An Investigation of the Factors Affecting Students’ Acceptance and Intention to
Use E-Learning Systems at Kuwait University: Developing a Technology
Acceptance Model in E-Learning Environments

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Degree of Doctor of Philosophy

Cardiff School of Education

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Declaration

This work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

Signed...................................................................... (candidate)

Date..........................................................................

STATEMENT 1

This thesis is the result of my own investigations, except where otherwise stated. Where correction services have been used, the extent and nature of the correction is clearly marked in a footnote(s).

Other sources are acknowledged by footnotes giving explicit references. A bibliography is appended.

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Abstract

The current study has aimed to investigate the factors affecting students’ acceptance and intentions to use e-learning systems in higher education in Kuwait, based on the Technology Acceptance Model (TAM1). A theoretical model was proposed to study the effect of the following external factors: Internet self-efficacy, personal innovativeness, technical support, instructor characteristics, course interactivity and content quality. The study hypotheses were examined using a mixed method that comprised a questionnaire – a cross sectional survey and semi-structured interview. The data were collected from 336 undergraduate students registered on courses incorporating VLEs, particularly Blackboard, at Kuwait University. The study results provided support for relationships between the TAM Model constructs via two methods, where quantitative and qualitative results indicated that perceived ease of use and perceived usefulness were considered to be key factors in explaining students’ attitudes toward VLEs. Nonetheless, perceived usefulness was a more influential factor than perceived ease of use in terms of students’ attitudes and was also a higher predictor of attitudes toward using VLEs. Furthermore, the results indicated that perceived usefulness and students’ attitudes had a significant effect on the intention to use e-learning in the future.

However, students’ attitudes were more strongly influenced than perceived usefulness as regards the intention to use e-learning. Furthermore, the results show that the students’ intentions to use e-learning were positively correlated with their overall attitude toward e-learning. Regarding the effect of external factors, the study results reveal that personal innovativeness, instructor characteristics, course interactivity and content quality positively affected perceived usefulness. On the other hand, all external factors also had a positive effect on perceived ease of use. Furthermore, the study results show that perceived ease of use was found to be the strongest predictor of perceived usefulness, and self-efficacy was the most critical external factor influencing students’ perceived ease of use of VLEs.
Acknowledgments

In the name of Allah, the most Gracious and most Merciful: by your will, I have been blessed with this knowledge, instruction and support from individuals that got me where I am today. There are people in everyone’s life who make success both possible and rewarding. I would therefore especially like to express my gratitude to my parents and sisters; may Allah reward you for all the support you have given me.

I also wish to take this opportunity to extend my grateful appreciation to those who provided me with assistance, encouragement, understanding and guidance during the preparation of this thesis. First and foremost, I would like to express immense gratitude to my supervisor, Dr. Cecilia Hannigan-Davies for her constant support, guidance, effort and time in supervising this work. I also extend my sincere thanks to Prof. Gary Beauchamp and Dr. Spencer Jordan for their guidance and clarification during my research and the writing up of the thesis. Full appreciation also goes to the Faculty members at Kuwait University for their help and the facilities they provided while I was collecting the data for this study. Thanks are also due to all who willingly participated and collaborated in this project. I am thankful to everyone who assisted me in accomplishing the work.
Dedication

This work is dedicated to the bedrock of my life: my mother, father and sisters.

They have always been with me, giving me the strength and emotional support to pursue my goals.
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<td>Analysis of Moment Structures</td>
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<td>CC</td>
<td>Course Content</td>
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<td>Technical Support</td>
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<td>TAM</td>
<td>Technology Acceptance Model</td>
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<tr>
<td>TRA</td>
<td>Theory of Reasoned Action</td>
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<td>PEOU</td>
<td>Perceived Ease of Use</td>
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<td>PU</td>
<td>Perceived Usefulness</td>
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CHAPTER ONE

Introduction and Rationale for the Study

1.1 Introduction

The remarkable developments in the field of Information and Communication Technology (ICT) have introduced radical transformations in opportunities for obtaining information using various time-efficient methods. In the light of this tremendous growth and in view of these developments, it seems that many learners currently show an interest in educational activities based on modern technology and electronic resources (Liu et al., 2010). Therefore there is a demand from the education sector to adopt ICT tools at different stages in the education process and to apply a new approach to learning. Thus, specialists in education are drawn to many innovations in the ICT world, in order to be able to use them in the learning and teaching process.

As technological integration has progressed in the education sector, a new and different approach to learning has emerged. Among these approaches is the appearance of e-learning, which has become a common tool in higher education, approved at many universities around the world for supporting and enhancing learning, while also encouraging lifelong learning. Recently, with the appearance of new innovations in ICT, the development of Internet infrastructure, and the widespread use of the World Wide Web, e-learning has taken on a new form, because modern ICT requires e-learning opportunities to be more flexible, interactive and better designed (Khan, 2005). Moreover, the quality of e-learning has improved (Lee, Yoon and Lee, 2009). This has been partly instrumental in the modernisation of the teaching and learning process (Haythornthwaite and Andrew, 2011).
Thus, the trend toward using e-learning in learning and teaching has increased and there is global attention given to e-learning in education (Liaw, Huang and Chen, 2007).

The State of Kuwait, particularly the Ministry of Education, has recognised the potentially active role of ICT in the development of the teaching and learning process and the probable enhancement of learning skills. Thus, the State of Kuwait has awarded close attention to the integration of e-learning into its education system and to the promotion and implementation of e-learning, by adopting e-learning strategies within its education system. Furthermore, there is the motivation to build an educational environment which takes into consideration the requirements of its community, while at the same time stimulating technological development, not only in terms of advanced technological media, but also as an interactive medium which will operate on the basis of the learner being at the core of the educational process. Hence, the Ministry of Education is moving towards the use of ICT tools through the integration of traditional educational methods with e-learning tools. The use of these e-learning tools will therefore act as a support to traditional education and increase its efficiency and the enhancement of the development of learning outcomes.

Kuwait University, the main higher institution for education in Kuwait, has responded to Kuwait’s plans by engaging with ICT through an integrated approach, with various ICT tools being introduced into the learning process. One of these tools is the Virtual Learning Environment (VLE) which is an environment designed to deliver instructional materials and facilitate communication within a course, as well as supporting and improving the learning process.

However, the success of such environments will depend on various factors that must be considered in order to produce a successful and effective e-learning process (Masoumi,
Many learners discontinue their e-learning courses after preliminary experiences (Dutton and Perry, 2002; Sun et al., 2008; Aixia and Wang, 2011). The factors involved in this therefore need to be understood, otherwise the learner will have a ‘passive experience, leading to surface learning’ (Stiles, 2000, p. 1). Moreover, these factors could affect the learners’ readiness, acceptance and decisions about using e-learning in the longer term. Therefore, once a new e-learning environment or ICT tool is offered in the learning process, it is essential that the institutions and its tutors are in a state of readiness to encourage the student to fully accept and adopt such tools. Ultimately the success of e-learning systems will mainly rely on the extent of learner acceptance and usage of these systems (van Raaij and Schepers, 2008), combined with their willingness, especially if they have accepted and are satisfied with these tools (Eke, 2011).

From another perspective, Lee (2006) views understanding the nature of external factors affecting the use of ICT as a means of assisting universities in encouraging learners and tutors to use ICT in their teaching and learning. It is therefore crucial to investigate these factors and classify them according to their significance. Furthermore, alternatives need to be identified and proposed in order to mitigate the negative factors relating to the e-learning process and to put forward proposals for the optimum use of such technology during the learning process. This will then ensure the efficiency of VLEs and encourage more widespread use.

1.2 Study Problem

Through the use of VLEs as e-learning tools in Kuwait University’s academic faculties, instructional materials have been delivered and communication has been facilitated within courses. Nevertheless, many students still do not use VLEs frequently and do not have a positive experience of them. As a result, VLEs are not utilised to their full potential. This study is an attempt to identify the factors influencing the student learning process through
VLEs and the relationship between these factors, including system interactivity, course content quality, instructor characteristics, technical support, course interactivity, Internet self-efficacy, and so-called perceived usefulness and perceived ease of use, examining the effect of these last two factors on learners’ attitudes to using an e-learning system, based on the Technology Acceptance Model (TAM) (Davis, 1986).

1.3 Study Questions

As mentioned previously, the present study aims, in a practical way, to investigate the factors influencing students’ attitudes towards the use of e-learning environments, in addition to students’ intentions to use e-learning. In particular, the study areas may be summarised as posing the following key question:

What are the factors affecting students’ attitudes towards and usage of Virtual Learning Environments (VLEs) and how do these factors influence students’ intentions to use e-learning?

1.4 Study Hypotheses

The following hypotheses have been proposed for the achievement of the aims and objectives of the current study:

**H1**: Personal innovativeness in using information technology will have a positive effect on the perceived usefulness of VLEs.

**H2**: Personal innovativeness in using information technology will have a positive effect on the perceived ease of use of VLEs.

**H3**: Self-efficacy for students will have a positive effect on the perceived ease of use of VLEs.

**H4**: Technical support has a positive effect on the perceived ease of use of VLEs.

**H5**: Course content quality has a significant effect on the perceived usefulness of VLEs.

**H6**: Course content quality has a significant effect on the perceived ease of use of VLEs.

**H7**: Course interactivity will positively affect the perceived usefulness of VLEs.
H8: Course interactivity will have a positive effect on the perceived ease of use of VLEs.

H9: Instructor characteristics will positively affect the perceived ease of use of VLEs.

H10: Instructor characteristics will positively affect the perceived usefulness of VLEs.

H11: Perceived usefulness will have a positive influence on students' attitudes to using VLEs.

H12: Perceived ease of use will have a positive effect on students' attitudes towards using VLEs.

H13: Students' attitudes toward VLEs will positively affect students' intentions to use e-learning.

H14: Perceived usefulness of VLEs will positively affect students' intentions to use e-learning.

H15: Perceived ease of use of VLEs will positively affect their perceived usefulness.

1.5 Aims of the Study

This study aims to:

1. Investigate the influence of specific factors (Internet self-efficacy, personal innovativion, technical support, instructor characteristics, course interactivity, course content quality) that could influence the students’ attitudes towards learning via VLEs at Kuwait University.

2. Analyse the most significant factors which could influence the succesful utilisation of e-learning.

1.6 The Objectives of the Study

1. Analyse the factors that affect students' attitudes to learning using a VLE.

2. Identify critical factors that encourage the effective interactive use of VLEs in the learning process.
3. Investigate the relationship between students’ attitudes and students’ intentions to use e-learning

4. Evaluate the impact of the above on students’ intentions to learn through e-learning.

5. Develop a framework of effective practice for VLEs use in Kuwait’s higher education system.

1.7 The Rationale of the Study

This study could assist and guide those who develop, implement, and deliver e-learning systems at Kuwait University, in order to improve these systems and thus lead to a better understanding of student participation in the online learning environment. Given this greater understanding, the respective developers would then be in a better position to improve their instructional design in terms of encouraging learners to learn via VLEs. Moreover, this would lead to greater clarity over whether instructors should make changes to their instructional approaches, or whether it is the students who need to adjust their learning styles in order to better adapt to courses. Furthermore, this would provide indications of whether or not the factors identified will affect students’ attitudes to using e-learning tools. Given the growing demand for the use of VLEs in university education, this study may then yield data to guide researchers, as well as those in charge of e-learning programmes. Additionally, Kuwait University teaching staff could be guided towards a number of proposals and solutions for increasing the chances of success in integrating technology into the learning process.

From another perspective, various studies have demonstrated the success and advantages of VLEs in other environments and geographical regions. The results of this study could be useful worldwide and, according to my knowledge, few such studies have been conducted in the Gulf region, particularly in Kuwait, on the factors affecting students’
attitudes towards and usage of e-learning, specifically their attitudes towards VLEs and in particular, in accordance with the Technology Acceptance Model (TAM). This is despite the fact that Kuwait is one of the countries that is growing in terms of e-learning in the Arabian Gulf. In fact, there is a deficiency of research in this area, as not many studies have been recognised and so this study endeavours to fill the gap in e-learning research.
CHAPTER TWO

The Background to the Study

2.1 General Information about the State of Kuwait

Kuwait is a small country, characterised by a harsh desert climate, with a population amounting to approximately 2,695,316, according to the official census for 2013 (Index Mundi, 2013). Geographically speaking, it is located in the Middle East, to the southwest of the continent of Asia; more specifically, on the northwest side of the Arabian Gulf, as shown in Figure 2.1. It borders on Iraq to the north and Saudi Arabia to the south (Kuwait Government Online, 2013). The State of Kuwait is a country which is categorised by a small land mass, with a total area of 17,818 square kilometres (Kuwait Government online, 2013), approximately double the size of Cyprus (9,250 square kilometres) (Encyclopedia of the Nations, 2014).

Climatically, given its location within a desert region, the State of Kuwait has a prevailing dry desert climate, characterised by the length of its summer season, the lack of rainfall, very high temperatures in summer and contrastingly low temperatures in the winter. Arabic is the country's official language, while English is the second most widespread language. Islam is the official religion and it is prevalent amongst the population. Politically speaking, Kuwait is a hereditary emirate, ruled by an Emir from a specific family known as Al Sabah. As far as the economy is concerned, although Kuwait is a small country, it has substantial economic power, and is classed as one of the most significant producers and exporters of oil worldwide.
2.2 Overview of Education in Kuwait

According to Act No. 40 of the State of Kuwait's Constitution, Kuwaiti citizens’ right to education is guaranteed by the country and provided without fees (Ministry of Education, 2012). The country, represented by the Ministry of Education, is committed to providing all human and material resources for education, with the exclusion of the private education sector.

The education system in Kuwait is divided into two main levels, both directed by the Ministry of Education: firstly, there is general education and secondly, there is higher education (this includes Kuwait University, the Public Authority for Applied Education and Training, the Institute of Arts, and the Institute of Music Studies, in addition to private universities).

General education is categorised into three sectors: public education, qualitative education (allocated to the disabled), and private education. Public education is divided into four basic stages: the kindergarten stage (with a duration of two years), the primary stage (with a
duration of five years), the intermediate stage (with a duration of four years) and finally, the secondary stage (with a duration of three years). The total duration of study in these stages amounts to 14 years of schooling. According to Kuwait’s Compulsory Education Law, 1965, the primary and intermediate stages are compulsory for all citizens, while secondary and university education are not. Kuwait has made noticeable progress in developing its education system by making it general and obligatory for all Kuwaiti citizens. It has also increased the amount of educational expenditure and is now using advanced ICT strategies. In addition, educational institutions, at their different levels, have witnessed important developments which have contributed to their adaptation to the requirements of the current era.

2.3 Kuwait University

Kuwait University is one of the oldest universities in the Arabian Gulf, as well as being the main centre for higher education in Kuwait. It was established in 1966 as an independent institution, directed by the university Council, which is chaired by the Minister of Education (Kuwait University, 2009). It is accredited to award a bachelor's degree, alongside the Public Authority for Applied Education and Training, and the College of Basic Education, in addition to the private universities.

The State of Kuwait's government, represented by the Ministry of Finance, provides full funding for Kuwait University, since it has a separate budget from that of the Ministry of Education. This budget is prepared and operated by the University's administration, in accordance with rules and regulations approved by the University Council. University education is offered without fees to Kuwaiti students who fulfil the conditions for admission set by Kuwait University.
Initially, in 1966, studies at the University of Kuwait fell into three main areas, namely science, literature and education. These were taught at just two colleges: the College of Sciences, Arts and Education, and the College for Women (Kuwait University, 2009). As a result of the State's concern about keeping pace with knowledge development, the university has evolved rapidly in many areas since that time. Hence, the colleges have continued to separate from each other and the University has expanded by establishing specialised colleges to extend their scientific departments, which now include a broader range of disciplines. Currently, Kuwait University comprises 16 colleges in different disciplines, distributed across five main campuses (Kuwait University, 2009). It offers graduate programmes, where a diploma may be awarded, as well as Master's and doctoral degrees. Furthermore, a variety of facilities and centres exist for the education and enlightenment of members of the community, such as the Community Service Center and the Language Center (Kuwait University, 2009). Both Arabic and English are used as mediums of instruction.

A modular system involving units has been adopted as the study approach within Kuwait University. According to this system, a certain number of study units are designated for graduation, whereby students are required to successfully complete each unit at a given level set by the University in (Kuwait University, 2009). The total combined number of male and female students at Kuwait University is 38,253 and there were over 1500 faculty members for the academic year 2013. In addition to this, the State of Kuwait has seven private universities.

2.4 Adopting Information Communication Technology (ICT) in the State of Kuwait

The State of Kuwait has prepared itself well for the 21st century by introducing technology into government works under the name of ‘E-Government’ and an ambitious development
plan. This was fulfilled using ICT and related applications in all its government institutions and facilities, with a view to spreading the culture of information technology (IT) and its applications in the community, as well as oiling the wheels of development. The most important aim was to increase IT literacy in the general population. Moreover, there was the desire to build a Kuwaiti information community at various levels, as part of a development plan to connect the community's members with key sectors within the country, such as the public, education, health, trade and industrial sectors. Furthermore, the plan included developing and modernising the telecommunications and information infrastructure by covering all the country's regions with telephone services and fibre-optic networks. Internet services were therefore provided throughout the nation (Economic and Social Commission for Western Asia, 2009).

Several projects associated with the development plan were implemented. The most important of these were the E-Government applications launched in 2008. These were contained in the Kuwait Official Electronic Portal. Secondly, the Kuwaiti Information Network has provided a fast and safe communication environment connecting all governmental institutions and Ministries with each other and with the Kuwait Official Electronic Portal. Currently, 15 government bodies are connected with each other (Economic and Social Commission for Western Asia, 2013).

It is worth mentioning here that the content of the available governmental electronic sites is not only confined to general information on government institutions, but has also become a link between these sites for the benefit of both individuals and institutions. Government institutions have begun to disseminate their decisions and provide detailed information about their services and requirements (Economic and Social Commission for Western Asia, 2013). Furthermore, they have begun to present their studies, reports and statistics, which also
provide information and data on their projects, in addition to raising awareness of their work and responsibilities as regards the country’s efforts to build its E-Government. Noticeably, there are applications for government sites and an electronic portal for smartphones, which enable these sites to be accessed at any time and from anywhere (Economic and Social Commission for Western Asia, 2013).

The Official Electronic Portal, as mentioned previously, is among the most important E-Government projects and is regarded as a qualitative leap and radical change in terms of providing information and government services for the community's members, by linking all government institutions with the Electronic Portal. This Portal provides its services to all members of the community within Kuwait, whether actual citizens or residents, as well as to the private sector and visitors, 24 hours a week, and in both Arabic and English.

The Portal enables its visitors to access a great deal of government information and services, as well as systems and laws relating to the State of Kuwait. Moreover, the services available within the Portal can assist with performing transactions at any time, which saves time and effort for tasks that would normally involve visiting government agencies (Economic and Social Commission for Western Asia, 2013). Among the most important of these services is the E-Payment Portal for services provided by the country to the community's members. This currently includes 12 electronic payment services, a shift which enhances the role of ICT in all life aspects, as well as helping to stimulate the community's members to become integrated with the new world of IT and to make use of advanced ICT as an integral part of daily transactions. However, despite the fact that these projects use electronic files and documents, electronic messaging is very limited in the country's institutions, due to the absence of laws and regulations in this domain (Economic and Social Commission for Western Asia, 2013).
Kuwait is considered as the first country in the Gulf to have provided Internet services for its citizens, namely through the Gulf Net Foundation in 1994 (Bachiouo and Alghnnam, 2010). According to a report by the Kuwait Financial Center in 2013, Kuwait ranked third amongst the countries of the Gulf Council in terms of expenditure in the ICT sector (Economic and Social Commission for Western Asia, 2013). Currently, there are four companies providing local Internet services, with varying capacity and at a reasonable cost. According to the World Economic Forum Report issued in 2013, there is actually a noticeable increase in the number of Internet users in Kuwait, since it ranks at 26 among 144 countries across the world in terms of percentage individual Internet use (Economic and Social Commission for Western Asia, 2013, p. 7). On the other hand, Kuwait is also listed among the top countries for mobile phones ownership and use; it ranks seventh among 144 countries across the world in the rate of mobile phone subscription relative to population. In addition, it ranks 38 among 143 countries in the world in terms of the percentage of individuals who use personal computers (Economic and Social Commission for Western Asia, 2013, p. 5). Regarding government sectors, all government institutions and Ministries are currently linked to the Internet, with Wi-Fi facilities being available throughout government utilities.

Notably, the majority of people in Kuwait widely use social networking sites, such as Twitter, Facebook, Instagram and instant messaging systems via smartphones (such as WhatsApp) for communication and sharing information (Economic and Social Commission for Western Asia, 2013). This is due to their comparative ease of use with blogs or forums, as well as the possibility of utilising them through portable devices, such as smartphones and tablet computers.
2.5 Adoption of E-Learning in the State of Kuwait

In view of rapid progressive developments in ICT, along with the popularity of technology in all aspects of life, ICT has imposed itself as an indicator of society's progress and development and as an aspect of the foundation of development, since its success is apparent to us. ICT has dramatically acceded to the education sector via e-learning. Thus, there is an urgent need to develop strategies for developing and updating learning, in order to keep up with expansive scientific and technical developments in ICT. To implement these strategies, the Ministry of Education has depended on ambitious plans to introduce e-learning into its educational institutions and has invested extensively in constructing the infrastructure for e-learning systems through specific electronic projects. The aims of these projects are outlined by Alsharah and Alshrhan (2011, p. 4) in their report on e-learning strategy for the Kuwait Ministry of Education: Constructing an interactive learning environment in the new educational system involves attempts to establish interactive approaches between the learners on one hand, and the learning resources that are represented by tutors and in textbooks on the other. Furthermore, it enables learners to receive learning materials in a manner which suits their abilities, drawn from various sources and applying modern methods. The role of the tutor is converted to that of leader and the educational process is directed away from indoctrination. Another aim is to construct a large and renewable database, containing various learning materials for the purpose of developing and increasing the effectiveness of the teaching, in addition to facilitating a learning process which can take place anywhere and anytime, in an attempt to prepare an innovative and educated generation. More importantly, learners are steered away from indoctrination in their learning, through an enrichment of the learning process with non-traditional interactive activities.
In 2008, e-learning projects were launched by the Ministry of Education in a scientific and well-researched framework, which included the following projects: building an infrastructure for educational institutions by establishing and connecting data centres with high technical specifications, able to accommodate a number of user accounts and all available electronic services applied in the Ministry of Education. The Ministry of Education also constructed the largest centre in the Middle East, through which all schools were linked via a fibre-optic network. This project was completed in 2010 (Alsharah and Alshrhan, 2011).

The basic structure for introducing e-learning into Kuwaiti schools has been completed. According to the Ministry of Education’s statistics for 2012, every school affiliated to the Ministry of Education has at various stages incorporated computer laboratories for educational purposes, where the number of computers allocated for students’ use within these schools amounted to 41,201 devices. In addition, the number of schools with Internet availability numbered 559 out of a total of 593 schools affiliated to the Ministry of Education (Economic and Social Commission for Western Asia, 2013). Furthermore, the Ministry of Education has ensured that a minimum level of computer and Internet skills are acquired by its tutors. This was achieved by emphasising the need for tutors to obtain experience and certification in the field of ICT, such as the most common certificate, the International Computer Driving License (ICDL), which is internationally recognised and sponsored by UNESCO for driving computer use.

Currently, the Ministry of Education is applying a project called the ‘Electronic Square’, which consists of the following main axes: school infrastructure, Smart Classrooms, learning portals and learning systems, and electronic content (an interactive curriculum) (Economic and Social Commission for Western Asia, 2013). The Ministry of Education has applied
this project by designing its own e-learning portal (Kuwait Educational Portals), whereby all schools within the country are linked together. The project aims to enable learning process components (schools, tutors, parents and students) to access the decisions, regulations, accurate statistics and developments of the Ministry of Education, as well as information relating to tutors and students. Furthermore, the student can benefit from electronic interactive study materials and test questions made available within the electronic library, in addition to being able to access their final results through the electronic portal. Moreover, students have electronic access to school books or by CD-ROMs (Economic and Social Commission for Western Asia, 2013).

The State of Kuwait also currently deals with the Arab Regional Centre for Software in the development of learning and training software and content in Arabic, designed for various age groups, from childhood to adulthood, in the Arab world. The Centre focuses its efforts on developing electronic content for use in e-learning. Furthermore, there is the Smart School Project (providing networks in class, laptops for all students and Smart Classroom projects). However, this project is still at an experimental stage.

2.6 ICT at Kuwait University

Kuwait University is regarded as the first university in the Arab world to provide Internet access, and this began in 1992 (Economic and Social Commission for Western Asia, 2003). Initially, the development process for the ICT infrastructure and the inter-campus network took time to complete. However, due to substantial facilities in ICT and the rapid changes of the 21st century, the infrastructure and inter-campus network were radically improved and are continuously being updated (Alansari, 2006). Each faculty now has a number of computer labs for students, with Wi-Fi Internet access available throughout the campus. Moreover, the classrooms are supplied with projectors and some contain interactive boards.
(smart boards). Each faculty at the University has its own website, besides the main university site. These comprise an electronic interface that presents different kinds of information for the students and faculty. It is worth mentioning here that the Kuwait University site has its own portal, offering various services to students, staff and faculty members. For example, the student registration process takes place online through the portal and students can also find out about their grades online at the end of each term, as well as accessing the academic registration plan and course schedule. In addition, faculty members may be evaluated by students through this portal, rather than this being done manually. Furthermore, the Kuwait University site also has an e-library that provides an opportunity for students to access all literature available online at Kuwait University, where they can borrow items and carry out online searches. However, the students sometimes suffer due to the inefficiency of the university site and inconsistent or low Internet speed, particularly during the registration period (Alfadhli, 2009), which can lead to delays in the registration process.

Among the modern techniques that Kuwait University seeks to apply in all its faculties is the development of the traditional classroom into what is known as the Smart Classroom as a basis for enhancing higher education at the University. The use of Smart Classrooms in e-learning is regarded as one of the main methods in interactive distance learning systems. Smart Classrooms are attractive and effective learning environments that rely on multimedia technology to support and enrich the learning process (Distance Learning Center, 2009). The importance of the Smart Classroom underlies the introduction of modern technology, such as the smart board, lecture recording and video clips. This tool assists with the projection of learning material in an interactive manner, rather than the traditional tools of the black- or whiteboard. Nevertheless, it must be added here that there are only a limited number of these classes at Kuwait University.
2.7 Adoption of Distance Learning at Kuwait University

In 1997, the first experience of teaching with reliance on the Internet was launched by Dr. Salem Altuhaih, the Professor of Business Administration at Kuwait University. At that time, a course for sophomore students was being provided through the Internet. The electronic class included 40 students, where a Website was designed which involved all the lectures relating to the course. Questions with their model answers were presented to assist in preparing for exams. Moreover, the site included a link that showed how to connect the student with the course tutor and how to obtain answers to enquiries. The students were enthusiastic about this experience, but encountered obstacles due to the slow Internet speed at the University. Therefore, all the course content and audio-visual aids were saved onto a CD, which led to the first e-book in Arabic (Altuhaih, 2004).

Later on and during the academic year 1999/2000, Kuwait University began implementing a distance learning project designed for use through video-conferences. Indeed, compulsory courses have now been designed for distance learning in the College of Engineering and Petroleum, the College of Arts, and the College of Sciences. By the beginning of the academic year 2000/2001, a limited number of compulsory courses were being provided via videoconferencing, which allows students to benefit from available courses without the need for traditional classrooms. Furthermore, these have helped solve the problems of closed classes and the mobilisation of students between different colleges. Especially significant was its benefit in addressing the regulatory requirements for gender segregation at Kuwait University (Albahrani, 2005).

In 2002, the Distance Learning Center was officially established, which included a department for cooperation with faculty members in designing e-courses, and another department for technical support and electronic systems. In fact, the distance learning
system was inaugurated as from the first semester of 2000/2001, but did not expand in terms of the number of courses, or the number of enrolments until after the Distance Learning Center was founded in 2002 (Al-Bahrani, 2005). The Distance Learning Center then became a specialised centre at Kuwait University for the implementation of distance learning programmes, supervising the delivery and provision of technical and administrative support for the distance learning system, which would in turn contribute to the implementation and development of its various programmes.

The objectives of the Center included working on disseminating and implementing the distance learning system at Kuwait University through electronic conferences, seminars and lectures, achieving connectivity between Kuwait University and other universities through the electronic link, sharing Gulf Arab and international experience by utilising it in the application of distance learning, and finally, communicating and collaborating with other distance learning institutions and centres in the Gulf, the rest of the Arab world and even globally. This centre is also responsible for training tutors to use distance and e-learning tools (Distance Learning Center, 2009).

After establishing the Distance Learning Center during 2001/2002 and achieving success in the experiment, the expanding process of applying distance learning systems began with electronic conferencing as a method of introducing such systems into halls equipped with modern communication and multimedia equipment. This enabled teaching to be provided simultaneously on more than one site within the college, accomplished by providing a single course for three different classes, interconnected via fibre-optics. The course was then broadcast through electronic conferences within appropriately equipped study halls, available within the university (Distance Learning Center, 2009).
As a result of expansion in the application of the system, the number of electronic classrooms increased from one main hall to more than 20 distributed throughout various colleges at Kuwait University. Then, the number of courses offered with the support of the management and cooperation of the colleges, faculty members and students increased. Figure 2.2 shows statistics for the Distance Learning and E-Learning Center at Kuwait University, regarding the numbers of students and courses that apply distance learning. As can be seen from the Figure, there was a notable increase in the use of distance learning from the establishment of the Center until 2011 (Distance and Electronic Learning Center, 2012).

**Figure 2.2:** Number of students and courses applying distance learning at Kuwait University between 2001- 2011 (Distance and Electronic Learning Center, 2012).
2.8 Adopting E-Learning at Kuwait University

After the success of the distance learning experience at Kuwait University, the University sought to keep pace with rapid changes in learning methods and ICT. This took place through the implementation of projects related to e-learning within an integrated system of technology use in the learning process, which included: the development of distance learning programmes and expansion in their use; the use of e-learning tools; the creation of Smart Classrooms; the development of an electronic infrastructure; the application of a wireless network; the electronic management of human resources, and the updating of Kuwait University’s Electronic Portal, along with updates for the Electronic Student Information Portal. In addition, the University is currently preparing a project for the design of applications for Smartphone devices concerning Kuwait University (Economic and Social Commission for Western Asia, 2013).

In 2003, Kuwait University began applying its e-learning system. Since then, e-learning policies have been defined with the selection of the most appropriate international academic systems for developing and managing courses. This will in turn contribute to the advancement of the learning process at Kuwait University and keep up with the latest learning and technological systems, thus advancing and developing the skills and abilities of faculty members, students and staff in resolving problems related to the learning, e.g. the closed classes and gender mixing issues amongst students, given that the university applies gender segregation laws (Distance and Electronic Learning Center, 2012).

During the summer semester of 2004/2005, a Learning Management system (LMS) was first used as a means of e-learning at Kuwait University and this was represented by Blackboard. It was regarded as an aspect of integrated learning for promoting the culture of e-learning at Kuwait University. Furthermore, it was considered as the focal point of support for the
management and implementation of e-learning (Distance and Electronic Learning Center, 2012). Figure 2.3 indicates the gradual increase in the number of students and courses using Blackboard between 2006 and 2010 in all faculties belonging to Kuwait University.

![Number of students and courses using Blackboard at Kuwait University](image)

**Figure 2.3:** Number of students and courses that apply Blackboard at Kuwait University (Distance and Electronic Learning Center, 2012).

The Blackboard system was chosen by Kuwait University on the strength of its features. Among these is the fact that it is widely used by education organisations all over the world. Moreover, it is compatible with e-learning standards (for example SCORM). Besides this, there is the simplicity of its usage, with the capacity for expansion and integration into other systems, such as the university’s Electronic Portal and the Student Information System. Additionally, the availability of communication systems and content managing systems within Blackboard permit faculty staff to share course content by other practitioners and to easily integrate this with the curriculum. Furthermore, Blackboard is characterised by its
ability to provide various significant functions for faculty staff, in order to help them in the process of teaching and assessing students (Distance and Electronic Learning Center, 2012).

2.9 E-Portfolio

Recently, Kuwait University, particularly its Education Faculty, used E-portfolio, that available in Blackboard to evaluate students for graduation. E-portfolio is considered to be one of the modern methods of evaluating students by electronic means. With this method, all student work, such as presentations (PowerPoint), lectures and projects are grouped into a portfolio (Distance and Electronic Learning Center, 2012). The portfolio is used to evaluate the student's performance, as well as being considered as an objective and effective tool for evaluation, which may be relied on in assessing and documenting the learner's performance. Besides, it will encourage learners to reflect on their performance and to review their previous experience and accomplishments (Altaher and Atteih, 2012).

2.10 The Challenges that Accompany the Application of E-Learning at Kuwait University

Generally speaking, e-learning at Kuwait University is still in its infancy (Alfadhli, 2008) as regards its adoption and implementation. Ali and Magalhaes (2008) agree with this view, stating that e-learning in Kuwait University is a relatively new phenomenon. Alkharang and Ghinea (2013, p. 239) go even further, claiming that ‘Kuwait is falling behind other countries because of its relatively poor innovation and productivity capabilities’. In spite of high expenditure on electronic projects and obvious government efforts to improve the IT infrastructure in the nation, with the adoption of new technology in all sectors, particularly in the field of education, there is a shortage of studies being conducted on higher education institutions concerning the barriers and difficulties which students encounter. Alkharang and Ghinea (2013) state that there is a lack of research regarding students' acceptance of e-
learning in Kuwait. In fact very little research has been conducted to investigate students’ acceptance and usage of e-learning tools, or the factors that could affect student attitude and usage. It could be said that educational institutions do not give sufficient attention to these kinds of studies, which play a critical role in the ongoing development of the e-learning process.

Among the research which has looked into challenges encountered in e-learning at Kuwait University is Albadris’ study (2012). Albadri has identified the most significant challenges encountered by faculty members raised in using various VLEs, particularly Blackboard, as they demand considerable effort for the preparation of learning material and there are accompanying technical problems, with a shortage of qualified specialists in educational technology. There is also a scarcity of educational programmes that support the e-learning path. Moreover, it can be difficult to apply online tests. Nevertheless, in spite of these challenges, the results reveal that faculty members do acknowledge the importance of using e-learning, despite the problems, while Alfadhli (2008) has found that some faculty members at Kuwait University encounter difficulties with the English language and their failure to master English has a consequent negative effect on their adoption of e-learning. Actually, when looking at e-learning tools, it becomes clear that many of them are designed in the English language and there is a lack of applications in Arabic, which is considered as a significant challenge for adopting e-learning in universities, since many faculties use Arabic as the official language for teaching. This, therefore, can profoundly impact the students’ and tutors’ acceptance of e-learning. Most importantly, Alfadhli (2008) mentions that the unclear visualisation of e-learning by Kuwait University management is a very serious challenge for faculty staff, particularly for new tutors. Other barriers have appeared in an earlier study carried out by Alkharang and Ghinea (2013), which aimed to investigate the factors influencing the adoption of e-learning from the perspective of academics and
managers at Kuwait University. The findings indicate that performance expectancy, effort expectancy, social influence, management awareness, and language barriers could be considered as the main factors affecting the behavioural intentions of academics and managers to use e-learning.

Furthermore, Aldhafiri (2008) concludes from a descriptive study, that the use of VLEs at Kuwait University encountered administrative, financial, technical and academic challenges. Aldhafiri reported that Kuwait University management does not offer adequate support for the use of VLES, such as training courses to encourage students to see the significance of VLE application in the learning process and which enable students to use VLEs correctly and in interactive ways. Furthermore, there is a lack of VLE laboratories and computer devices at the University and tutors and students encounter technical problems, since there is also a shortage of technical support for those laboratories which actually exist. It has also been found that language is an important issue when using VLEs, since they mostly depend on the use of English. Therefore, it is crucial for the students and tutors to possess English language skills. On the other hand the development of learning materials for VLEs need more time and effort from tutors and more time must be dedicated to training students in the use of VLEs.

It is clear from previous examinations of the barriers to using e-learning that university support, particularly technical support and administrative support for tutors, besides language, are considered as being major obstacles for both tutors and students. Thus, Kuwait University still needs to make serious efforts to keep up with developments and sustained changes in e-learning.
It should be noted that e-learning is used at Kuwait University as a supportive tool for traditional learning and it is blended with the latter, thus VLEs are being used at Kuwait University to support and improve face-to-face, campus-based learning. Here, it is essential to be aware that any student registering online, with a university outside of Kuwait, or on a course at a foreign university, will obtain a degree that will not be authorised or officially accepted by the Ministry of Higher Education. The reason for this is discussed by Alfadhli (2008, p. 69), who states that, ‘There is a common belief that distance learning is lower in quality. Kuwaitis do not recognize e-Learning and distance learning as a valid mode of education and Kuwait University does not appoint a staff member with a distance learning or e-Learning degree’, therefore, Kuwait does not authorise distance learning or e-learning certification. Furthermore, Mustafa (2013) also reached the conclusion from his study investigating the extent to which online university degrees are accepted in Arab academia, that such degrees are not recognised qualifications for acquiring specific posts, since these degrees are not accepted under Arab academics and are not recommended under the standards of faculty members in the Arab academic community, particularly at university. Mustafa (2013, p. 2) clarifies that this is due to the common belief in the Arab world that ‘e-learning programs are rear doors for getting university degrees. Moreover, e-learning programmes lack of practice of student’s activities in compared to traditional’. For that reason, there are no virtual universities in Kuwait, but there is the Arab Open University, which follows an open learning policy and applies distance learning (Economic and Social Commission for Western Asia, 2013). In spite of that, private universities in Kuwait make substantial use of e-learning.

### 2.11 Overview of E-learning

In recent years, it is clear that the potential benefits of e-learning have been increasingly recognised across the world, namely in the development of the learning process (Golden et
al., 2006), whilst there is still some disagreement over its definition (Rosenberg, 2001; Kılıç-Çakmak, Karataş and Ocak, 2009; Lee, Yoon and Lee, 2009; Haythornthwaite and Andrew, 2011). Race (2005) interprets the difficulty of unifying the definition as a problem of its association with learning technology, which develops day after day, especially with the emergence of the Internet, where the concept is constantly being exposed to updates and amendment. For this reason, Race (2005) finds e-learning to be the truest expression of change in education, whereas Alshary (1997) attributes the diversity of e-learning definitions to the fact that many researchers view e-learning from the perspective of their specialisation, interests and previous experiences (cited in Alhelah, 1998). According to this diversity in defining e-learning, Khan (2005) has found it comprises various terms, for example, Web-based learning, digital learning, online learning, distributed learning and Internet-based training; all these terms focus on e-learning activities. Among these expressions, which are used interchangeably with e-learning, is Internet-based learning. From the names listed above, different types of technology overlap in e-learning, causing it to vary in form and name, depending on the technology used.

It has been argued that e-learning is a new area of distance learning (Garrison and Anderson, 2003), distinguished by the application of the most effective methods, together with technology and the Internet, which assist student interaction in the educational process (Alareeni, 2005). Meanwhile Julitta (2003) attributes e-learning to third generation distance learning, while More (2009) ranks e-learning as the fourth stage of distance learning, characterised by the presence of new ICT technologies. In the same context, O’Malley and McGraw (1999), Rosenberg (2001), (2008), and Goi and Ng (2009) agree that e-learning has emerged from distance learning. However, Rosenberg (2001) considers distance learning to be a broader concept than e-learning. For this reason, distance learning, which incorporates correspondence courses and one-way TV courses, can also lack interaction between the
A follower of the evolution of distance learning will find that in the beginning, there were no major issues concerning interaction and communication between the elements of education. It was development in the means of communication, interactive technology and the advent of the Internet at the end of the twentieth century (Alareeni, 2005) which finally had a significant impact on the process of distance learning, offering the possibility for a fundamental process of interaction. This reinforced the emergence of the Internet and modern techniques for distance learning (Alomari, 2002), where different methods of interaction and maintaining contact between the tutor and students were introduced, using channels provided by the Internet. Technological development in distance learning therefore spread and expanded to its maximum dimensions, but new patterns differed from traditional forms of distance learning, the best known of these being e-learning.

Basically, many researchers have defined e-learning in general, as a method of delivering learning resources using any type of technology, such as the Internet, audio and video tapes, interactive TV, and CD-ROMs (Engelbrecht, 2005; Sun et al., 2008; More, 2009). However, it can also cover Web-based learning, computer-based learning, or virtual classrooms and content delivery via satellite TV, video conferencing, iPads, emails, and mobile devices. Other tools suited to the classroom environment are laptops, data projectors software and interactive whiteboards, in addition to electronic communication tools, including email, discussion boards and blogs (Joint Information Systems Committee, 2004; Eke, 2011). All these aids can be used in the actual classroom to supplement traditional education, supporting and enriching the educational process, or else they may be accessed outside the classroom during distance learning (Almoosa and Almubarak, 2005).
Over the past few years, the dramatic spread of Web-based technology and the frequency of Internet use in teaching and learning have generated new tools for communication (Goi and Ng, 2009). Therefore, new e-learning technology has emerged which is gradually transforming the concept of a learning environment and has characterised e-learning (Ju, Hao-Fan and Yu-Hsin, 2007). The main transformation has been the move towards learner-centred learning in the educational process, as opposed to teacher-centred learning (More, 2009; Lee, Yoon and Lee, 2009). This means that the learner participates more actively in the e-learning process and takes more responsibility for their own learning (Ju, Hao-Fan and Yu-Hsin, 2007). Consequently, control in e-learning lies with the learner, as it is they who control their own learning environment (Eke, 2011, p. 2). Furthermore, it is self-directed, so learners can study according to their own schedule. They can also evaluate their own performance at times which suit them. Ultimately it is suggested that e-learning can enhance the efficiency of self-learning and encourage independent thought (Ju, Hao-Fan and Yu-Hsin, 2007, p. 415). Other important changes may take place in the interaction between learners and instructors, or learners and learners, which can be accomplished anywhere and at any time through synchronous and asynchronous learning tools (Sun et al., 2008; More, 2009).

