفّيز الطلاب في دائرة جودة المقررات الإلكترونية؟ ومن هو المسؤول عن تقييم جودة المقررات؟
6. ما هي أبرز المعوقات التي تواجهونها أو يواجهها التعليم الإلكتروني بالجامعة؟
7. هل تعملون على مدار الساعة بحيث أن الطالب أو عضو هيئة التدريس يستطيع التواصل معكم في أي وقت؟
8. هل هناك محفزات تقدمونها لأعضاء هيئة التدريس المتميزين في أنظمة إدارة التعلّم بالجامعة؟

أسئلة المقابلة الشخصية مع الطلاب:

1. ما هو اسم نظام إدارة التعلم الإلكتروني الذي تستخدمه الجامعة؟
2. هل ترى أن هناك سهولة في استخدام وتصفح المحتوى العلمي من خلال هذا النظام؟
3. هل حصلت على دورة في كيفية استخدام نظام إدارة التعلّم الإلكتروني؟
4. هل ترى أن هناك أشياءً تُلفت انتباهك في نظام إدارة التعلم الإلكتروني؟ سواء كانت جيده أو غير جيدة.
5. **بالنسبة لك** هل تفضّل طريقة التعليم التقليدية أو التعلّم من خلال التعليم الإلكتروني؟
6. هل تعتبر التعلّم عن طريق نظام إدارة التعلم الإلكتروني يساعدك على التعليم؟
7. هل ترى أن هناك محفزات في نظام إدارة التعلّم الإلكتروني تحفّزك على المشاركة ومتابعة الدرس؟
8. هل تعتقد أن التعلم عن طريق أنظمة التعليم الإلكتروني يجعلك تشعر بأنك لا تستطيع إبراز رأيك العلمي والمشاركة في المحاضرة بشكل مباشر؟
9. في نهاية المحاضرة هل تعتقد أن لديك الثقة في حل تمارين الدرس، أو الإجابة على أسئلة الاختبار؟

10. هل تشعر بالرضى إذا أكملت المحاضرة ولم تواجه بعض المشاكل التقنية كضعف الإنترنت أو عدم وضوح الصوت أو غير ذلك؟ وهل تواجهون مثل هذه المشاكل؟
11. إذا واجهتك مشكلة في نظام التعليم الإلكتروني؟ ما هو الإجراء الذي تتخذه؟
12. هل هناك وسيلة تواصل بينك وبين مشرف المادة من خلال نظام إدارة التعلّم؟ إذا كان الجواب نعم. فهل تستفيد من هذه الخدمة؟