As a result of these changes, it can be said that there is increasing concern over the use of the Internet in e-learning processes. Hence, many researchers define e-learning mainly as online learning which utilises Web-based and interactive network technology to deliver education and training, without restrictions of time or place (Sun et al., 2008; More, 2009; Holmes and Gardner, 2006; Goi and Ng, 2009). As Charmonman (2008, p. 1) points out, ‘Online or e-Learning is learning in which 80-100% is done through the Internet’.
In looking to Khan’s (2005) definition, e-learning is a method of creating an interactive environment which focuses on the student, which is well-designed in advance and which is accessible to anyone at any place or time, using the properties and resources of the Internet, plus digital technologies which conform to educational design principles considered to be appropriate for distance learning environments. Based on this definition, e-learning is not to be seen as random learning, but merely refers to the choice of electronic means to present educational substance. It is a process planned according to basic principles which should be taken into consideration upon implementation; these include the characteristics of the students and the interactive element; the addressing of concerns related to educational theories; principles of good design, and the extent to which these conform to the features of the respective students. It also indicates the use of interactive technology to provide an interactive element in the learning process. However, according to the Joint Information Systems Committee (2004), it should be the learning which is emphasised in e-learning, rather than the technology.

Further, Šumak et al., (2011, p. 1) define e-learning in such manner that goes beyond the traditional framework. They highlight the importance of the environment in providing access to synchronous and asynchronous learning resources and activities that transfer the learner from passive to active learning styles, through the advent of Web technologies and services (for example, Wikis, blogs, virtual learning spaces). Other options may also be provided, necessary for managing all aspects of a course, for example course content management, uploading content, the collection and organisation of students’ grades, and online quizzes. An examination of this definition will reveal that the authors explicitly point out how the e-learning process unfolds when interactivity is involved, on the basis that interaction is one of the most significant features of e-learning, binding together all elements of the educational process. Based on previous e-learning features, ‘e-learning is the act of
the learners to learn learning learn something in a specific way or of a specific type that is not the same as conventional learning’ (Woollard, 2011, p. 4).

Through a review of the various definitions of e-learning outlined above, there are on-going discussions about its precise definition. However, there is a consensus on the necessity for the Internet in e-learning and the greater need to link e-learning with the Internet than to any other method of communicating information. The Internet is also essential for providing interaction in the learning process and communication channels between the student and the tutor, or the student and other students. From the above, it can be concluded that the objectives of e-learning are to make interactive use of modern technology as a support for the learning process, thus potentially leading to a more satisfying academic and educational result than that which may be achieved through other modes of learning.

Overall, traditional e-learning, as we generally know it, has mainly been implemented to deliver and manage content and learning, but this is no longer always effective because contemporary learners display different characteristics (Aixia and Wang, 2011). For instance, current generations grow up with the Internet and media, such as remote control mobile devices: iPads, iPhones, and digital games, and they start e-learning when they play with these tools (Veen and Vrakking, 2006). Therefore, innovation in ICT has changed learning environments, which are now no longer limited to the classroom environment, or even to the teacher-pupil relationship (Aixia and Wang, 2011, p. 264). One such innovative tool is the VLE.
2.12 Virtual Learning Environments (VLEs)

Virtual learning environment is a term which was added by information technology to distance learning. Its emergence has been associated with the increasing role of the Internet and its growth, particularly as a means of sharing and managing information. These environments were initially used as conduits for delivering information. Then, they were transformed into environments that offered various academic and administrative processes, so that students could interact with them as if studying in a physical classroom (Abdulhameed, 2005). From Zaytoune’s (2004) point of view, these virtual environments are artificial learning environments which closely resemble the real world, whereby the student participates and becomes involved in the learning process taking place within a networked environment. In this way, many individuals are able to interact with different learning resources and to learn at the same time through a global information network.

Basically, VLEs comprise a Web-based course, consisting of a package of software systems initially created to utilise the advantages offered by the Internet (Schulte-Mecklenbeck, 2004). In another definition of the term ‘VLE’, it is described as ‘a collection of integrated tools enabling the management of online learning, providing a delivery mechanism, student tracking, assessment and access to resources’ (JISC infoNet, p. 5, 2004). These types of VLEs are referred to as Learning Management System (LMS), Online Learning Environments, or Content Management Systems (CMS). Furthermore, VLEs can be divided into two different groups: those that require the payment of fees for use of the software, such as WebCT and Blackboard, and free VLEs, for example, Moodle and Ilia.

The main purpose of these environments, as Carmean and Haefner (2002) specify, is to assist tutors with the use of the Internet during the teaching process, communicating with
students, and disseminating learning materials in an easy manner, without the need for deep knowledge of programming methods, or the creation of their own pages on the Internet. Furthermore, VLEs are not simply about e-learning or distance learning, but are also currently recognised as an effective means of supporting and assisting the development of traditional learning, often enriching classroom activities (Keller, 2005). Therefore, they are not restricted to distance education; recently VLEs started to be considered as common tools offering support and enhancing traditional learning to improve the quality of the learning process, in an approach referred to as ‘blended learning’. Furthermore, they are considered as an important means of achieving and supporting the philosophy of self-learning in many universities (Mahdi, 2008), with the potential for developing various skills for lifelong learning (Carmean and Haefner, 2002). Thus, they have instantly become embedded in the learning process (Pituch and Lee, 2006), especially in universities and institutes of higher education and are increasingly considered as supportive tools for teaching and learning, where various institutions have begun ‘using a standardised set of tools and interface design that could be centrally managed, resourced and monitored’ (Brown, 2010, p. 1).

2.12.1 The Significance of Using VLEs

Haran (2007) argues that the VLE is a learning tool rather than a learning method. He describes its aims as being to transfer, support and promote various types of distance learning as well as traditional learning. Furthermore, VLEs are tools that will help control students’ learning speed, as well as providing access to various learning resources at any time and from any location. Moreover, these environments enhance students’ ability to communicate with their tutor and other students, allowing them to discuss topics with the use of synchronous and asynchronous communication tools. Moreover, they permit interaction between students and tutors, as well as providing a method of sending and receiving learning material in various ways, so that learners can connect with the learning
process. Holmes and Gardner (2006, p. 10) state that VLEs offer ‘new opportunities for both tutors and learners to enrich their teaching and learning experiences’. Moreover, VLEs provide a resource for exchanging, transforming and managing information through a selection of tools, while at the same time offering various academic and administrative services which the student can deal with as if in person (Abdulhameed, 2005). Most significantly, students are able to receive feedback on their performance (JISC infoNet, 2012).

In view of the significance of virtual environments, it could be said that they represent a fertile field for the use of learning software through the Internet, whereby the student can obtain as many as possible of the informative and cognitive skills and capabilities that contribute to the promotion of the distance learning process, in that the lessons are explained using different types of multimedia and communication during the learning process. This can take place from any location and at any time.

2.12.2 The Advantages of Using VLEs

Like any other tools, VLES have advantages and disadvantages. According to Haran (2007), O’Leary (2007), Schulte-Mecklenbeck (2004) and JISC infoNet (2012), these advantages and shortcomings of VLEs are as follows: the first privilege of a VLE is its flexibility of use, which means the learner is not restricted to a specific place or time; secondly, usability and accessibility, as the learner can use a VLE without any special knowledge of website construction. In addition, tutors can construct their own online courses without requiring high levels of technical skill. However, tutors need pedagogical skills when using VLEs and designing their content. Furthermore, the learner can access a range of learning resources which may be presented in different ways, such as videos, graphs, PowerPoint presentations, communication tools, lecture notes, documents, libraries, Website links, and quizzes.
Therefore, learning materials may be uploaded in several forms. In addition, learners can easily access these learning resources, and use them frequently according to their needs and available time. Thirdly, learning resources can be redeveloped and changed without difficulty. Moreover, tutors have the scope to update their online courses without any restrictions. This means they can manage and administer their own courses (JISC infoNet, 2004). Most of all, interactivity can be facilitated through different communication tools that enable learner-learner and learner-tutor interaction in various ways such as through the discussion board and forum.

There are many arguments as to whether VLEs save time for tutors. Wareham (2005) discusses the issue that effective VLEs can save tutor time through the provision of storage data and the facility to constantly update courses. However, tutors could face overload while trying to communicate with each student, and designing e-courses takes time. However, as soon as the content is designed, it can easily be updated (JISC infoNet, 2004). Wareham (2005, p. 5) concludes that a ‘VLE can reduce the workload of tutors through a change in pedagogy and culture’. The author adds that VLEs can also save lecture time by presenting the information before the lecture, thus helping the learner to construct knowledge (Wareham, 2005). In addition, Gillespie et al., (2007, p. 2) mention that VLEs can help a learner ‘create and store digital work which can be refined as the project progresses’. What is more, as Keller (2005) outlines, VLEs enable tutors to track student activities and their access and engagement with VLE tools. Furthermore, these tools are often linked to other informational systems, such as the library, student records, or other administrative systems within the university which are not part of the VLE options.
2.12.3 The Shortcomings of Using VLEs

Certain shortcomings restrict learners or tutors from using VLEs, such as the unavailability of computer and Internet access off-campus, which prevents learners from accessing them; this issue is considered as a significant obstacle for some. Furthermore, the properties of the Internet should be considered. For instance, when the Internet connection is slow, it will affect downloading and the navigation process. Moreover, VLEs can also become useless, uninteresting and discourage interaction when the learning materials are not sufficiently well-designed to meet learners’ needs, particularly when they are full of inappropriate and non-beneficial information and are not well-organised. In such cases, students could become confused about course activities and deadlines for assignments. This is a situation where the learning material needs to be developed and periodically updated. Besides, VLEs need continuous support and updates from IT departments to avoid excessive load. Other issues include overload for the tutor, especially in communicating with each learner. Moreover, tutors may not always be available online when the students need it and there is the possibility that the learner could become isolated and lack support in the learning process. Besides, this type of learning may be inappropriate for certain styles of learner, namely those who lack self-discipline and cannot manage their personal time, or those who cannot deal with the tools and are not flexible in dealing with technology. It will also clearly have implications for those who are unable to learn independently. Learners such as the above are not likely to favour this method. In addition, since e-learning is dependent on the learner’s motivation, these intrinsic incentives must be inherent in the learners if they are to engage in the learning process and take full advantage of the available options (Mobbs, 2003). So, it must also be borne in mind that VLEs are not suitable for all types of course. On another hand, Brown (2010, p. 6) stats that VLEs require ‘widespread buy-in, and enterprise wide infrastructure [is] required’.
2.12.4 Common Tools in VLEs

VLEs contain a series of diverse tools and options to facilitate the delivery of the learning process. O’Leary (2007) mentions the following tools:

2.12.5 Communication Tools

The most significant feature of VLEs is that they support social interaction for learners in many ways, via synchronous and asynchronous tools, such as email, bulletin board, chat rooms, discussions tools, online timetables and calendars. These tools can be linked to other tools, such as ‘course content’.

2.12.6 Collaborative Tools

The purpose of these tools is to encourage collaborative learning within and across groups, through forums, the uploading of files, the sharing of diaries and the exchange or delivery of learning resources.

2.12.7 Assessment Tools

Summative and formative assessment can take place using various online assessment tools, such as self-testing, quizzes and assignment tools.

2.12.8 Course Management Tools

Through these tools, the tutor can record data on the learner’s progress or track individuals or groups of learners. Feedback can also be provided for tutors on the tools the learner uses, as well as the times and dates of the learner’s access and how often he or she accesses them.

2.14.9 Course Resource Tool

The tutor can provide the learner with supplementary documents and links to different sites or to other learning resources, such as activities, images and videos, by using this tool.
2.14.10 The Content System

The content system saves the content of the courses, exams and assignments in a special box relating to the course, with the capability of involving many of the faculty members in the use of this content in multiple classes offering the same course. This will result in reduced effort, as the same course will be generalised to all students within the university. In addition, the content system includes the e-portfolio function, whereby the user can display his or her abilities, achievements and contributions.

2.15 Blackboard as a VLE

Blackboard is among the most widely used learning environments for managing e-learning. It is affiliated with the Blackboard foundation for learning services, based in Washington. One of the main advantages of this system is its ease of use for both the tutor and the student, due to the navigation system, which is an interactive interface design. This is specially designed for ease of use by students. Moreover, there is a bulletin board which enables the student to view announcements or course news on an ongoing basis.

On the other hand, the tutor can establish the course content directly within Blackboard, without resorting to the hypertext mark-up language (HTML) - a language used to write and submit pages on the Internet. The tutor can also prepare all aspects of the learning materials through the options and tools available within the system, in terms of managing the classroom, providing information related the topic presented to the students, and the assignments and tasks that the student is meant to accomplish (Blackboard Learning System, no date). These environments support formats for various files, such as Word and PDF files for electronic publishing, which both the tutor and students can download. Furthermore, virtual classes are correspondingly presented to explain the lessons and offer support
through different types of multimedia, such as graphics, pictures, videos and Flash, in addition to presentations (PowerPoint) and websites.

In this current study, the Blackboard environment was used as an essential tool in the integrated learning process, along with traditional learning. This was due to the recent availability of this environment at Kuwait University, supported by its e-learning Department. In addition, it is considered as one of the most widely used and developed virtual environments at Kuwait University.
CHAPTER THREE

Theoretical Background

3.1 The Technology Acceptance Model (TAM)

At a time when technology was growing rapidly, user acceptance, attitudes and behaviour in relation to this new technology were widely targeted for active research (Venkatesh et al., 2003) and have consequently been extensively studied for the past decade. For the reason user acceptance is considered as a critical issue in the continued use of technology and improvement (King and He, 2006). Furthermore, it is considered as an anchor factor in the implementation of technology (S, and Kumar, 2013). Thus, technology acceptance is one of the most investigated issues in the field of information systems (IS) (Rosen, 2004). Consequently, various relevant theories and models have been conceptualised, for example, Theory Reasoned Action (TRA), the Technology Acceptance Model (TAM), the Theory of Planned Behaviour (TPB), the Innovation Diffusion Theory, and the Unified Theory of Acceptance of the Use of Technology (UTAUT). For the most part, the above focus on explaining why users reject or implement particular technologies, drawing upon the fields of IT, IS, psychology and sociology (Eke, 2011).

Out of all the models and theories mentioned above, the TAM Model is the most commonly used model in IT and IS (Davis and Venkatesh, 1996). Furthermore, TAM has attracted the attention of researchers to study the adoption of technology and they have concentrated more on these issues. The adoption of technology has in fact gained significance through the TAM Model (Davis, Bagozzi and Warshaw, 1989). This is due to the reasons put forward by Davis (1989), who declares that there has been a deficiency in the field of IT, as regards valid and high quality measures to predict the extent of user acceptance, its
relationship to system usage and its associations with the system being used. As a result, the TAM Model has introduced a suitable scale for predicting users' acceptance and the usage of technology, based on perceived usefulness and perceived ease of use.

The main purpose of the TAM Model as Davis (1993, p. 475) states is ‘to address why users accept or reject information technology and how users’ acceptance is influenced by system characteristics, and also to understand how to improve user acceptance’. Davis and Venkatesh (1996) add that the TAM Model is influential in predicting user acceptance and users' intentions, as well as the efficient usage of tools in the field of technology. The latter is regarded as a key challenge in IT. Thus the TAM Model is cited extensively as a theoretical model for the above purposes in the IS field (Lee, Kozar and Laren, 2003; Benbasat and Barki, 2007) as it has a solid theoretical base (Teo et al., 2011), emerging from the perspective of social-psychological theory, repeatedly refined over time (Goodhue, 2007). It therefore has a proven ability to interpret human behaviour in an effective and successful approach (Davis, Bagozzi and Warshaw, 1989).

The notion of the TAM Model extended from the Theory of Reasoned Action (TRA), expounded by Fishbein and Ajzen (1975). This is considered as one of the key theories from social psychology for interpreting and predicting human behaviour (Venkatesh, 2000) and individual attitudes. The concept behind TRA theory is that what people believe will influence their attitude, thus giving rise to intent and the prediction of behaviour. As shown in Figure 3.1, actual behaviour is determined by individual behaviour and behavioural intention is mainly determined by attitudes toward behaviour and subjective norms. In fact, TRA theory also highlights the relationship between beliefs and attitudes and this relationship has been demonstrated in psychological research (Siragusa and Dixon, 2008).
In 1986, Davis applied aspects of TRA theory in his doctoral thesis. This was in order to understand and predict students’ acceptance of a word-processing programme at a school of management. TRA theory was thus represented for the first time in a sequential causal relationship between beliefs, attitudes and actual behaviour. Davis redesigned and simplified TRA theory by excluding the subjective norms and salient beliefs, so that it would be more appropriate and efficient for IT research into IT acceptance. However, two important beliefs were added and a system design characteristic symbolised by X1, X2 and X3, as shown in Figure 3.2. Bagozzi (2007) mentions that the path linking model components causes the TAM Model to overlap with TRA theory.

**Figure 3.1:** Theory of Reasoned Action (Fishbein and Ajzen, 1975)

**Figure 3.2:** The original Technology Acceptance Model (TAM) suggested by Fred Davis (Davis, 1986, p. 24)
The main difference between TRA theory and the TAM Model is that the former takes into consideration the subjective norms, along with attitudes, as factors which directly affect behavioural intention and then actual behaviour; while in TAM Model, the subjective norm is excluded and depends purely on attitudes which directly predict actual system use, without identifying behavioural intention. Secondly, the TAM Model depends on just two types of belief to predict attitude, while TRA theory depends on a number of salient beliefs to predict attitude.

Since the TAM Model’s introduction in 1986, TAM has not sustained its original design but has been exposed to several modifications. The first was in 1989, when Davis, Bagozzi and Warshaw first amended the original TAM Model by adding behavioural intention. This was because they presumed that users would have a greater intention to use the technology if they had a high level of belief about the tool’s usefulness, regardless of their attitudes. In addition, external variables were added that could affect to users’ beliefs. Finally, it became known as TAM1 (first modified), explaining usage based on users’ internal beliefs, attitudes and behavioural intention, as shown in Figure 3.3, below.

![Figure 3.3: TAM1, first modified version of the TAM Model (Davis, Bagozzi and Warshaw, 1989)](image)

In 1996, Davis and Venketesh made another adjustment to the TAM Model, based on the empirical evidence provided by Davis, Bagozzi and Warshaw (1989). They found that
perceived ease of use and perceived usefulness had a direct effect on behavioural intention and they concluded that users may perhaps use technology even if they do not have favourable attitudes, and they stated that attitude did not entirely mediate the influence of perceived usefulness on the behaviour intention. Thus, Davis and Venketesh (1996) excluded attitudes from the TAM Model and postulated that attitudes do not play a significant role in users’ behavioural intention to use, since attitudes are confined by performance and effort expectancies (Venkatesh et al., 2003). Figure 3.4 represents the final modifications for the TAM Model.

![Diagram of TAM Model](image)

**Figure 3.4**: Final version of TAM1 (Davis and Venketesh, 1996, p. 20)

Subsequently, in 2000, Venkatesh and Davis presented a theoretical extension to the technology acceptance model and managed to extend the second version of TAM, referred to as TAM2. The main purpose of this version is to overcome TAM1 restrictions related to describing the reasons for someone perceiving a given system as useful (Chuttur, 2009). Thus, Venkatesh and Davis introduced specific variables as antecedents for clarifying perceived usefulness and usage intentions from a social and cognitive perspective, namely by adding the following variables: job relevance, output quality, result demonstrability and
perceived ease of use, as cognitive processes. On the other hand, they integrated subjective norms, voluntariness and images as processes of social influence (Venkatesh and Davis, 2000). It is noticeable from Figure 3.5 that all the above factors were directly and exclusively connected to perceived usefulness, without any relationship between these factors and perceived ease of use. In addition, attitude was excluded in TAM2. Using TAM2 provided an opportunity to identify in more detail the reasons why users find specific systems useful from various perspectives. TAM2 was verified by longitudinal data collected in voluntary and mandatory environments.

![Technology Acceptance Model](image)

**Figure 3.5:** Technology Acceptance Model 2 (Venkatesh and Davis, 2000, p. 88)

In current study, I adopted TAM1, modified by Davis and Venkatesh (1996). The main reason for the adoption of this version is that attitudes play a significant role in identifying students’ acceptance of technology. From the perspective of social psychology, it is considered a best predictor for determining a person’s behaviour (Fishbein and Ajzen, 1975). Thus, it provides criteria for identifying students’ acceptance. Many studies have
confirmed that students' attitudes affect their behavioural intention, and a significant relationship between students' attitudes and users’ intentions has been indicated. Moreover, knowing about learners’ attitudes to e-learning will help improve e-learning usage and effects in the future and will assist in designing appropriate e-learning environments for teaching and learning (Liaw, 2008). Therefore taking students' attitudes towards this type of learning into account should not be eliminated from the model. Socially, from the TRA perspective, students’ behaviour intentions mainly rely on their attitudes toward e-learning (Fishbein and Ajzen, 1975) and therefore intentions to use e-learning are predicted via attitudes. Furthermore, as per the aim of the current study to investigate the influence of specific factors on students' attitudes towards learning through VLEs at Kuwait University and on students’ intention to use e-learning, it was necessary to use the version of TAM which includes attitudes. Moreover, there is no wish in the current study to move away from the original TAM Model. Instead, the researcher wishes to preserve the identity of the TAM Model so, as far as possible, the components of the model and the relationship pathways between the variables have not been substantially modified from the original TAM. In fact, just as Igbaria et al., (1997, p. 281) have stated, the researcher has found that the TAM Model was ‘much simpler and easier to use but a more powerful model of the determinants of user acceptance of computer technology than TRA theory’.

On the other hand, the TAM2 Model was not applied for the current study, mainly because TAM2 introduces specific factors that are not meaningful for the study aims in this instance. As mentioned previously, the aim of this study is to investigate the influence of specific factors (Internet self-efficacy, personal innovativeness, technical support, instructor characteristics, course interactivity, and content quality) on students’ attitudes to VLEs. The study also endeavours to investigate the relationship between students’ attitudes and students’ intentions to use e-learning in the future, with the TAM2 Model excluding
attitudes. Furthermore, the current study intends to investigate the influence of specific factors on students’ attitudes, mainly through perceived ease of use and the usefulness of VLEs. Ultimately, the TAM1 Model is the most convenient model for the current study.

3.2 The Main TAM1 Model Components and the Relationships between Them

The TAM Model is considered as the first model to comprise a psychological factor affecting technology acceptance (van Raaij and Schepers, 2008) and an understanding of the relationship between psychological and other factors. The TAM1 Model mainly consists of two key beliefs, the first being the perceived ease of use and the second, the perceived usefulness of information technology. These beliefs are regarded as essential determinants for assessing users’ acceptance of technology and their attitudes towards adopting a particular system, as well as for determining the indirect effect of the external variables on attitudes and beliefs. Thus, these factors are recognised as criteria for user acceptance by numerous researchers (Davis, 1989). Other major components consist of attitudes, behavioural intention and actual use.

Davis (1989, p. 320) defines perceived usefulness as the ‘degree to which a person believes that using a particular system would enhance his or her job performance.’ On the other hand, perceived ease of use is the ‘degree to which person believes that using a particular system would be free of effort’. These two basic beliefs have a direct impact on users’ attitudes towards a particular technology and together, can shape users’ attitudes. They will then influence the intention to use a specific system, leading to actual usage. Davis has also theorised perceived usefulness as having a direct effect on the intention to use. In other words, actual use is determined via users’ behavioural intentions, and users’ behavioural
intentions are determined via the attitude of users. Finally, attitudes are determined via perceived ease of use and perceived usefulness.

From another angle, in the TAM Model, Davis, Bagozzi and Warshaw (1989) have theorised perceived ease of use as being directly linked to perceived usefulness and perceived usefulness’ is directly linked to behavioural intention. Consequently, perceived ease of use indirectly affects the behavioural intention to use, via perceived usefulness. The TAM Model postulates that external variables have an indirect impact on users’ attitudes through perceived ease of use and perceived use.

Ultimately, the TAM Model clarifies the relationship between external variables and beliefs, and beliefs and attitudes, before shedding light on why users accept or reject technology, based on certain factors (Davis, 1993). According to the obvious and specific relationships in the TAM Model, Bagazzi, (2007) describes it as ‘parsimonious’, which is considered as its strength.

3.3 The Significance of Attitudes in E-Learning

‘Attitude' is a common term in psychology and it is also broadly used in sociology and education. It plays a significant role in identifying and interpreting the behaviour of individuals and has thus gained intense interest from researchers in theoretical or applied research. Therefore, numerous definitions of the term have emerged. Hogg and Vaughan (2005, p. 150) define it as ‘a relatively enduring organisation of beliefs, feelings, and behavioural tendencies towards socially significant objects, groups, events or symbols’. In another practical definition, Fishbein and Ajzen (1975, p. 216) have defined attitudes as an ‘individual's positive or negative feeling about performing the target behavior (e.g. using a system)’. They also define this as representing ‘a person’s general feeling of favourableness
or unfavourableness toward some stimulus object’. More specifically, Davis (1993, p. 476) defines attitudes towards use as the ‘degree of evaluative effect [sic] that an individual associates with using the target system in his or her job’. Moreover, Hallorans (1970) argues that attitudes are not inherited, but are rather learned or acquired, and then developed and formed through direct personal experience and social context. In this current study, learners’ attitudes are defined as the extent to which learners favour the use of VLEs and seek effective learning methods.

Basically, attitudes are constructed from three main components and these combined, make up attitudes. First of all, there is the affective component (emotional). This concerns an individual's feelings and emotions towards the attitude theme. Secondly, there is the behavioural component, which relates to the way in which attitude will influence an individual’s behaviour and his or her tendency to gravitate towards a specific theme. Thirdly, there is the cognitive component, which pertains to an individual’s beliefs, opinions, or ideas concerning a specific issue, and how these components relate to each other and affect each other (Mcleod, 2009).

Baker (1992) discusses the importance of attitudes as an indicator of an individual’s thoughts, beliefs, preferences and desires. Furthermore, they can assist in the interpretation and comprehension of the social process. They may also be used to clarify the direction and persistence of individual behaviour, or even to predict behaviour (Crano and Prislin, 2006). Moreover, the identification of attitudes will enable individuals to feel, form realisations and think in a certain way concerning the different topics that they have encountered and experienced.
Through attitudes, an individual's response to others and to various topics can also be identified. Moreover, they will crystallise and clarify the relationship between individuals and the surrounding community, as well as determining, interpreting and orientating the direction of the respective person’s behaviour. Furthermore, they will facilitate the decision-making process by evaluating decisions according to different situations (Hamza, 1997). In general, attitudes represent ratings of love, preference, hate and trends towards a specific case, person or thing. Moreover, attitudes may represent the outcomes of an individual's relationship with a particular topic and its association with stimuli, social situations involving a number of individuals or groups, and various factors which will eventually result in driving behaviour.

Based on the above discussion, it may be concluded that an individual's attitudes can be inferred through their behaviour towards a topic or an individual, since attitudes are reflected in words, actions and interaction with others. In this respect, Gee and Gee (2006) are of the view that an individual's positive attitudes will determine the extent of his/her success at professional and personal levels. For example, if he/she has a positive attitude, this will cause him/her to attempt to overcome any obstacles encountered. In contrast, if attitudes towards work are negative, this will provide opportunities to accumulate a large number of frustrations that will ultimately lead to failure at work. Thus, attitudes towards the e-learning context are regarded as meaningful and powerful issues in interpreting an individual's behaviour, as well as having the capacity to predict future behaviour when using a new technology. In turn, they will influence students’ performance. Therefore, attitudes can be seen to play a crucial role in learning.

In the context of e-learning and with extensive use of this kind of learning, there have been concerns about users’ attitudes towards e-learning and many studies have hypothesised and
supported that beliefs affect users’ attitudes, which can in turn affect behavioural intention. Such studies provide evidence of the significant effect of learners’ attitudes to e-learning on behavioural intention and they conclude that attitudes are considered as a significant determinant for behavioural intention (Liu, Liao and Peng, 2005; Porter and Donthu, 2006; Abdel Wahab, 2008; Liu, Liao and Pratt, 2009). Further, Abdel Wahab (2008) concludes that students’ attitudes towards e-learning, perceived usefulness, perceived ease of use, are necessary factors when modelling students’ intentions to adopt e-learning.

On other hand Liaw, Huang and Chen (2007) discuss that the use of various kinds of technology is not enough to increase learning quality, but a positive attitude is also a requirement for success in the e-learning process. Moreover, an awareness of users’ attitudes is considered as a critical issue for enhancing learning processes and generating applicable designs. In addition, they explain why users’ attitudes are critical in e-learning; namely that they lead to an understanding of users’ tendencies to gravitate towards certain attitudes and their feelings about technology. This information can then be applied to learning to make the process more ‘effective, efficient, and appealing’ (Liaw, Huang and Chen, 2007, p. 1077). From Damoense’s (2003) perspective, students with positive attitudes to Internet-based learning are able to acquire knowledge and learning experience related to cognitive skills, such as problem-solving, decision-making, analysis and critical thinking. Moreover, Damoense adds that there is a strong correlation between positive attitudes towards Internet-based learning and the degree of participation in those environments. In sum, understanding students' attitudes toward e-learning is considered to be a vital criterion for predicting their intentions to use it, although there is a need to improve the effectiveness of e-learning.
However, Davis, Bagozzi and Warshaw (1992) and Venkatesh et al., (2003) all found that attitudes have a weak influence on the formation of behavioural intention, but are important as partial mediators in discovering the relationship between beliefs and behavioural intention.

3.4 Behavioural Intention

Fishbein and Ajzen (1975, p. 288) define behavioural intention as a ‘person’s subjective probability that he will perform some behavior’. In the light of TRA theory, actual behaviour is determined by behavioural intentions, behavioural intention being formed on the basis of an individual's attitude towards the behavioural and subjective norms pertaining to the enacting of the behaviour. It is therefore apparent that there is a sequence of relationships between beliefs, attitudes and actual behaviour. In the current study behavioural intention relates to the students’ decision to use VLEs and other e-learning tools in their learning in the future.

With respect to the above issue, Fishbein and Ajzen (1975) illustrate that the person with a positive attitude towards something will intend to enact further positive behaviour, whilst the person with a negative attitude will plan on performing negative behaviour. In the context of e-learning, Parker (2003) points out that users who maintain favourable attitudes to technology are most probably successful in adapting to an e-learning environment and using e-learning on an ongoing basis. Accordingly, behavioural intentions are considered as the most immediate predictors of users’ behaviour (Ajzen, 1991). Furthermore, in order to be able to predict the behavioural intentions of individuals, it is important to identify their attitudes via their beliefs.
In the TAM Model Davis (1989) assumes that attitude is a strong predictor of users’ intentions to use a new technology. As mentioned earlier, attitudes are usually directly shaped by personal experience, so they can be seen as feelings or ways of thinking which affect a person's behaviour. Moreover, attitudes act as a mediating construct between beliefs and behavioural intentions. They therefore have a vital impact on the behaviour of individuals and their day-to-day lives. It is through becoming aware of the attitudes of the individual towards a particular topic that the level of achievement in a particular area can be predicted. Moreover, it is by precisely identifying individuals’ attitudes that the reasons for failure or success in the performance of certain tasks can be understood and the reasons why individuals or groups disagree with each other can be revealed (Hassan, 2010).

### 3.5 Limitations of the TAM Model

Arguably, the TAM Model is a well-recognised model in IS that has supported it in the improvement of tools and contributed to a better understanding for user acceptance. Furthermore, it has succeeded in achieving the purpose indicated, more easily than has the TRA theory (Igbaria et al., 1997). Furthermore, Venkatesh and Davis (2000) mention that several empirical studies have concluded that TAM1 constantly clarifies a considerable percentage of the variance: approximately 40% in usage intentions and behaviour, compared to the theory of reasoned action (TRA).

Nevertheless, the TAM Model has come under criticism and had its limitations pointed out from various angles. In an article written by Chuttur (2009) pertaining to TAM limitations, the author has discussed these limitations and identified the following shortcomings, centred on three areas: firstly, limitation has not been accommodated in the methodology; secondly, the variables and relationships between them have not been explored, and thirdly, there are
limitations in the foundations for this model. The main criticism directed at the TAM Model involves the method of investigation, which mainly consists of self-reported data (Chuttur, 2009), typically gathered using a survey method that contains multiple items. This is considered as a subjective measure, providing imprecise and relative indicators for system usage (Legris, Ingham and Collerette, 2003).

However, according to Bagozzi (2007), the major advantage of TAM is its stinginess in the relationship between its components. Moreover, while Straub and Burton-Jones (2007) point out TAM’s strong points, these are also its weak points, since one criticism directed at it is its ignorance of social variables and cultural features, as well as other user behaviour. Likewise, Salovaara and Tamminen (2009) have found that the TAM Model does not concern the influence of social issues, such as the subject norm. In this regard, Benbasat and Barki (2007) declare that the TAM Model has misled researchers by using serious salient behaviours, which could have affected users’ decision on technology acceptance (Bagozzi, 2007).

Another criticism mentioned by Kwahk and Lee (2008) argue in favour of TAM’s perceived usefulness and perceived ease of use. However, although these beliefs may influence the thoughts and attitudes of users, they do not actually explain them. Other meanings provided by TAM Models include general information on users’ thoughts about a system, but without clarifying how such beliefs or thoughts are shaped, or the manner in which they can improve user acceptance and usage (Mathieson, 1991). In the words of Goodhue (2007, p. 220), the TAM Model has blind spots in that it mainly investigates ‘what causes users to utilise technology’. Where Benbasat and Barki (2007) have found that the majority of studies do not inquire about the real reasons for a system being useful, several studies have dealt with
perceived usefulness and perceived ease of use as the ‘black boxes’ which are difficult to open.

Moving on to other criticisms pointed out by Salovaara and Tamminen (2009), the TAM Model does not consider the probability that technology might be initially accepted by users, but rejected later, or vice versa. In looking at this issue, Bagozzi (2007) doubts the theoretical relationships between some constructs in the model, particularly the relationship between behavioural intention and actual usage. He argues that users’ intentions might not predict users’ actual usage, for the reason that the time period between intention and actual use might be affected by other factors influencing users’ judgment over the acceptance of a technology. The further intentions of users could involve exposure to assessment and reflection, thus leading them to reconsider their intention.

The above criticisms have caused researchers to make some substantial modifications to the original TAM Model and several studies have integrated other theoretical models into the TAM Model and variables. These changes have led to obvious and basic changes in the TAM Model, for the purpose of avoiding TAM constraints. They are also aimed at adapting the TAM Model to the continuing modifications in information technology, in order to provide more interpretations of user acceptance (Benbasat and Barki 2007), as well to increase the predicative capacity of the TAM Model. In turn, the researchers’ transformation from the original model has led, as Benbasat and Barki (2007, p. 211) point out, to a ‘theoretical chaos and confusion in which it is not clear which version of the many iterations of TAM is the commonly accepted one’. They further add that intensive application and replication with regard to TAM have transferred the interest of researchers away from significant research issues and ‘caused an illusion of progress in knowledge accumulation’. From Lee, Kozar and Larsen’s (2003) insights, concentration on the TAM
Model has tended to reduce awareness of the role of the technology itself and its design. Moreover, these changes could affect the model’s validity.

Despite these limitations and criticisms, the TAM Model is still a rigorous model for explanations and making predictions about users and the most tested model is used for technology acceptance (Yousafzai, Foxall and Pallister, 2007). These facts were confirmed by several TAM1 meta-analysis studies in the literature, attesting to the validity of the TAM1 model scale and theoretical accuracy, such as the meta-analysis studies conducted by Ma and Liu (2004), where 26 empirical studies were reviewed in order to be able to analyse the existing empirical results for the TAM1 Model. Their meta-analysis confirmed the original TAM1 Model finding, and it was significantly verified that perceived usefulness was considered a critical factor for IT adoption, even over perceived ease of use. Likewise, Schepers and Wetzels (2007) conducted quantitative meta-analysis for 63 studies using the TAM1 Model in different countries and for various populations, sample sizes and tools. Their meta-analysis study verified the underlying relationship between TAM components, particularly the importance of perceived usefulness and perceived ease of use in forming students’ attitudes toward IT. In another meta-analysis, King and He (2006) investigated 88 studies using the TAM1 Model and reported that it was powerful and robust in predicting user acceptance. Lee, Kozar and Larsen’s (2003) meta-analysis, where they looked at several different studies published between 1986-2003, that applied TAM1 Model. They concluded that the TAM1 Model is the most influential model utilised in different studies to investigate the acceptance of IT and IS and to predict usage, but they also found that the TAM Model frequently developed over that time and researchers were involved in helping to resolve its limitations, adding new external variables, besides incorporating other theoretical models, in order to render it applicable to a range of subjects, information systems, and the environment. Thus, the TAM Model has broadly received experimental
and theoretical evidence from researchers using the replicated TAM Model, with a set of technology tools and under varying circumstances (such as different cultures, fields, factors and users).

### 3.6 E-Learning Acceptance and the TAM Model

Carswell and Venkatesh (2002) have found that many researchers have given considerable attention to TAM Model in their investigations of user acceptance and the use of new technology in e-learning. In addition, many researchers have constructed their models based on the TAM Model to investigate external factors affecting user acceptance and usage behaviour. This is because the TAM Model is considered as a reliable source for tracing the indirect influence of external variables on internal beliefs, attitudes, and intentions (Legris, Ingham and Collerette, 2003). In addition, it is a ‘practical tool for early user acceptance testing’ (Davis, 1993, p. 484). Šumak et al., (2011) mention one of the most significant advantages of the TAM Model as being a certain degree of flexibility, which can be modified, based on the purposes of the study, enabling it to be extended. Furthermore, many researchers have also found it can be used for many other purposes, such as investigating user needs and user factors, while discovering its usefulness for e-learning. Rosen (2004, p. 6422) mentions that ‘one of the strong points of the TAM Model is its simplicity’. Similarly, King and He (2006) widely applied it due to it being simple to understand and use without complications. This view is supported by Sánchez and Hueros (2010, p. 1633), the TAM Model representing for them a consistent and secure method of predicting how users will accept modern technological tools. Generally, Schepers and Wetzel’s (2007) report that the popularity of the TAM Model may be attributed to three points: it is a parsimonious model in the relationships; it has a robust theoretical foundation, and it has gained substantial empirical support. Therefore, various researches in the field of psychology and IT concluded that crucial factors in developing an understanding of how the e-learning process
can best be fulfilled may be identified using the TAM Model (Sun et al., 2008). Accordingly, numerous studies try to understand students’ acceptance of e-learning behavioural intentions and system usage, grounded on the TAM Model.

Among this research is an empirical study conducted by Šumak et al., (2011), which looked at factors affecting students’ acceptance and use of Moodle, and Aladwan, Aladwan and Smedley’s (2013) study that aimed to investigate students’ acceptance of e-learning in Jordanian universities, without adding any external variables. The results for both studies indicated that perceived ease of use has a significant effect on attitude, and there is a correlation between perceived ease of use and perceived usefulness. Furthermore, the findings confirm that perceived usefulness has a direct effect on the intention to use e-learning, but does not affect students’ attitudes. Aladwan, Aladwan and Smedley (2013, p.13) attributed the non-significance result between perceived usefulness and students’ attitudes as being ‘due to the fact that students are willing to adopt e-learning systems, while focusing on its benefits’. On the other hand, ease of use was found to directly affect students’ attitudes in Šumak et al.’s study. In another study conducted by Ng, Shroff and Lim (2013), which analysed factors affecting e-portfolio implementation for student tutors through a qualitative study, the data were collected through semi-structured interviews conducted with nine students. The students’ comments revealed that students’ attitudes had a direct relationship with the intention to use the e-portfolio, as did perceived usefulness, which was the defining factor for students with a less positive attitude to the e-portfolio.

3.7 Factors that Impact the Use of E-Learning

Despite the advantages of e-learning, there are numerous factors that influence the success of an e-learning environment and these should be considered when trying out a new
technology. Thus, Davis (1989) assumes that there are other external variables which can affect directly perceived usefulness and perceived ease of use. Additionally, these factors indirectly affect the acceptance of technology via perceived usefulness and perceived ease of use. Davis therefore emphasises the need to include other external variables in TAM, so as to be able to identify acceptance relating to the use of specific tools in future factors, wherever new technology is first encountered.

Many researchers categorise these factors into pedagogical and technological factors, and emphasise their importance for the creation of VLEs (Masoumi, 2010). According to Gaide (2004), inadequate computer skills represent a major factor in student retention. Lynch (2001) confirms this by recognising that students who do not have essential computer skills, or who are new to using the Internet, will not have the ability to adapt to the new learning environment. He also emphasises the importance of preparing students and faculties for a Web-based teaching and learning environment, in order to ensure study success. Konrad (2003) highlights the typical characteristics of effective online learners, such as the ability to deal with normal technological problems. This means they should have the essential computer and Internet skills to enhance their e-learning outcomes. In the view of Drennan, Kennedy and Pisarksi (2005), it is in fact the learner’s responsibility to update his or her computer skills on an on-going basis.

It has been acknowledged that prior experience and pre-existing attitudes and beliefs may all play a role in determining whether or not a student will be able to successfully deal with the reality of e-learning. Ivers and Carter-Wells (2005) report several variables that can impact on students’ attitudes and outlook on online instruction, for example, prior computer experience, interaction with peers and tutors, as well as support from the institution.
Drennan, Kennedy and Pisarksi (2005) link skill level and attitude with learner interaction in this context, and these variables are seen as determining how students will respond.

Ekong (2006), however, lists specific factors that relate to student personality, such as motivation, discipline, and time-management skills. These are put forward as vital factors in successful learning. The abovementioned authors also highlight instructor characteristics as being very important, especially positive traits, such as being able to demonstrate an interest in, or care for students through the provision of high quality, clear, specific and detailed feedback on assignments and in discussion forums. Salmon (2004) is quite specific concerning those elements that encourage interaction and motivate learners in an e-learning environment, for example, self-confidence, positivity, facilitation, and creativity.

Regarding to self-motivation is essential when participating in the learning process and study can take place either in groups, or independently, according to the online strategies. Students should therefore be able to communicate and interact with their online peers. Tabor (2007, p. 48) has concluded that learners display varying degrees of motivation and self-learning skills and it is not everyone who can use communication tools to communicate. Konrad (2003) goes further, pointing out that not all learners favour studying online, as time management and independence in learning can be obstacles for them. Thus, some learners need colleagues and a tutor for direct interaction, as well as a traditional classroom (Wareham, 2005).

Mahdi (2008) concluded that there were several factors affecting the use of VLEs in Egypt, specifically those that inhibit their implementation in university education. These consisted of a vague idea of the philosophy of virtual learning, a lack of self-learning skills, difficulties resulting from poor electronic infrastructure in the respective environment, and
hurdles attributed to the lack of technological awareness in Egyptian society. Other obstacles included a lack of sufficiently qualified tutors in the field of modern technology, given to the recent and rapid developments in ICT. The above author also noted a lack of enthusiasm among educational leaders, a lack of confidence in the results and a shortage of the foreign language skills needed for virtual learning. It can be concluded from this study that factors vary from culture to culture, and culture plays a critical role in determining the factors that affect the use of VLEs.

It is clear from the previous discussion of the factors that there are divergent perspectives among researchers regarding those factors which affect e-learning. Recent innovation in e-learning tools, especially in terms of the increased use of the Web, include Websites, and Web-based learning systems, accordingly many institutions evaluate their e-learning systems from a specific perspective, so numerous researchers have shown a tendency to integrate variables into the TAM Model to investigate these factors, respective to the e-learning tools being researched. In the current study, the following factors of self-efficacy, self-innovativeness, technical support, course content and course interactivity were examined as external factors, in their indirect effect on the acceptance of technology through perceived ease of use and perceived usefulness.

3.7.1 Self–Efficacy

From a theoretical perspective, the importance of learner traits has been widely clarified in learning processes, and even in e-learning processes. Numerous studies have revealed that learner traits, such as Internet self-efficacy, computer experience, Internet experience, and computer anxiety can affect learners’ adoption of e-learning, or other new technology (van Raaij and Schepers, 2008). Learners’ personal traits will also influence behavioural intentions to use technology (Davis et al., 1989) and these factors can even affect each other,
as Thatcher and Pamela (2002) found personal innovativeness in information technology will be positively related to computer self-efficacy. It is therefore important to study these factors because students’ traits vary.

The current study focuses mainly on personal innovativeness and self-efficacy as examples of students’ traits that assist in recognising learner characteristics. There has been increasing attention awarded to the study of self-efficacy, as it is one of the critical issues in successful e-learning. The reason for this is that self-efficacy is viewed as a key psychological factor contributing to students’ success (Pajares, 1996). It can change how learners view their learning environment (Multon, Brown and Lent, 1991), i.e. more positively or more negatively. As a result, self-efficacy has come further to the fore as a subject for study and is regarded as an important factor in effective e-learning. It is also considered as a source of intrinsic motivational factors that can assist students in self-regulating their motivation to use e-learning (Park, 2009) and which will affect their performance and their expectations with regard to e-learning.

In 1977, Alberta Bandura conceptualised self-efficacy from Social Cognitive Theory, describing it as a ‘belief in one’s capabilities to organize and execute the course of action required to produce given attainments’ (Bandura, 1997, p. 3). It is mainly concerned with assessing one’s personal capabilities (Bandura, 1997, p. 11). Bandura discriminates between skill and ability in this concept. From the point of view of Taipjutorus, Hansen and Brown (2012, p. 56) ‘Self-efficacy is the personal determination of one’s own ability to deal with certain tasks’.

However, DeTure (2004) argues that this ‘determination’ does not originate fully in previous experience or the availability of skills, but rather in how learners view their own personal
knowledge, capabilities and confidence in terms of the task or situation. Eastin and LaRose (2000) substantiate this by adding that self-efficacy should not be centred on a specific skill as it is more about how far the persons involved believe they can achieve the task with the skills they have (therefore, their confidence in their own abilities). Thus, Zimmerman (2000, p. 983) stresses that self-efficacy should ‘focus on performance capabilities rather than on personal qualities’. Bandura (1997) and Scott (1996) explain that individuals who have a tenacious belief in their abilities are more likely to challenge themselves with difficult situations and demonstrate the power and motivation to achieve their aim, in spite of the obstacles and difficulties they encounter. Hence, Bandura (1993) has found that self-efficacy is in fact an essential factor for the self-regulation of motivation and also plays an important role in behaviour and individual beliefs. Also Zimmerman (2000, p. 82) pointed out that ‘students’ beliefs about their academic capabilities play an essential role in their motivation to achieve’.

It is worth mentioning here that self-efficacy is ‘multidimensional’ in form and may vary in one person, based on the field of work. Further, self-efficacy has various levels and these levels will vary according to the difficulty of the task or situation (Zimmerman, 2000) and individual attributes. Bandura (1997) mentions that there are specific sources of self-efficacy, one of these being ‘mastery’ through experience. This means that students have already had in using such technology has consequently increased (Bates and Khasawneh, 2007). The strength of self-efficacy is therefore influenced by previous successful performance.

In the context of e-learning, Abbad, Morris and Nahlik (2009, p. 5) define self-efficacy as the self-confidence of the student in undertaking specific tasks with systems of e-learning
management. In the current study, self-efficacy is interpreted as a learner’s capability to accomplish certain learning tasks or activities using VLEs and their confidence in their ability to use VLEs tools. The outcome of this is that those students with a high level of self-efficacy will consequently have a high level of self-confidence, believing in their capacity to learn within the e-learning environment, even if they face problems at times. As a result, they will look positively on aspects of ease of use and usefulness and are more likely to embrace systems which they believe offer these. Where learners demonstrate low levels of self-efficacy, there will be a lack of self-confidence in overcoming problems and some negativity in their approach to the e-learning environment, accompanied by a lack of interest. Moreover, they will be anxious and experience higher levels of stress. As Sun et al., (2008, p. 1186) concluded, ‘Learners with high self-efficacy are more confident in accomplishing e-Learning activities and improving their satisfaction’. Abbad, Morrie and Nahlik (2009, p. 14) support this result and they demonstrate that ‘students who are confident in their ability to master an e-learning system, without help, are more likely to become users’.

With the presence of the TAM Model, self-efficacy was investigated more as an external factor, since the TAM Model is essentially constructed on the beliefs of individuals. Self-efficacy is related to beliefs and so might affect perceived ease of use and perceived usefulness as external variables. It is therefore important to study this factor when adopting a new technology in learning. The following studies address self-efficacy as an external factor.

Sharma and Chandel (2013) adopted the TAM Model to address the main factors impacting students’ learning through Websites in Oman. Questionnaires were distributed as part of a survey of 100 students at Sultan Qaboos University, Oman. A major result of the study was
that students’ attitudes and behavioural intentions to learn through Websites appeared to be shaped by such key factors as perceived usefulness, perceived ease of use, perceived Website quality, and computer self-efficacy. In the same context, Liaw (2008) proposes a conceptual model for investigating satisfaction, behavioural intention, and e-learning effectiveness among learners using Blackboard as an e-learning tool. Data were collected from 424 undergraduate students using a questionnaire. The results of Liaw’s study verified that learners’ characteristics, particularly self-efficacy, represent primary factors in learner satisfaction with Blackboard. Furthermore, perceived satisfaction and perceived usefulness both contribute to the behavioural intention of learners to use an e-learning system. Lee and Mendlinger (2011) focused on the effect of self-efficacy factors on perceived ease of use, the perceived usefulness of online learning systems, and the effects of self-efficacy on online learning acceptance and student satisfaction amongst 972 students enrolled in online classes. The outcomes reveal that there is a positive relationship between self-efficacy perceived ease of use, and perceived usefulness, with regard to acceptance of and satisfaction with online learning systems. It was also revealed that there was a positive correlation between self-efficacy and the perceived usefulness of online learning systems, as well as with perceived ease of use.

A study presented by Alhaderi (2013) examined the factors influencing the acceptance of technology in the public sector in the Yemen, such as varying levels of self-efficacy in individuals. The aim was to arrive at a deeper understanding of the individual factors affecting the acceptance of IT in relation to perceptions. The study presents empirical evidence of the positive effect of self-efficacy on the intention to use, right up to the actual use of the technology, via a positive impact on perceived usefulness and perceived ease of use. Additionally, the results of the study confirmed that self-efficacy is one of the determinants influencing the acceptance and actual use of technologies.
In the Gulf area, Alenezi, Abdul Karim and Veloo (2010) carried out empirical research at Saudi Arabian universities to examine students' intentions to use e-learning, on a sample of 402 undergraduate students. The researchers applied the TAM Model and added factors such as computer anxiety, computer self-efficacy, and the role of enjoyment as external factors. The results reveal that all these factors significantly affect students' intentions to use e-learning, except for Internet experience. In addition, there was a positive relationship revealed between perceived usefulness and perceived ease of use. Furthermore, there was a positive relationship between perceived usefulness and the behavioural intention to use e-learning.

Based on the above results, it may be stated that the majority of these studies have found that self-efficacy leads to students believing in perceived ease of use and perceived usefulness. This in turn affected students' attitudes and their intention to use e-learning or technology. Consequently, when instructors plan on integrating new technologies into their courses, students' levels of self-efficacy concerning such technologies and methods of maximising self-efficacy should be taken into consideration. Self-efficacy is therefore not only a good predictor of academic outcomes, but may assist learners in adapting to new learning environments (Alivernini and Lucidi, 2011), regardless of their previous online learning experience (Swan, 2004). Furthermore, instructors can determine what most significantly reflects learners’ beliefs, by observing their motivation and behaviour (Bandura, 1994). Finally, self-efficacy influences choices and objectives and the degree of effort exerted for any tasks which are specified (Bandura, 1997).
3.7.2 Personal Innovativeness

Certain individuals can easily and directly use new technology, while others may reject or resist it, showing a preference for old tools and methods. Such a choice will indicate a personal preference for innovation. Personal innovativeness is considered as a critical factor in personality trials which aim to establish the acceptance of new technology (Agarwal and Prasad, 1998). Also they have concluded that personal innovativeness is a factor of influence in technology acceptance behaviour, through its connection with beliefs or perceptions. Hence, it is considered as a ‘determinant of innovation adoption behaviour’ (Agarwal and Prasad, 1998, p. 206) which can predict a person’s behaviour when faced with innovation.

Agarwal and Prasad (1997, p. 206) define personal innovativeness when accessing the technological domain for the first time as ‘an individual’s readiness to try out any new information technology’. This refers to individuals who accept technological innovation more easily and at an earlier stage of exposure. Such individuals are characterised as ‘innovative’. On the other hand, Rogers, (2003, p. 267) defines innovativeness as ‘the degree to which an individual (or other unit of adoption) is relatively earlier in adopting new ideas than the other members of a system’. According to Rogers’ definition, promptness of use is considered as a criterion for innovativeness. Kleysen and Street (2001) point out that the degree of willingness will depend on users’ characteristics and behaviour. In more specific terms, Kirton (2003) believes personal innovativeness is more about how an individual can find more effective or diverse ways to undertake tasks, indicating a level of creativity. It is noteworthy that Kirton (1976), in his Adoption-Innovation Theory, distinguishes between adaptors as persons who ‘do things better’ and ‘challenge rules rarely’, while innovators are those who ‘do things differently’ and ‘often challenge rules’.

Based on previous definitions, the individual should be flexible, prompt and enthusiastic in
exploring new ideas and activities, meeting the challenge presented to try out new innovations.

Previously, there were limited studies using personal innovativeness as a concept in researches models (Rosen, 2004). Lu, Yao and Yu (2005) support that this personal trait has not been explored or applied, particularly with regard to the acceptance of technology, and even less so in terms of researching the intention to adopt IT. However, at present, with development and diversity in ICT being considered as critical factors, many empirical studies have addressed this issue and verified that personal innovativeness is considered as a personal trait that can help in understanding the acceptance of technology, the behaviour and intentions associated with it, and its contribution towards understanding students’ attitudes toward e-learning.

Agarwal and Prasad (1998) examined personal innovativeness as a new construct in the TAM Model. They concluded that personal innovativeness has a profound effect on perceived ease of use and perceived usefulness. The abovementioned authors have found that the more innovative the person, the more likely he or she is to adopt technology. Those who have high personal innovativeness are also predicted to have more positive beliefs relating to the perceived ease of use and perceived usefulness of technology.

van Raaij and Schepers (2008) have investigated the effect of individual traits, which includes subjective norms, personal innovativeness and computer anxiety; those factors involved in students’ acceptance and use of a VLE in China for 45 MBA students. This was conducted through a conceptual model designed, based on the TAM2 Model. The study findings show a positive effect of personal innovativeness on the perceived ease of use of a
VLE, while personal innovativeness was not observed to have any effect on the perceived usefulness of VLEs. Moreover, the results indicate that perceived ease of use has a significant effect on perceived usefulness. Similarly, a study carried out by Lu, Yao and Yu (2005) investigated the relationship between personal innovativeness, social influence, perceived ease of use, perceived usefulness, and the intention to adopt a specific information system, i.e. wireless Internet services via mobile technology. Accordingly, a questionnaire was distributed to a sample of 277 MBA students in Texas. The researchers applied a structural equation analysis to discover the relationship between variables. Strong causal positive relationships were evident between external variables and belief variables, while personal innovativeness did not have a direct effect on the intention to adopt wireless Internet services via mobile technology.

Moreover, Hung et al., (2013) conducted a study entitled, ‘Critical factors predicting the acceptance of digital museums: User and system perspectives in Taiwan museums’, to discover the effect of computer self-efficacy, with personal innovativeness as an external variable in the acceptance of a digital museum and the TAM Model being applied. An analysis of the empirical data revealed that computer self-efficacy and personal innovativeness were considered as significant factors for increasing perceived ease of use and perceived usefulness, and the stronger effect was for perceived ease of use. The latter therefore play an important role in forming positive attitudes, as well as in the acceptance of digital museums.

3.7.3 Technical Support

Another considerably important factor is support. The learner needs substantial and constant support, because, 'if their needs are not met, they are likely to withdraw from an online
course’ (Zainuddin, 2008, p. 6), specifically in the first stages of using virtual environments. Consequently, the e-learning method still requires tutors to dedicate time to support and follow up the learning (Khan, 2005). Cheung and Huang (2005) have categorised support into sources of support, university support and support from instructors. With respect to university support, Eneh (2010) places emphasis on this kind of support in overcoming technophobia, especially during the first year of study. Kee, Omar and Mohamed (2012, p. 7) present an argument in favour of the importance of university support, stating that ‘it may speed up or slow down the adoption at each stage of the innovation-decision process’. From this viewpoint, Kleinman and Entin (2002) have found that technical support gives online learners the confidence that studying online requires (cited in Alenezi, Karim and Veloo, 2010). In addition, it enhances the process of using e-learning tools, with students becoming more engaged with e-learning tools and more organised, thus ultimately facilitating their e-learning.

In terms of instructor support, Cheung and Huang (2005) consider this to be a critical type of support, as instructors provide motivation and encouragement for learners, making learning more active and effective. Yiong, Sam and Wah (2008) also came to the conclusion from their study that support from instructors will have an effect on how far learners actively engage in e-learning systems. Besides these kinds of support, there is a third kind which relates to administrators, and these have an important role in accelerating the application of innovative technology.

The current study defines technical support as the ability of a university to provide experienced staff or other facilities to support e-learning amongst users, particularly in Blackboard, or when problems with Blackboard are encountered. Ngai, Poon and Chan (2007) list various kinds of support, such as help desks, hotlines, machine-readable support
knowledge bases, telephone voice response systems, online support services, more training hours, induction weeks and the availability of staff experienced in the use of VLEs.

Previous studies have broadly investigated the influence of technical support on the acceptance of technology and the results demonstrate a positive relationship between technical support and the acceptance of technology. Thus, technical support is considered as a vital factor for encouraging students and raising their awareness in the use of technology.

Ngai, Poon and Chan’s (2007) empirical study examining the adoption of WebCT as an e-learning tool amongst 838 university students applied the TAM Model as its theoretical foundation and technical support was added as an external factor. The results indicate that technical support has a positive influence on perceived ease of use and perceived usefulness, while perceived ease of use and perceived usefulness are the main factors affecting the attitudes of students using WebCT. Furthermore, the results also demonstrate the meaning of perceived ease of use and perceived usefulness when managing the relationship between technical support, attitudes and WebCT usage.

Similarly, Abbad, Morrie and Nahlik (2009) adapted the TAM Model, including four external variables to identify major factors affecting students’ adoption of e-learning systems in Jordan. Data were gathered from a survey of 486 undergraduate students using the Moodle-based e-learning system at the Arab Open University. The findings indicate a strong direct effect of self-efficacy on perceived ease of use, but not on perceived usefulness. Likewise, there was a direct effect from technical support on perceived usefulness but not on perceived ease of use. However, there was no evidence of the effect of system interactivity on perceived usefulness or perceived ease of use.
In looking to Kee, Omar and Mohamed (2012) study they constructed a theoretical framework to examine factors contributing to the adoption of e-learning system for 495 undergraduate students at University Sains in Malaysia. The authors classified the factors into three groups, namely individual factors (personal innovativeness, self-efficacy and attitude), organisational factors (instructor support, university support and administrator support), and technological factors. A cross-sectional survey was used to collect data. The findings show a significant relationship between factors and the adoption of e-learning, except for factor complexity. Moreover, regression analysis revealed that university support, attitude and self-efficacy were significant predictors of the adoption of e-learning, and the strongest predictor of adoption appeared to be university support.

On the other hand Mehra and Omidian (2010), conducted study to investigate post-graduate students’ attitudes at the University of the Punjab, with regard to the adoption of e-learning. The above researchers added more independent variables to the TAM Model: technological and pedagogical support, pressure to use and e-learning stressors. The results revealed that the common variables which may be applied in predicting students’ attitudes towards the adoption of e-learning are perceived usefulness, intention to use, ease of use, pressure to use, e-learning stressors and technical and pedagogical support.

3.7.4 Instructor Characteristics

Due to dramatic developments in ICT tools, instructors play multiple and diverse roles in e-learning and it is clear that the role of the instructor has changed from being the main source of students’ learning in traditional learning styles, to being the director of students’ learning resources in e-learning (Romiszowski, 2004). New skills are therefore required for ensuring the success of e-learning. An important skill that instructors sometimes lack on an online
course is the ability to provide a well-designed framework and delivery system, with appropriate assessment methods and the promotion of collaboration and communication. Zainuddin (2008) explains how an online course can be effective, by providing students with various opportunities to communicate and collaborate with their peers and with the instructor via different tools. In addition, the tutor should provide students with different sources of learning that give them the chance to learn using different methods. The author also mentions that ‘in a successful e-class, the tutor should provide students with clearly stated expectations and strategies for meeting such needs, as well as plenty of regular, useful feedback and opportunities for collaboration’ Zainuddin (2008, p. 68). Earlier experiences may permit students to direct their learning, improve their capacity for critical thought, and learn how to deal with technology. In the process, they may learn more about themselves and their learning material, according to their needs and abilities (Zainuddin, 2008). In the same context, Lee, Cheung and Chen (2005, p. 1102) have proposed guidelines for instructors seeking to enhance the perceived usefulness of e-learning. They recommend that instructors ‘varying the types of content, creating fun, providing immediate feedback, and encouraging interaction’. In addition, Salmon (2004) identifies the following criteria for successful online instructors: confidence, constructiveness, development, facilitation, knowledge sharing and finally, creativity. Thus, online tutors must familiarise with the instructional design before attempting to apply it. Also, Hussein, Aditiawarman and Mohamed (2007, p. 6) outline the main aspects of a tutor that might impact students’ motivation to use e-learning, such as the, ‘instructor’s positive attitude toward technology, interactive teaching style and control over technology to deliver lectures’. Such verification will ensure the course meets students’ needs. All the above key factors which will ensure an effective online course.
One of the factors that play an important role for learners in the use of e-learning and integrating ICT is instructor attitude. According to Webster and Hackley (1997), instructors’ attitudes towards technology, teaching styles and mastery of technology may also impact learning outcomes, and in the view of Buabeng-Andoh (2012), if instructors maintain a positive attitude towards using technology in the learning process, they will be more willing to engender useful perceptions for the acceptance and incorporation of technology into learning processes. In same context, Sun et al., (2008, p. 14) portray how the student satisfaction can be affected by instructors’ attitudes. They reported ‘When instructors are committed to e-learning and exhibit active and positive attitudes, their enthusiasm will be perceived and further motivate students’.

From the above discussion, instructors’ characteristics are considered to be a key factor in the acceptance of e-learning by learners. Gillespie et al., (2007) believe that VLEs actually present a whole new way of learning, rather than just an advanced technology for an existing learning process. It is therefore not enough for tutors to have technical skills, they should also have appropriate pedagogical skills. VLE materials consequently need to be designed in a way which will assist students in becoming more active, interactive, creative, and independent when undertaking self-learning processes, instead of being mere recipients of information. This will come about when well-trained online tutors create an environment that can facilitate and promote critical thinking, problem-solving and debate and where students are free to discuss different opinions using a range of available tools (Zainuddin, 2008).

In brief, tutors involved in e-learning should possess the following characteristics (Hussain and Abdul Jalil, 2008; Altaher and Atteih, 2012): advanced educational and technical skills, the most important of these being skills involving computer programmes and Internet
services; the ability to design e-courses; e-classroom management, and the ability to use e-assessment tools for the evaluation of students. Furthermore, effective and enthusiastic tutors will be motivated to deal with e-learning tools, have the ability to communicate with students electronically, and will encourage self-learning amongst students. Therefore, the e-learning instructor will not only be sending out information, but will also receive it, communicating interactively with the students and facilitating the learning process by providing students with appropriate learning resources and guiding them in this regard. Most importantly, the tutor needs to develop his or her technological skills to keep up with current developments.

Many studies have examined these factors, with the appearance of new tools in e-learning. The following studies have examined instructor characteristics as external factors in the acceptance of e-learning amongst students. Selim (2007), for example, carried out studies to outline the critical factors affecting the acceptance of e-learning, using confirmatory factor models to evaluate such factors. In the above cases, the critical factors were grouped into four sets, namely instructor characteristics (instructor attitudes and learning style), student characteristics, information technology and technical support. It was revealed that these had good validity coefficient values and a high impact on learners’ acceptance of e-learning. In addition to the above, also the author found university support to be important for effective and efficient learning and student acceptance, combined with instructor characteristics. Likewise, Lee, Yoon and Lee’s (2009) proposed model analyses learners’ acceptance of e-learning, based on the TAM Model, for 250 undergraduate students in South Korea. Regression analysis results reveal that instructor characteristics are positively related to perceived usefulness. Moreover, perceived usefulness was revealed as the highest predictor of the intention to use e-learning. In another study conducted in the Indonesian Open University, Hussein, Aditiawarman and Mohamed (2007) suggested a model investigating
the factors which affect students’ acceptance of e-learning in a developing country, specifically in the Indonesian Open University. The authors focused their model on the instructional design, technological factors, instructor’s characteristics and self-efficacy as external factors and concluded that the instructional design, technological factors, instructor’s characteristics and self-efficacy were important factors facilitating learners’ acceptance of e-learning, as well as being significant predictors, while the instructor’s characteristics were not a dominant factor; they did not predict perceived ease of use.

3.7.5 Course Content Quality

E-course content consists of a set of pre-arranged and interrelated lessons with hyperlinks. It also include a range of activities and learning materials that must be supported by interactive multimedia. Furthermore, the content should comprise various learning tools to be included within the content, such as: links to different learning resources, e-testing tools, assignment delivery tools, an electronic library, a bulletin board and, most importantly, the availability of social networking tools, such as the discussion tool and email and chat tools.

Altaher and Atteih (2012) argue that the quality of the e-content does not depend only on what is included, but may be evaluated using other criteria, such as activating and implementing communication tools in an appropriate manner during learning, in order to facilitate the process, as well as the relevance of the content to the lesson's objectives, how the content and lessons are organised, and the extent to which the content is updated. Inevitably, the content must also be organised in a manner that facilitates access, so as not to waste the learner's time while they are obliged to search for information; this would in fact result in a reduction in the value of e-learning. Moreover, the type of design, organisation and quality of the e-content will affect the student's continuity and his or her motivation to
go on learning, and poor design and a shortage of learning resources in the respective e-content will have a negative effect on the students' motivation to use e-learning. Lee, Yoon and Lee (2009) have noted how the quality of e-learning teaching materials takes the issue of learner motivation into account when ensuring continued success in the e-learning process. It has been found that the use of VLEs is ‘least effective when there is poor content’ or where they are just being used by tutors as a ‘dumping ground for rarely used files’ (Ofsted, 2009, p. 5). Therefore e-courses must be designed according to instructional design models.

Referring to content quality, Baker and Papp (2004) have assessed content quality in terms of accuracy, authenticity, accessibility, design, and suitability for the course. Conversely, Lee (2006) evaluates content quality on the basis of two main criteria: ‘content richness’ and the ‘regularity of updates’, while Wright (2003) lists a set of criteria for evaluating the quality of online courses: the availability of general information about the course from the very beginning; accessibility; how far learners can directly find information and learning materials; the organisation of components; language; layout; the presentation of course objectives; the appropriateness of course content to the learners’ needs and its relevance to the course objectives; the learning strategies and opportunities for effective practice with various approaches through a range of activities; how far the learning resources are accurate, accessible and diverse, and finally, evaluation. According to these criteria, researchers have concentrated on the quality of the content; as Dawson, (2013) states: ‘quality over quantity, content is not purely restricted to text’.

In the light of the above, Boldt (2013) mentions that effective content will contain a diversity of tools, such as images, video (tutorials, instructional videos), e-book links, journals, recommended websites and resources for other types of information which will
help learners gain more clarification, in addition ‘support different learning styles and provide self-pace learning’ (Woollard, 2011, p. 73). In contrast, ineffective content will contain low-quality text with no interactive tools. Lee (2006) has found that content on e-learning systems needs to be frequently updated and new learning resources provided, so that learners will have faith in the e-learning system’s usefulness as a means of accessing new sources of knowledge and experience. Consequently, learners’ motivation and expectations of e-learning will be affected in this way. The following studies examined this factor based on the TAM Model.

Lee (2006) investigated factors influencing the adoption of e-learning systems for undergraduate students in Taiwan, thus attempting to examine content quality, perceived network externality, computer self-efficacy and course attributes as external variables in the TAM Model. The author demonstrated the outcomes of the original TAM Model. In addition, the study delivered empirical evidence for the positive effect of self-efficacy on perceived ease of use, as well as content quality, indicating a positive impact on perceived usefulness, while there was no significant effect of computer self-efficacy on perceived usefulness. Lee (2006, p. 26) explains non-significance finding as follows: ‘individuals’ confidence in their technology-related knowledge and abilities is more associated with their judgement of the ease or difficulty of the usage of the system’. In another study in Jordan, Almahamid and Aburub (2011) demonstrated through an empirical study that there is a positive relationship between information quality, service quality, self-efficacy and the continued intention to use an e-learning system.

By the same token, this positive result was confirmed by the findings of a study carried out by Roca, Chiu and Martínez (2006), which endeavoured to understand the continued intention to use e-learning, where the quality of information in e-learning systems had a
direct and powerful influence on student satisfaction with e-learning. Moreover, Bhuasiri et al., (2012) concluded that course quality and self-efficacy are critical factors influencing e-learning success in developing countries.

A different study, which took place at Bahrain University and which was conducted by Alammary and Hamad (2008), established a conceptual framework to determine factors influencing students’ behavioural intention to adopt and use an e-learning system. Their model examines computer self-efficacy and content quality, along with a number of other factors that could influence students’ attitudes toward using an e-learning system. A quantitative analysis of 200 questionnaires revealed that perceived usefulness and perceived ease of use have a very positive influence on students’ behavioural intention to use e-learning systems at the University of Bahrain. Moreover, the results reveal that content quality and computer self-efficacy significantly and positively correlate to perceived ease of use and perceived usefulness. In turn, these factors have an indirectly positive influence on the behavioural intention to use e-learning systems.

In Another study, Aixia and Wang (2011) examined the most important factors affecting learner satisfaction in the e-learning environment amongst undergraduate students in different majors. The result reveals that e-learning course quality, incorporated e-learning function, perceived ease of use and learners’ computer literacy and skills were considered to have a significant effect on students’ perceived satisfaction. Furthermore, these factors can also explain 83.8% of learner attitude.

Sun et al., (2008) concluded from their empirical study that quality and flexibility in a course, perceived ease of use, diversity of assessment, perceived usefulness, computer anxiety, and tutors’ attitudes toward e-learning are the critical factors impacting learners’
perceived satisfaction. They also reached the conclusion that course quality is at the core of the e-learning environment and content should consequently be designed according to specific criteria and presented very carefully.

3.7.6 Course Interactivity

Interaction is a basic element in e-learning and a strong motivator and driver for active learning, since an interactive environment will help connect the components of the learning process through synchronous and asynchronous communication tools (Qandil, 2006). In the opinion of Palloff and Pratt (1999), the key to effective e-learning is the interaction between learning components, while Bean’s (2012) perspective is that there is nothing more important than a group of learners chatting to each other, cooperating on a project using online learning. Bean (2012) therefore considers social interaction to be at the core of e-learning and this issue is often ignored in other studies. As a result, it is important to add meaningful interactivity to e-learning courses, which will allow learners to participate in the learning process, generating an enhanced learning environment. Pituch and Lee (2006) and Paechter, Maier and Macher (2010) argue that if personal communication takes place between instructors and other learners, with learning being facilitated in groups, and effective, rapid knowledge exchange taking place between learners through the e-learning system, then such a system will be perceived as a learning tool which is easy to use. According to Zainuddin (2008, p. 74), communication between students and tutors was found to ‘create a warm, comfortable learning environment, it increases their motivation to learn’. Therefore, Liaw (2008, p. 869) stresses that ‘a constructivist e-learning system should thus enable learners to engage in interactive communication, self-directed activities, and multimedia learning materials’.
Bean (2012) provides a general definition of interactivity, as being ‘two things that work together’. Moore (1989) characterises interaction in more detail, categorising into three types what should take place during the distance learning process:

1. Learner-content interaction: Moore views this type of interaction as the hallmark of instruction, since it plays a significant role in facilitating the learning process. According to Moore’s perceptions, the learning process is not intended purely to provide the student with information, but some kind of interaction should also take place between the student and the content or subject, including the information, in order to add knowledge or modify the learner's experience. This is fulfilled by providing the learner with a series of questions, activities and tasks that will motivate him or her to think and participate, using the various e-learning tools and options.

2. Learner-tutor interaction: This type of interaction occurs when the tutor and student communicate using tools available on the Internet and in VLEs, whether synchronous or asynchronous, with the aim of assessing the student’s performance, or assisting him or her in overcoming the obstacles he or she encounters during the learning process. This interaction therefore endeavours to support the learning process, and has the potential to increase the motivation to learn.

3. Learner-learner interaction: This type of interaction results from the student's communication with other students during the course, whether synchronous or asynchronous, for the purpose of sharing knowledge to assist with learning. It will integrate the student into the learning process and increase his or her sense of community. It can help prevent feelings of isolation and then increase the motivation to learn.

Hillman, Willis and Gunawardena (1994) discuss types of interaction which rely on Moore's classification and have found that there is one kind of interaction which is not covered by
Moore, despite its significant role in integrating the student at the beginning of the learning process. Moreover, this interaction correlates with the user-interface, which permits the student to interact and communicate with all elements of the learning process. Hence, this interaction is regarded as the key to accessing e-learning (Abdul Hameed, 2005). Finally, Hillman, Hillman, Willis and Gunawardena (1994) have added a new fourth type of interaction known as ‘learner-interface interaction’. In this regards Sun et al., (2008) indicate that a well-designed course should consider the user-interface as a significant issue in allowing the students to navigate easily in the e-course.

The current study adopts the following definition to measure course interactivity: interactivity relates to a VLE’s capacity to facilitate interactive communication between instructors and learners and between the learners themselves. VLEs present a range of tools to ensure interactivity, such as email, a discussion board, or a chatroom forum (Pituch and Lee, 2006).

Among the studies which look into course interactivity is a quantitative study carried out by Cheng (2012), which mainly examines whether quality factors affect the acceptance of e-learning. The researcher categorises these quality factors into four groups: course content quality, support services, information quality and system interactivity. The conceptual framework was established on the basis of the TAM Model and previously determined variables. It was assessed through a structural equation modelling approach using an AMOS software programme. The results show that support services have a significant effect on perceived ease of use and perceived usefulness and these four quality factors are thus considered as critical to e-learning acceptance. Moreover, Liaw (2008) confirms that the availability of interactive learning activities in Blackboard is a key factor for predicting the
effectiveness of e-learning and the behavioural intention to use Blackboard as an e-learning tool.

Further to the above, Pituch and Lee (2006) applied a survey method to collect data from 259 undergraduate students in order to investigate the influence of the system and users’ characteristics, such as system functionality, system interactivity, system response and self-efficacy, on the students’ intention to use an e-learning system. The results validate the importance of system characteristics in the development of e-learning systems and learners’ beliefs. Where the learners indicated that a system possessing positive characteristics would appear easier to use and more useful to them, this greatly affected their intention to use such a system to supplement their learning and remote learning. In addition, learners who emphasised how the system enabled them to interact more effectively with their peers and instructors also perceived the system to be more effective in helping them learn. This is because learners who perceive one system to be more favourable than another highlight ease of use and usefulness as their primary reasons, consequently reporting a greater intention to use the system to supplement their learning and remote learning. In addition, learners who emphasise how a system has enabled them to interact more effectively with their peers and instructors also perceive the system as more effective in helping them learn. System interactivity has been found to have the greatest total effect on ‘perceived usefulness’.

In brief, there is a significant body of empirical research on the scope and effectiveness of the TAM Model. In fact, it has been clearly shown that the TAM Model has become to fundamental research into the implementation of IT. Consequently, numerous models have been formulated as a means of investigating and identifying the factors that influence the willingness to adopt technology in various environments and cultures, as these have obvious benefits for research. The majority of the studies have demonstrated the impact of belief on
attitudes and the behavioural intention to use IT. Furthermore, they have confirmed what the TAM Model assumes concerning the external factors affecting individual beliefs. They have also verified that perceived usefulness and perceived ease of use mediate the relationship between external factors, users’ attitudes, users’ usage and users’ behavioural intention.

3.8 The Conceptual Research Model

Established on the original TAM Model and on the significance of external factors discussed earlier, the study model was proposed, aiming to investigate the factors affecting students’ attitudes towards and usage of virtual learning and how these factors influence students’ intentions to use e-learning tools. The proposed model, as shown in Figure 3.6, mainly consists of four variables: perceived usefulness, perceived ease of use, students’ attitudes and behavioural intention. Six external factors were added to the original TAM Model in order to examine the direct effect of these factors on variable beliefs: perceived ease of use and perceived usefulness. Perceived ease of use and perceived usefulness are considered as determinants or mediating factors between external factors and attitudes, while attitudes are considered as determinants between perceived ease of use, perceived usefulness and behavioural intention. Moreover, perceived usefulness is considered as a determinant between perceived ease of use and behavioural intention.
Attitudes may be considered as dependent or independent variables: independent when predicating behavioural intention and dependent when determined by perceived ease of use and perceived usefulness. Perceived ease of use and perceived usefulness are taken as independent variables when predicating attitudes, but dependent when predicted by an external variable. On the other hand, behavioural intention is regarded as a dependent variable, since it will predict students’ attitudes. The main purpose of this model is to try and understand the effect of external factors on students’ attitudes through perceived ease of use and perceived usefulness’. The proposed model posits that there is a causal relationship between external variables and users’ beliefs, as well as students’ attitudes and the behavioural intention to use e-learning. The current study has examined this relationship between the variables.
3.9 Summary

E-learning is becoming a significant tool for the learning process in many institutions around the world, particularly with Internet diffusion and different innovations in ICT tools. However, there are several issues which may arise when applying e-learning, such as the factors that need to be considered and understood in order to ensure effective, more widespread e-learning. Being aware of these factors involved can help in assessing and developing the e-learning process. In fact, for e-learning to be successful, the tutor, learner and the university need to play specific roles, complementing each other in the completion of the learning process via VLEs. Therefore, we cannot rely solely on either the tutor or the learners for the success of the learning process.

Based on the review of the literature, it is clear that the TAM Model has been widely applied in e-learning fields for various technologies, purposely to investigate factors affecting e-learning acceptance. Many of these studies have succeeded in verifying assumptions and highlighting the relationship between the components of the TAM Model. This body of research has contributed to the TAM Model’s status and validity, indicating that it can be given priority in this research area. To be more specific, the TAM Model may be regarded as one of the models which has best succeeded in gaining an understanding of technology acceptance amongst users, based on perceived ease of use and perceived usefulness, where the majority of studies confirm the significance of previous beliefs for shaping students’ acceptance of e-learning. On the other hand, there is variance between the studies regarding attitudes, where several studies exclude attitudes from their models. In addition, these studies also indicate variance in the relationship between perceived usefulness and behavioural intention, and the relationship between students’ attitudes and behavioural intention.
It is evident from the literature review that none of the previous studies have endeavoured to study students’ acceptance on the basis of the TAM Model, using both quantitative and qualitative methods in one study. All the studies conducted in this field have exclusively used the quantitative method, while the current study has applied the mixed method - namely quantitative and qualitative approaches - to investigate the effect of the external factors of support, course interactivity, course content, self-innovativeness and self-efficacy as external factors in the TAM Model on students’ attitudes towards, and their intention to use e-learning at Kuwait University.

It has also been noted that the Arabian Gulf region lacks this type of study and needs to conduct more research into students’ acceptance of e-learning, especially as the Gulf countries differ in their culture and learning strategies from other countries. Moreover, e-learning is considered as rather a new learning method and so needs to be studied carefully from different angles (from the point of view of the learners, instructors, institutions and tools).
CHAPTER FOUR

Research Methodology

4.1 Introduction

The present chapter is concerned with the methodology aspects of the current study, beginning with an overview of the research methods and research design adopted. Later the study instruments are described in terms of their construction, content, and psychometric properties. Their validity and reliability will be investigated and then procedural steps followed for data collection. Furthermore, this chapter will demonstrate the population and sample for the study, with the statistical approach finally being used for data analysis.

4.2 Research Design

Essentially, the research methods are classified into two types: qualitative and quantitative methods, following different paradigms. Each method has its own strategy for collecting and analysing data, as well as the conclusion and generalisations arrived at. In order to verify the current study hypotheses, mixed methods shall be utilised in this study, and before looking at these, both qualitative and quantitative methods will be introduced separately and in brief.

4.3 Quantitative Research Method

Quantitative methods rely on the notion of the positivist paradigm or post-positivist paradigm (Newby, 2010). This holds that people live in a stable, relatively coherent world, and that they have the ability to measure, understand, predict, and generalise the ideas that relate to it (Esterby-Smith, Thorp and Lowe, 2012). Moreover, positivism assumes the existence of an objective and singular reality that is isolated from people’s feelings and
thoughts and which can be discovered (Burton, Brundrett and Jones, 2008). As Gray (2009, p. 19) states, ‘this reality contains what is presented to the senses’. Logically speaking, quantitative methods employ deductive logic (Burton, Brundrett and Jones, 2008; Teddlie and Tashakkori, 2009), where surveys begin with a theory on a certain phenomenon or study problem and from this theory, a number of hypotheses and specific questions will arise, to be tested in certain environments controlled by the researcher in specific circumstances and according to planned steps and procedures, so as to reduce error and bias. Hence, there are varieties of precise research design which correspond to this method, such as correlation and experimental design (Teddlie and Tashakkori, 2009). Therefore, quantitative methods which are considered to be well structured ‘have clear procedures which can be explicitly defined and recognized’ (Kumar, 2011, p. 103).

Grounded on these beliefs, quantitative methods focus more on measuring reality and facts, and are also concerned with the measuring and testing tools that measure study variables, endeavouring to explain how one particular variable can affect other variables, as well as describing the attitudes, opinions, and thoughts of people about a particular idea or phenomenon. In addition, they will indicate the number of individuals who put forward a particular concept (Zaytoune, 2006). Ultimately, quantitative methods depend on numerical data that are analysed using statistical processes, and according to the results of such an analysis, one can make inferences and generalisations (Newby, 2010).

It is clear from the above points that quantitative research is commonly used to describe the current status of the subject and what is happening at the current time, by utilising measurement tools, such as questionnaires and tests, containing the basic characteristics of validity and reliability. It is worth mentioning that the quantitative method is not only
limited to the process of data gathering. Creswell (2009) explains that quantitative methods deal with ‘cause and effect’, which means this method attempts to search out the causes of the problem, and then tries to find the best solution to the study problem in the hope of reaching meaningful generalisations about the original society.

4.4 Qualitative Research Method

For a period of time, the quantitative method was the most common research method as it depended on the prevailing paradigm at that time (Burton, Brundrett and Jones, 2008). However, more recently, researchers such as Kvale (2007) have indicated a tendency towards qualitative research, in view of the fact that human behaviour is significantly influenced by the environment. Moreover, it not only describes things as they are, but tries to gain a deeper understanding of the study problem and investigates the problem from all aspects, whatever the opinions and meanings they hold.

The qualitative method works from the point of view of the interpretivist paradigm. The key concept for this paradigm, as Newby mentions (2010), is the rejection of ‘the assumption of a single explanation of things’. It is typically associated with inductive logic, which upholds the notion of a worldview known as constructivist theory (Gray, 2009), where reality is constructed and subjective, taking on different forms (Hartas, 2010). This is built depending on an understanding of a group of people or individuals (Johnson and Christensen, 2008). Therefore, the individuals in an organisation will have different facts and ideas about a particular subject. According to Creswell (2013, p. 24), ‘Individuals search understanding of the world in which they live and work’, so they develop subjective meanings for their experience. Since individuals differ from each other, they often have diverse perspectives and contexts and, as a result, the world can take on a variety of meanings. It is not
necessarily the case that one is more accurate or true than another (Esterby-Smith, Thorp and Lowe, 2012).

Regarding earlier principles, qualitative methods typically focus on non-numerical narrative data, where participants talk about the feelings, thoughts, behaviour, emotions and experiences behind on their own perspectives and expressed through words, images and actions in natural circumstances. Therefore, this method emphasises the need to understand the problem from the perspective of the participants, namely people's experience (Johnson and Christensen, 2008). It will then enable the researcher to arrive at particular and limited generalisations.

In view of how qualitative methods work, it is generally considered that they are relatively unstructured when compared to quantitative methods, where general questions are asked, in contrast to the quantitative method, where the purpose of the research and questions are specific and narrow (Kumar, 2011). However, in qualitative methods, the procedures are determined during the research process instead of being defined beforehand. Furthermore, the study problem cannot be identified by establishing the hypothesis in advance, but the hypothesis is rather identified during the process of collecting data. The theories and concepts might then emerge after data collection, e.g. ground theory. We conclude from this that the qualitative method does not search for or gather facts with regard to theory. This is therefore the method frequently used when little is known about a topic or phenomenon and when one wants to discover or learn about it.

Within the qualitative method, the researcher is considered as an actual study tool and engages with the research context (Burton, Brundrett and Jones, 2008). The researcher will also use what are known as protocols in order to record the data from participants. These
protocols contain several forms, such as interviews and observations (Creswell, 2009). These are considered as major sources of qualitative data (Corbin and Strauss, 2008).

Building on the above-mentioned characteristics of both methods, it may be found that each approach has its strengths, weaknesses and suitability. Therefore, it was planned to take advantage of these methods in combination with each other in the current study using mixed methods.

4.5 Mixed Methods

For the past two decades, research has adopted combinations of methods and approaches, rather than purely applying just one or other of qualitative and quantitative means for social and behavioural investigation (Teddlie and Tashakkori, 2009), and so a great deal of attention has been awarded to such mixed methods as they are becoming increasingly recognised as the third major research method (Johnson, Onwuegbuzie and Turner, 2007). Teddlie and Sammons (2010) justify the increased use of such mixed quantitative and qualitative methods by pointing to their capacity to deal with a range of complex research problems at the same time, for the reason that mixed methods provide the researcher with opportunities to work with participants from an objective or subjective point view, It is therefore a more flexible approach.

Punch (2009, p. 288) defines mixed methods quite simply as ‘empirical research that involves the collection and analysis of both qualitative and quantitative data’. In a more comprehensive definition, Creswell et al., (2003, p. 212) defined it as, ‘The collection or analysis of both quantitative and/or quantitative data in a single study in which the data are collected concurrently or sequentially, are given a priority, and involve the integration of the
data at one or more stages in the process of research’. According to Teddlie and Tashakkori (2009), mixed methods mainly apply to the pragmatic paradigm and can be used with both narrative and numeric data. Tashakkori and Teddlie (1998, p. 30) advise the researcher to; ‘study what interests and is of value to you, study it in the different ways that you deem appropriate, and use the results in ways that can bring about positive consequence within your value system’. Creswell (2009, p. 11) states that ‘pragmatism opens the doors to multiple methods, different worldviews and different assumptions’.

Creswell and Plano Clark (2011) mention that the logic behind this method is to overcome the weak points in the quantitative and the qualitative methods, depending on the strong points in each of the approaches and so integration will help to focus on the strengths and positive values in both quantitative and qualitative data, in order to be able to understand the problem more completely and deeply (Johnson and Christensen, 2008), and to give a more comprehensive picture of the research problem than any one kind of data could provide in isolation (Fraenkel and Wallen, 2006).

4.5.1 The Strengths of Mixed Methods

Fraenkel and Wallen (2006) assert that there is no doubt this method has clear strengths. One of these strengths, as Teddlie and Sammons (2010) mention, is that there are more reliable and appropriate meta-inferences which can be made when combining various types and sources of data. By mixing the two methods, the researcher can identify common points between the results of quantitative and qualitative research, thus leading to strong evidence in confirmation of conclusions reached using the mixed method. This will also increase opportunities to generalise results, as well as enabling the researcher to attain deep, accurate and more reliable results. Moreover, this combination will enable the researcher to formulate and discover ideas and variables to be investigated in future. Likewise, it is
practical, because it tends to solve problems using multiple worldviews using both numbers and words, and combines both inductive and deductive thinking, as the researcher is not limited to any one, single method while striving to resolve a research problem (Creswell and Plano Clark, 2011). In a nutshell, a single effective strategy is adapted from several methods and approaches, so that a greater level of validity can be achieved when collecting and interpreting data from more than one source (Burton, Brundrett and Jones, 2008, p. 170). Therefore, the most important thing to bear in mind is that mixed method research must not assume or pinpoint contradictions between quantitative and qualitative research, but should rather increase the researcher’s knowledge in terms of the research problem and help develop research skills.

4.5.2 Disadvantages of the Mixed Methods

Fraenkel and Wallen (2006) and Creswell and Piano Clark (2011) state that the mixed method is not just a pick and mix method; neither is it easy or straightforward. Newby (2010) clarifies this difficulty as being due to the fact that we are mixing inductive and deductive logic with both singular and multiple realities. Similarly, Biesta (2012) argues that there are many different ideas which fall under the terms ‘qualitative’ and ‘quantitative’, so it is not considered as a direct and automatic method. Thus, there are no givens or specific formulae involved in adopting the method. Ultimately, as with any method, there are weak points, and the researcher who seeks to apply mixed methods should be well-versed in both quantitative and qualitative method designs, as well as being aware of the logic for both research methods. Certain skills are therefore required (Gorard and Taylor, 2004). Additionally, the researcher must be sufficiently aware of ways of merging both approaches in a clear and specific way. Gorard and Taylor (2004, p. 4) claim that ‘mixed methods are nearly always more powerful than separate methods’, but they do require more energy, time, and resources for extensive data collection and analysis (Fraenkel and Wallen, 2006).
4.5.3 Mixed Methods Design for the Study

Teddlie and Tashakkori (2009) describe various techniques in detail regarding mixed method designs. They have categorised these designs according to the means and timescales for mixed methods. Similarly, Creswell and Piano Clark (2011) identify three main dimensions, as follows, when designing the mixed method: the timing dimension, the weighting dimension and the mixing dimension. Therefore, the researcher must decide whether to collect the data in a synchronous or sequential way, how to integrate data in a complementary or associative way, and how to determine the priority for collecting the data.

In the current study, quantitative and qualitative data were collected in a convergent way, where the collection and analysis were in a concurrent order and separate during the same stages, and results were finally merged for interpretation and then compared. In more detail, quantitative data were collected at the first step using a questionnaire instrument. I intensely relied on quantitative data while testing the study hypotheses, and then shortly after, the arrangements were made for the interviews. Qualitative data were gathered through interviews with participants who had completed the questionnaires, qualitative data were considered as a second source of information to support the questionnaire results and assist in interoperating the quantitative data. Regarding data analysis, this process occurred in a sequential manner, starting with an analysis of quantitative data and followed by an analysis of qualitative data.

The rationale for using this design is that I would ensure quantitative data were gathered from the largest number of students, as regards the factors affecting students in the use of VLEs. As a result, these data provided a perception of the research problem, which played a crucial role in illustrating the general image of the problem. Moreover, the opportunities for generalisation would be increased. On the other hand, qualitative data gathered through
interviews reinforces the validity of quantitative results and allows the study hypotheses to be interpreted both extensively and deeply, which can lead to meaning being added to the quantitative data. As a result, outcomes of the experimental course are justified and quantitative data is supported. At the same time, the impact of quantitative data on the results of the study is reduced. In this way, there is greater clarification and understanding of the study problem, as the two approaches and various techniques are integrated.

4.6 The Study Instruments

4.6.1 Study Questionnaire

Questionnaires are considered as one of the most commonly structured instruments used to collect numerical data (Cohen, Manion and Morrison, 2011). Johnson and Christensen (2008, p. 170) define it as a ‘self-report data collection instrument’, that contains a list of questions or statements about a specific topic, requiring the participants to answer these questions in a certain way.

Broadly speaking, questionnaires are used for collecting information related to particular variables or personal information from individuals, such as their educational level, grades, age, income, experience, work and performance. They may also be used to try and understand individuals’ beliefs, thoughts, feelings, attitudes, perceptions, personality, behavioural intention, opinions, desires, and tendencies (Johnson and Christensen, 2008; Hartas, 2010). Hence, they are still the main tools used for survey research and are effective in producing a large amount of data in a straightforward way (Newby, 2010), by putting a series of questions to a broad population in different ways and at an appropriate time. They are therefore most appropriate for a larger population (Burton, Brundrett and Jones, 2008) and most effective in terms of time and cost, when compared with observations and interviews. Furthermore, they provide objective data, since questionnaires offer
confidentiality and anonymity, without the need for one-to-one encounters. Sensitive questions can be asked, contributing to the acquisition of more accurate information and results (Kumar, 2011). Consequently, participants will be stimulated to give reliable information and data.

According to previous features, I used the questionnaire as an initial instrument to collect the quantitative data, as it is considered the most suitable tool for investigating factors affecting students’ attitudes. In spite of these features, the researcher may not be able to thoroughly understand the beliefs, tendencies, and personal experiences of the respondents through the questionnaire. What is more, after the distribution of the questionnaire, the questions cannot be modified and the researcher will be unable to verify the honesty of the respondents. This means there will be little chance for the researcher to check the reliability of the answers (Denscombe, 2007).

4.6.2 Designing the Questionnaire

To verify the hypotheses of the study, closed-ended questions were prepared. This kind of questionnaire requires the participants to select appropriate answers from a limited number of available answers determined by the researcher (Hartz, 2010). The rationale for using closed-ended questions for the current study is easily explained; such a questionnaire is also easier for participants to fill out and does not require much time and effort. Data analysis is also easier and furthermore, closed-ended questions are ideal when the items of a variable are already fully understood and will ensure that all respondents are faced with the same categories of response, allowing quantitative statistical analysis to be standardised (Johnson and Christensen, 2008).
Table 4.1: The proposed relationship between variables

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Effects</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Personal innovativeness → Perceived usefulness</td>
<td>PI → PU</td>
</tr>
<tr>
<td>H2</td>
<td>Personal innovativeness → Perceived ease of use</td>
<td>PI → PEOU</td>
</tr>
<tr>
<td>H3</td>
<td>Self-efficacy → Perceived ease of use</td>
<td>SE → PEOU</td>
</tr>
<tr>
<td>H4</td>
<td>Technical Support → Perceived ease of use</td>
<td>TS → PEOU</td>
</tr>
<tr>
<td>H5</td>
<td>Course content quality → Perceived usefulness</td>
<td>CCQ → PU</td>
</tr>
<tr>
<td>H6</td>
<td>Course content quality → Perceived ease of use</td>
<td>CCQ → PEOU</td>
</tr>
<tr>
<td>H7</td>
<td>Course interactivity → Perceived usefulness</td>
<td>CI → PU</td>
</tr>
<tr>
<td>H8</td>
<td>Course interactivity → Perceived ease of use</td>
<td>CI → PEOU</td>
</tr>
<tr>
<td>H9</td>
<td>Instructor characteristics → Perceived ease of use</td>
<td>IC → PEOU</td>
</tr>
<tr>
<td>H10</td>
<td>Instructor characteristics → Perceived usefulness</td>
<td>IC → PU</td>
</tr>
<tr>
<td>H11</td>
<td>Perceived usefulness → Attitude toward VLEs</td>
<td>PU → ATV</td>
</tr>
<tr>
<td>H12</td>
<td>Perceived ease of use → Attitude toward VLEs</td>
<td>PEOU → ATV</td>
</tr>
<tr>
<td>H13</td>
<td>Attitude toward VLEs → Intention to use e-Learning</td>
<td>ATV → IUE</td>
</tr>
<tr>
<td>H14</td>
<td>Perceived usefulness → Intention to use e-Learning</td>
<td>PU → IUE</td>
</tr>
<tr>
<td>H15</td>
<td>Perceived ease of use → Perceived usefulness</td>
<td>PEU → PU</td>
</tr>
</tbody>
</table>

The closed-ended questions questionnaire for the current study was designed based on the study objectives, theoretical framework and previously published measures, and most importantly, the TAM1 Model. Based on these resources, the study model first developed included ten constructs, then the study hypotheses were determined, as shown in Figure 4.1, with the relationships path being shown in Table 4.1, and finally, the questionnaire was designed.

The questionnaire consisted of ten constructs, namely personal innovation; self-efficacy; instructor characteristics; course content; technical support, and course interactivity, in addition to the original components of the TAM1 Model, which were represented in two belief variables: perceived ease of use and perceived usefulness, and attitude and intention to
use. The items for each construct were developed using valid and reliable items from various previous studies and measurements were used from the TAM Model, along with a certain amount of modification in their formulation to render them appropriate for the e-learning tools in this study.

**Figure 4.1:** The conceptual model and research hypotheses

In more detail, items for the perceived ease of use construct, perceived usefulness, intention to use, and student attitude were adopted from Davis’ (1989) TAM measurement, while the seven items for the instructor characteristics construct were adopted from the studies of Selim (2007) and Lee, Yoon and Lee (2009) and Lim, Hong and Tan (2008). The technical support construct was assessed through six items derived from Abbad, Morris and Nahlik (2009) and Ngai, Poon and Chan’x (2007) measurements, whilst content quality construct was measured by five items adopted from Lee (2006), Lee, Yoon and Lee (2009), and Liaw, Huang and Chen (2007). Regarding computer self-efficacy, this construct was measured by six items adapted from Lee (2006) and Abbad, Morris and Nahlik’s (2009) studies. The
The initial version of the questionnaire consisted of three parts: part one contained the introduction, general information about the subject of the study, and ethical issues, while part two gathered demographic information about the participants, such as age, specialisation, study year. The participants were also asked about other variables, such as their experience of using the Internet and Blackboard, while the third part of the questionnaire contained 60 items to assess the ten constructs investigating the impact of specific factors that could influence students’ attitudes towards learning via Blackboard and the intention to use e-learning. At the end of questionnaire, there was an open question which required the participants to indicate other factors that could affect their use of Blackboard. In addition, at the end of questionnaire, the participants were asked if they desired to do an interview on the use of Blackboard. If they agreed to this, then they were requested to write their email address and phone numbers, so that I could contact them for the semi-structured interviews.
4.6.3 Pre-Testing

The questionnaire was translated from English to Arabic by the researcher, since the main language for studying at the Education Faculty in Kuwait is Arabic. It was then reviewed by a proofreader to check the phrases for their accuracy and sense in Arabic. As most of the items were adapted from a previous study and modified by the researcher to fit the learning context, the resulting questionnaire was pre-tested by two colleagues in the same field, who were asked to read the questionnaire and discuss issues, such as the length of the instrument, the format and the clarity and appropriateness of the wording. Piloting feedback led to slight changes in sentence formulation in some of the items. After this, the questionnaire in its primary form was presented to a group of professionals at Kuwait University’s Department of Psychology and Department of Curriculum and Technology in Education, as well as from the King Qaboos University in Oman, in order to review questionnaire items and ensure that each item related to the domain under which it was classified. The language used was also checked to make sure it was appropriate and accurate. Moreover, it was verified whether the items were clear and if they would like to submit any suitable updates or suggestions. According to the results of these specialists, there were some modifications required for some words; the most important being the modification of items 11 and 12. Besides this, two items were deleted, because they were not appropriate for their constructs, and the specialists agreed that the questionnaire items appropriate for the study in its final Arabic form consisted of 58 items (see Appendix 2), distributed across nine constructs, as shown in Table 4.2.
Table 4.2: Distribution of the questionnaire items across the constructs

<table>
<thead>
<tr>
<th>Construct</th>
<th>Number of items</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal innovativeness</td>
<td>1-7</td>
<td>7</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>8-13</td>
<td>6</td>
</tr>
<tr>
<td>Instructor characteristics</td>
<td>14-20</td>
<td>7</td>
</tr>
<tr>
<td>Course interactivity</td>
<td>21-25</td>
<td>5</td>
</tr>
<tr>
<td>Course content</td>
<td>26-30</td>
<td>5</td>
</tr>
<tr>
<td>Technical support</td>
<td>31-36</td>
<td>6</td>
</tr>
<tr>
<td>Perceived ease of use</td>
<td>37-40</td>
<td>4</td>
</tr>
<tr>
<td>Perceived usefulness</td>
<td>41-45</td>
<td>5</td>
</tr>
<tr>
<td>Attitudes toward VLEs</td>
<td>46-53</td>
<td>8</td>
</tr>
<tr>
<td>Intention to use e-learning</td>
<td>54-58</td>
<td>5</td>
</tr>
</tbody>
</table>

4.6.4 The Pilot Study

Newby (2010) and Kumar (2011) emphasised the need for the draft questionnaire to be piloted by experts in questionnaire design, which would eliminate most of the potential problems for respondents in either understanding or interpreting a question (Kumar, 2011). Similarly, Gorard (2001) advocates the need for all research strategies to be pre-tested or piloted, ideally under real life conditions; a two-stage process being preferable, with the questionnaires reviewed by experts, or even friends, to obtain constructive feedback, before a complete and thorough pilot study was carried out. The aim of the pilot study was to ensure the clarity of the instructions, items, language used, means of responding, and the time required time for completing the questionnaire.

An Arabic version of the questionnaire was piloted on a sample similar in nature to the study sample. 29 students on the Environment Education course, at the Faculty of Education of
Kuwait University, using Blackboard for the summer semester in the academic year 2011-2012, undertook the pilot study. After completing it, the participants were asked if the wording of the questionnaire was clear and if the time was enough to complete the questionnaire or make any inquiries about it. Based on the feedback from the students on the pilot study, the questionnaire items and timeframe were considered as sufficient. Individual scale items are listed in Appendix 1.

4.7 The Psychometric Characteristics of the Questionnaire

4.7.1 Questionnaire Validity

Generally speaking, validity refers to the capacity of an instrument to measure what it is supposed to measure (Oppenheim, 1992; Gray, 2009; Kumar, 2011). With this technique, researchers concentrate on how far the measurement tools they are developing or using are truthful and meaningful indicators of the construct being evaluated (Hambleton, 2012, p. 245). The validity of the questionnaire was assessed in terms of content and construct validity.

4.7.2 Content Validity

The content validity refers to the actual form of the instrument and the quality of the items within it, in terms of their comprehensiveness and appropriateness (Fraenkel and Wallen, 2006); therefore the measurement tool must fully represent the constructs intended for inclusion in their research (Punch, 2009). The validity of the content will also enable the researcher to judge whether the questions or other items are in line with the research aims and correspond to assessments by experts and other readers in this domain (Kumar, 2011). Therefore, content validity is determined by specialists in the field, as they have sufficient knowledge of the information to be measured. Usually, specialists are asked to assess and make decisions about the extent of the representation by the measurement items of the
intended domain and study objectives. They will also evaluate the clarity of the items and their appropriateness for use. If the specialists are in agreement, the validity of the content will be strong, and specialist opinion shall enhance the validity of the questionnaire in measuring what it is intended to measure.

For this purpose, a form was prepared for the measurement of the content validity. The title and aim of the study were identified in the form, as well as a clarification of the constructs and items for each construct. Specialists were asked to assess the clarity of the items, their linguistic formulation, and the appropriateness of the item to the construct. The form was distributed to eight specialists from the Kuwait and Qaboos Universities. Overall, however, the specialists were agreed that the questionnaire items were appropriate for the current study aims.

4.7.3 Construct Validity

Construct validity concerns the extent to which measures of the dimensions of a construct really reflect the construct itself and more specifically, ‘it refers to the conceptual coherence across all items that constitute a characteristic’ (Hartas, 2010, p. 75). It is determined by finding out the effect of each construct on the entire variance observed in a phenomenon (Kumar, 2011, p. 180).

In the current study, construct validity was confirmed through factor analysis after applying the study instrument in its final form in the study sample at the University of Kuwait. Factor analysis is known as a ‘statistical method used to find a small set of unobserved variables (also called latent variables) which can account for the covariance among a larger set of observed variables (also called manifest variables)’ (Albright and Park, 2009, p.2). Thus, it is usually used to find out the correlation between the variables (Kline, 1994). On the other
hand it also applies to the evaluation of instrument validity (Pett, Lackey and Sullivan, 2003). Factor analysis is in fact a useful technique for investigating the internal structure of instruments (Johnson and Christensen, 2008) and is often used to develop questionnaires, so that the questions asked relate to the construct they intend to measure, and where the correlation coefficient is calculated between each item in the scale and in relation to the construct to which it belongs, it contributes to an assessment of the measurement model (van Raaij and Schepers, 2008) and assesses how far the data fit the model (Shroff, Deneen and Ng, 2011).

There are two types of factor analysis: Confirmatory and exploratory factor analysis. Confirmatory factor analysis is used to ‘verify the factor structure of a set of observed variables. It also allows the researcher to test the hypothesis that a relationship between observed variables and their underlying latent constructs exists’ (Suhr, 2006, p. 1). Confirmatory factor analysis is used when the ‘researcher has some knowledge about the underlying structure of the construct under investigation’ (Pett, Lackey, Sullivan, 2003, p. 4). For these reasons, confirmatory factor analysis was used in the current study. In contrast, exploratory factor analysis is used to discover the underlying dimensions of the construct. In order to determine the confirmatory factor analysis I have followed three essential steps (Cornish, 2007):

**Firstly:** I identify the factor loading. ‘Factor loading’ refers to the correlation of a variable with a factor. This step can be applied in different ways, but the most widely used method is the principal component method. In this step, the correlation coefficient (saturation) was calculated between each item and its relation to the construct to which it belongs. This study adopted 0.30 as a minimum level of saturation, according to the Guilford standard. In this regard, Hair et al., (2009) recommend that 0.3 represents the minimum level required for
factor loading, and 0.40 is considered as important saturation, while 0.5 is considered as practically significant.

**Secondly:** Factor rotation - The purpose of the rotation is to attempt to ensure that all variables have high loadings on only one factor. For the most part, there are two forms of rotation method: orthogonal and oblique rotation. In this study, orthogonal rotation was used, applying a common and recommended rationing method called Varimax for all questionnaire items. The analysis was carried out according to ten factors, in order to ensure that the items were saturated around these factors.

**Thirdly:** Calculation of factor scores - This step was conducted by choosing eigenvalues (the variances of the factors). The eigenvalue was used according to the Kaiser standard, where the value is selected as more than one.
Table 4.3: Factor loading, eigenvalues and variance explained for all variables

<table>
<thead>
<tr>
<th>Item</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Factor PI</td>
</tr>
<tr>
<td>1</td>
<td>0.638</td>
</tr>
<tr>
<td>2</td>
<td>0.667</td>
</tr>
<tr>
<td>3</td>
<td>0.620</td>
</tr>
<tr>
<td>4</td>
<td>0.661</td>
</tr>
<tr>
<td>5</td>
<td>0.508</td>
</tr>
<tr>
<td>6</td>
<td>0.659</td>
</tr>
<tr>
<td>7</td>
<td>0.695</td>
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<td>8</td>
<td></td>
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<td>56</td>
<td></td>
</tr>
<tr>
<td>57</td>
<td></td>
</tr>
<tr>
<td>58</td>
<td></td>
</tr>
<tr>
<td>Cumulative%</td>
<td>17.284</td>
</tr>
</tbody>
</table>
Table 4.3 displays factor loading and eigenvalues and explains the variance for all variables. The results of the factor analysis indicate that all items were saturated according to the Guilford standard, where the factor loading values for all items ranged between 0.431 and -0.918, and all factor loading over 0.431. This was considered to be an acceptable minimum loading value, which means that all items were loaded on their factors, and all items converged on just one construct. In turn, this confirms that all items relate to their factors. Furthermore, the results demonstrate that the saturation of all items reached a greater degree, where the eigenvalues were greater than one for each factor. The percentage of variance explained by the components range between 2.746 and 17.284 and are explained around 66.642% of the total variation in the study sample responses to instrument items. It is clear from the outcomes obtained that the study instrument is characterised by sufficient levels of construct validity.

4.7.4 Questionnaire Reliability

Basically, Cohen, Manion and Morrison (2011) related reliability to the consistency or stability of the test score over time and over a similar sample. Likewise, Johnson and Christensen (2008) highlight the fact that the degree of reliability refers to a scale being applied to the same sample under similar conditions, but at another point in time, in order to repeat the results (Hartas, 2010,). Usually, reliability is measured using a correlation coefficient and its value ranges between zero and one. The reliability of the current measurements was measured through internal consistency.

4.7.5 Internal Consistency

The term ‘internal consistency’ indicates the consistency of items when measuring a single construct (Johnson and Christensen, 2008). In the same context, Hartas (2010, p. 73), refers
to internal consistency as the ‘conceptual coherence across all items that constitute a characteristic’. It is therefore concerned with the consistency of individual performance from one item to another and across the whole scale. Thus, through internal consistency the homogeneity of an instrument can be determined (Gray, 2009). Internal consistency among the items was estimated using Cronbach's alpha coefficient, which depends on the concept of internal links between items. However, it provides information about items in one test that may only be applied the once, because the estimation of internal consistency requires just one application. Cronbach’s alpha coefficient is also used in cases where multiple answers are required for questionnaire measures. Cronbach’s alpha was measured for each construct. The results of the reliability of the internal consistency are given in Table 4.4.

**Table 4.4: Instrument reliability: Cronbach's alpha**

<table>
<thead>
<tr>
<th>Construct</th>
<th>Number of items</th>
<th>Cronbach's alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal innovativeness</td>
<td>7</td>
<td>0.751</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>6</td>
<td>0.898</td>
</tr>
<tr>
<td>Instructor characteristics</td>
<td>7</td>
<td>0.855</td>
</tr>
<tr>
<td>Course interactivity</td>
<td>5</td>
<td>0.883</td>
</tr>
<tr>
<td>Course content</td>
<td>5</td>
<td>0.829</td>
</tr>
<tr>
<td>Technical support</td>
<td>6</td>
<td>0.797</td>
</tr>
<tr>
<td>Perceived ease of use</td>
<td>4</td>
<td>0.910</td>
</tr>
<tr>
<td>Perceived usefulness</td>
<td>5</td>
<td>0.936</td>
</tr>
<tr>
<td>Attitude toward VLEs</td>
<td>8</td>
<td>0.912</td>
</tr>
<tr>
<td>Intention to use e-Learning</td>
<td>5</td>
<td>0.900</td>
</tr>
</tbody>
</table>
Table 4.4 demonstrates that the values pertaining to the reliability of internal consistency using the Cronbach's alpha coefficient for all constructs, ranged between 0.751 and 0.936 and all exceeded .75. Nunnally (1967) recommends value .7 as acceptable for the Cronbach alpha coefficient. According to these results, internal consistency amongst the items was high and above the recommended value, which indicates that the items were homogeneous, that they were linked with each other, and that they measured the same constructs. So, the questionnaire shows acceptable levels for psychometric properties, and is appropriate for the current study.

4.8 The Study Population

The targeted population for the current study consists of all the students registered in the Education Faculty at Kuwait University for the first term of the academic year 2012-2013, where the researcher conducted the current study. According to Registration Department statistics at the Education Faculty, their total number was 5060 male and female students across different disciplines and study years. In order to verify the hypotheses of the study and then apply conclusions and make inferences, I chose a sample from within the target population, comprising students registered on the academic courses utilising Blackboard for the first semester of the academic year 2012-2013. This was based on statistics extracted from the e-learning centre at Kuwait University and totalled 841 students distributed across 32 courses and using Blackboard, out of the 396 courses taught during the first semester at the Education Faculty.

4.9 The Questionnaire Sample

According to the study aims, a purposive sampling technique in the current study was used to test the study hypotheses. The main purpose of this sample, as Cohen, Manion and Morrison (2011, p. 157) mention, is to ‘assess knowledgeable people who have in depth knowledge about a particular issue’. Towards this end, researchers will make judgements
based on prior knowledge of the population for sample selection, based on the belief they will thus obtain the required data (Fraenkel and Wallen, 2006), in order to focus on a specific issue and then to understand the study problem in depth from specific people. Nevertheless, the sample may not be representative and the result may not be generalisable, although this is not so important in such a sample, as the main aim is to gather meaningful and comprehensive information from appropriate people in terms of specific issues (Cohen, Manion and Morrison, 2011). Thus, the purpose of the sample in the current study is to link the participants with the subjects of the study, with regard to whether they used Blackboard, or had any experience and prior knowledge of it, eventually enabling the students to provide reliable data. The purposive sampling method was used in sample selection to ensure that only students who had experienced or used Blackboard were included. Thus, the researcher gave instructions to the participants, not to fill out the questionnaires, if they had not used or did not have any experience with Blackboard, to guarantee that all participants actually used Blackboard. Through the respective lectures and obtaining permission from the tutors concerned, the researcher was able to access 335 out of the total number of students enrolled on courses who had used Blackboard.

4.10 Sample Description

A total of 335 female undergraduate students took part in this study, selected from the Faculty of Education at Kuwait University. All participants were registered in courses where Blackboard was used. The profiles of the participants are summarised in Table 4.5 according to certain variables.
### Table 4.5: Demographic profile of the study sample

<table>
<thead>
<tr>
<th>Variables</th>
<th>Levels</th>
<th>Frequency</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td>17-19</td>
<td>113</td>
<td>33.7</td>
</tr>
<tr>
<td></td>
<td>20-22</td>
<td>194</td>
<td>57.9</td>
</tr>
<tr>
<td></td>
<td>23-24</td>
<td>20</td>
<td>6.0</td>
</tr>
<tr>
<td></td>
<td>25-26</td>
<td>8</td>
<td>2.4</td>
</tr>
<tr>
<td><strong>Study Year</strong></td>
<td>First (0-29 unit)</td>
<td>69</td>
<td>20.6</td>
</tr>
<tr>
<td></td>
<td>Second (30-59 unit)</td>
<td>77</td>
<td>23.0</td>
</tr>
<tr>
<td></td>
<td>Third (60-89 unit)</td>
<td>50</td>
<td>14.9</td>
</tr>
<tr>
<td></td>
<td>Fourth (90-131 unit)</td>
<td>121</td>
<td>36.1</td>
</tr>
<tr>
<td></td>
<td>Fifth (more than 131 unit)</td>
<td>18</td>
<td>5.4</td>
</tr>
<tr>
<td><strong>Discipline</strong></td>
<td>Science</td>
<td>105</td>
<td>31.3</td>
</tr>
<tr>
<td></td>
<td>humanities</td>
<td>230</td>
<td>68.7</td>
</tr>
<tr>
<td><strong>Internet Experience</strong></td>
<td>Poor</td>
<td>5</td>
<td>1.5</td>
</tr>
<tr>
<td></td>
<td>Fair</td>
<td>35</td>
<td>10.4</td>
</tr>
<tr>
<td></td>
<td>Good</td>
<td>195</td>
<td>58.2</td>
</tr>
<tr>
<td></td>
<td>Excellent</td>
<td>100</td>
<td>29.9</td>
</tr>
<tr>
<td><strong>Blackboard Experience</strong></td>
<td>No experience</td>
<td>16</td>
<td>4.8</td>
</tr>
<tr>
<td></td>
<td>Poor</td>
<td>45</td>
<td>13.4</td>
</tr>
<tr>
<td></td>
<td>Fair</td>
<td>99</td>
<td>29.6</td>
</tr>
<tr>
<td></td>
<td>Good</td>
<td>138</td>
<td>41.2</td>
</tr>
<tr>
<td></td>
<td>Excellent</td>
<td>37</td>
<td>11.0</td>
</tr>
<tr>
<td><strong>Number of courses Using Blackboard</strong></td>
<td>0</td>
<td>17</td>
<td>5.1</td>
</tr>
<tr>
<td></td>
<td>1-2</td>
<td>286</td>
<td>85.4</td>
</tr>
<tr>
<td></td>
<td>3-4</td>
<td>28</td>
<td>8.4</td>
</tr>
<tr>
<td></td>
<td>5-6</td>
<td>4</td>
<td>1.2</td>
</tr>
<tr>
<td><strong>Frequency of Blackboard Use</strong></td>
<td>Never use</td>
<td>20</td>
<td>6.0</td>
</tr>
<tr>
<td></td>
<td>Rarely</td>
<td>150</td>
<td>44.8</td>
</tr>
<tr>
<td></td>
<td>One a week</td>
<td>141</td>
<td>42.1</td>
</tr>
<tr>
<td></td>
<td>Daily</td>
<td>24</td>
<td>7.2</td>
</tr>
</tbody>
</table>

It is clear from Table 4.5 that participants aged between 20 and 22 formed the highest percentage in the study sample, 57.9%, while the number of participants aged between 25 and 26 constituted the lowest percentage, at 2.4% of the total study sample. Regarding the year of study, the percentages show that students were distributed across each year of study, with the fourth year being most significantly represented (36.1%), and the fifth year forming the lowest percentage of participants (5.4%). With regard to specialisation, the results indicate that the number of participants from scientific disciplines is greater than the participation from the Humanities. In terms of Internet experience, the results show that the
percentage of participants with ‘good’ and ‘excellent’ experience of the Internet reached around 88.1% of the total sample, which means the majority of the study sample used the Internet and had experience of doing so. This was considered as a crucial issue in using Blackboard, whilst only 11.9% of the participants had less than ‘good’ (‘fair’ and ‘poor’) experience in using the Internet.

With respect to experience of using Blackboard, the results show that the percentage of participants with ‘excellent’ experience in this domain formed 11% of the total sample of participants, and 41.1% participants claimed they had ‘good’ experience. On the other hand, 47% of the study sample reported that their experience of using Blackboard was less than ‘good’ (‘poor’ and ‘fair’), meaning that approximately 52.2% of participants were capable of using Blackboard. The lowest percentage is for the students who never use Blackboard, where 16 students reported that they did not have experience of using this tool.

In view of the number of courses that students use Blackboard for, the results indicate that the participants who had taken one or two courses using this tool represented the highest percentage in the study sample, at approximately 85.4%. However, the number of participants who had taken 5 or 6 courses using Blackboard, comprised the lowest percentage (1.2%). It seemed that the majority of participants attending at least one course had used Blackboard.

Finally, the results related to the extent of the students’ usage of Blackboard in their learning. The highest percentage was for students who rarely use Blackboard (44.8% of the total study sample). The participants who used Blackboard just once a week constituted 42.1% of the total study sample, while only 20 out of 350 participants claimed they used
Blackboard on a daily basis (7.2% of the total sample). It is therefore clear from these outcomes that the majority (86.9%) of the participants did not often use Blackboard.

It is worth mentioning that all the participants were female, and this was due to the percentage of male students being very low in the Education Faculty. The number of male students for the academic year 2012-2013 was 561, representing 10% of all students in the Education Faculty, while the number of female students totalled 5060, representing 90% of all students in the Education Faculty. Another reason for the participants being is that Kuwait University applies a policy of segregating males from females in lectures. Therefore, all the courses that incorporate Blackboard were solely for females.

4.11 Procedures for Applying the Questionnaire

According to specialist opinions on the validity of the scale and the results of the pilot study, the number of items for the final scale became 58, distributed between nine constructs, and the questionnaire was therefore ready to be applied to the study sample.

The following procedures were followed by applying the questionnaire:

1. Firstly, I gained ethical approval from the School of Education’s Research Ethics Committee at Cardiff Metropolitan University and also obtained a letter of consent from the School of Educational Research in Cardiff Metropolitan University to facilitate the research study at Kuwait University. These indications of consent were submitted to stakeholders at the Kuwait University Faculty of Education, in order to obtain permission to access the Education campus, apply the study instruments, and obtain necessary data and statistics from the e-learning centre at Kuwait University. Based on this initial consent, I finally obtained a letter of consent from the Faculty of Education at Kuwait University, to facilitate the research and conduct the study there.
2. Statistics were extracted from the e-learning centre at Kuwait University to determine the number of courses using Blackboard, the names of faculty members, and the number of students on these courses. This would determine the population and study sample.

3. The researcher met with the Education Faculty’s nine tutors who use Blackboard, in order to clarify the purpose of the current study and gain their approval for distributing the questionnaire amongst students in their lectures. Six tutors agreed to distribute the questionnaires in their lectures and the dates and time for doing so were consequently determined, while two tutors refused to distribute the questionnaires in their lectures. I got the opportunity to identify some courses available on Blackboard and therefore discovered the extent to which Blackboard was used in learning.

4. One month after starting the semester, I contacted the tutors, who provided me with the approval to distribute the questionnaires in their lectures and I reminded them about the date for doing this. The questionnaires were directly handed out in person by me at the lectures, using a paper-based questionnaire for students. These were then completed during the lectures. I was present while the questionnaires were being completed, and this was because of the convenience of accessing large samples of students gathered in one place and obtained a high percentage of responses, reaching 100% in most of the lectures. In addition, I also explained and answered questions put by the participants, and the participants were encouraged to answer the questions. However, I did not try to persuade or pressurise the students to complete the questionnaires. Instead, I informed them that they had absolute freedom to participate or withdraw.

5. First of all, the subject and aim of questionnaire were clarified for the students before the questionnaires were distributed. The participants’ information sheet and informed consent forms were distributed in order for the students to read about ethical issues and sign to confirm their consent. Based on the British Educational Research Association (BERA) (2011) guidelines, the participants were informed that they had the right to withdraw from
participating in the questionnaires without needing to provide justification and at any time. Therefore, if they decided they did not want to participate, they could simply leave the lecture.

6. The respective questionnaires were completed during the period 27/10/2012 to 22/12/2012. The total number of distributed questionnaires was 360 and all the questionnaires were returned. However, five of the returned questionnaires were excluded because they were mostly incomplete; 20 other questionnaires were also omitted, as the participants did not use Blackboard and did not even have any knowledge of it. Overall, a total of 335 questionnaires out of the 360 were used for statistical analysis, making the valid return rate 93%.

7. The data entry process in SPSS was directly carried out after collecting the questionnaires on an ongoing basis.

4.12 Interviews

Interviews are considered as a powerful instrument for constructing knowledge and gathering information, particularly with regard to the human condition, since they permit a glimpse into the real experience of participants, as expressed in their own words (Kvale, 2007). Gillham (2005, p. 8) states that interviews are ‘about real people not just statistics’. Fraenkel and Wallen (2006, p. 455) remark that the main purpose of interviews is to ‘find out what is on people’s minds, what they think or how they feel about something’. In such a way, interviewees can talk about their own personal opinions and beliefs (Kvale, 2007).

In an overview of the strengths and weaknesses of the interview as a technique for gathering data, they will be seen as one of the main methods for collecting profound information in qualitative research (Kvale, 2007). The interview is considered as a worthy tool for obtaining deep information, especially if the researcher uses it effectively. Interviews are
more appropriate for asking questions that cannot be formulated in the questionnaire, where there are no alternative questions. Gillham (2005) states that interviews are by their very nature flexible, regardless of how they are structured, which means that the researcher can formulate and clarify the questions once more in order to develop them to suit all participants. They are therefore best suited to greater complexity and sensitivity (Kumar, 2011). Interviews consequently stimulate and encourage students to take part in conversations, where the interview can then become more interactive. Furthermore, they provide opportunities to review the accuracy of answers in different ways and throughout various stages of the interview, so that the interviewer can acquire more reliable data (Fraenkel and Wallen 2006). In the meantime, the verbal and expressive behaviour of the interviewees may also be noted. It is worth mentioning that the interview is used for formulating and developing new hypotheses for studies.

However, interviews are considered as an expensive method for the interviewer and are time-consuming for both the interviewer and interviewee (Burton, Brundrett and Jones, 2008), particularly in the case where the interviewer wishes to make appointments, arrange meetings and contact participants. Time is also required for analysing, presenting and interpreting the material required (Gillham, 2005). Furthermore, the interview may be considered as biased in favour of the ideas of the interviewer (Kumar, 2011), and may be noticeably unsuitable for large study samples, lending itself more readily to small numbers. Thus, results cannot be generalised. In addition to this, in some cases, the interviewer may find some of the interviewees are not so reliable or honest with their answers, trying to provide data that are consistent with the interviewer’s thoughts and trends, in order to satisfy the interviewer and show themselves in a positive light.
4.12 Interview Design

4.12.1 The Semi-Structured Interview

The semi-structured interview technique was chosen as a second instrument for collecting qualitative data. Semi-structured refers to the control the interviewer has over the way the interviewee responds. In a semi-structured interview, the interviewer has a clear list of pre-prepared and open questions which are very specific in their content and options for answering (Gray, 2009). The principal questions may be supplemented so that the participants are prompted to provide more explanations and in-depth information, with their responses consequently expanded (Newby, 2010). In addition, the interviewer must correspondingly adopt a much more flexible stance with regard to the order of the topics under study and permit the flow of ideas from the interviewee (Denscombe, 2007).

The rationale for using semi-structured interviews in the current study is that these contain flexible questions, which allow an interactive relationship to develop between the interviewer and interviewees. As a result, the interviewees are more likely to be accepting of the interview process, making more effort to provide the necessary information. Furthermore, the interviewees have a certain freedom in the way they answer the questions and express their ideas and thoughts. This is reflected in the diversity, accuracy and objectivity of the resulting information; moreover, they can provide more validity and support for the quantitative data.

Fifteen open-ended questions were prepared for the interviews, with sub-questions for each question, to allow for more clarification and to encourage interviewees to enter into more discussion. The interview questions were mainly derived from the study hypotheses to support quantitative data and to explain the relationships between the variables in more detail. I have prepared an interview guide for myself in order to organise the process and make sure that I put the same main questions to all
interviewees, and that there is consistency in these questions. The guide is divided into two sections: The first section containing the time and date of the interview and general information about the interviewee (Specialty - Study year - Experience using Blackboard - Number of times Blackboard has been used). The second section contains a clear list of questions that should be covered and addressed during the interview (see Appendix 3).

4.12.2 The Interview Sample

The issue of a quantitative preview is not applied in the qualitative research. The aim of selecting the sample in a quantitative study is to generalise the study results from the sample to the population. However, this is not the case in qualitative methods and so the sample in such research typically employs purposive sampling (Gray, 2009), since the aim of the interview is not to generalise, but to deeply understand the phenomenon, or the study problem. Flick (2009) demonstrates that the study sample should be selected according to how the subjects relate to the purpose of the study and not how they represent the population. For this reason, researchers in qualitative research intentionally select participants who are in a good position to provide information and moreover, who have experience (Creswell and Plano Clark, 2011). Very often, qualitative research involves a relatively small sample, because this will deliver sufficient and useful data for the research question (Teddlie and Tashakkori, 2009), and will lead to the collection of in-depth information on social phenomena within the relevant context. On the other hand, the quantitative method involves selecting as large a sample as possible so that it closely reflects the population it is taken from (Hartas, 2010).

For the current study, I inventoried the number of students who had agreed to do an interview, indicating as such in the questionnaires, where those students who agreed to be interviewed wrote their email address and phone number at the end of the questionnaire,
after the latter had been completed. I was keen that the students who had agreed to be interviewed had experience of using Blackboard and would be able to give appropriate information in the interview. The total number of students who accepted to do a face-to-face interview was 24, all being female. The interviews were conducted during November - December 2012, three weeks following the distribution of the questionnaires.

### 4.12.3 Implementation of the Interviews

1. Based on the initial consent of the students to do the interviews, collected via their questionnaires, I contacted the respective participants in order to determine the time and place for the interviews, according to the students’ free time, the venue being the Education Faculty’s university library. The day before the interview, text messages were sent to students to remind them of the time of their interview.

2. Initially, at the beginning of the interview, the interviewees were welcomed and I introduced myself as the researcher. Then, the significance of their participation in the interview was emphasised, in order to encourage them. Next, I presented an introduction about e-learning and VLEs and the purpose of this study. I also described the information I wished to acquire from them, and explained who the beneficiary would be, how the data would be used, along with the kind of questions that would be asked. Besides this, the expected time for the interview was stated: the duration of each ranging between 30 and 45 minutes. This introduction and clarification helped the interviewees think about the interview topic carefully and take the subject seriously, so they could offer truthful responses.

3. First and foremost, ethical issues were taken into consideration, where informed consent forms had been distributed to interviewees. The main ethical issues outlined included the confidentially of the subjects: anonymity. They were thus informed that this interview would not affect any pending course evaluations and they were not obliged to participate,
since their participation was voluntary (BEAR, 2011). Written approval was obtained from the interviewees, as well as their permission to record the interviews.

4. I began the by asking general questions from a prepared interview guide (e.g. Discipline - Study year - Internet Experience - Number of courses using Blackboard- Frequency of using Blackboard). Afterwards, I asked the main questions for all interviewees, interposing sub-questions. It is worth mentioning that these sub-questions occasionally differed from one interview to another, depending on how much the interviewee used VLEs. However, various sub-questions were raised to suit all participants and to stimulate interviewees to take part in the conversation, so I could gain more accurate and richer information from them. Through interviews, I was careful to write important notes and answers on the interview guide for each interviewee, even on their facial expressions.

5. Lastly, at the end of the interview, the researcher gave the interviewees time to add any extra information, make suggestions, or ask questions.

Regarding validity and reliability, they do not mean quite the same things in quantitative and qualitative research (Cohen, Manion and Morrison, 2011), as they differ significantly (Kumar, 2011). Nevertheless, in both concepts, the aim is to verify the standard and accuracy of the information and the way in which it is to be interpreted (Creswell and Plano Clark, 2011). Some instructions were followed to promote and ensure the reliability of the interviews by asking direct, unambiguous and easy to answer questions, moving away from long, double, or biased questions. Moreover, flexibility in the discussion was ensured by giving the interviewees the opportunity to express their opinions. As Kvale (2007) states, ‘a good contact is established by attentive listening’. In addition to this, alternative questions were included in the interview guide, which could be altered, depending on the style of the interviewee. The reliability of the interviewees’ answers was confirmed in the current study.
by asking one question more than once in different ways and only briefly writing down the most important points, in order to avoid distracting the interviewees and making them wary of continuing. Additionally, the interviews were recorded so as to ensure the accuracy of the interviewees’ answers, and to double-check responses, since this can help increase concentration during the interview, and show respect for what the interviewee says. This is also critical for the transcription process, as the researcher must frequently check the transcription for accuracy. This phase is considered to be crucial for the reliability of data and for producing real qualitative data (Gillham, 2000). Regarding the validity of the qualitative data, this may be ensured by obtaining and verifying honest and in-depth information across a broad scope from the interviews (Winter, 2000).

4.13 Data Analysis
The data analysis process for the current study passed through two phases in a separate and sequential manner, as follows:

4.13.1 Quantitative Data Analysis
First phase: the quantitative data were analysed, starting by coding the questionnaires. The data were imported into SPSS statistical software. Version 19 was used to analyse and present the quantitative data, with no missing data found for any of the questionnaires. Initially, descriptive statistics were used to analyse the quantitative data and inferential statistics were used to test hypotheses and reach conclusions and inferences from the study data. However, in this instance, the following statistical methods were applied: Firstly, before testing the study hypotheses, the study measurement model was assessed using confirmatory factor analysis to measure whether the constructs of the instrument are appropriately validated. In addition, the Cronbach alpha coefficient was applied to determine the reliability of the study instrument. Secondly, descriptive statistical analyses, such as mean, standard deviation, and frequency percentage were used to organise and summarise
the data and also to describe the study sample and its features. These analyses also helped determine the students’ responses to each item in the questionnaires. In addition, standard deviation was used for measuring the amount of variation and dispersion in the students’ responses and the extent of spacing values from the arithmetic mean were also calculated. Thirdly, the researcher applied a structural equation model (SEM) for verifying the hypotheses. SEM is a statistical modelling technique (Hox and Bechger, 1998) used to examine various complex relationships between variables in a single model. Tighezza (2012) also provides information about how well the theoretical model can predict a hypothesis. Moreover, the direct and indirect effect of each variable on other variables is explained from the perspective of the entire model (Lei and Wu, 2007). Path and regression analysis were used in SEM to test the study hypotheses and investigate the relationship between the variables in more depth, especially for causal directions between them (Fox, 2002). A structural equation modelling approach was adopted using the AMOS 19 software programme.

4.13.2 Qualitative Data Analysis

The second phase of data analysis represented an analysis of the students’ interviews, where the transcript and coding process took place. The transcript process was considered as the first stage in the analysis of qualitative data, and here, the students’ verbal answers were transferred from the recording to a Word file in the Arabic language after listening to the interview recording carefully. I then translated each interview into English for analysis, so I had two versions of the transcription, one in Arabic and one in English.

The second stage of the qualitative data analysis involved coding the data into themes and nodes. These processes were carried out using the NVivo programme, which was implemented to assist in analysing the interview data. NVivo is a computer software
programme, the major aim of its design being to organise and help analyse qualitative data (non-statistical data). These data can be obtained from interviews and focus groups, in addition to videos, audio files and multimedia images. Furthermore, NVivo provides opportunities for researchers to classify and manage unstructured information. In addition, it assists the researcher in quickly and precisely analysing data, while also effortlessly acquiring such data (QSR International, 2014). Moreover, this process is considered as a crucial procedure for qualitative data analysis, since these codes aid in data management in terms of storage and retrieval and are linked to quantitative results.

In the coding process and in order to analyse interviewees’ responses, I applied a ‘thematic content analysis’, which is a widely used method of descriptively presenting qualitative data analysis (Anderson, 2007). Furthermore, it is a flexible method of analysing qualitative data. Moreover, thematic analysis is defined as ‘a method for identifying, analysing, and reporting patterns (themes) within data. It minimally organises and describes your data set in (rich) detail’ (Braun and Clarke, 2006, p. 79). In this process, after reading the interview transcripts several times and writing down key ideas, in order to become familiar with the data, the interviewees’ responses were broken down into small sentences or paragraphs, where similar sentences were grouped into one category and then labelled and categorised according to study factors. The labelling and categorising process took place through the ‘Nodes’ option in NVivo, where the same answers or data were combined in one place under a specific theme. The Node option enables the researcher to look for thoughts and ideas that result from the interviews in an easy and organised manner. It can be said that the Nodes option provides storage folders with specific labels and content. Finally, the quantitative and qualitative findings were reported under each hypothesis, supported with appropriate quotations to demonstrate these findings.
4.14 Ethical Considerations

Blumberg, Cooper and Schindler (2011) define ethics as a group of moral principles or criteria which shape the way we behave and relate to others, while Johnson and Christensen (2008, p. 101) state that ethics are ‘principles and guidelines that help us uphold the things we value’. Many research organisations which have intensely studied moral issues and ethical guidelines have been prepared for these to be used by researchers, in order to contribute to ethically adequate ways in which a study may be conducted, thus preserving the participants’ rights. There is a degree of agreement over moral issues in research, the most vital being confidentiality, anonymity and informed consent. In the same context, Gray (2009) outlines the most important ethical issues, which consist of avoiding harm to participants, ensuring their informed consent, respecting their privacy and avoiding the use of deception.

The British Educational Research Association (BERA) are an organisation that deeply study ethical issues and produce BERA’s (2011) ethical guide for educational researchers. According to BERA’s ethical guidelines, Educational research undertaken by researchers outside the UK must meet similar ethical criteria to that which is applied to research in the UK. Thus, the current study follows the following procedures: Ethical approval was obtained from the School of Education’s Research Ethics Committee at Cardiff Metropolitan University. Based on this approval, the researcher also obtained a letter from the School of Education Research to facilitate their work (see Appendix 4). This letter was submitted to the authorities in the Faculty of Education, in order to obtain approval for the application of the current study there and also to obtain permission to enter the campus. Ultimately, the researcher received approval from the Faculty of Education to conduct the study (see Appendix 5).
Before applying each instrument, I was keen to inform the students about ethical issues in two ways: first, vocally, on a face-to-face basis, and then by providing the participants with an information sheet (see Appendix 6) and an informed consent form (see Appendix 7). The participant information sheet provided participants with sufficient information about the study, such as its subject and purpose, the kinds of questions to expect, consequences and risks, anonymity, privacy, confidentiality, risks, benefits, and the right to withdraw, so they could make an informed decision about their participation. Once the students were aware of the research ethics, the questionnaires were distributed to them.
CHAPTER FIVE

Quantitative and Qualitative Data Analysis

5.1 Introduction

This chapter presents quantitative and qualitative data analysis, based on various statistical analyses and in conjunction with an analysis of the interviews. The presentation of the data analysis is organised according to the study hypothesis in the following sequence, prior to examining the hypothetical descriptive results for the questionnaires items presented. For example, the results for the proposed model will be displayed separately in the light of quantitative analysis for each hypothesis, followed by qualitative findings arising from semi-structured interviews, where the narrative data obtained from the interview will provide deep information that can contribute to an investigation of the underlying factors influencing students’ acceptance and intention of using e-learning systems.

5.2 Descriptive Results

Initially, arithmetic means and standard deviations for each item and construct instrument were calculated and analysed for participant response, measuring their beliefs and opinions regarding the factors that affect attitudes to using Blackboard and the intention to use e-learning, according to the TAM Model. A descriptive analysis for study variables is shown in Table 5.1, below.
Table 5.1: Arithmetic means and standard deviations of responses from Kuwait University students to the factors which impact the use of Blackboard

<table>
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<tr>
<th>Factors</th>
<th>Question</th>
<th>Mean</th>
<th>Std deviation</th>
</tr>
</thead>
<tbody>
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<td>Personal innovativeness</td>
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<td></td>
<td>50</td>
<td>3.98</td>
<td>0.889</td>
</tr>
<tr>
<td></td>
<td>51</td>
<td>3.96</td>
<td>0.933</td>
</tr>
<tr>
<td></td>
<td>52</td>
<td>3.93</td>
<td>0.973</td>
</tr>
<tr>
<td></td>
<td>53</td>
<td>3.74</td>
<td>1.010</td>
</tr>
<tr>
<td>Attitude toward VLE</td>
<td>54</td>
<td>3.64</td>
<td>1.139</td>
</tr>
<tr>
<td></td>
<td>55</td>
<td>3.86</td>
<td>1.057</td>
</tr>
<tr>
<td></td>
<td>56</td>
<td>3.90</td>
<td>1.010</td>
</tr>
<tr>
<td></td>
<td>57</td>
<td>3.97</td>
<td>0.980</td>
</tr>
<tr>
<td></td>
<td>58</td>
<td>4.06</td>
<td>0.930</td>
</tr>
</tbody>
</table>
The descriptive analysis data, as shown in Table 5.1, indicates that the means of items representing the personal innovation factor range between 3.72 and 4.43, with a range of standard deviation between 0.679 and 1.110. For the self-efficacy factor, the means ranged between 3.69 and 3.30, with a range of standard deviation between 0.939 and 1.111. Regarding instructor characteristics, the findings for the factor indicate values of means ranging between 3.99 and 4.53, with a standard deviation of 0.749 and 0.879 and an overall mean of 4.29, with a standard deviation of 0.62. Moreover, the means of the items representing the course interactivity factor ranged between 3.59 and 4.15, with a standard deviation of 0.875 - 1.022. Furthermore, the means for course content range between 4.07 and 3.63, with standard deviations of between 0.774 and 0.941; while for the overall score, the mean reached 3.92, with a standard deviation of 0.65. The means for the items representing the technical support factor were between 3.03 and 3.037, with standard deviations ranging between 0.832 and 1.189. On the other hand, the means for the items representing perceived ease of use ranged between 3.83 and 3.94, with a standard deviation of 0.907 and 0.949. Finally, the means for the items representing the perceived usefulness factor ranged between 3.87 and 4.03, with standard deviations of between 0.869 and 0.987. In general, the amount of standard deviation for all factors indicate a narrow spread around the mean.

Overall, all means for all items were above 3.00 and the results reveal that participants reported the highest mean for the instructor characteristics factor, amounting to 4.29, followed by the personal innovation factor and then the factors of perceived usefulness, perceived ease of use, course content, course interactivity, and self-efficacy, respectively, while the technical support factor had the lowest mean, amounting to 3.36. The overall means and standard deviation for each construct are determined and displayed in Table 5.2.
Table 5.2: Arithmetic means, standard deviation and ranking for each construct

<table>
<thead>
<tr>
<th>Factor</th>
<th>Mean</th>
<th>Standard deviations</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructor characteristics</td>
<td>4.29</td>
<td>0.62</td>
<td>1</td>
</tr>
<tr>
<td>Personal innovation</td>
<td>4.11</td>
<td>0.55</td>
<td>2</td>
</tr>
<tr>
<td>Perceived usefulness</td>
<td>4.02</td>
<td>0.81</td>
<td>3</td>
</tr>
<tr>
<td>Perceived ease of use</td>
<td>3.97</td>
<td>0.79</td>
<td>4</td>
</tr>
<tr>
<td>Course content</td>
<td>3.92</td>
<td>0.65</td>
<td>5</td>
</tr>
<tr>
<td>Course interactivity</td>
<td>3.79</td>
<td>0.77</td>
<td>6</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>3.63</td>
<td>0.79</td>
<td>7</td>
</tr>
<tr>
<td>Technical support</td>
<td>3.36</td>
<td>0.68</td>
<td>8</td>
</tr>
</tbody>
</table>

In order to identify students’ attitudes and their intention to use VLEs, the means and standard deviations for the degree of student attitude towards these VLEs were calculated and analysed. It is clear from Table 5.3 that all items relating to student attitude showed generally positive attitudes towards Blackboard. All the means for items relating to student attitudes towards Blackboard were over 3, ranging from 3.03 to 4.03, with standard deviation between 0.877 and 1.01. The overall mean score was 3.96 and overall standard deviation was 0.79, thus indicating a concordance between the responses received regarding the items on this scale. Finally, the results indicate that the means of the items representing the intention to use e-learning ranged between 3.64 and 4.06, with standard deviations of between 0.930 and 1.139; while for the overall score, the mean amounted to 3.92, with a standard deviation of 0.84. This also indicates a concordance between the responses received, regarding the items on this scale.
Table 5.3: Arithmetic means and standard deviations and the level of response regarding attitudes to items and the intention to use e-learning

<table>
<thead>
<tr>
<th>Factors</th>
<th>Questionnaire Item No.</th>
<th>Mean</th>
<th>Std. deviation</th>
<th>Degree of response</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitudes towards VLEs</td>
<td>46</td>
<td>3.03</td>
<td>0.877</td>
<td>Moderate</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>47</td>
<td>3.81</td>
<td>0.930</td>
<td>High</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>48</td>
<td>4.03</td>
<td>0.935</td>
<td>High</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>49</td>
<td>3.88</td>
<td>0.992</td>
<td>High</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>3.98</td>
<td>0.889</td>
<td>High</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>51</td>
<td>3.96</td>
<td>0.933</td>
<td>High</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>52</td>
<td>3.93</td>
<td>0.973</td>
<td>High</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>53</td>
<td>3.74</td>
<td>1.010</td>
<td>High</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td>3.96</td>
<td>0.79</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>Intention to use E-learning</td>
<td>54</td>
<td>3.64</td>
<td>1.139</td>
<td>High</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>55</td>
<td>3.86</td>
<td>1.057</td>
<td>High</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>56</td>
<td>3.90</td>
<td>1.010</td>
<td>High</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>57</td>
<td>3.97</td>
<td>0.980</td>
<td>High</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>58</td>
<td>4.06</td>
<td>0.930</td>
<td>High</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td>3.92</td>
<td>0.84</td>
<td>High</td>
<td></td>
</tr>
</tbody>
</table>

The following equation was adopted for defining levels of the degree of response for students' attitudes and the intention to use e-learning and also to classify these data into groups:

\[
\text{the highest value - the lowest value} \quad \frac{5 - 1}{3} = 1.33
\]

The following levels were derived from the previous equation and adopted for defining the levels of the degree of response:

- A weak degree of response (low attitude) is indicated by the mean of items ranging between 1.00 and 2.33.
- A moderate degree of response (medium attitude) is indicated by the mean of items ranging between 2.34 and 3.67.
• A high degree of response (high attitude) is indicated by the mean of items ranging between 3.68 and 5.

Therefore, based on these three divisions, the degree of response from students relating to attitudes to items involved in using VLEs and the intention to use e-learning - as shown in Table 5.3 - reveal that the majority of students demonstrated a high level of positive attitude towards using VLEs, as well as a high level of intention to use e-learning.

5.3 Results of the Proposed Study Model

The next step in the data analysis was to examine the significance and strength of hypothesised relationships in the study model. Initially, the Pearson correlation coefficient was used to decide whether regression analysis was appropriate for the data (Liu, Liao and Pratt, 2009). The Pearson correlation coefficient presented in Table 5.4 is an analysis that shows all variables were significantly correlated to each other at \( p < 0.01 \), except that Technical support correlated to Personal innovation at \( p < 0.05 \). The results gathered from correlation analysis reveal relationships between variables. For more accuracy in determining the relationship between variables, more analyses, such as path analysis, have been carried out to test the study hypotheses.
Table 5.4: Pearson correlation coefficients between study variables (N=335)

<table>
<thead>
<tr>
<th></th>
<th>PI</th>
<th>SE</th>
<th>IC</th>
<th>CI</th>
<th>CCQ</th>
<th>TS</th>
<th>PEO U</th>
<th>PU</th>
<th>ATV</th>
<th>IUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal innovation (PI)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-efficacy (SE)</td>
<td>.338</td>
<td>1</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td>Pearson Correlation</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instructor characteristics (IC)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Pearson Correlation</td>
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<td>.562</td>
<td>.505</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Course interactivity (CI)</td>
<td>.291</td>
<td>.000</td>
<td>.000</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Pearson Correlation</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Course content quality (CCQ)</td>
<td>.317</td>
<td>5.11</td>
<td>.510</td>
<td>.686</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technical support (TS)</td>
<td>.122</td>
<td>.358</td>
<td>.352</td>
<td>.484</td>
<td>.435</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived ease of use (PEOU)</td>
<td>.236</td>
<td>.662</td>
<td>.476</td>
<td>.584</td>
<td>.569</td>
<td>.424</td>
<td>1</td>
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<td></td>
<td></td>
</tr>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived usefulness (PU)</td>
<td>.366</td>
<td>.627</td>
<td>.493</td>
<td>.693</td>
<td>.634</td>
<td>.425</td>
<td>.712</td>
<td>1</td>
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<tr>
<td>Pearson Correlation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitudes toward VLEs (ATV)</td>
<td>.365</td>
<td>.571</td>
<td>.488</td>
<td>.686</td>
<td>.637</td>
<td>.418</td>
<td>.663</td>
<td>.835</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intention to use e-learning (IUE)</td>
<td>.419</td>
<td>.552</td>
<td>.384</td>
<td>.535</td>
<td>.497</td>
<td>.395</td>
<td>.527</td>
<td>.639</td>
<td>.689</td>
<td>1</td>
</tr>
</tbody>
</table>

P < 0.05.  
P < 0.01

The Structural Equation Model (SEM) was used, to examine the relationships between the hypothetical constructs via regression or path coefficients between the factors, and it recommends that a model contain two to four factors (Lee, Yoon and Lee, 2009).

A path analysis model was used, which represents both a direct and indirect linear relationship between variables. It is an extension of the general linear model, of which multiple regressions are considered a part (Lei and Wu, 2007) and which is one of the best models for studying the relationship between variables, as well as for investigating the
causality between variables, ‘in an effective and direct way of modelling mediation, indirect effects, and other complex relationships among variables’ (Lei and Wu, 2007, p. 34), since the causal relationships provide a deeper and more accurate understanding. In addition, it is the only model that determines both the affecting and influenced variables within the proposed model, since the dependent variables also appear to the left of the relationships or equations within the path analysis; that is, the dependent variables may appear on both sides of the equation, rather than merely being confined to one side (the right side), as in the case of the regression analysis models. Hence, the SEM model is referred to as causal modelling (Wuensch, 2009). Linear regression analysis was used to determine the percentage of a construct’s variance in the model, examining ‘the amount of variance in the dependent variables that can be explained by independent variables’ (Almahamid and Abu Rub, 2011, p. 244), where standardised regression coefficients $R^2$, or coefficient determination in this analysis indicates the amount of variance. In addition, standardised regression coefficients, $R^2$ are commonly used to point to the relative importance of predictor variables (Anglim, 2007), while path coefficients ($\beta$) point to the strength of relationships between variables (Chine, 1998). Therefore, the hypotheses were mainly tested by examining the path coefficients and their significance ($\beta$).

Figure 5.1 shows the findings for the path coefficients of the proposed research model and the causal relationship between constructs. Overall, based on the estimated parameter value, fourteen out of the fifteen hypotheses were supported by the data and most of the paths were significant in a predictable direction, with only hypothesis two being rejected. Hypotheses 1, 3, 5, 7, 8, 9, 10, 11, 12 and 13 are significant at $p<.001$, while hypothesis 14 is significant at $p<.01$, and hypothesis 4 is significant at $p<.05$. For further detail, Table 5.5 shows the estimate (path value) and the path coefficient for each hypothesis.
Figure 5.1: Path coefficient result for the study model
Table 5.5: The results of the path value for all hypotheses

<table>
<thead>
<tr>
<th>No</th>
<th>Hypothesised Relationship</th>
<th>Estimate</th>
<th>Path coefficient</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Personal innovation → Perceived usefulness</td>
<td>.143 ***</td>
<td>Supported</td>
<td></td>
</tr>
<tr>
<td>H2</td>
<td>Personal innovation → Perceived ease of use</td>
<td>-.036 .235NS</td>
<td>Not Supported</td>
<td></td>
</tr>
<tr>
<td>H3</td>
<td>Self-efficacy → Perceived ease of use</td>
<td>.284 ***</td>
<td>Supported</td>
<td></td>
</tr>
<tr>
<td>H4</td>
<td>Technical support → Perceived ease of use</td>
<td>.075 .011*</td>
<td>Supported</td>
<td></td>
</tr>
<tr>
<td>H5</td>
<td>Course content → Perceived usefulness</td>
<td>.284 ***</td>
<td>Supported</td>
<td></td>
</tr>
<tr>
<td>H6</td>
<td>Course content → Perceived ease of use</td>
<td>.165 ***</td>
<td>Supported</td>
<td></td>
</tr>
<tr>
<td>H7</td>
<td>Course interactivity → Perceived ease of use</td>
<td>.105 ***</td>
<td>Supported</td>
<td></td>
</tr>
<tr>
<td>H8</td>
<td>Instructor characteristics → Perceived ease of use</td>
<td>.100 ***</td>
<td>Supported</td>
<td></td>
</tr>
<tr>
<td>H9</td>
<td>Instructor characteristics → Perceived usefulness</td>
<td>.120 ***</td>
<td>Supported</td>
<td></td>
</tr>
<tr>
<td>H10</td>
<td>Course interactivity → Perceived usefulness</td>
<td>.446 ***</td>
<td>Supported</td>
<td></td>
</tr>
<tr>
<td>H11</td>
<td>Perceived usefulness → Attitudes towards VLEs</td>
<td>1.054 ***</td>
<td>Supported</td>
<td></td>
</tr>
<tr>
<td>H12</td>
<td>Perceived ease of use → Attitudes toward VLEs</td>
<td>.247 ***</td>
<td>Supported</td>
<td></td>
</tr>
<tr>
<td>H13</td>
<td>Attitudes towards VLEs → Intention to use e-learning</td>
<td>.375 ***</td>
<td>Supported</td>
<td></td>
</tr>
<tr>
<td>H14</td>
<td>Perceived usefulness → Intention to use e-learning</td>
<td>.221 .003**</td>
<td>Supported</td>
<td></td>
</tr>
<tr>
<td>H15</td>
<td>Perceived ease of use → Perceived usefulness</td>
<td>0.511 ***</td>
<td>Supported</td>
<td></td>
</tr>
</tbody>
</table>

Path coefficient significant at ***p<.001, **p<.01, *p<.05

5.4 Results Relating to the First Hypothesis

H1: Personal innovation in using information technology will have a positive effect on the perceived usefulness of VLEs.

According to SEM using a path analysis, as shown in Table 5.5, the results indicate that there is a statistically significant positive effect of students’ personal innovation in using information technology on the perceived usefulness of Blackboard. Moreover, the results indicate that the estimated coefficient value amounts to \( \beta = 0.143 \); this result representing the path analysis coefficient, which is statistically significant at the level p <0.001 and points to the direct effect of student innovation in using information technology on the perceived
usefulness of Blackboard. Based on this result, the level of personal innovation amongst the students would reinforce their perception of the usefulness of Blackboard. The results of the analysis of the structural model include path coefficients, with path significance being summarised in Table 5.5.

For further confirmation in identifying the effect of students' personal innovation on the perceived usefulness of Blackboard, the predictive value of the benefit of using Blackboard was verified using linear regression analysis, by considering personal innovation as a predictor (the independent variable), whereby we can predict the usefulness of using Blackboard (the dependent variable).

It is apparent from the analysis results in Table 5.6, that students' personal innovation has a positive effect on the perceived usefulness of Blackboard, and personal innovation explains about 33.6% of the total variation in the perceived usefulness of Blackboard, where the coefficient of determination $R^2 = 33.6$ and therefore, students' personal innovation contributes significantly to the perceived usefulness of Blackboard at the level $p < 0.001$. Thus, Hypothesis One was supported.

**Table 5.6:** Regression analysis results relating to the effect of students' personal innovation on the perceived usefulness of Blackboard

<table>
<thead>
<tr>
<th>Predictors</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Unstandardised Beta Coefficient</th>
<th>Standardised Beta Coefficient</th>
<th>T-value</th>
<th>p-value (Sig.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Innovation</td>
<td>0.336</td>
<td>0.132</td>
<td>0.382</td>
<td>0.366</td>
<td>7.187</td>
<td>0.000</td>
</tr>
</tbody>
</table>

As for the qualitative data gained from interviewees regarding the first hypothesis, all participants in the interviews generally revealed that they possessed various kinds of ICT tools, such as smartphones (iPhone and Samsung Galaxy), iPads and laptops and they had
experience of using this technology. The majority of the participants already used social media, such as Twitter, Instagram and WhatsApp applications and spent a great deal of time on them. The Internet was therefore considered as a major source of information for them and they would always search Websites to prepare reports and search for information. Other online resources consisted of YouTube, Wikipedia, forums and Blackboard and such technology was favoured by them when searching for information and learning material, regardless of the time and place. Moreover, they enjoyed studying by means of technology and such enquiry provided them with various sources of learning and opportunities for communication. Furthermore, the majority of interviewees reported the view that it is necessary to keep up with changes and developments in the ICT world and follow these changes up without relying only on traditional learning. Therefore, it was thought that technology should be merged into the learning process. Various ICT tools were indicated in support of the learning process as a means of facilitating learning and making it more interesting, with more effective delivery of information.

It was noted that all interviewees were familiar with social media, and they used it heavily and effectively to communicate with tutors and other students, especially the WhatsApp application. All the interviewees stated they had participated in social networking groups with other students, particularly using the WhatsApp application on a smartphone, in order to communicate with peers to share information, discuss projects and allocate the work between them if they were working as groups, as well as following up any issues related to the course. In fact, the majority of interviewees used smartphones to access Blackboard and they were aware of the extent to which technology was significant in and facilitated their learning. Thus, they preferred using Blackboard in their studies and did not reject it. Here are some examples of interviewees’ responses:
P10. I like using modern technology and programmes to keep up with development… I prefer courses that are taught through Blackboard to help me keep up with the progress.

P19. I like to try technology and for that I use Blackboard because it affords me the experience of searching for more information more effectively.

P22. I like and enjoy studying through technology… and I search for technology that benefits me in studying, so I like to search and explore Blackboard. I wish that all courses were developed to use Blackboard because everything related to the lectures is available with me at home.

P13. I have more curiosity about learning through modern means. Every tutor prefers using Blackboard rather than paper and each also prefers providing course details on Blackboard, namely the course description, grades, assignments and presentations.

P2. I inquire about what is new in technology and search for it… I am curious about what is launched on Blackboard by the course tutor and other students.

P13. Modern technology attracts me, I use my iPhone and laptop I also use WhatsApp, Twitter and various blogs. I use the iPhone a lot during lectures and when searching for information… I also use YouTube to access educational films. … I have found Blackboard to be successful and a good and easy programme for communication with tutors and students, as well as being a way of accessing various learning resources.

However, 2 out of 24 interviewees revealed that they were not interested in technology, ICT or Blackboard, because one of them had medical issues, and the other had social circumstances and time constraints. Here is what one of these interviewees said:

P7. I do not like technology because it causes headaches while studying. I do not look forward to using modern technology and do not like using it heavily in studying… I feel bored when searching the internet, Websites, and Blackboard because it requires a long time… I prefer books and material things rather than the Internet, Blackboard, and other technology.
5.5 Results Relating to the Second Hypothesis

**H2: Personal innovation in using information technology will have a positive effect on the perceived ease of use of VLEs.**

Path analysis revealed for this hypothesis that there is no statistically significant positive effect of students' personal innovation in using information technology on the perceived ease of use of VLEs. The results indicate that the estimated path coefficient value amounted to $\beta = -0.036$, which is statistically insignificant at the level $p < 0.05$. This result reveals that students’ personal innovation does not directly affect the perceived ease of use of Blackboard in the current study. Therefore, the quantitative result does not support the second hypothesis.

For further confirmation in identifying the effect of students' personal innovation in using information technology on the perceived ease of use of Blackboard, the predicted value of the perceived ease of use of Blackboard was verified using linear regression analysis, considering personal innovation as a predictor (the independent variable), where it can predict the perceived ease of use of Blackboard (the dependent variable). Table 5.7 shows the results of regression analysis.

**Table 5.7: Regression analysis results relating to the effect of students' personal innovation on the perceived ease of use of VLEs**

<table>
<thead>
<tr>
<th>Predictor</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Unstandardised Coefficient Beta</th>
<th>Standardised Beta Coefficient</th>
<th>T-value</th>
<th>P-value (Sig.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Innovation</td>
<td>0.236</td>
<td>0.053</td>
<td>0.196</td>
<td>0.236</td>
<td>4.426</td>
<td>0.000</td>
</tr>
</tbody>
</table>

The $R^2$ value indicates that personal innovation interpretation accounts for 23.6% of the total variation in the perceived ease of use of Blackboard and thus, students' personal innovation
was seen to contribute significantly to the perceived ease of use of Blackboard at the level p <0.001.

For further clarification of the interpretation of the variation in the path analysis and regression analysis results, it is apparent that the extent of the effect of students' personal innovation in using information technology on the perceived ease of use of Blackboard, measured through path analysis, is affected by the proposed model, without taking into account the direct and indirect effects pertaining to that study model. On the other hand, in regression analysis, the extent of the effect deals with the direct relationship between personal innovation and the perceived ease of use of Blackboard.

As stated earlier in the first hypothesis, interviewees' responses show that all interviewees had substantial experience in ICT, particularly in social networking applications. These issues indeed reflect how far Blackboard is found to be easy to use and the extent to which it is time-consuming, since advanced tools are dealt with. However, Blackboard was not found to be a complicated tool and did not require specific or advanced skills. On other hand, many interviewees found that certain ICT tools, such as the iPhone and iPad, provided the opportunity to access Blackboard easily at any time and from anywhere. Several interviewees stated they were interested in technology and they had the curiosity to explore Blackboard. They therefore did a lot of research on Blackboard and tried using all options available by themselves, without needing any assistance, even if they encountered difficulties in applying the various Blackboard options. Students tended to discover for themselves how to resolve problems. The following quotations are typical responses from interviewees that support the second hypothesis:
P10. Because I use many programmes, and I like changing programmes and using modern technology to keep up with progress... I found using Blackboard was very easy and enjoyable. I did not encounter any difficulties while using it.

P1. I'm looking for what is new in technology since I am curious about these things and so for that, I used Blackboard; it is very easy. It does not require enrolling in training courses. I can download lectures, participate in discussions and work through the discussion tool.

P21. I like using technology... I search within the tutors' sites in order to download slides, since this is better and faster for studying. I use YouTube for things related to studying. I have used wikis a lot for preparing reports... I have also browsed everything in Blackboard. Blackboard was clear for me; I did not encounter any difficulties because I was used to using these programmes.

P22. I search for technology that benefits me in studying. I like and enjoy studying through technology. .....I did not encounter any difficulties when I used Blackboard. I am of the type who likes to search and explore. I do not like to be taught by anyone, I like to discover by myself.

P19. I like experimenting with all of the new technology since I do not miss any chance in experimenting with these modern things, both in learning and to search for information. For that, I found using Blackboard to be easy and I did not encounter any difficulties when using it at home. I found it comfortable and particularly efficient in delivering assignments. It also involves a variety of learning resources.

5.6 Results Relating to the Third Hypothesis

H3: Self-efficacy for students will have a positive effect on the perceived ease of use of VLEs.

Based on the path analysis, as shown in Table 5.5, there is a statistically significant positive effect of students' self-efficacy on the perceived ease of use of Blackboard in learning, where the estimated path coefficient value (parameter) amounts to β= 0.284. This is statistically significant at the level p <0.001. This result indicates a direct effect of students' self-efficacy on the perceived ease of use of Blackboard in learning.

For further confirmation in identifying the effect of students' self-efficacy on the perceived ease of use of Blackboard in learning, the predicted value of the perceived ease of use of
VLEs was verified using linear regression analysis and by considering students' self-efficacy as a predictor (the independent variable). The perceived ease of use of VLEs (the dependent variable) can be predicted from this result. Table 5.8 shows regression analysis results.

**Table 5.8: Regression analysis results relating to the effect of students' self-efficacy on the perceived ease of use of VLEs**

<table>
<thead>
<tr>
<th>Predictors</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Unstandardised Coefficient B</th>
<th>Standardised Beta Coefficient</th>
<th>T-values</th>
<th>P-value (Sig.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-efficacy</td>
<td>0.662</td>
<td>0.436</td>
<td>0.434</td>
<td>0.662</td>
<td>16.102</td>
<td>0.000</td>
</tr>
</tbody>
</table>

It is apparent from the regression analysis results in Table 5.8 that the students' self-efficacy has a positive effect on the perceived ease of use of Blackboard in learning. From the $R^2$ values, it is clear that self-efficacy explains 66.2% of the variance in the perceived ease of use of Blackboard in learning and thus, students’ self-efficacy contributes significantly to the perceived ease of use at the level $p < 0.001$. Therefore, hypothesis three was accepted.

Qualitative analysis revealed that the answers for the questions that related to the third hypothesis were varied, and are classified into three groups. The interviewees from the first group were very confident about their ability to use Blackboard, as one interviewee expressed: ‘I do not feel hesitant when using Blackboard; even if I was worried, it is a normal situation for me, because this is the first time for me to use Blackboard’. This group therefore found Blackboard easy to use and trusted their ability to use Blackboard tools. They did not need any help and neither did they need to spend much time on navigation. As a result, they participated in discussions, completed tests and sent assignments without any hesitation or problems and without having to think about the process too much or ask for help. Their perceived ease of use of Blackboard was therefore high. The following quotations from this group demonstrate this:
P19. I did not hesitate in participating in discussions and delivering assignments, nor did I need a lot of time to do it. It was easy.

P13. I do not feel disturbed nor need much time, but on the contrary, I am confident in my abilities and challenge myself. I keep trying, even if I hesitate. I undertake to accomplish tasks. They have to be accomplished. Even if they are wrong, I have to do them, and I have discovered by myself how to solve the problem.

P20. I do not feel hesitant when using Blackboard. I feel capable of sending my work. I feel confident when sending files through Blackboard. I do not hesitate or think very much because my confidence is good. I only send good work, with confidence in Blackboard.

P12. I use the Blackboard directly without feeling hesitant, where I send my files directly in a short time. Its use became comfortable and I am confident in my ability.

P21. I am confident in myself and I have learned how to use Blackboard, so I am confident in myself... Therefore, I have browsed everything within Blackboard. It was clear without presenting any difficulties.

The second group of interviewees, which represent the majority of interviewees, declared that they felt hesitant at the beginning and spent time on the Blackboard options, because many were using them for the first time to deliver assignments, do tests or participate in discussions. They did not have experience in using Blackboard, but after receiving training and obtaining the necessary skills, they gained more experience and become more confident in their ability. They used Blackboard more and found it easy to use. Here is what some of the interviewees said:

P14. We received training, since the tutor taught us the steps for searching and accessing Blackboard; to an extent, I became able to search for additional things and deepened my search into Blackboard and I became more confident.

P2. I was hesitant and I encountered some difficulties at the beginning and I was disturbed and hesitated to use Blackboard, but after the second and third trials, I mastered the topic and I found it easy... I became confident in using Blackboard.
However, interviewees in this group were worried about whether their assignments were delivered. Nonetheless, Blackboard sent them confirmation messages that their assignments or tests had been delivered, which gave them more confidence in using Blackboard. Thus, they preferred to submit assignments for all courses through Blackboard, because it was easy and saved time and effort, confirming for them the ease of use of Blackboard. The following such comments from the second group support the quantitative result:

P1. I am confident in my abilities and potential when using Blackboard. At the beginning, I was afraid that the assignments were not delivered, since I did not know if they were delivered, but then I learned and knew the necessary procedures to ensure that homework was sent.

P9. I will be worried a little during the process of delivering assignments, but Blackboard ensures that assignments have been delivered since it always presents a confirmation message. I think that Blackboard is clear.

The third group of interviewees represent a smaller number of interviewees. They mentioned that they were anxious about delivering assignments and doing the tests or conducting the discussions. They were afraid that the Blackboard site was not working or that the Internet would be disconnected during the tests, or else that they could not submit the assignment or complete the test on time. They were worried about feedback from tutors, thus they preferred to submit the assignment or complete the quiz manually. The following sentences show some of their opinions:

P15. It was difficult for me to use Blackboard for the first time… I needed someone to help practically to participate in the discussion because it was not easy and so I asked the students and the teacher. I need a person or someone to train me how to practically participate in discussions. I encountered a problem while solving the test.

P16. I’m worried and concerned because the sending method is difficult with no guarantee. Sometimes, Blackboard freezes or does not respond, so when it freezes, I try again. So far, I am concerned and hesitant but I try to send assignments again, and I prefer to deliver assignments manually, because I have a bad impression of the delivery method; I do not find the procedures for delivering assignments very easy.

Another interviewee had similar feelings when doing the test, commenting
P10. I felt hesitant, disturbed the first time I used Blackboard; especially when completing the test online, because the test time was very limited, so I became worried about losing time and the screen closing within a given time.

Other interviewees showed mixed feelings about doing the tests or submitting assignments, although they have high self-efficacy, but they were anxious about technical problems that affect their abilities. Here are their comments:

P18. Normally, I am confident about my abilities and I do not need to think about using Blackboard. I only become concerned and worried about whether the assignment was delivered or not, because sometimes it is also possible for Blackboard to freeze. It is possible to receive a confirmation message, but I find later that the assignment was not delivered to the teacher.

P17. I am confident in myself and not hesitant when sending assignments through Blackboard. I prefer sending assignments through Blackboard in order not to have to face the tutors, but for tests, I prefer manual methods since I feel safe. I am afraid of disconnecting and logging out while working with Blackboard.

Overall, the interviewees’ answers varied, but the qualitative result supports the quantitative result and reveals that the level of self-efficacy will affect the perceived ease of use of VLEs and there is a positive relationship between them.

5.7 Results Relating to the Fourth Hypothesis

H4: Technical support has a positive effect on the perceived ease of use of VLEs.

Path analysis for this hypothesis reveals that there is a statistically significant positive effect of technical support on the perceived ease of use of Blackboard. The results indicate that the estimated coefficient value (parameter) equals $\beta=0.075$, which is statistically significant at the level $p<0.05$, indicating an increase in the value of the direct effect of technical support from the university on the perceived ease of use of Blackboard.
On the other hand, the linear regression analysis for this hypothesis revealed the effect of technical support on the perceived ease of use of VLEs, by considering technical support as a predictor (the independent variable), whereby we can predict the perceived ease of use of VLEs (the dependent variable). Table 5.9 shows the regression analysis result.

Table 5.9: Regression analysis results relating to the effect of technical support from the university on the perceived ease of use of VLEs

<table>
<thead>
<tr>
<th>Predictors</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Unstandardised Coefficient B</th>
<th>Standardised Beta Coefficient</th>
<th>T- value</th>
<th>p- value (Sig.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical Support</td>
<td>0.424</td>
<td>0.177</td>
<td>0.339</td>
<td>0.424</td>
<td>8.531</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Regarding to $R^2$ in Table 5.9, I found that the technical support factor has a positive effect on the perceived ease of use of Blackboard. This means that technical support interprets (predicts) about 42.4% of the variance in the perceived ease of use of Blackboard, and therefore, technical support contributes significantly to the perceived ease of use of VLEs at the level $p <0.001$. Hence, the fourth hypothesis was supported.

Based on qualitative analyses, the majority of interviewees showed strong agreement on the significance of the support offered by the university in using Blackboard and in solving the problems that students encounter, as well as encouraging them to adopt this tool in their learning. However, 20 interviewees were not satisfied and they were not even sure if their university provided any support for students. None of them mentioned any support related to Blackboard from the IT support services available at the university, such as a hotline or email and guidance service. One interviewee said ‘No methods are available to support and encourage students in using, Blackboard; not even email or a hotline is available to enquire, and no announcements are made regarding Blackboard’. They felt that Blackboard was not as important as e-learning tools in the university, for the reason that there was an obvious
lack of technical support from the Education Faculty’s IT department regarding Blackboard. They also indicated that the staff in the IT department did not have adequate experience in using Blackboard; one of the interviewees said ‘We cannot ask them about things related to Blackboard because they do not have a role with this tool’. Another interviewee said ‘There are no technicians who are experts in Blackboard in the College of Education from whom we can receive assistance; we only turn to technicians in things related to designing websites’. Similarly, another interviewee supported this view, saying ‘If I asked for help from the technicians, their reply would be that they do not have experience’. In this situation, many interviewees claimed that if they faced any problems, they would not use Blackboard, but would rather delay and wait for the tutor to help. In this case, the support process would mainly rely on the tutor. The tutor would therefore be the only one supporting the students. As one interviewee said, ‘the entire support role is located in the tutor; I have not heard about any assistance regarding Blackboard being provided by the university’. Furthermore, interviewees were disappointed and they hoped that the university would award more attention to this tool from the beginning of their studies. As one interviewee pointed out ‘I always wonder why we did not receive training on Blackboard for a long time, given that I used it for the first time recently during the senior year’. In the same context, the sophomore reported: ‘Although I love technology and I want to keep up with it, there is no encouragement. Many students do not know about Blackboard because the tutors do not use it’. Thus, they emphasized and suggested providing training hours for Blackboard for students from the first year of study so that they could become more aware of this tool and learn more about it. In this regard, several interviewees strongly expressed their requirement for support from the university, because many believed that if the university provided support for students from the beginning, they would be more interested in using the tool. Comments from interviewees are quoted below to support quantitative analysis results. An interviewee in the fourth year stated that:
P11. Although I have attended university for four years, I only recently came across Blackboard. To the best of my knowledge, the university has not played a role in this… The first time I accessed the university’s website, I saw the Blackboard icon, but I did not recognise it and no one provided me with information about it, so I didn’t search within. We should learn about Blackboard at the beginning and we should receive encouragement from the university administration.

Other interviewees supported this result:

P1. Nothing is done. The university does not have any role in encouraging or supporting students to use Blackboard. The university did not organise courses and if there were courses, no announcement was made. The hotline or email is not available for inquiries… The solution to any problem is provided through the course tutor. The university role in developing Blackboard is not clear. I think that the primary role rests with the teacher. I did not know about Blackboard, only after three years of enrolling in the university.

P14. I hope to conduct training courses related to Blackboard by enlightening students about it because many students do not use it within the College of Education, unlike [in] the other colleges, where they use it more.

In the same context, if the students failed to find any support they said:

P7. Sometimes Blackboard freezes and the website does not open; so I wait until the next day.

P19. Among Blackboard’s difficulties is the fact that it freezes and does not open the site so that sometimes I am denied access until the next day… We even encounter problems while downloading our marks.

Previous statements confirm a lack of support from the University, with many students depending on themselves for training and asking their colleagues or tutors to assist them. They indicated that sometimes, they needed assistance, but if they could not find any help, they left it and came back the next day to ask tutors or colleagues. Consequently, interviewees suggested the following procedures: making training workshops available for Blackboard and in addition, students should use Blackboard from the first year on foundation courses, in order to familiarise themselves with this tool. Moreover, instructions about Blackboard should be made available on university sites as well as providing staff
with experience in using Blackboard in the IT department. One interviewee said, ‘The university should enlighten us from the beginning of the course regarding Blackboard and how we should use it, since we were not academically loaded during the first year, where our courses were easier’. In another opinion, a junior interviewee reported; ‘Blackboard should be noted down within the laws and regulations of the university and must be mentioned in the university's guides’. Drawing together qualitative and quantitative data, I concluded that the University’s support was insufficient.

5.8 Results Relating to the Fifth Hypothesis

H5: Course content has a significant effect on the perceived usefulness of VLEs.

The path analysis results, as shown in Table 5.5, indicate the existing significant positive effect of the course content factor on the perceived usefulness of Blackboard. The results show that the estimated coefficient value (path coefficient) amounts to $\beta=0.284$, which is statistically significant at $p <0.001$, and this means that course content directly affects the perceived usefulness of Blackboard.

Further linear regression analysis was carried out for this hypothesis for further validation in identifying the effect of course content on the perceived usefulness of Blackboard and the predicted value of the perceived usefulness of Blackboard was verified using linear regression analysis, by considering the course content as a predictor (the independent variable), where it can predict the usefulness of Blackboard (the dependent variable). Table 10 shows the results of the analysis.

Table 5.10: Regression analysis results relating to the effect of course content on the perceived usefulness of Blackboard
It may be observed from the results of the analysis in Table 5.10 that the technical support factor has a positive effect on the perceived usefulness of Blackboard. Technical support represents what accounts for 63.4% of total variation in the perceived usefulness of Blackboard, where the correlation square (coefficient of determination) $R^2 = .634$, and thus, the course content factor contributes significantly to students’ perceived usefulness of using Blackboard at the level $p < 0.001$, so the hypothesis fifth was subsequently confirmed.

According to the qualitative result, the positive effect of course content on the perceived usefulness of VLEs was obvious from the interviewees’ responses. The interviewees were asked if the learning resources were useful and available for implementation with various methods. Many interviewees made comparisons between two courses that used Blackboard, claiming that the content provided value for Blackboard, such as the type of assignment, discussions and online exams. Most important was the ease or difficulty of tests and assignments. Furthermore, the availability of the variety of learning materials, grades, course description, important dates, announcements, apologies, even the design and how far these materials are enjoyable: all these issues affected the perceived usefulness of Blackboard and encouraged students to use it frequently. Moreover, they considered the usefulness of Blackboard as depending on the course tutor and how he or she used it. In the case of launching important or enriching things, they would access it and find it more useful.

The following quotations from interviewees made comparisons between courses that use Blackboard:
P11. Not many things are currently available on Blackboard which we can use for our courses. The course content is inadequate. If there were important things, I would access them. This is in comparison with the previous course, where the tutor made better use of Blackboard and the course content was rich in learning material. She launched everything to do with the course and how to accomplish the assignments and projects. She always used to remind us regarding the learning materials and any instructions or notices available within Blackboard.

P1. The most important positives of Blackboard are the availability of a variety of learning resources, grades, discussions, PowerPoint, the electronic library and online exams. What is available on Blackboard is appropriate for this course in comparison with other tutors. By comparing with another current course where Blackboard was used, I found that Blackboard was used in a very superficial manner in the second course. I only found the curriculum and the project's working method. No lectures or discussions were available. Some tutors used it just to keep files, without the presence of any additional information or learning resources, which I found made using Blackboard unimportant.

Other positive comments from senior students included:

P21. I can find a variety of online learning resources, which help me in self-learning. The tutor allotted the assignments clearly within Blackboard, allocating scores for each assignment. Moreover, the learning resources were always available within Blackboard, which meant that I could use it anytime and anywhere. Students can download and send files whenever they want and take tests online… which I found very useful.

P23. Blackboard contains various learning resources, such as a method of sending assignments and projects and taking tests online. Furthermore, the presence of announcements and lectures within Blackboard assists me in the case of my absence. What is more, the presence of grades is something beautiful that encourages and provides us with more motivation.

However, there were different positive and negative comments regarding course content among the interviewees, some pointing out that it lacked useful learning material and did not attract them to use Blackboard, or support their learning, because the tutor did not utilise all the potential tools available in Blackboard and sometimes they used Blackboard purely to present Word documents, but without the presence of any additional information or different learning resources. Thus, they did not use it. As one senior interviewee found, ‘Blackboard was not effective because it has not been used in an effective manner. Few learning materials are available since many of the tools were not used effectively’. In the same
context, another interviewee mentioned, ‘Currently, I do not use it much because the tutors do not provide many or varied learning resources within it. My usage depends on what is available within Blackboard and the extent of its usefulness and importance’.

Accordingly, the interviewees mentioned that they expected Blackboard to contain various sources of learning, but rather the opposite was true. They did not consider Blackboard to be an important tool and they were not satisfied with its content, because they needed more useful learning materials and they indicated Blackboard should adopt a more effective approach in order to enhance the learning process. Moreover, they emphasised that the content should be updated continuously so that students would be motivated to use it regularly. Here are some examples of student responses:

P3. Few learning resources are available. Lectures are available in the form of Word files, where the course tutor's usage of Blackboard is not deep, but superficial.

P9. After going thoroughly into Blackboard I needed other tools within it to be activated. I needed different learning resources.

P16. I find it rigid in form and content because it does not involve vital and effective things. This depends on the tutor who should use it in an effective and attractive manner.

P17. I noticed that the tutors’ use of Blackboard is traditional, so they need to launch new things, but I see that they stay the same and within a certain limit. For this reason, Blackboard cannot be considered as an essential tool according to the current situation, because it does not attract me.

Consequently, these interviewees suggested that the course content should include the following things: grades, learning resources, PowerPoint, discussions and announcements.

5.9 Results Relating to the Sixth Hypothesis

H6: Course content has a significant effect on the perceived ease of use of VLEs.
According to the path analysis for the sixth hypothesis, as shown in Table 5.5, it is indicated that there is a statistically significant positive effect of the course content factor on the perceived ease of use of Blackboard in learning. The results highlight that the estimated coefficient value (parameter) amounts to $\beta = 0.165$, which is statistically significant at the level $p < 0.001$, indicating an increase in the value of the direct effect of course content on the perceived ease of use of Blackboard in learning.

For further validation in identifying the effect of course content on the perceived ease of use of Blackboard in learning, the predicted value for the perceived ease of use of Blackboard was tested using linear regression analysis, by considering the course content as a predictor (the independent variable), whereby we can predict the ease of using Blackboard (the dependent variable). Table 5.11 shows the results of regression analysis.

**Table 5.11:** Regression analysis results relating to the effect of course content on the perceived ease of use of Blackboard

<table>
<thead>
<tr>
<th>Predictors</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Unstandardised Coefficient B</th>
<th>Standardised Beta Coefficient</th>
<th>T-value</th>
<th>P-value (Sig.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course content</td>
<td>0.569</td>
<td>0.322</td>
<td>0.559</td>
<td>0.569</td>
<td>12.639</td>
<td>0.000</td>
</tr>
</tbody>
</table>

The analysis results in Table 5.11 shows that the course content factor has a positive effect on the perceived ease of use of Blackboard in learning, and it explains what accounts for 56.9% of the total variation in the perceived ease of use of Blackboard in learning. Accordingly, the course content factor contributes significantly to the perceived ease of use of Blackboard at the level $p < 0.001$. Thus, the sixth hypothesis was accepted.

Qualitative results regarding the sixth hypothesis are consistent with the quantitative results. Many reasons were given in the interviews for this positive result. Overall, the majority of
the interviewees revealed that using Blackboard content was easy, such as doing the tests and submitting assignments online. This was a simple, not a complicated procedure and they found learning material in direct ways which they could remember every time. Clarifications from interviewees are quoted as follows:

P8. I found the content in Blackboard was varied and organised and I could use it easily, where everything was available

P7. One of the most important positives of Blackboard is the availability of online testing, which is easier and does not consume time. We can take tests at home, so that we save time and obtain grades directly.

A few interviewees indicated that some tutors uploaded a substantial amount of learning material at once, such as several PowerPoints and Word documents, without instructions. This affected the ease of using Blackboard and confused them. As one interviewee said about these issues:

P22. The course tutor used to launch many files and PowerPoint presentations all at once, not gradually, so we did not know when to use these things. Blackboard became overcrowded with learning materials so we could not appreciate its importance. She used to launch a great deal of information that confused me, besides launching learning materials all at once till these things started to accumulate.

Moreover, interviewees’ responses revealed that what was within Blackboard affected its ease of use and they linked the ease of using Blackboard with the ease or difficulty of course content questions; two interviewees connected the ease of use of Blackboard to the ease or difficulty of the assignments. For instance, they complained about difficulties in understanding the assignments. Subsequently, this affected their acceptance of Blackboard and how easy they found it to use. It may be concluded from the interviewee responses that designing easy and simple questions will lead to the students being encouraged to use Blackboard, where they can enjoy solving questions and be motivated to access it more
often. The following quotation describes how the course content affects the ease of use of Blackboard from a fourth year student’s viewpoint:

P7. I found it very difficult to use Blackboard for the first during the course, because the course's questions available on Blackboard were tough and had no answers, so I formed a bad impression about Blackboard; I did not like it and I didn’t use it because I found it difficult. Now, however, I find Blackboard easy because the current course tutor launched easy and different types of questions on Blackboard which affected its easiness and difficulty. Therefore, I consider that Blackboard's difficulty depends on the quality of the course tasks and assignments. Now, I do not hesitate in using Blackboard.

5.10 Results Relating to the Seventh Hypothesis

H7: Course interactivity positively affects the perceived usefulness of using VLEs.

As shown in Table 5.5, the path analysis result indicates a statistically significant positive effect of the course interactivity factor on the perceived usefulness of Blackboard. The results show that the estimated coefficient value (parameter) amounts to $\beta = 0.446$, representing an indication of the path analysis coefficient, which is statistically significant at the level $p < 0.001$. This result points to the direct effect of course interactivity on the perceived usefulness of Blackboard. Thus, the seventh hypothesis was accepted.

For further confirmation in identifying the effect of course interactivity on the perceived usefulness of Blackboard, the predicted value of the perceived usefulness of Blackboard was verified using linear Regression Analysis, by considering course interactivity as a predictor (the independent variable), whereby we can predict the usefulness of Blackboard (the dependent variable). Table 5.12 shows the regression analysis result.

Table 5.12: Regression analysis results relating to the effect of course interactivity on the perceived usefulness of Blackboard

157
<table>
<thead>
<tr>
<th>Predictors</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Unstandardised Coefficient B</th>
<th>Standardised Beta Coefficient</th>
<th>T-value</th>
<th>P-value (Sig.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Interactivity</td>
<td>0.693</td>
<td>0.479</td>
<td>0.715</td>
<td>0.693</td>
<td>17.556</td>
<td>0.000</td>
</tr>
</tbody>
</table>

It is apparent from the analysis results in Table 5.12 that the course interactivity factor has a positive effect on the perceived usefulness of Blackboard. In addition, course interactivity explains what accounts for 69.3% of the total variation in the perceived usefulness of Blackboard, where the correlation square (coefficient of determination) ($R^2$) = 0.693, and accordingly, the course interactivity factor, contributes significantly (at the level $p < 0.001$) to the benefits of using Blackboard.

With respect to the qualitative result for the seventh hypothesis, the interviewees initially gave different responses regarding course interactivity and, based on their responses, the results are split into two groups: the first group represents the small number of interviewees who mentioned that there was interactivity in some of the courses that used Blackboard, while the second group mentioned there was no interactivity in courses available on Blackboard. Interviewees in the second group pointed out that they did not obtain any feedback from tutors through the Blackboard tool and that the communication tools were not effective. Some of them used the discussion board superficially, rather than in an effective or interactive way. Therefore, they did not communicate, either with each other or with the tutors. Thus, the interviewees mentioned that Blackboard would become more useful if the tutors were more active, particularly through communication tools such as discussions, or the forum and email. They could then provide effective feedback through these tools.
For further clarification about the effect of course interactivity on the perceived usefulness of VLEs, interviewees were asked about approaches to delivering learning materials in Blackboard. It was understood from the interviewees’ responses that some tutors used Blackboard with a traditional or theoretical approach and indicated that they did not use many of the options available in Blackboard; they just used it to deliver lectures in Word documents and present project briefs, with the dates for submitting the finished projects. They also presented outlines of the syllabus, but without any interactive learning material. Some tutors were not even interested in using the communication tools available in Blackboard and so interviewees did not use this facility frequently, since the interactive factor was missing. Therefore, they recommended that Blackboard should be more interactive, and that they needed more communication between tutors and students, using the options available in Blackboard to maximise its usefulness, where a number of interviewees, after going thoroughly into Blackboard, found other tools within it they could activate. Here is what one interviewee from the first group stated:

P23. The course content is appropriate and good, but I want to communicate more with the teacher. I prefer to send messages or alerts from Blackboard when launching something new. No interactive activities or feedback are available within Blackboard.

The above comment shows that although the content of Blackboard is good, the student would prefer to benefit more from its interactivity. Other interviewees commented:

P17. There is no interaction between students, no sharing of information, and some of the tools are disabled. I do not find it very useful

P19. The Blackboard's content is good, since it involves a variety of learning resources and an attractive electronic library. Although the tutor launches attractive things within Blackboard, we prefer to communicate with the tutor directly through Blackboard

P4. Since many of the tools have not been used effectively, I do not find Blackboard effective.
P16. The tutor should launch more attractive and more effective things… I find it rigid in form and content because it does not involve vital and effective things. This depends on the tutor, who should use it in an effective and attractive manner.

However, a few of interviewees declared that the Blackboard content was indeed interactive and they were enthusiastic about using it frequently, mainly because tutors used communication tools such as discussion boards and forums in effective ways, where feedback could be obtained and a great deal of information and learning resources could also be shared, together with opinions and thoughts. They could also express their opinions freely, particularly when participating in the forums and indicated that they were able to communicate with other students outside of class and identify better with their colleagues in class. One such statement expressed that: ‘The most beautiful thing about Blackboard is that all students access the forums under the tutor’s monitoring. I recognised my fellow students through participation in the forums’. In addition, a number of interviewees indicated that tutors were prompt in providing them with grades through Blackboard. One of these interviewees thus declared: ‘When I see all my grades and the feedback from the tutors, it gives me the motivation to use it frequently, and I find it more useful’. However, three of the interviewees mentioned that they used discussion board purely to submit their responses, without any interaction with their tutor and peers. Based on the interviewees’ responses, it was suggested that VLEs would become more useful if students obtained rapid feedback from tutors through Blackboard, particularly their grades. For this reason, students would be more motivated and encouraged to use the tool. The positive effect of course interactivity on the perceived usefulness of VLEs was supported in the following interviewee statements:

P5. The interactive presentation of the grades and scores within Blackboard always gives me a good feeling, especially if our grades are excellent. This provides me with more incentive to study, so that I undertake my studies to obtain an excellent grade and increase my use of Blackboard.
By the same token:

P19. We can communicate through the discussion tool. I found that discussion with others was a fine opportunity for sharing ideas to figure out whether they matched or not. Blackboard enables us to share viewpoints and rectify each other’s mistakes without boredom as it does not require much time for discussion.

P5. I have used the discussion tool for communication, where I discuss with students in an effective manner and each one responds in a logical manner. The course tutor follows the discussion, provides an incentive by thanking the participants, and enhances the discussion… I access Blackboard more than once a day to effectively observe and participate in students' discussions because the tutor’s lessons are full of vitality.

P10. I prefer discussion through Blackboard, rather than in the classroom, because sometimes I shy away from discussion in the classroom. I can express my opinions in writing as there are students who are too shy for discussion in the classroom and cannot express themselves, except in writing. I am one of these people.

P10. We communicate through the discussion board, where the course tutor poses enjoyable questions to create effective discussion. The tutor is available during the discussion. So, from my point of view, I found the Blackboard became more useful and effective.

It is worth mentioning that Blackboard’s interface is a factor which arises when talking about interactivity. A number of interviewees argued about these issues and agreed that Blackboard is rigid and needs to be more interesting. Some things should be added to make this programme a more attractive environment for learning. They also mentioned that Blackboard’s design needs to be more interesting, since the interest factor affects the usage of Blackboard. Arguments were presented on this point, where one interviewee said, ‘The tutor’s way of using Blackboard is rigid and boring. In addition, its form and colours indicate rigidity, but, in spite of that, it should be used because it is useful and involves options for learning’. Another comment corresponds to the above opinion: ‘Although Blackboard involves many organised options, it needs colour to make it interesting’. Similarly, one interviewee stated:
P17. The Blackboard design is boring for studying and we need an attractive thing. It should be attractive and involve more things to appeal to students’ ... The design is old with no motion. Sometimes I feel bored when using it. Its form has not changed or developed. It has a specific design that does not attract.

Furthermore, another view was that:

P16. The Blackboard design is not interesting... I considered it old and different from other modern sites, where we should access many pages in order to reach what we want. I support the use of Blackboard but by developing its interface and form. The tutor should launch more attractive and effective things.

It may be concluded, therefore, that the issue of an attractive design is very important for students when using Blackboard. If these factors are enhanced, we can achieve maximum efficiency from the tool and thus increase the quality of the learning. Eventually, based on qualitative analyses for the data gathered from interviews for the seventh hypothesis, I found that the qualitative results support the quantitative result.

5.11 Results relating to the Eighth Hypothesis

H8: Course interactivity will have a positive effect on the perceived ease of use of VLEs.

As observed in Table 5.5, path analysis indicates that there is a statistically significant positive effect for the course interactivity factor on the perceived ease of use of VLEs in learning. The results show that the estimated coefficient value (parameter) amounts to \( \beta = 0.105 \), representing an indication of the path analysis coefficient, which is statistically significant at \( p < 0.001 \); this result points to the direct effect of course interactivity on the perceived ease of use of VLEs in learning.

For further validation in identifying the effect of course interactivity on the perceived ease of use of VLEs in learning, the predicted value was verified using linear regression analysis, by considering the course interactivity factor as a predictor (the independent variable), whereby
we can predict the perceived ease of use of Blackboard (the dependent variable). Table 5.13 shows the regression analysis result.

**Table 5.13: Regression analysis results relating to the effect of course interactivity on the perceived ease of use of Blackboard**

<table>
<thead>
<tr>
<th>Predictors</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Unstandardised Coefficients B</th>
<th>Standardised Beta Coefficient</th>
<th>T-value</th>
<th>P-value (Sig.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Interactivity</td>
<td>0.584</td>
<td>0.339</td>
<td>0.481</td>
<td>0.584</td>
<td>13.131</td>
<td>0.000</td>
</tr>
</tbody>
</table>

The regression analysis result demonstrates that the course content factor has a positive effect on the perceived ease of use of Blackboard in learning. It found that course content explains what accounts for 58.4% of the total variation in the ease of use of Blackboard in learning, where the correlation square (coefficient of determination) $R^2=0.584$. Consequently, the course interactivity factor contributes significantly to the perceived ease of use of Blackboard in learning at the level $p < 0.001$ and this result confirms the eighth hypothesis.

As mentioned previously, interviewees' responses were varied regarding course interactivity. From the point of view of the interviewees who used communication tools for interaction with tutors and students, they mentioned these tools were effective for obtaining feedback and getting rapid responses for their inquiries, or if they faced any problem with the Blackboard options. On the other hand, regarding the interviewees who mentioned there was no interactivity or communication between the students and the tutors through Blackboard, they preferred and required direct communication between students and tutors which could help them with any inquiries related to Blackboard. According to the results gathered from the interviewees, the qualitative result supports the quantitative data. Here is
what some interviewees said about the effect of course interactivity on the ease of use of Blackboard:

P14. Communication with students is carried out through forums. We have more than one forum for multiple purposes, where we communicate, train, educate and share information. We can also ask questions, or discuss matters through the forums, which saves time. Furthermore, the course tutor monitors forums, communicating with students, replying to us and always encouraging us; they can help us when we face any problems, so I find it an easy way of making inquiries.

P6. The course tutor encourages us to communicate and replies to our emails and questions posted through forums. This thing gave me the motivation to increase my use of Blackboard and my communication.

P6. I met all the course students through the forums in a rapid and easy way. Moreover, we can communicate with the course tutors when necessary through the forums or Gmail. Blackboard can be used comfortably and besides, it saves time; this is achieved through the bulletin boards where the course tutor can make apologies for lectures, which also saves time and is an easy way of finding out anything related to lectures.

5.12 Results Relating to the Ninth Hypothesis

H9: Instructor characteristics positively affect the perceived ease of use of VLEs.

Based on the path analysis, as shown in Table 5.5, there is a statistically significant positive effect of the instructor characteristics factor on the perceived ease of use of VLEs in learning, with the estimated path coefficient value (parameter) amounting to $\beta = 0.100$, which is statistically significant at the level $p <0.001$, and which indicates to direct effect of instructor characteristics on the perceived ease of using Blackboard in learning.

Linear regression analysis was carried out for this hypothesis for further validation in identifying the effect of the instructor characteristics factor on the perceived ease of using Blackboard in learning, and the predicted value of the perceived ease of use of Blackboard
was verified using linear regression analysis, by considering instructor characteristics as a predictor (the independent variable) of the dependent variable. Table 5.14 shows the regression results for this hypothesis.

**Table 5.14**: Regression analysis results relating to the effect of instructor characteristics on the perceived ease of use of VLEs

<table>
<thead>
<tr>
<th>Predictors</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Unstandardised Coefficient B</th>
<th>Standardised Beta Coefficient</th>
<th>T-value</th>
<th>P-value (Sig.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructor Characteristics</td>
<td>0.476</td>
<td>0.225</td>
<td>0.371</td>
<td>0.038</td>
<td>9.888</td>
<td>0.000</td>
</tr>
</tbody>
</table>

It is evident from the analysis results in the above Table 5.14, that the factor, ‘instructor characteristics’ has a positive effect on the perceived ease of use of VLEs in learning. The instructor characteristics factor interprets what accounts for 47.6% of total variation in the perceived ease of use of VLEs in learning. Accordingly, it contributes significantly to the perceived ease of use of VLEs in learning processes at the level p <0.001. Thus, Hypothesis Eight was accepted.

This result was also supported by the interviewees’ perspectives, where it was found that the instructor’s characteristics positively affected perceived ease of use. It was concluded that instructor characteristics play a crucial role in how far the students use Blackboard and the extent to which they find it easy, with very little time or effort required. The interviewees’ responses confirmed that tutors were considered as the main source of support and problem-solving. As one interviewee stated: ‘The solution to any problem is found through the course tutor’. Another interviewee supported this view: ‘the primary role for support is located in the teacher’. They were also of the opinion that the primary responsibility for encouraging students to use Blackboard lies with the tutors. The tutors would also have an impact on how far Blackboard was considered as simple. Moreover, it was each tutor’s
responsibility to organise Blackboard tools, as well as giving continuous instructions on how to use them. It was also noted that the interviewees needed continuous encouragement from tutors, particularly at the beginning. Moreover, they preferred to have a tutor with experience in ICT and enthusiasm for using it, in order to motivate them to use Blackboard. Furthermore, they expressed a desire for rapid feedback from tutors, who could communicate with them electronically for any inquiries about Blackboard. The positive effect of instructor characteristics on the perceived ease of use of VLEs was supported with the following comments from fourth year interviewees with substantial experience of using Blackboard:

P1. Incredibly, the course tutor was the first one who encouraged and inspired me to use Blackboard…. Because of him, I was immersed deeply into using it, because the tutor showed various ways to use Blackboard tools more easily. At the beginning of each lecture, he emphasised the use of Blackboard.

P10. The course tutor joined us, step by step without leaving us, taught us when we did not know something, and encouraged us to ask. As a way of completing assignments it was easy and enjoyable, and the method of grading was beautiful, especially if grades were good.

P21. The tutor provides us with the procedures and steps needed to accomplish the assignments; tutor provide us with everything that we will take away during the lecture. Everything is launched on Blackboard.

Other interviewees made comparisons between two tutors and literally stated:

P14. The first time I used Blackboard, the course tutor did not train us how to use it. He just asked us to access Blackboard by using the password to identify the required assignment. I did not know how to do that… whereas on the current course, we received training, since the tutor taught us steps for searching and accessing Blackboard.

P6. The extent of students' acceptance of Blackboard depends on the course tutor and also what it is used for. One tutor said: 'just go and search within Blackboard' without providing any training or clarification. We could not know how to use it. Then we asked other students, but we did not know. After that, we lost interest in the topic.

Other interviewees illustrated the effect of tutors on the ease of use of Blackboard:

P19. The course tutor has experience in using technology. Therefore, she endeared us to technology, encouraged us to participate in Blackboard in
many ways and enlightened us about what was on Blackboard. Other tutors asked us just to access Blackboard, where we would find assignments, without providing us with any instructions or encouragement. We sometimes faced difficulty with that.

P17. The tutor encourages, urges and emphasises in every lecture that accessing Blackboard is mandatory. The course tutor always sends announcements through Blackboard, where it is something that attracts us to access Blackboard.

From the previous statements, it was found that the tutors played a dynamic role in encouraging students to use Blackboard and were considered as motivational factors for many students to use VLEs in their learning. Many interviewees stressed the importance of the encouragement factor from tutors, because as long as students were encouraged to use Blackboard, they would find it easy and use all the tools. As one interviewee said: ‘I think that the tutor has a more significant role in using Blackboard than the students do. The tutor is supposed to encourage the student, since the student can do anything in the presence of encouragement’.

It is noteworthy that the interviewees revealed there were various ways in which they were encouraged to use Blackboard. For instance, students were given an extra bonus when they used Blackboard tools. Five interviewees also indicated that part of their course assessment was based on contributions to and participation in the discussion tool and forum and knowledge exchange with other students in the forums. Besides, students were provided with rapid feedback and then graded electronically, rather than manually and this was considered to be a vital issue for students. The response from one of interviewees included:

P8. The tutor encourages us to use Blackboard through launching discussion questions and encouraging us to access and participate in the discussion panel. In case of any problems, he helps us.
5.13 Results Relating to the Tenth Hypothesis

H10: Instructor characteristics positively affect the perceived usefulness of VLEs.

The path analysis for this hypothesis revealed a statistically significant positive effect for instructor characteristics on the perceived usefulness of Blackboard. The results show that the estimated coefficient value (parameter) amounts to $\beta=0.120$, which is statistically significant at $p<0.001$, indicating an increase in the value of the direct effect of instructor characteristics on the perceived usefulness of Blackboard.

On the other hand, the linear regression analysis for this hypothesis revealed the effect of instructor characteristics on the perceived usefulness of Blackboard, by considering this factor as a predictor (the independent variable), whereby we can predict the usefulness of using Blackboard (the dependent variable). Table 15 shows the regression analysis result.

**Table 5.15: Regression analysis results relating to the effect of instructor characteristics on the perceived usefulness of Blackboard**

<table>
<thead>
<tr>
<th>Predictors</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Unstandardised Coefficient B</th>
<th>Standardised Beta Coefficient</th>
<th>T-value</th>
<th>P-value (Sig.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructor Characteristics</td>
<td>0.493</td>
<td>0.241</td>
<td>0.481</td>
<td>0.493</td>
<td>10.334</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Regarding $R^2$ in Table 5.15, it was found that instructor characteristics had a positive effect on the benefit of using Blackboard. Technical support explains about 49.3% of the variance in the perceived usefulness of Blackboard and so the technical support factor contributes significantly to the perceived usefulness of Blackboard at the level $p<0.001$. As a result, the tenth hypothesis was supported.

Based on the qualitative result, there was consensus among the interviewees’ responses regarding the effect of instructors’ characteristics on the perceived usefulness of Blackboard,
where qualitative data analysis revealed that the tutors’ characteristics had a positive effect on the perceived usefulness of VLEs and the interviewees strongly expressed the positive effect of tutors’ characteristics on the perceived usefulness of Blackboard, such as motivation, encouragement, communication and learning method. They mentioned that tutors are responsible for the extent to which they can render VLEs useful for students and this was confirmed through the following comment; ‘The course tutor has a basic role in the use of Blackboard and is responsible for students’ access to Blackboard.’ Another interviewee stressed that ‘the tutor launches things that stimulate us to access Blackboard frequently’. Other interviewees claimed that it was the tutor who motivated them to use Blackboard, by stating that:

P3. Through allocating scores to the number of times Blackboard is accessed. Sometimes, he cancels the lecture and launches questions for discussion and communicates with us through the discussion tool.

P6. The course tutor motivates and encourages us by participating in forums that she provides through Blackboard. The participation takes place by launching topics, learning materials, and different information from the students. The more information is launched, or [the greater the] participation, the higher their scores. She always encourages us to access Blackboard and thanks the students who send topics to the forums. This gives us more motivation to participate in these forums.

Further interviewees found that the importance of Blackboard relies on the tutor’s usage and method of usage. As one of the sophomore students mentions, ‘Blackboard's importance depends on the extent of the tutor's use, where we see that some tutors do not give it any importance’.

On the other hand, a number of interviewees emphasised the feedback they had obtained from tutors through Blackboard, since it was this feedback which encouraged them to use Blackboard more frequently and to look forward to what was available on it. As a result, the learning process became more interesting and useful for them. Furthermore, the
interviewees preferred tutors to notify and remind them to read what was available in Blackboard. They also favoured tutors who were enthusiastic and interested in using ICT in learning and who had some experience in using technology, as well as updating the Blackboard content. Moreover, interviewees indicted that the usefulness of Blackboard depended on the tutor’s learning methods and how far these tutors used the available options on Blackboard in an interactive way. Some comments from interviewees are quoted below:

P18. The tutor always launches announcements regarding what is required and what is new. Also, the nature of the course and the way of teaching require us to access Blackboard every day.

P16. Sure, the tutor plays a significant role in my use of Blackboard. The tutor always encourages us and asks to access Blackboard where she will launch things to follow up there. Therefore, I find using it interesting and more useful with the computer tutor and boring with the other course.

P13. The course tutor encouraged me to use Blackboard. At the same time, the nature of the assignments of the course obliges us to access Blackboard and deliver our assignments through it. Our assignments oblige us to use the "discussion" tool. In addition, the course tutor communicates with us and shows us what is right and wrong and provides feedback regarding our discussions and assignments.

P9. The tutor urges us to use Blackboard and always emphasises we need to accomplish and deliver assignments through Blackboard. Furthermore, the tutor always launches announcements about assignments, apologies, notices, and deadlines. Therefore, we always use Blackboard, because the tutors always present updated learning material on it.

P5. The course tutor is the one who uses technology and Blackboard properly as he always encourages and compares traditional and electronic methods. He asks us to use Blackboard in order to save time and paper because the traditional method requires time, especially when delivering assignments.

Other interviewees compared two tutors:

P10. The current tutor promptly provides us with grades and feedback regarding our assignments through Blackboard, so that I enjoy and am interested in using Blackboard. This is something that encourages me and makes me enjoy solving problems and using Blackboard. The second course tutor is not like the first one. His assignments require a great deal of time and are boring; he does not provide feedback or grades on assignments and so I do not feel any benefit or enjoyment while doing the assignment.
P23. Using Blackboard was better in the second course, since the assignments and exams were sent and received, which means that the tutor acted as a sender and receiver, while the first course tutor acted only as a negative sender. The second course tutor was enthusiastic regarding the use of Blackboard, while the first course tutor was not enthusiastic.

However, a number of interviewees mentioned how tutors could have a negative effect on the perceived usefulness of VLEs, where three interviewees were not satisfied with tutors’ characteristics and mentioned that they did not receive any encouragement or support from them. In fact, they found tutors were not interested in using VLEs effectively in learning. They said that the tutors mentioned Blackboard only once, at the beginning of the course only, but the interviewees did not receive any training from the tutor and so did not consider Blackboard to be important. As a result, they did not use it frequently. The following response from one of these interviewees was as follows:

P6. I encountered difficulty and discomfort while using Blackboard for the first time, because the course tutor did not train us to use it. Consequently, I did not see the importance of using it. The tutor asked us just to go and use Blackboard directly without allocating time for training.

P11. Using Blackboard did not make any difference to me in my studies because the course tutor talked about Blackboard during the first lecture. After that he did not mention anything about Blackboard and he did not use it a lot or [launch anything] important [on it]. On the current course, the tutor does not use the Blackboard tools effectively.

5.14 Results Relating to the Eleventh Hypothesis

H11: Perceived usefulness will have a positive influence on students' attitudes to using VLEs.

The path analysis for this hypothesis indicates a statistically significant positive effect of perceived usefulness on students' attitudes to using VLEs. The results indicate that the estimated coefficient value (parameter) amounts to $\beta=1.054$, representing an indication of the path analysis coefficient, which is statistically significant at the level $p <0.001$, thus
indicating an increase in the value of the direct effect of perceived usefulness on students' attitudes towards using VLEs.

For further confirmation in identifying the effect of perceived usefulness on students' attitudes to using VLEs, the predicted value of students' attitudes in this regard was verified using linear regression analysis, by considering perceived usefulness (the independent variable), whereby we can predict students' attitudes to using VLEs (the dependent variable). Table 5.16 shows the regression analysis results.

Table 5.16: Regression analysis results relating to the effect of perceived usefulness on students' attitudes to using VLEs

<table>
<thead>
<tr>
<th>Predictors</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Unstandardised Coefficients B</th>
<th>Standardised Beta Coefficient</th>
<th>T-value</th>
<th>P-value (Sig.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Usefulness</td>
<td>0.835</td>
<td>0.696</td>
<td>0.584</td>
<td>0.835</td>
<td>27.702</td>
<td>0.000</td>
</tr>
</tbody>
</table>

In Table 5.16, the regression analysis results demonstrate for this hypothesis that perceived usefulness has a positive effect on students' attitudes to using VLEs. Perceived usefulness interprets what accounts for 83.5% of total variation in students' attitudes in this regard, where the correlation square (coefficient of determination) $R^2 = .835$, and thus, perceived usefulness, contributes significantly to students' attitudes to using VLEs at the level $p <0.001$. Therefore, Hypothesis Eleven was confirmed.

According to a descriptive analysis of students’ attitudes, it was obvious from the mean values that the majority of students had a high level of attitude towards using Blackboard. It is clear that the interviewees’ attitudes were shaped by their experiences with Blackboard. This result was also confirmed by the interviewees themselves. Moreover, they declared that the extent to which Blackboard was useful in their learning process depended on the
kind of learning resources available on Blackboard and the tutor’s method of presenting them on Blackboard. Many of the interviewees, however, after using the options available on Blackboard, realised its usefulness in self-learning and chose to integrate it into their learning.

It was noted that the interviewees were positive about their experience of Blackboard and considered it as a supportive tool for traditional learning to improve learning quality. As one of the interviewees said, ‘I think that the availability of Blackboard raises the quality of education in the university and adds positive points that promote the academic level for the university’. In this section, the interviewees were asked about the main advantages of using Blackboard and they listed a number of positive factors, the main ones being the facility to send assignments online, which is considered to be an easy and rapid method of submission. They also mentioned taking tests online and presenting grades immediately, without having to wait for the tutor. Other advantages consist of ease of use, time-saving, information-sharing and discussing opinions through various means of communication, such as the discussion board and forums. In addition, learning resources are available in different forms (PowerPoint, Websites, Word documents, etc.), which can be downloaded and attached as files and sent off at any time and from anywhere. Finally, there is the Bulletin Board for checking the deadline for assignments or online tests and/or other issues related to the course.

A few interviewees also mentioned they feel this tool was safe, because each student had his own record in Blackboard and nothing would be lost from under the tutors’ control. This means that the students’ rights are preserved, since all their work and scores are saved within Blackboard. They also found that the Blackboard type of e-learning provided them with accurate documents at any time and from any place, since Blackboard is linked to the
university and is not available to the general public. The documents and information are uploaded and checked by tutors alone. Therefore, it is considered as a reference for the students, in case they are absent from a lecture; it gives them a sense of security. Two interviewees stated the following:

P2. Blackboard is a good tool; it assures and provides accurate and documented information because it is connected to the university and monitored by the course tutor.

P22. Blackboard is considered as a reference in our hands, in case we lose the book. It involves many options and learning materials that facilitate our studies.

The above interviewee added:

P22. Using Blackboard made a difference to me since I can use it to ask the tutor or students in the event of my absence and I can find lectures on Blackboard… I can see the required assignments, deadlines and different learning resources.

From another point of view, from a more senior interviewer, it was declared:

P5. One of the most important positives of Blackboard is that the test results are immediately saved in the system and appear permanently on the screen where we can see [them at] any time.

Eventually, the quantitative analysis results revealed that perceived usefulness has a positive influence on students' attitudes towards using VLEs. The positive effect for perceived usefulness on students' attitudes was supported with the following comments:

P10. I considered Blackboard to be supportive and of assistance to traditional learning….For me, it made a difference because everything available within Blackboard supports the curriculum.

P1. I consider it as an important tool. For me, it made a difference because everything available within Blackboard supports the curriculum and I would advise other tutors to use it and keep the learning materials within it…

P18. Blackboard enables us to share viewpoints and correct each other without getting bored as it does not require much time for discussion. In addition, delivering the assignments online saves time. Blackboard
involves a variety of learning resources that have benefited and supported me.

P4. Using Blackboard in learning saves time. It involves learning resources. When there is not enough time to deliver the whole lecture, the course tutor will upload these lecture notes onto Blackboard. In addition, the availability of the Bulletin Board on Blackboard saves time, especially if the tutor excuses him or herself from a lecture.

P14. In the case of losing any papers, everything is available on Blackboard. I can access [it] from anywhere within the University: the hallways and computer laboratories, which means it saves time.

P8. The most important positives of Blackboard are: delivering the assignments online without any need to meet the teacher; the availability of sample exams to practice on, and the availability of the Bulletin Board to save our time, where the tutor writes the most important things. Once, I needed a test date and amount. I found these available on the Bulletin Board. For this, I found it is an assistive and supportive tool.

It was clear from the qualitative and quantitative results relating to students’ attitudes that many interviewees praised Blackboard and considered it as a supportive tool for traditional learning in that it saves time and effort. Furthermore, several interviewees said they considered Blackboard to be a supportive tool, but not essential, for the reasons mentioned by the following interviewees:

P22. I consider Blackboard to be supportive, because we do not implement it in all the courses and if we did, it would become essential. Furthermore, there are still students who have never heard about it or use it. Also, not all tutors use it.

P21. I consider Blackboard as something supportive, because we have not been accustomed to using it from the beginning. We started using Blackboard late, when the tutor obliged us to use it. If we were accustomed to using it from the beginning, it would be more useful. We are familiar with the tutors' sites and the use of Gmail.

However, this high level of attitude was not shared by all interviewees; there were a few who had contrary opinions which did not acknowledge all the advantages of Blackboard. One of these opposing points of view was that the students felt bored, due to a lack of
interactivity and interest and the rigid use of Blackboard by tutors.

5.15 Results Relating to the Twelfth Hypothesis

H12: Perceived ease of use will have a positive effect on students' attitudes to using VLEs.

The path analysis revealed that perceived ease of use has a significant positive effect on students' attitudes to using Blackboard. The results indicate that the estimated coefficient value amounts to $\beta = 0.247$, which is statistically significant at the level $p < 0.001$. This indicates the direct effect of the perceived ease of use of Blackboard on students' attitudes to using Blackboard.

For further confirmation on identifying the effect of the perceived ease of use of Blackboard on students' attitudes and to obtain the predicted value for students' attitudes to using Blackboard, linear regression analysis was applied, by considering the perceived ease of use as a predictor (the independent variable), whereby we can predict students' attitudes to using VLEs (the dependent variable). In addition, the R square shows that 66% of the total variation of attitude is explained by perceived ease of use. Table 5.17 shows the results of the regression analysis.

Table 5.17: Regression analysis results relating to the effect of perceived ease of use on students' attitudes to using VLEs

<table>
<thead>
<tr>
<th>Predictors</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Unstandardised Coefficient B</th>
<th>Standardised Beta Coefficient</th>
<th>T-value</th>
<th>P-value (Sig.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Ease of Use</td>
<td>0.663</td>
<td>0.437</td>
<td>0.369</td>
<td>0.663</td>
<td>16.140</td>
<td>0.000</td>
</tr>
</tbody>
</table>

It is apparent from the analysis results in Table 5.17 that the perceived ease of use of technology has a positive effect on students' attitudes to using VLEs. Perceived ease of use
accounts for 66.3% of the total variation in students' attitudes to using VLEs, where the correlation square $R^2 = 66.3$, and as a result of this, perceived ease of use, contributes significantly to students' attitudes to using VLEs, at the level $p < 0.001$.

The interviewees were asked about their thoughts on the ease of use. Their responses were positive and the results reveal that ease of use plays a substantial role in forming both positive and negative attitudes towards using VLEs, where the majority of interviewees mention that one of the main advantages of Blackboard is that it is easy to use, uncomplicated, well-arranged and organised for the learning process, since they found that options such as the assignment tools, tests and discussions were easy to apply and the navigation process within Blackboard was clear and simple. As a result, the interviewees had a good impression of Blackboard and declared that they would use it more in future. The following quotations refer to what interviewees said about the ease of use of Blackboard:

P11. I found using Blackboard very easy and enjoyable. I did not encounter any difficulties while using it.

P. 12 I found using Blackboard easy, where everything is organised and available.

P. 15 Blackboard is beautiful and also an easy programme. It facilitates the process of delivering assignments. In the case of absence, I can see the required assignments, their deadlines and different learning resources.

P10. At first, I did not like Blackboard, but after that, I adapted and I found it more efficient for knowing my grades, rather than visiting the university. I did not find it difficult since everything is clear and easy. ..I did not need much time to use it.

P1. Blackboard saves time and effort as well as being easy to use, where you can use the iPhone rather than the computer to access Blackboard.

P15. Among the most important positives of Blackboard is that the delivery method for assignments is performed online, as well as the method of completing assignments being quick and easy, without requiring
a long time. This is better than the manual delivery method since it is possible to access the tutor [whether they are there] or not.

However, one interviewee had negative attitudes and a different opinion about the ease of use. She stated:

P16. I find the procedures for delivering assignments are not easy but rather complicated. I always feel concerned. I developed a view and a bad impression of Blackboard because the assignments were not delivered.

I observed from interviewees’ responses that there were such issues arising when interviewees used Blackboard and this affected their attitudes. A few interviewees specified a particular problem which they considered major. Two interviewees pointed out their difficulty in using Blackboard, which was due to having poor English language skills and they therefore suffered because the tutors used English and the Blackboard interface was in English. Such students spent a long time translating and navigating in Blackboard, while also trying to understand its content. This in turn influenced their interest in using it. The effects of this factor were described as follows:

P22. It was difficult for me to use Blackboard during the first course where the tutor illustrated the lessons in English and besides, the Blackboard interface was in English and the assignments were difficult. Therefore, I did not like Blackboard, because I lacked proficiency in the English language in the first year.

Another interviewee expressed opinions about this language issue:

P23. Even if I converted the Blackboard interface into the Arabic language, the Blackboard's basis would remain in English. I want to convert the whole interface into Arabic so that it will become easier for me; the presence of a dual language interface disperses me.

Furthermore, three interviewees brought up issues relating to the accessibility of Blackboard; they complained that access to Blackboard was not direct, but it had to be accessed via the university site. They stated that they would prefer direct access to
Blackboard through a special application for Kuwait University, to enable them to access it directly via smartphone. One interviewee explained in this regard: ‘The access into Blackboard is indirect since I need to access the university website or search in Google. I prefer making a direct application in order to access it faster’. Two interviewees also mentioned that they had to check Blackboard regularly and keep searching every day for new announcements or apologies that may have been entered by the course tutor, because Blackboard does not provide them with alerts or notifications of new mail or announcements. On this issue, a senior interviewee explained:

P21. No notification is available in the case of receiving a new email or announcement, unlike Gmail, which gives alerts when new emails arrive from the teacher. So, in this case, we must access Blackboard frequently and follow up what is new, or we will miss some things.

A few interviewees even mentioned that communication through Gmail is faster, because tutors did not always access Blackboard, but always accessed Gmail. In this regard, another interviewee - when asked why she used email more than Blackboard in communication - explained: ‘We hold a belief that the tutor does not reply to us through Blackboard, so we use email’.

Furthermore, a few interviewees complained about the slow performance of Blackboard and sometimes, navigating or downloading from it. Most importantly, students declared that they were suddenly disconnected while browsing and Blackboard would stop working while sending, or else fail to deliver assignments. The following comment refers to this issue: ‘One of Blackboard's difficulties is that it freezes a lot, stops working, does not respond to commands, and does not send assignments, especially when sending a video, so that it must be sent via a CD’. They also mentioned that when sending files via Blackboard, it has a limited capacity which can limit the size of the assignment you can send. This was considered by some interviewees as a disadvantage of using Blackboard.
5.16 Results Relating to the Thirteenth Hypothesis

**H13: Students' attitudes to VLEs will positively affect students' intentions to use E-Learning.**

The path analysis for this hypothesis, as shown in Table 5.5, indicates a statistically significant positive effect for students' attitudes to VLEs as regards students' intentions to use e-learning. The results indicate the estimated coefficient value (parameter) β= 0.375, representing an indication of the path analysis coefficient, which is statistically significant at the level p <0.001. This shows an increase in the value of the direct effect of students' attitudes to VLEs as regards students' intention to use e-learning.

For further confirmation in identifying the effect of students' attitudes to VLEs and students' intentions to use e-learning, the predicted value for the benefit of using Blackboard VLEs was verified using linear regression analysis, by considering students' attitudes to VLEs as a predictor (the independent variable), whereby we can predict students' intentions to use e-learning (the dependent variable). Table 5.18 shows the results of the regression analysis.

**Table 5.18:** Regression analysis results relating to the effect of students' attitudes towards VLEs on students' intention to use e-learning

<table>
<thead>
<tr>
<th>Predictors</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Unstandardised Coefficient B</th>
<th>Standardised Beta Coefficient</th>
<th>T-value</th>
<th>P- value (Sig.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students' Attitudes toward VLEs</td>
<td>0.689</td>
<td>0.473</td>
<td>0.504</td>
<td>0.689</td>
<td>17.346</td>
<td>0.000</td>
</tr>
</tbody>
</table>

On the other hand, the linear regression analysis of this hypothesis revealed that students' attitudes toward VLEs have a positive effect on students' intentions to use e-learning. Students' attitudes to VLEs explain what accounts for 68.9% of total variation in the benefits of using Blackboard, where the correlation square (coefficient of determination) $R^2 = .689,$
and as a result of this, students' attitudes to VLEs contribute significantly to the benefit of using Blackboard at the level p <0.001.

As indicated previously, the majority of students have a positive attitude towards VLEs and in turn, this positively impacts the intention to use e-learning in future, where descriptive data gathered from questionnaires show that students have a high level of intention to use e-learning. This result was also been confirmed through the interviews, where the interviewees were asked to describe their feelings, thoughts and intention to use Blackboard or e-learning in other courses or learning situations. The qualitative analysis for this stage revealed that interviewees stated they would register in courses on the use of e-learning or VLEs because they had sufficient experience of using Blackboard, and applying Blackboard options had given them a positive attitude towards e-learning. Furthermore, accessing Blackboard had encouraged them to use more e-learning tools in their studies and they intended to integrate more developed technology and more effective tools in their learning. As one of the interviewees claimed: ‘Using Blackboard provided me with more motivation towards e-learning. I liked learning online and I am proud of it. We evolved more and raised our academic level. I wish it could be implemented in all courses’.

Many of the interviewees stated that they would like all the other course tutors to use Blackboard as an advanced e-learning tool. They stated they would recommend their friends to use Blackboard. They also emphasised the role of the university in promoting and facilitating the use of Blackboard by students. In fact, it was stated that the university should play a bigger role in encouraging students to use Blackboard and in adopting this tool for all courses at the university. It was generally believed that tutors should use e-learning more effectively in higher education, as it facilitates and supports learning processes anywhere and at any time. Moreover, Blackboard is better when developed and implemented
appropriately and by tutors who are competent in using it to solve the above-mentioned problems. The following quotations support the quantitative results:

P13. Using Blackboard made me more curious and aware of electronic learning. I will use technology wherever it exists. Many modern things are available and besides, I want to use the more up to date programmes.

P19. It is such a method that breaks the routine and is attractive…. since it is an advanced means for delivering assignments comfortably, whereby we type and deliver without consuming time, I consider delivering assignments manually to be something old-fashioned. I have a positive attitude towards technology. I like to try technology and besides, we must keep up with change. I would encourage my classmates to use Blackboard since it is an advanced means of

P17. After using Blackboard, I recognised its advantages as well as the advantages of e-learning in terms of saving time and effort. I will use different types of technology in learning, where Blackboard has inspired and encouraged me more to use appropriate technology.

P20. Using Blackboard gave me a positive feeling towards e-learning. The individual develops while using Blackboard. I have got a background in e-learning. I will vary the use of technology.

P20. I will enrol in other courses that implement Blackboard because now I have experience. Blackboard is supposed to be applied to all courses at university and in all fields, because we have reached an advanced stage.

P22. Blackboard provided me with motivation for e-learning. I liked learning online and I am proud of it. We evolved more and raised our academic level. I wish it was implemented on all courses.

However, four interviewees who were very interested in ICT claimed they needed more advanced systems, and they requested more attractive and interesting types of technology, because they made comparisons between advanced ICT tools, especially social media and Blackboard. One of these interviewees said, ‘I consider Blackboard to be a successful and good programme, but we want more sophisticated things. After learning how to use Blackboard, we want more advance programmes’. Another comment corresponded with this view: ‘It is better to provide us with interesting things. Blackboard needs something that
can add life to it’. Further, another interviewee reported ‘I support the use of Blackboard with developing its interface and form’.

5.17 Results Relating to the Fourteenth Hypothesis

H14: The perceived usefulness of VLEs will positively affect students' intentions to use e-learning.

According to path analysis, as shown in Table 5.5, the results indicate a statistically significant positive effect for the perceived usefulness of VLEs on students' intentions to use e-learning. The estimated coefficient value (parameter) amounts to $\beta = 0.221$, representing an indication of the path analysis coefficient, which is statistically significant at the level $p < 0.001$. This result indicates the direct effect of the perceived usefulness of VLEs on students' intentions to use e-learning.

For further validation in identifying the effect of the perceived usefulness of VLEs, the predicted value for students' intentions to use e-learning was verified using linear regression analysis, by considering the perceived usefulness of VLEs as a predictor (the independent variable), whereby we can predict the students' intention to use e-learning (the dependent variable). Table 5.19 shows the results of the regression analysis.

Table 5.19: Regression analysis results relating to the effect of the perceived usefulness of VLEs on students' intention to use e-learning

<table>
<thead>
<tr>
<th>Predictors</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Unstandardised Coefficient B</th>
<th>Standardised Beta Coefficient</th>
<th>T-value</th>
<th>P-value (Sig.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Usefulness</td>
<td>0.639</td>
<td>0.407</td>
<td>0.669</td>
<td>0.639</td>
<td>15.173</td>
<td>0.000</td>
</tr>
</tbody>
</table>
According to the linear regression result, as shown in Table 5.19, it was found that the perceived usefulness of VLEs has a positive effect on students' intentions to use e-learning. The coefficient of determination ($R^2$) value for this analysis is .639, which explains about 63.9% of the total variation in students' intentions to use e-learning and thus, the perceived usefulness of VLEs contributes significantly to the students' intentions to use e-learning at the level $p < 0.001$.

As stated previously in Hypothesis Thirteen, all interviewees claimed they intended to enrol in other courses using Blackboard in future. This also supports the quantitative result, where all the interviewees also declared they would use Blackboard again and were willing to enrol in courses that implemented e-learning, because they had gained experience and skill in using these tools. They even intended to use more developed technology, as Blackboard had given them the motivation to learn through other e-learning tools, since they had a good impression of e-learning and found it important as part of a learning process. Moreover, they declared they had recommended their friends use it, once they realised its usefulness and the facilities offered for learning processes, such as submitting assignments, making announcements, publishing grades and making various types of learning material available at any time, or in any place and without any boundaries. The following sentences are what interviewees said about their intention to use e-learning once they had perceived the usefulness of VLEs:

P1. Using Blackboard made a difference because everything available on Blackboard supports the curriculum and I would prefer other tutors to use it and keep learning materials on it. For that reason, I would use it in other courses.

P6. I will enrol in other courses that implement Blackboard because it involves many learning resources.
P9. Learning through Blackboard gave me the motivation for e-learning. I liked this method. I will use other means of e-learning in order to benefit more and obtain more knowledge and information.

P12. Blackboard is beautiful and an easy programme as well as facilitating the process of delivering assignments. In case of absence, I can see the required assignments, their deadlines and different learning resources… so, for this reason, I would enrol in such courses normally without any problems.

P3. I will enrol on other courses that implement Blackboard because it gives vitality for studying. In addition, anything that has to do with the computer gives vitality and excludes inertia and boredom.

P17. It is supposed that all tutors use Blackboard; since it saves paper, time and effort.

One of the senior interviewees made an interesting comment about why the students did not know about Blackboard. Here is her reason:

P14. I place the blame on the tutors, since the students do not use it because the tutors do not know about it. How can a student use it if the tutor can’t?

Another interviewee supports this view, saying:

P16. The student is not blamed for not using Blackboard if the tutor does not use it. The responsibility does not lie with the student.

However, one interviewee had a conflicting opinion, stating: ‘The tutor provides all the learning resources within Blackboard. Here, the responsibility lies with the students when these are not used’. It is worth mentioning here that using Blackboard encourages some students to communicate with their tutors via email, as one sophomore interviewee declared:

P11. In the past, I did not participate in discussions with tutors through email, but after using Blackboard, I have participated with them in discussions by email, because they do not have Blackboard. Therefore, Blackboard has encouraged me to communicate with the tutors through email.
Another interviewee advised the other tutors to use Blackboard, emphasising:

P13. Every tutor prefers to use it instead of paper and everyone prefers providing his course on Blackboard (the Course Description - grades – evaluation - questions and assignments).

In spite of positive attitudes towards using Blackboard, the majority of interviewees stated that they still preferred lectures and could not waive them; they needed face-to-face contact with tutors because sometimes they faced difficulties in connecting with the university site and there were also problems with slow Internet speed. Thus, they preferred direct or human contact, especially with tutors. Here is one of these responses: ‘Blackboard is a supportive tool; I cannot exclude lectures because some lectures cannot be presented through Blackboard’. Another interviewee agreed with this: ‘Blackboard is a supportive tool that assists traditional learning, but we cannot exclude lectures because sometimes the Internet works slowly or is interrupted, so we need the tutor’s illustration. Therefore, I consider Blackboard as a complementary thing’.

5.18 Results Relating to the Fifteenth Hypothesis

H15: Perceived ease of use will positively affect the perceived usefulness of the VLEs

The path analysis, as shown in Table 5.5, reveals statistically significant positive effects of the perceived ease of use on the perceived of usefulness of VLEs. The estimated coefficient value (parameter) amounts to $\beta =0.515$, representing an indication of the path analysis coefficient, which is statistically significant at the level $p <0.001$. This points to an increase in the value of the direct effect of the perceived ease of use on the perceived usefulness of VLEs.

A further linear regression analysis was carried out for perceived ease of use, in order to obtain further confirmation in identifying the effect of perceived ease of use of VLEs on the
perceived usefulness of VLEs. The predictive value of the perceived ease of use of VLEs was verified by considering the latter as a predictor (the independent variable), whereby we can predict the perceived usefulness of the VLE (the dependent variable). Table 5.20 shows the results of the analysis.

**Table 5.20:** Regression analysis results relating to the effect of the perceived ease of use of VLEs on perceived usefulness

<table>
<thead>
<tr>
<th>Predictors</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Unstandardised Coefficient B</th>
<th>Standardised Beta Coefficient</th>
<th>T-value</th>
<th>p-value (Sig.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Ease of Use</td>
<td>0.507</td>
<td>0.505</td>
<td>0.568</td>
<td>0.712</td>
<td>18.504</td>
<td>0.000</td>
</tr>
</tbody>
</table>

It is apparent from the results of the analysis in Table 5.20 that the perceived ease of use of VLEs has a positive effect on the perceived usefulness of VLEs. The value of the correlation square (coefficient of determination) $R^2=.507$, indicates that the perceived ease of use of VLEs interprets what accounts for 50.7% of total variation in the perceived usefulness of VLEs. Thus, perceived ease of use contributes significantly to the benefits of using Blackboard at the level $p <0.001$. As a result, Hypothesis Fifteen was accepted.

With respect to the qualitative data collected from the interviewees, the results support the quantitative outcome. What the qualitative result reveals is that when students find VLEs easy to use, it gives them the motivation and interest to use Blackboard tools more frequently and to carry out intensive searches using such tools and learning resources. One of the interviewees thus stated: ‘I mastered the topic and I found it easy […] so I became excited [about] using it’. Students consequently became more aware of the usefulness of Blackboard and were encouraged to believe in its usefulness and how it could improve their performance. In addition, the students found that Blackboard’s ease of use enabled them to
search and browse more options in it and to download the relevant learning materials. One of the interviewees mentioned: ‘I found Blackboard easy to use, where I can send links for students and access all the tools’. Another said: ‘After searching, going deeply and dealing with it I found it easy; then I undertook to explain to students how to use it and benefit from using it’. Many other students agreed that the ease of use of Blackboard tools, such as assignment tools and the grade and bulletin board, save time and effort and facilitate the learning process. This is because they do not need go in to the university; everything is clear and easy for them to understand and so they prefer this method of delivering assignments and finding out their grades online. Accordingly, the students appeared to feel that whenever Blackboard and the content was easy to use, it would help them in their searches and motivate them to use it more in their learning. The following statements from interviewees demonstrate their beliefs about this issue:

P13. Blackboard does not consume time or effort, where assignments are delivered through it and the submission dates are obtained online. This is better and saves paper

P7. One of the most important positives of Blackboard is the availability of online testing, which is easier and does not consume time. We can take tests at home so that we save time and obtain grades directly.

P11. I did not find it difficult since everything is clear. I do not need much time when I send files through Blackboard. For this reason I use it and find it better for finding out my grades, rather than visiting the university. It also provides learning resources.

Generally, as observed in Table 5.21, based on the path estimation coefficient, it was found that perceived ease of use was considered to be the strongest factor affecting the perceived usefulness of Blackboard ($\beta=0.511$), followed by course interactivity ($\beta=0.446$). In contrast, the factors least affecting the perceived usefulness of Blackboard involved instructor characteristics ($\beta=0.120$).
Table 5.21: Path (β) coefficients for the perceived usefulness variable

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Effect</th>
<th>Path (β) coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>H15</td>
<td>Perceived ease of use → Perceived usefulness</td>
<td>.511</td>
</tr>
<tr>
<td>H10</td>
<td>Course interactivity → Perceived usefulness</td>
<td>.446</td>
</tr>
<tr>
<td>H5</td>
<td>Course content → Perceived usefulness</td>
<td>.284</td>
</tr>
<tr>
<td>H1</td>
<td>Personal innovation → Perceived usefulness</td>
<td>.143</td>
</tr>
<tr>
<td>H9</td>
<td>Instructor characteristics → Perceived usefulness</td>
<td>.120</td>
</tr>
</tbody>
</table>

On the other hand, as shown in Table 5.22, course interactivity was the predictor that could best anticipate the perceived usefulness of using Blackboard (R²=.693), followed by course content (R²=.634), perceived ease of use (R²=.507), and instructor characteristics (R²=.493), in order of importance. Finally, personal innovation proved to be the weakest predictor of the perceived usefulness of Blackboard (R²=.366).

Table 5.22: Interpretation coefficient (R²) for the perceived usefulness variable

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Effect</th>
<th>Interpretation coefficient R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>H10</td>
<td>Course interactivity → Perceived usefulness</td>
<td>.693</td>
</tr>
<tr>
<td>H5</td>
<td>Course content → Perceived usefulness</td>
<td>.634</td>
</tr>
<tr>
<td>H15</td>
<td>Perceived ease of use → Perceived usefulness</td>
<td>.507</td>
</tr>
<tr>
<td>H9</td>
<td>Instructor characteristics → Perceived usefulness</td>
<td>.493</td>
</tr>
<tr>
<td>H1</td>
<td>Personal innovation → Perceived usefulness</td>
<td>.366</td>
</tr>
</tbody>
</table>

Regarding the factors with the greatest effect on perceived ease of use, as shown in Table 5.23, it appears that the self-efficacy factor has the strongest effect on the perceived ease of use of Blackboard (β=.284), followed by course content β=.165. While the factor with the least effect on the perceived ease of use of Blackboard is technical support (β= 100).
Table 5.23: Path (β) coefficient for the perceived ease of use variable

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Effect</th>
<th>Path (β) coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>H3</td>
<td>Self-efficacy → Perceived ease of use</td>
<td>.284</td>
</tr>
<tr>
<td>H6</td>
<td>Course content → Perceived ease of use</td>
<td>.165</td>
</tr>
<tr>
<td>H7</td>
<td>Course interactivity → Perceived ease of use</td>
<td>.105</td>
</tr>
<tr>
<td>H8</td>
<td>Instructor characteristics → Perceived ease of use</td>
<td>.100</td>
</tr>
<tr>
<td>H4</td>
<td>Technical Support → Perceived ease of use</td>
<td>.075</td>
</tr>
</tbody>
</table>

As shown in Table 5.24, the self-efficacy factor was also identified as the greatest predictive factor (determinant) for the perceived ease of use of Blackboard (R²=.662), followed by course interactivity (R²=.634), course content (R²=.569), instructor characteristics (R²=.476), and lastly, technical support: the lowest predictor of perceived ease of use of Blackboard (R²=.476). The result also reveals that perceived usefulness has a greater effect than perceived ease of use on students’ attitudes, and was also the greatest predictor of the perceived ease of use of Blackboard.

Table 5.24: Interpretation coefficient (R²) for the perceived ease of use variable

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Effect</th>
<th>Interpretation coefficient R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>H3</td>
<td>Self-efficacy → Perceived ease of use</td>
<td>.662</td>
</tr>
<tr>
<td>H7</td>
<td>Course interactivity → Perceived ease of use</td>
<td>.584</td>
</tr>
<tr>
<td>H6</td>
<td>Course content → Perceived ease of use</td>
<td>.569</td>
</tr>
<tr>
<td>H8</td>
<td>Instructor characteristics → Perceived ease of use</td>
<td>.476</td>
</tr>
<tr>
<td>H4</td>
<td>Technical Support → Perceived ease of use</td>
<td>.424</td>
</tr>
</tbody>
</table>
5.19 Summary

In general, the results of the closed-ended questionnaires show a high degree of consensus with the results of the semi-structured interviews, where the results reveal that the students had a high level of positive attitude towards using Blackboard and a high level of intention to use e-learning. They stated that they would continue to use Blackboard in their learning in the future since it was easy to use and useful for them.

Out of the total fifteen hypotheses, fourteen were accepted and supported by the results of quantitative analysis of data gathered from questionnaires. The findings also reveal that there is a positive relationship between dependent variables and independent variables, except for the second hypothesis, where the quantitative results were unsupported and no significant positive relationship between personal innovation in using information technology and the perceived ease of use of VLEs was found, whilst the qualitative results gathered from interviews support all proposed research hypotheses and provide more clarification of the positive relationship between study variables. Most importantly, the results show that the usefulness and ease of use of Blackboard are considered as key components in TAM. The Model affected students’ attitudes toward VLEs and the results confirm that students’ attitudes towards Blackboard affected their intention to use e-learning. Furthermore, other factors emerged in the current study which could affect students’ attitudes towards Blackboard, such as language, interface and Blackboard design. Overall, the qualitative and quantitative results therefore support and demonstrate the TAM Model applied in the current study.
CHAPTER SIX

Discussion

6.1 Introduction

The purposes of this study is to investigate the factors affecting learning in VLEs in higher education in Kuwait. In order to verify the current study's objectives, a conceptual model was developed, drawing on a TAM Model. To arrive at a more comprehensive understanding of students’ acceptance, six external factors were added to the TAM Model, which were thought to affect students’ use of e-learning; namely personal innovativeness, technical support, instructor characteristics, self-efficacy, course interactivity and course content quality. According to the conceptual framework study, the study hypotheses were theorised to examine the underlying relationships between external variables and the TAM constructs. Mixed methods were considered for verifying these relationships. Hence, the study instruments, consisting of closed-ended questionnaires and semi-structured interviews were developed and used concurrently in order to examine the study hypotheses. After the administration of these tools on students at Kuwait University, both quantitative and qualitative data were gathered. Then, the data were analysed based on specific statistical techniques. In this chapter, the results which emerge from the study model are discussed individually for each hypothesis. This includes an interpretation of the quantitative results obtained from the questionnaires, supported by the qualitative results derived from the interviews with the students. This also refers to the related theoretical and empirical literature, presented and discussed in Chapter One, in order to compare and link current results with previous studies and to ascertain the extent to which the findings are consistent with the results of previous studies.
6.2 Discussing the Results of the First Hypothesis

**H1: Personal innovativeness in using information technology will have a positive effect on the usefulness of VLEs.**

Personal innovativeness has a direct positive effect on the perceived usefulness of VLEs. This finding implies that there is a causal relationship between personal innovativeness and the perceived usefulness of VLEs in the current study. The students were aware of the kinds of technology available nowadays which could be useful for their learning and therefore, were looking for tools that present various sources of learning which require less effort and time, such as VLEs, so they can then communicate with their tutors and colleagues to share information and facilitate their learning.

It was concluded from the results that the majority of the students had high ratings for their belief in the usefulness of technology in their daily lives and to facilitate their learning. In turn, this thought reflects the perceived usefulness of VLEs and many students were convinced and conscious of the role of technology in enhancing the learning process, as well as providing opportunities to become more independent within it. Such technology would also allow them to learn at their own pace. Thus, they wished to see VLEs being implemented in all courses and they believed that students had to learn how to use technology in learning and not just depend on their tutors. The researcher attributes this result to learners’ traits in the 21st century having changed dramatically, due to the technological and cognitive revolution in this era. In fact, the students have co-existed with technology from the time they were young and have even used it from the earliest stages of their schooling. They have therefore become more enthusiastic and receptive to new developments in this field, as well as being keen to adopt new tools. They are not confined purely to traditional learning, but also seek other methods that will activate the traditional learning process and provide them with opportunities for self-learning, where they become
the centre of the learning process. They are therefore willing to adopt new tools from information technology to assist them in communication, entertainment and the rapid gathering and transferring of information, or information-sharing with members of their community. It may be concluded from the findings that students are becoming more innovative than ever before and promptly accept new technology in their learning. Based on Hung et al.’s (2013, p. 234) study, the criteria for being an innovator are to be a ‘quick adopter and more willing to take risks’. Moreover, Agarwal and Prasad (1998) conclude, learners may be called innovators when they quickly adopt a new technology. According to the outcome, students who have a high level of personal innovativeness are more likely to understand that VLEs are helpful for their learning, and will believe in the importance of using technology to enhance their learning. They will have had positive experiences about the usefulness of technology.

This result is consistent with Agarwal and Prasad’s (1998) claim that high personal innovativeness is predicted to indicate more positive beliefs relating to the perceived ease of use and usefulness of technology. In addition, the result is compatible with findings which are empirically verified by the direct relationship between personal innovativeness in using information technology and the perceived usefulness of technology. These studies were conducted by Lewis, Agarwal and Sambamurthy (2003), Lu, Yao and Yu (2005) and Hung et al., (2013) and confirm that personal innovativeness is considered as a personality trait that can explain the adoption of technology. Xu and Gupta (2009) have found that personal innovativeness has a significant influence on the behavioural intention to use location-based services and is considered as an important predictor for the adoption of technology. On the other hand, van Raaij and Schepers (2008) do not provide evidence for the effect of personal innovativeness on the perceived usefulness of VLEs.
6.3 Discussing the Results of the Second Hypothesis

H2: Personal innovativeness in using information technology will have a positive effect on the perceived ease of use of VLEs.

Interestingly and contrary to the predictions of this current research, the quantitative results relating to the second hypothesis do not show any evidence of the positive effect of personal innovativeness in the use of information technology on the perceived ease of use of VLEs. This indicates that there is no relationship between personal innovativeness and the perceived ease of VLEs; a finding which is consistent with Ke, Sun and Yang’s (2012) study, but which conflicts with many previous empirical studies which apply the TAM Model, e.g. like those conducted by Lewis, Agarwal and Sambamurthy (2003) Lu, Yao and Yu (2005), van Raaij and Schepers (2008) and Hung et al., (2013). These studies detected a significant direct relationship between personal innovativeness and perceived ease of use.

However, the above non-significance result was not supported by the qualitative results gathered from the interviews. After obtaining deep information from interviewees relating to the second hypothesis, the qualitative results show evidence of the impact of personal innovativeness on the perceived ease of use of VLEs. One example of such evidence is the degree of willingness amongst students to be innovative and this personal level of innovativeness affects their perceived ease of use of VLEs. This has also influenced the extent to which they find VLEs easy to use, i.e. students with high personal innovativeness found VLEs easy to use and became skilful in using them rapidly, which in turn influenced their attitudes and intention to adopt these learning environments in a positive manner. Another justification that could be given for the positive aspect is that many students possessed sufficient skills for dealing with modern technology and had become familiar with it and so, when they used Blackboard, they were able to do so easily at any time and with little effort. Ultimately, they adopted Blackboard in their learning.
As noted from the first hypothesis, learners have become innovators and more flexible in dealing with technology since they live in a world filled with inventions; characterised by knowledge change, the rapid transmission of information in moments, and speedy interaction between individuals from different communities. Therefore, innovative individuals are of great importance in this era, because they accept life with its changes and adapt to it. Furthermore, such students have a positive vision for technology and see it as important in facilitating tasks in their lives, including learning. Therefore, students are sufficiently aware of how to deal with technology and gain skills which are adequate for dealing with e-learning tools. Hence, the students’ perceived ease of use was high and even if they had problems using VLEs, they were happy to use such tools again, since they were more aware of the usefulness of Blackboard for their learning, as well as the ease of using Blackboard. It is worth mentioning that levels of personal innovation differed between students and these differences depended on the characteristics of learners. Accordingly, the level of acceptance of innovativeness will differ between learners, which means that there will be differences in the level of adoption of VLEs. Eventually, based on the qualitative results, personal innovativeness emerged as a prerequisite for adopting technology and had a positive effect on perceived ease of use.

6.4 Discussing the Results of the Third Hypothesis
H3: Self-efficacy for students will have a positive effect on perceived ease of use.

Self-efficacy in the context of the current study relates to a learner’s capability to accomplish certain learning tasks or activities using VLEs and the extent of their confidence in their own ability when using VLE tools. Among the external variables under study, self-efficacy was found to have a higher direct effect on the perceived ease of use of Blackboard. It was also shown as the strongest predictor for perceived ease of use. This result was supported by the interview responses, with many interviewees reporting that they were
confident of their abilities and potentialities and that they had experience in dealing with the Internet. Thus, they were not worried about using VLEs and they believed Blackboard was easy to use. Such participants appeared more confident in their ability to interact with VLE options. Therefore, they participated in discussions or forums, or sent their assignments immediately without wasting time, thinking too much, or hesitating, which indicates that such students have high self-efficacy. In fact, some were motivated to meet the challenge of specific tasks, such as discussions, completing online tests, submitting assignments, downloading lectures, or uploading documents, and were confident when using Blackboard options. Even if they faced difficulties, they continuously tried to overcome them without help. According to Bandura (1997), individuals with a tenacious belief in their abilities are more likely to challenge themselves with difficult situations. They have the power and motivation to achieve their aim, in spite of the obstacles and difficulties they encounter. Even though there were a few students who were anxious, especially when attempting online tests, this could be related to a lack of experience, since many of the students were using Blackboard for the first time. As Bandura (1994) confirms, experience plays an important role in students’ levels of self-efficacy, especially the positive experience. However, VLEs assist students in becoming more confident of their ability to perform tasks via VLEs and this is achieved through confirmation messages available on Blackboard during the process of delivery.

The findings for this hypothesis lead to suggestions that if the students have high confidence in their ability, they will be able to use VLEs with ease and in turn, this will affect students’ acceptance of VLEs. As a result, self-efficacy can determine the path a learner will follow. Furthermore, this path could indicate how far a learner is convinced of their efficiency and their confidence in their abilities. The above conclusion conforms to Abbad, Morris and
Nahlik (2009, p. 14), who assume that ‘students who are confident in their ability to master an e-learning system, without help, are more likely to become users’.

Subsequently, the positive relationship between self-efficacy and perceived ease of use could be interpreted as a high level of self-efficacy providing motivation and encouragement to use Blackboard, even if it is difficult. Park (2009) justifies the positive result arising from self-efficacy and students’ attitudes from the perspective of motivational theory, where self-efficacy is considered as an intrinsic motivational factor which helps students to self-regulate their motivation toward e-learning. Moreover, students have been found to be more active when they have high levels of self-efficacy (Bandura, 1994). From my point of view, students who have high self-efficacy look at obstacles in a positive way and try to overcome them, even if they spend less effort and time on an assignment. From Khorrami-Arani’s (2001, p. 18) perspective, ‘self-efficacy [has] influenced people’s decisions, goals, their amount of effort in conducting a task, and the length of time they would persevere through obstacles and difficulties’. Most importantly, they are optimistic about and trust their ability, which is critical for overcoming any difficulties they encounter. Therefore, and from the perspective of social cognitive theory on self-efficacy, it is considered to be a powerful direct determinant of ease of use (Ke, Sun and Yang, 2012).

This finding is in line with studies conducted by Pituch and Lee (2006), Abbad, Morris and Nahlik (2009), Lee and Mendlinger (2011), Alhaderi (2013), Alammary and Hamad (2008), Punnoose (2012) and Hung et al., (2013). More specifically, Lee (2006) and Park (2009) have found that self-efficacy is a strong predictor of the perceived ease of use of Blackboard, corresponding to this current study result. Chen et al., (2007) are other authors who have arrived at the conclusion that self-efficacy has the most significant direct effect on the perceived ease of use of e-learning, while Ke, Sun and Yang (2012) did not find significant
effect for self-efficacy on perceived ease of use, because the users found other variables in the study relating to system characteristics, for example interface style and interactivity, which are more important and have greater impact on their ease of use beliefs, than user characteristics (self-efficacy, subjective norms and personal innovativeness).

6.5 Discussing the Results of the Fourth Hypothesis

H4: Technical support has a positive effect on the perceived ease of use of VLEs.

Positive findings were obtained for the fourth hypothesis, which confirms that technical support has a positive effect on the perceived ease of use of VLEs. This result was supported to a high degree by the qualitative results gathered from interviews, where several interviewees emphasised the significance of support from the university, especially in the first year. They indicated that the university plays a powerful role in their consciousness of such tools and particularly if they have encountered problems while working off-campus. Therefore, technical support is considered as a key factor in successful e-learning, in that learning through VLEs represents a self-learning method, rather than acquiring information directly from course tutors. This means that students can seek out information at any time and from anywhere, in addition to communicating with each other and with their tutors when off-campus. Thus, this approach needs special facilities, guidance, instructions and various sources of assistance to facilitate the use of VLEs in learning. It also helps students to accomplish their goals with less effort and in a shorter timespan to overcome any problems. Since VLEs are Web-based, students could encounter difficulties in uploading or downloading files and browsing VLEs. This problem would relate to the university server and so, according to Cheung and Huang (2005), university support is significant, because it provides a variety of continuous sources of support which can contribute to increasing students’ perceived ease of use of VLEs. Therefore, as Eneh (2010) states with regard to the importance of support, especially for the induction year, students’ perception of VLEs will
be affected, as well as the extent to which they find them easy and important for learning. Moreover, support, for example online advice, guidance, training hours for learners, and the helpdesk should start from the point students first engage with e-learning, so that they can receive support at every phase. This will also guarantee that all learners are capable of accessing such tools (Great Britain, Department for Education and Skills, 2003).

However, the qualitative results indicate that many students are unfamiliar with Blackboard from their early years and many of the interviewees had only used this facility for the first time during the final phases of their studies. Furthermore, they were unsatisfied with the university’s support services for Blackboard and there was a noticeable lack of technical assistance for students in this regard. Moreover, neither did the technicians working in the IT department have any experience with Blackboard. As a result of this, the supporting role lay primarily with the tutor, who would be the one to solve any problems relating to Blackboard.

The study findings affirm that technical support is a significantly important factor in the enhancement of students’ perceived ease of use of VLEs. Consequently, students focused intensely on this factor and suggested the following support to increase their usage of VLEs: providing training hours for Blackboard for first year students; instructions for Blackboard being made available on university sites, as well as staff gaining experience in using Blackboard in the IT department or at the helpdesk; availability of sources of support when students work off-campus, such as specific email facilities for VLE inquiries. Most importantly, universities should enlighten students from their first year about the importance of this tool in their learning, as ‘a good-quality induction and early use of the system are essential in ensuring a positive attitude to the VLE among learners’ (Ofsted, 2009, p. 5). In addition, Ashby and Broughan (2002, p. 141) have demonstrated that in order for students to
actively engage in VLEs, they ‘need to be educated and encouraged to embrace this new method of teaching and learning effectively in order to achieve their fullest potential’.

These findings are compatible with those of previous studies showing a positive relationship between support and perceived ease of use, based on the TAM Model by Cheung and Huang (2005), Ngai, Poon and Chan (2007), Cho, Cheng and Lai (2009), Cheng (2012). In addition, Alenezi, Abdul Karim and Veloo (2010) found institutional technical support has a direct impact on students’ attitudes towards e-learning. Mehra and Omidian (2010) and Kee, Omar and Mohamed (2012) noted a direct effect of university support on the adoption of e-learning. This result, however, is incompatible with what was discovered by Abbad, Morris and Nahlik (2009), who found a minor effect of technical support on the perceived ease of use of VLEs, while they found technical support had a direct impact on perceived usefulness.

6.6 Discussing the Results of the Fifth Hypothesis

H5: Course content quality has a significant effect on the perceived usefulness of VLEs.

Findings from quantitative data analysis show a significant positive impact of course content on the perceived usefulness of VLEs. In addition, course content is considered to be a strong predictor of the perceived usefulness of VLEs. The study suggests that the level of content quality and how far it enriches learning sources will affect students’ perceived usefulness.

A plausible explanation for this finding is that students found VLEs offer flexibility in learning, where course content contains a variety of learning sources in different forms, for example hyperlinks, assignment tools, tests, discussions, PowerPoint (presentations), lectures in Word document format, the syllabus, important dates in bulletin board and course
requirements. All these sources were sufficient and appropriate for them and they found them to be flexible in that they could potentially access them at any time, or from any location. From the students’ perspective, these sources meet the course objectives and students’ needs, and facilitate the learning process. Thus, they consider VLEs to be a reference and felt secure. In spite of the above, some students reported that the content of some courses in the VLEs lacked interactive multimedia and communication tools were not utilised; even the quality of the content of courses on VLEs was varied and did not meet their expectations. In turn, this impacted on their perceived usefulness in a negative way.

Another interpretation of the positive result is that a diversity of learning sources will provide students with an opportunity for self-learning, which is considered as a critical issue in self-regulated learning and will help them to construct their own knowledge, based on their capability, needs, skills and learning style. All these reasons may contribute to an increase in students’ perceptions of the importance of these environments for the learning process. In turn, this can affect the perceived of usefulness of VLEs and provide a certain amount of satisfaction among students regarding these environments. It was noted in this study that students’ perceived usefulness varied; it depended on the availability and diversity of learning materials and on information being updated on a regular basis. This finding is in accordance with empirical studies that demonstrate the positive impact of content quality on perceived usefulness, as revealed in Lee (2006), Huang and Chen (2007), Alammary and Hamad (2008). More specifically, Cheng (2012), Hung et al., (2013), Liu, Liao and Pratt (2009) found that richness of content in media had a positive effect on perceived usefulness.
6.7 Discussing the Results of the Sixth Hypothesis

H6: Course content quality has a significant effect on the perceived ease of use of VLEs.

A positive link between course content quality and the perceived ease of use of VLEs was found. This result demonstrates that course content was considered as an important predictor of the ease of use of VLEs and increased perceived ease of use of VLEs amongst students. The finding was positively supported by qualitative results, which confirmed that ease of understanding and effortlessness in finding learning material would directly affect students’ beliefs concerning ease of use. The researcher attributed the positive result to the fact that Blackboard contains easy options and ease of accessibility in its procedures, such as testing, discussions and assignment tools. Moreover, the contents are arranged and organised in a way that makes them easy to understand and access. The information was therefore clear for the students. Furthermore, the navigation process between Blackboard options was easy; the steps were easy to memorise and permitted the student to retain the previous page displayed. This was especially useful for students with little experience of Blackboard. Thus, students did not spend much time or effort when learning through these means and this in turn contributed to an increase in their motivation towards using VLEs.

On this point, the perceptions of many students concerning content quality was good. They believed it was designed to make things easier and felt that Blackboard itself was easy to use, but it just needed to be more interesting. Nevertheless, this issue did not affect students’ perceived ease of use.

Interestingly, it was found that the level of difficulty of assignments influenced students’ belief regarding to perceived ease of use. In addition, when learning materials are displayed all at once, in large quantities and without instructions, this negatively affected students’ perceived ease of use of VLEs. Accordingly, a few students found VLEs difficult to use and
indicated their preference for avoiding them in future. From the above, it emerges that the assignments should be described in simple and direct ways, with the tutor presenting the learning materials gradually. It can be concluded that, in order to enhance students’ intentions to use e-learning, tutors and designers should concentrate on designing content in a way which will enable students to improve their performance with less effort. A simpler design, better organised and more effective would be more helpful, as Parizotto-Ribeiro and Hammond (2005, p. 25) have mentioned: it ‘helps the user comprehend the information in a better and easier way’. It would also enhance accessibility to learning materials. In addition, designing content in an interesting way would give students more motivation to use VLEs. Thus, in order to increase the level of student belief about the ease of use, the tutor should focus on the following issues: considering how to design and allot the content to sections, with the provision of a list of content, whereby students can recognise the content easily and provide specific instructions that explain what students should accomplish and what is expected of them. The bulletin board should also be used for updating information and giving clear instructions, as well as posting announcements and reminders. This is because the tutors are not permanently available to direct the students. Moreover, the page should not be crowded with information in a way that would hinder the student from reading the content with ease. All these issues can affect students’ beliefs about the ease of use of VLEs.

The findings of this study are consistent with those of the following studies: Alammary and Hamad (2008), Chen et al., (2007), Cheng (2012), and Saba (2012). These studies have found a significant positive correlation between the quality of the content and the ease of using Blackboard, while Sun et al., (2008) have found that e-learning course quality directly affects learners’ perceived satisfaction. Moreover, Sharma and Chandrael (2013) found a direct effect of website quality on behavioural intention.
6.8 Discussing the Results of the Seventh Hypothesis

H7: Course interactivity positively affects the perceived usefulness of VLEs

Course interactivity was linked positively with the perceived usefulness of VLEs. Furthermore, course interactivity is considered to be the strongest predictor of perceived usefulness among the external factors. The researcher attributes a significant positive finding for the use of VLEs, particularly the existence of the Blackboard environment, to help students to interact easily via the available options, e.g. online tests, or the presence of a bulletin board, where the tutor can communicate with students and inform them of important dates and deadlines for assignments and projects, or make announcements related to the course. Moreover, the presence of important links and discussion activities will enable students to share opinions and information, besides delivering assignments online. All these options mean that learning environments are rich in interaction and so the learning process is likely to be more meaningful; it should promote students’ more frequent use of VLEs, with students being more engaged with the course content, and they were able to learn autonomously through the available learning sources and according to their needs and then became more aware of the usefulness of Blackboard in their learning. Ultimately, these issues led to an increased positive perception amongst students of the usefulness of VLEs.

Furthermore, the availability of discussion activities via the discussion board or forums provided students with the opportunity to communicate synchronously with each other and to discuss topics, exchange ideas and pose questions, without any embarrassment. The use of forums gave students the chance to discover new ideas and so they were more motivated to participate in these forums to obtain and exchange information. I found that discussion activities play a significant role in students’ interaction with their peers and engagement with VLE tools. This can be achieved through designing activities aimed at securing interaction, involvement, discussion of information and experiences, work-related exchanges
and discussions conducted for the purpose of exchanging views, or to find out about the opinions of others. All this can be brought about through the use of communication tools made available as part of the course. The objective is to transform each student into a more positive and proactive participant in the learning process, while at the same time fostering a sense of team spirit. This should increase students’ motivation to learn (Rabah, 2004) and share information cooperatively through Blackboard.

According to Constructive Theory, activities play a critical role in engaging and motivating students to learn effectively (Liaw, 2008). Consequently, students become the core of the educational process and an effective and positive element in the e-learning process. In this way, VLEs provide students with more incentives to learn through these environments and render the latter more effective and useful. These findings confirm that VLEs are regarded as rich interactive environments with learning resources and synchronous and asynchronous means of communication, which provide many opportunities for students to interact with each other, reflecting positively on the perceived benefits of VLEs.

The researcher concluded from the results that learning through Blackboard is regarded as a type of learning that stimulates students to get actively involved. This may be attained by its actual implementation for VLEs, combined with good instructional design, which relies on principles of pedagogy, especially where learning also integrates pre-planned activities with specific objectives with students’ needs and where these activities help to stimulate an integrated learning process and improve its efficiency. Thus, course content should be designed in such a way to encourage students to be interactive, creative, and innovative, while also assisting them to integrate with the learning process, so that they become capable of relying on themselves to complete self-learning processes, instead of merely being recipients of information (Darawzeh, 1999).
The positive result of course interactivity and the perceived usefulness of VLEs is supported by previous studies and is in line with the findings of Pituch and Lee (2006), Liaw (2008), Jebakumar and Givindaraju (2009) and Cheng (2012). On the other hand, it contradicts Abbad, Morris and Nahlik’s (2009) study, as these authors did not find a direct effect of course interactivity on perceived usefulness, and they justified the result, stating that: ‘The development of e-learning is in its infancy in Jordan and it may well be that students’ expectations of e-learning systems did not embrace communication capabilities’ (Abbad, Morris and Nahlik, 2009, p.14)

6.9 Discussing the Results of the Eighth Hypothesis

H8: Course interactivity will have a positive effect on the perceived ease of use of VLEs.

Course interactivity is positively related to perceived ease of use. The findings show course interactivity is a critical predictive factor for the perceived ease of use of Blackboard, meaning more interaction with course content and between tutors and students, there were more beliefs concerning ease of use among students.

The positive findings could be explained by the fact that the communication tools were easy to use and understand, and the procedures for using these tools were simple, not complicated. There was also the opportunity for students to communicate with each other in flexible ways, regardless of the time and place. Furthermore, these options helped students to make enquiries in a straightforward manner and they realised that Blackboard needed less effort and time for its communication tools. As a result, they were more encouraged to engage in using these tools and some were also more curious about discussion board.

Furthermore, VLEs were considered to be a good idea for discussion and sharing
experiences and information, as well as obtain clarification for their inquiries. Also, students can even easily identify their peers through discussion activities, and may strengthen the face to face relationships that students have with each other. In turn, this influenced their beliefs about ease of use and contributed to the flow of positive experiences of ease of use. However, some communication tools were not used effectively and the students were not actively engaged with such tools available in VLEs, unless information had been provided by tutors. In addition, some of the tutors were not actively engaged in using the VLEs, therefore, communication with them was almost exclusively supposed to take place during lectures. Accordingly, students suggested that more options in VLEs should be interactively applied, particularly with tutors, as the available communication tools save time and effort and offer opportunities for students to post questions regarding their assignments or any technical problems encountered with VLEs. Prompt feedback could also be obtained for their inquiries or assistance from peers with their learning, especially while off-campus.

These findings are compatible with studies conducted by Jebakumar and Givindaraju (2009), Liaw (2008) Cheng (2012) and Ke, Sun and Yan (2012), while contradicting the findings of Abbad, Morris, and Nahlik (2009) and Pituch and Lee (2006), since these authors did not find a direct effect of course interactivity upon perceived usefulness. Similarly, Sun et al., (2008) concluded that students’ satisfaction with e-learning was not influenced by perceived interaction. Other factors were found, such as diversity in assessment, which appeared to be more significant for students’ satisfaction than perceived interaction.
6.10 Discussing the Results of the Ninth Hypothesis

H9: Instructor characteristics positively affect the perceived ease of use of VLEs.

As the study hypothesis anticipated, the perceived ease of use of VLEs was positively related to instructor characteristics and influenced students’ perceived ease of use of VLEs. This result clarifies that students believe using VLEs will be easier if tutors have experience and skill in e-learning, and are also motivated to use e-learning; as Bates (2005) mentions, motivated tutors will overcome any problem in technology. Such tutors will also be able to assist students in class and through VLEs, giving clear instructions for using VLEs and course contents. Most importantly, tutors should have positive attitudes towards technology and should believe in the usefulness of VLEs in learning. They should be confident and enthusiastic about their ability to use e-learning tools, in order to encourage and motivate students. In this respect, Lee, Cheung and Chen (2005) reported that tutors should be interesting and interactive with students when using communication tools, providing a timely response for any inquiries.

Regarding a timely response, Sun et al., (2008) point out that this promptness is an important issue for students as regards their tutors, the main reason being that when the students encounter any problems, appropriate help from tutors would encourage them to continue using e-learning. In fact students believe tutors play a key role in their consistent and untroubled use of VLEs, where sufficient encouragement is received from tutors concerning the use of e-learning tools. Tutors should communicate with students and provide them with prompt responses to inquiries or solutions to problems, particularly during early attempts to use Blackboard. More importantly, students should be provided with training hours to familiarise themselves with VLEs, coupled with regular instructions on such usage, as well as any reminders about new entries in Blackboard, or any other kinds
of learning resources which have been made available. Moreover, the tutors should be organised, so that learners can access course content more easily and continuously. In turn, these factors play a key role in increasing students’ perceived ease of use and students' positive attitudes towards e-learning.

The positive results may also be justified by the fact that the tutor is considered as one of the most powerful components affecting e-learning, in that e-learning does not simply mean the learner browses pages in the Internet, but rather browses in a specific manner, applying specific instructions and guidelines for using the information. This is regarded as one of the tutor's most important roles in e-learning, i.e. simplifying the learning process and regulating the content in a manner which enables the student to use e-learning tools easily and without obstacles. In this respect, Yoing, Sam and Wah (2008) conclude that the tutors should be knowledgeable about Internet technology, as it is an important requirement for designing an effective and meaningful e-learning environment, with a simple, user-friendly approach. This is consistent with what is confirmed by those interested in technology, namely that an abundance of information does not in itself mean anything, but can even sometimes be a problem.

Furthermore, since the students have not received enough support from the university, they are mainly rely on tutors to assist them when they encounter any difficulties with VLEs. Besides, the tutors play a fundamental role in the students’ use of Blackboard, as well as being responsible for students’ access to it and so students consider tutors to be a critical source of support in overcoming any obstacles. Consequently, tutor dramatically help form positive beliefs around ease of use.
The findings are in line with previous studies that emphasise the role of the instructor in the adoption of e-learning. Selim (2007) found that tutors’ attitudes towards technology and their teaching style are the most critical factors for instructors characterising the adoption of e-learning in higher education. Further, Sun et al., (2008, p. 1196) found that students’ satisfaction with e-learning was positively influenced by tutors’ attitudes, and explained this result as follows: ‘when instructors are committed to e-learning and exhibit active and positive attitudes, their enthusiasm will be perceived and further motivate’, since the tutors are seen as key actors in e-learning activities. However, the current study’s results contrast with those of Hussein, Aditiawarman and Mohamed (2007). They revealed that the instructor’s characteristics do not impact on perceived ease of use. This is because the instructor’s characteristics are not a dominant factor in a developing country. Furthermore, Lee, Hsiao and Purnomo (2014, p. 576) have not found any effect of instructors’ attitudes on perceived usefulness. They attribute this non-significant result to the fact that the implementation of e-learning in a developing country is generally ‘conducted through asynchronous learning, and virtual classes between instructors and students using synchronous methods are seldom conducted’.

6.11 Discussing the Results of the Tenth Hypothesis

H10: Instructors’ characteristics positively affect the perceived usefulness of VLEs.

Instructors’ characteristics were shown to have a positive effect on the perceived usefulness of VLEs. This finding demonstrates tutors’ characteristics; experience in using e-learning tools; the interactivity and effective application of VLE options in learning; ease of communication via the tools provided; the encouragement of students to interact through VLE tools; using various methods of learning; regular updates of the content of VLEs, and the provision of adequate, interesting and organised online learning materials. According to Yoing, Sam and Wah (2008), in order for students to become actively involved in e-
learning, the tutors should guide and facilitate the learning process and be active in using the tools themselves. Thus, the tutors should make sure they maintain a good standard of interaction and discussion with students, in order to improve their e-learning experience. All these factors seem to influence students in the perceived usefulness of VLEs for productivity and enhancement of performance. The majority of students strongly believed that tutors are one of the most critical factors affecting their feelings and judgments regarding Blackboard’s usefulness.

The positive finding can be explained as instructors being involved in using e-learning, having experience in ICT, encouraging students to learn through Blackboard and then guiding them continuously to the learning materials available in VLEs. Furthermore, it was emphasised in the study that instructors should use Blackboard to track how many times students log in to these environments, using tracking options. Consequently, students would integrate VLEs into their learning. In addition, students should become more interested in using VLEs when they obtain feedback via Blackboard.

On the other hand, a few tutors communicate with students through Blackboard, but rarely provide them with rapid feedback by these means regarding their inquiries and assignments. Nevertheless, this factor is considered as a motivator for students to use Blackboard and the students expressed a desire for more communication with their tutors, so they recommended that the tutor should play a more active role in e-learning. All the above factors are clearly influenced by students' beliefs concerning the benefits of these environments in facilitating and enhancing the learning process and increasing their motivation to use VLEs in their learning.
As mentioned previously, the students surveyed have a good level of personal innovativeness and expressed a desire to use e-learning tools in their learning. To reinforce this desire, they need encouragement from tutors who are enthusiastic about using ICT in learning. The study findings reveal that the level of encouragement and concern amongst tutors varied, because tutors’ characteristics differed and influenced students’ perceptions of the usefulness of VLEs.

The current findings are similar to those of Lee, Yoon and Lee’s (2009) study. More specifically, Cheng (2012) found that learners’ perceived usefulness of e-learning was positively influenced by the attitude of tutors towards e-learning, related to timely and prompt feedback, the updating of learning materials and good communication with learners. When tutors proved themselves capable of providing the above, the learners’ intention to use e-learning increased.

6.12 Discussing the Results of the Eleventh Hypothesis

H11: Perceived usefulness will have a positive influence on students’ attitudes towards using VLEs.

First of all, it is worthwhile discussing students' attitudes towards VLEs. The findings indicate that the majority of students have high positive attitudes to using VLEs. Moreover, most of the students surveyed agreed that e-learning is easy to operate on Blackboard and it constitutes a supportive source for their learning. In addition, it helps to enhance their performance and productivity, so they found it a good idea and had a favourable attitude towards using VLEs, accepting them as supportive tools.

The researcher attributes the high level of positivity in students' attitudes towards VLEs to the advantages of the latter. The most important of these are that these environments
provide students with a variety of online learning sources that will aid self-learning in at appropriate times and in convenient places, according to the abilities, needs and learning speed of each student. This will give students greater control over their own learning, leading to improvements in their performance. In addition, it will save the students time and effort, in that they will be able to deliver their assignments and complete tests online, as well as downloading learning materials. This should then help make the learning process easier.

Referring once again to the effect of perceived usefulness on students' attitude toward VLEs the findings are consistent with the expectations of the hypothesis. The findings reveal that perceived usefulness is considered to be a key predictor of positive student attitude as Davis (1985) posited. The findings assume that perceived usefulness dramatically helps form positive attitudes towards VLEs and has a greater effect on students’ attitudes than perceived ease of use. This is because students can then concentrate more on the usefulness of the technology itself and give more attention to how far the tools can be useful for their learning and improving their level. This means that students will use VLEs more often where they have positive beliefs about its usefulness. This result is in accordance with Davis (1989), who explains that it is due to the users implementing technology mainly for its advantages and useful functions, instead of its mere ease of use. Porter and Donthu (2006) add that if the benefits of usage are substantial, that students will overcome the difficulties they encounter when using a new technology.

Another reason for the significant effect of perceived usefulness, as opposed to perceived ease of use in terms of attitude, is the fact that the majority of students are likely to use ICT in their daily lives or in learning and have adequate skills for dealing with e-learning tools. This issue reflects their perceived ease of use of VLEs. Moreover, they have not encountered difficulties while using VLEs and so the students did not focus on ease of use,
but rather concentrated more on the usefulness of e-learning. In fact the students found VLEs to be supportive tools, especially when off-campus. They therefore found them to be favourable to their learning. It is also worth mentioning that the occurrence of positive beliefs was varied among students; it depended on the extent to which students benefited from VLE options. Accordingly, the level of positive attitude depended on students’ beliefs relating to VLEs.

My study findings are consistent with early studies applying the TAM Model as a basis for their studies (Porter and Donthu, 2006; Masrom, 2007; Liu, Liao and Pratt, 2009; Park, 2009; Alharbi, 2010 and Šumak et al., 2011). However, Shroff, Deneen and Ng, 2011) and AlAdwan and Smedley’s (2013) results are inconsistent with the findings of the current study. AlAdwan and Smedley (2013, p. 13) attribute the non-significant result between perceived usefulness and students attitudes and significant result between perceived usefulness and intention to use, to the fact that ‘students are willing to adopt an e-learning system while focusing on its benefits’.

6.13 Discussing the Results of the Twelfth Hypothesis

H12: Perceived ease of use will have a positive effect on students’ attitudes to using VLEs.

As expected, perceived ease of use was found to positively influence students’ attitudes towards VLEs, the results indicating that such attitudes can be directly predicted through the ease of use of VLEs. This finding confirms that perceived ease of use is an important factor for configuring positive attitudes, following perceived usefulness. The finding also implies that positive attitudes in students might form when the students believe that Blackboard is easy to navigate through pages and options and easy to implement for interaction. The
result suggests that students tend to use VLEs if they believe that they will assist them in enhancing their performance and effectiveness in their learning, with less effort required.

The positive result can be interpreted in two different ways. Firstly, Blackboard helps facilitate the learning process and makes it more flexible, since it can be used at any time and from anywhere. Students are therefore not confined to the campus. They can even access Blackboard via their smartphones, rather than a computer, so it is easily accessible. Secondly and most importantly, the students agreed on one common answer in relation to the ease of use of these tools in learning, and that is that they do not consume much time or effort, but rather speed up the process of finding information. In another explanation, the content of Blackboard was found to be organised in a way that made usage easier, and the procedures for using Blackboard options, for example the discussion board; forums; portals for delivering assignments, or downloading and uploading documents, and for obtaining grades, were straightforward and easy to understand. Lastly, using VLEs does not require specific skills in ICT, and students can easily gain sufficient skills for using them and even become adept. In turn, these issues can affect students’ feelings towards VLEs in a positive way and lead to favourable attitudes towards them, with ease of use accordingly being considered as one factor that would encourage students to use VLEs in the future.

The findings for the current study correspond to those of prior studies (Davis, 1989; MA, 2003; Porter and Donthu, 2006; Masrom, 2007; Park, 2009; Liu, Liao and Pratt, 2009; Alharbi, 2010; Šumak et al., 2011; Aladwan, Aladwan and Smedley; 2013; Ng, Shroff and Lim, 2013).
6.14 Discussing the Results of the Thirteenth Hypothesis

**H13: Students’ attitudes toward VLEs will positively affect their intention to use e-learning.**

In view of students’ intentions to use VLEs and e-learning tools, the majority of students have a moderately high intention to use e-learning tools in their learning. Besides, they will continue enrolling on courses that implement VLEs or other e-learning tools. This finding is in line with the results of the qualitative analysis, a result which may be explained by the fact that VLEs are considered as safe environments for learning, and students’ academic property, such as grades and assignments, will be safely stored on Blackboard, as it is under the control of the tutors and the university. Students were also able to print the learning materials in different formats e.g. in Word or as PDFs. Moreover, these virtual environments provide students with the opportunity to learn at any time and from anywhere, using a variety of methods. Therefore, students will have had a positive experience of the ease of use and usefulness of VLEs and become more aware of the importance of e-learning.

It is noteworthy that the study results suggest learning environments should be used more broadly by tutors, making use of the full potential of VLEs. Moreover, the university should give more attention to encouraging and supporting VLEs, given the importance of this tool in facilitating the learning process. However, not all tutors use VLEs and as a result, not all students know about these learning aids and so do not believe VLEs to be essential tools. Nevertheless, these students still consider them to be supportive tools.

With further reference to the relationship between students’ attitudes and behavioural intentions to use VLEs and e-learning, the findings show that there is a positive relationship between students’ attitudes toward VLEs and the intention to use e-learning. Consequently, students’ attitudes are an important factor for predicting their intention to use such tools. This means that if the students have positive or negative feelings towards VLEs, this will
have a major effect on their decision to use e-learning in the future. More specifically, students will use VLEs if they have positive beliefs regarding their usefulness and ease of use. In the current study students had positive thoughts and feelings about VLEs and favoured such tools in their learning. They also expressed a desire to use this tool in the future and found it to be a new method of supporting their learning. They considered such tools to be sophisticated, contemporary and able to assist with their learning, so they accepted them as supplementary tools, hoping that Blackboard would later be developed to make it more attractive.

Generally, this result can be explained in terms of students' attitudes and their motivation to use self-learning in such environments. The main effect is on the intention of students to use e-learning tools. This means that students’ intentions are formed according to their attitudes towards VLEs. A positive relationship can also be discerned between attitudes and behavioural intention, namely that after using the VLEs, students formed a positive perception of them, especially regarding their ease of use and usefulness in learning, these being considered as key issues for students when using any type of technology. In turn, this reflected positively on their interest and intention to use e-learning more in future. Therefore, the study result demonstrates that students’ attitudes are considered to be a significant factor influencing students’ behavioural intention.

Despite the high level of positive attitudes towards VLEs, all students declared a preference for face-to-face lectures over the provision of lectures online. Furthermore, instead of replacing traditional learning with virtual environments, they advocated the presence of face-to-face interaction with the tutors. Accordingly, it may be concluded that the students preferred integrated learning or blended learning, and therefore regarded VLEs as a
supportive and assistive tool during the learning process. This may be due to the fact that VLEs is still somewhat new in universities and is not yet widely used in its modern application. Moreover, many of the students had only recently started to use VLEs and lacked experience in this type of learning, with many tutors not using VLEs either, so there were few opportunities to use such tools.

In reviewing previous studies, the findings were varied, with the following studies being consistent with the current study (Davis, 1989; Liu, Liao and Peng, 2005; Porter and Donthu, 2006; Liu, Liao and Pratt, 2009; Park, 2009; Sharma and Chandel, 2013; Hung et al., 2013 and Adewole-Odeshi, 2014). The aforementioned studies confirm that behavioural intention is influenced by learners’ attitude and will determine students' intentions to use e-learning systems.

Contradictory to the assumption of the TAM Model, the following studies did not identify a direct effect between students' attitudes towards, or students' intention to use VLEs (Masrom, 2007; Šumak et al., 2011; Shroff, Deneen and Ng, 2011; Aladwan, Aladwan and Smedley, 2013). It is worth mentioning here that Aladwan, Aladwan and Smedley explained this result on the basis of interpretations by Davis, Bagozzi and Warshaw (1989), that learners will use technology, even if they do not have a positive attitude towards it. They will use new technology if they find it has benefits and can help them improve their performance with very little effort. Masrom (2007), however, attributes the non-significant result of students’ attitudes and behavioural intention as being due to the restrictions of using the TAM Model, with regard to the kind of technology adopted and the culture of the user. Moreover, from their perspective, the TAM Model did not provide a detailed analysis of the attitudes or intentions of the user.
6.15 Discussing the Results of the Fourteenth Hypothesis

H14: The perceived usefulness of VLEs will positively affect students’ intention to use e-learning.

As the study presumes, the students’ intention to use e-learning was positively correlated to perceived usefulness. The result of this hypothesis suggests that students will most probably use VLEs in future when they feel it is a useful tool for promoting their performance and does not demand much effort from them. In this respect, Jebakumar and Givindaraju (2009) mention that, ‘students will not spend time with VLEs unless they are convinced that it is a useful tool for their learning’. Furthermore, students’ intentions to use e-learning will depend on what is available within Blackboard and the extent of its usefulness and importance. This is because it assists in motivating students’ desire to learn via e-learning methods.

It may be concluded from this finding that once students have used Blackboard in their learning, they will realise it contains a variety of learning tools and learning resources, besides the course requirements, available for them 24 hours a day. This variety gives students the opportunity to choose learning methods which are appropriate for their learning styles. Furthermore, the information in VLEs is accurate and reliable because it is connected with the University and supervised by course instructors. Moreover, methods for delivering assignments are easy and quick, much more efficient than methods of manual delivery. Access to grades is also a good idea that encourages students to use Blackboard. All these factors can affect a student’s decision to enrol on other courses which implement Blackboard, with them being more likely to use e-learning more in future, as well as to recommend their peers use VLEs to support and assist them in their learning.
According to the study findings, the behavioural intention to use e-learning mainly depends on two factors: attitudes towards VLEs and perceived usefulness, where positive attitudes are the most significant and strongest predictor of students’ intentions. They are also a more important and effective factor than perceived usefulness in determining students’ intentions to use VLEs. The findings imply that perceived ease of use and perceived usefulness both help form students’ attitudes and so are considered to be vital factors for directly motivating students to use VLEs in the future. Thus, we not only depend on usefulness to determine students’ intentions, we should also know about their attitudes first and these comprise both perceived ease of use and usefulness. Moreover, the availability of these factors, simultaneously and combined with each other has more effect on the intention to use e-learning than they do separately. This result confirms that attitudes play a critical role in the acceptance of technology.

This findings are consistent with the outcome of the TAM Model and many studies have tested the relationship between perceived usefulness and the intention to use e-learning, showing that perceived usefulness has a significant positive effect on behavioural intention (Pituch and Lee, 2006; Masrom, 2007; Alammary and Hamad, 2008; Liaw, 2008; Liu, Liao and Pratt, 2009; Lee, Hsieh and Hsu, 2011; Escobar-Rodriguez and Monge-Lozano, 2012; Šumak et al., 2011; Punnoose, 2012; Cheng, 2012; Aladwan, Aladwan and Smedley, 2013; Sharma and Chandel, 2013). On the other hand, Park’s (2009) study finding is inconsistent with the results of my study. Park explains the non-significant result as being due to the fact that students in Korea are sufficiently aware of the ease of use and usefulness of e-learning and the Internet, because they already have enough experience in e-learning, gained during their public high school education. Thus, perceived usefulness did not affect their intention to use e-learning.
6.16 Discussing the Results of the Fifteenth Hypothesis

**H15: Perceived ease of use will positively affect the perceived usefulness of VLEs.**

There was found to be a positive relationship between the ease of use and perceived usefulness of VLEs in the current study. The findings also reveal that perceived ease of use is considered as the strongest factor influencing the perceived usefulness of Blackboard, so it is an antecedent of perceived usefulness. Since perceived usefulness is considered to be a moderating factor between perceived ease of use and students’ intentions to use e-learning, perceived ease of use will indirectly affect behavioural intention via perceived usefulness, because there is a positive effect between perceived ease of use and the perceived usefulness of VLEs. This implies that perceived ease of use contributes to an increase in students’ intention and continued use of e-learning, via perceived usefulness. In other words, if the VLE is easy to use, the students will find VLEs more helpful and this will stimulate their performance. Consequently, behavioural intention will be influenced and increased as an indirect effect of perceived ease of use.

A possible explanation for the positive result between ease of use and perceived usefulness is that the students found VLEs to have a simple user interface, which is easy to use and navigate. They therefore quickly became familiar with VLE options and it enabled them to access these environments from anywhere and at any time. In addition, it might be due to the tools for interaction being clear and easy to understand, so students become skilful in using VLEs. As a result, it is this very simplicity that motivates and attract students to use such tools and to find out what they contain, for example assignment tools, or discussion and learning materials. They can send their assignments more quickly and improve their learning performance. Ultimately, the students realised that VLEs contain many useful
options and were more likely to believe in the benefits of VLEs. This will lead them to use VLEs more in future as supportive tools to facilitate the enhancement of their learning.

It can interpreted from the finding that students’ beliefs regarding the usefulness of VLEs will depend on how far the students believe VLEs are easy to use and do not require a great amount of effort. Therefore, whenever a tool is easy to use, the students will be more aware of the advantages of VLEs and will search for more VLE options. They will then engage in and interact more with these environments. Thus, Lu, Yao and Yu (2005) consider perceived ease of use to be an essential factor in evaluating the system’s usefulness. Ultimately, ease of use works towards promoting and increasing students’ awareness of the benefits of using Blackboard. That mean ease of use enhances students’ beliefs concerning usefulness, and students will directly use VLEs to support their learning if they find them simple and easy to understand. Based on the significant result between perceived ease of use and perceived usefulness, this relationship should not be passed over when designing the course content, or developing an e-learning system and it should consider that ‘usefulness can be enhanced by providing enhanced e-learning services without increasing the complexity of the e-learning process’ (Lee, Yoon and Lee, 2009, p. 1325).

This result is consistent with numerous empirical studies that demonstrate original TAM Model results, such as for Davis (1989), who has more specifically examined the causal link between perceived ease of use and the perceived usefulness of e-learning. There are also significant results derived from others (Lu, Yao and Yu, 2005; Lee, 2006; Chen et al., 2007; Abbad, Morris and Nahlik, 2009; van Raaij and Schepers, 2008; Lee, Yoon and Lee, 2009; Alammary and Hamad, 2008; Šumak et al., 2011; Cheng, 2012 and Ng, Shroff and Lim, 2013). On the other hand, these results conflict with Ke, Sun and Yang (2012) and Escobar-Rodriguez and Monge-Lozano (2012). Escobar-Rodriguez and Monge-Lozano attributed
this result to the fact that students were familiar with social media and had experience of technology. The authors also found that the existence of other external factors could play a greater role in effecting perceived usefulness, rather than perceived ease of use, and these factors could weaken the significance of perceived ease of use on perceived usefulness, such as the enjoyment factor that they considered to be a stronger predictor of perceived usefulness than perceived ease of use. Therefore, perceived ease of use did not affect the perceived usefulness of VLEs and there was no link between the two beliefs.

6.17 Theoretical Framework Suggested for the Acceptance of the E-Learning Process at Kuwait University

In the light of the TAM Model and quantitative and qualitative findings generated by the current study, drawing upon the respective theoretical framework, the current study has arrived at the model illustrated in Figure 6.1, below. This was adopted to examine students’ acceptance and their intention to use e-learning at Kuwait University. The most important factors influencing the students' use of e-learning at Kuwait University were identified. The study model postulates that students’ beliefs regarding ease of use and usefulness are affected by six factors and students’ attitudes to e-learning are mainly determined by these two beliefs. The students' intention to use e-learning has a direct link to students’ attitudes. Initially, six external factors were added to the TAM Model and found to directly affect students' beliefs regarding ease of use and usefulness. In addition, other factors arose when analysing the qualitative data, which also appeared to affect students’ beliefs and their intention to use e-learning. These factors were considered and added to the proposed research model, such as English language, university support, course design, ease of accessibility to Blackboard and user-interface design, as shown in Figure 6.1, in the grey boxes.
It was concluded from these findings that, in order to raise the utilisation rate of e-learning amongst students at Kuwait University, e-learning tools should be characterised with the following features: various learning sources, a simple and well-organised design, updated information and learning resources, active communication, and the active role of tutors in using and encouraging students to use VLE tools and e-learning. Students should have confidence in their ability to use e-learning tools and be enthusiastic about including new technology in their leaning. Most importantly, the University should present varied and continuous support for students and not just rely solely on the tutor to support and enlighten them. Consequently, all these factors work alongside each other to increase students' belief in the ease of use and usefulness of VLEs and e-learning. This in turn will work towards creating favourable attitudes towards e-learning and, eventually, students will have a greater intention to use it. Consequently, the theoretical framework proposed for acceptance of the e-learning process at Kuwait University was modified, based on students’ responses and perceptions of the significance of these factors on their acceptance and intention to use e-learning, as shown in Figure 6.1. These factors should be taken into account by Kuwait University, and must be investigated constantly when adopting e-learning, so that students’ use for of e-learning is reinforced and new strategies for e-learning developed at Kuwait University.
Figure 6.1: Suggested framework for e-learning acceptance at Kuwait University
6.18 Summary

Overall, the outcomes of the study confirm the proposed study model and hypotheses. In addition, the findings strongly uphold the assumptions of the TAM Model, and are in agreement with the model that perceived ease of use and perceived usefulness are antecedents of attitude. Therefore, they are key determinants for students’ acceptance of e-learning. Meanwhile, behavioural intention is linked to students’ attitudes. In general, the majority of students showed a high degree of acceptance of VLEs and maintained positive attitudes towards them. These are students who will use e-learning in future, as they believe VLEs to be helpful tools which require little effort.

Furthermore, the current study has identified a number of external factors which were found to either directly or indirectly play a part in determining students’ attitudes, and their intention to accept e-learning in the future. Perceived ease of use appears to be directly affected by five external factors and the quantitative results exclude the effect of personal innovativeness on perceived ease of use; while the qualitative results indicate that perceived ease of use is determined by six factors, including personal innovativeness. Perceived usefulness, on the other hand, would seem to be determined by four external factors besides ease of use. Since perceived ease of use and perceived usefulness mediate the relationship and effect between external factors and students’ attitudes, all external factors were consequently found to have an indirect positive influence on students’ attitudes.
CHAPTER SEVEN

Conclusion and Recommendations

7.1 Introduction

This chapter provides a brief presentation on the study and a summary of the main outcomes, by combining the quantitative and qualitative results. It then outlines the study’s limitations, followed by a presentation of the most important recommendations and the possibilities for further studies which have been concluded in the light of the current study's results.

7.2 Conclusion

When e-learning is presented with innovative technology, it needs to be accepted by students. In fact there are several factors which may affect students' acceptance of an e-learning course. Determining those factors which will form user intentions will enable an institution to improve these factors, enhance users’ acceptance and increase IT use. This might pertain to the environments in which the academic courses are run, as well as to interaction with the tutor and other students, the academic materials offered on the course, the technology used, and the necessity for developing courses offered in these environments in line with pedagogical methods. It is therefore crucial to examine these important factors, in order to make e-learning more effective and to encourage its use in a broader sphere. Moreover, studying and trying to understand the most important factors that can influence students' acceptance or rejection of these environments during their learning may contribute to the success and the sustainability of the e-learning process. These factors must be taken into account when creating these environments because the desired results of e-learning
through VLEs cannot be attained unless they are preceded and accompanied by a learning environment that is adequate for the students’ needs and requirements.

Therefore, the current study attempts to investigate the influence of specific factors on students’ attitudes towards e-learning at Kuwait University, as well as their intention to use it. More specifically, the study sheds light on the following factors: personal innovativeness, self-efficacy, course content quality, course interactivity, and the ease of use and benefits of e-learning. In order to verify the study's aims, a number of hypotheses were theorised and then tested, relying on a mixed approach which combined both a quantitative approach, represented in the questionnaires, and a qualitative approach, where a questionnaire was developed according to TAM1 instruments and previous studies. Some modifications were made, where appropriate, in order to ensure validity for the study context. In terms of the qualitative method, interviews were conducted to gather in-depth and more detailed information. In addition, students' responses helped in putting together study recommendations for how a university could improve students' acceptance and intention to use Blackboard in future.

The questionnaires were administered to a sample consisting of 335 female students enrolled at the College of Education at Kuwait University, where 24 female students from the study sample were interviewed. The researcher developed the questionnaire based on a TAM Model, while also reviewing previous studies, in order to examine study hypotheses. Path and regression analysis have been used to examine study hypotheses and analyse the underlying relationships in a study model, which are represented as follows: Firstly, the relationship between six external variables (independent variables) and two belief constructs; secondly, the relationship between the construct beliefs and dependent variables (students’ attitudes), and lastly, the relationship between students’ attitudes and their
behavioural intention to use e-learning in the future. In another direction, to discover the relationship between perceived ease of use and perceived usefulness, the relationship between perceived usefulness and the intention to use e-learning in the future was also discerned.

Relying on the qualitative outcomes, personal innovativeness, technical support, instructor characteristics, self-efficacy, course interactivity and course content quality explained approximately 76.3% of variance in perceived usefulness, while these factors also explained approximately 61.3% of the variance in perceived ease of use. Among the external variables, course interactivity proved to be the greatest predictor of the perceived usefulness of VLEs, as well as having the most significant effect on perceived usefulness. Accordingly, course interactivity should be given significant attention when using VLEs, taking into consideration the most effective strategies and activities in the learning process, in order to guarantee the effective use of e-learning. This is achieved through the active involvement and use of communication tools, such as a discussion board, chat rooms, bulletin boards, or forums.

The result also shows that students’ characteristics, such as self-efficacy, are the greatest predictor of the perceived ease of use of VLEs, as well as being the factor which most affects perceived ease of use. Accordingly, it is important to raise self-efficacy for students, and the study suggests that this can be done by providing them with enough support, expertise and training. All these factors increase the confidence and ability of students when they use VLEs and facilitating their learning, which in turn, can lead to greater acceptance of e-learning during the course of their studies.
In the context of the core constructs for the study model, which are represented in perceived ease of use and perceived usefulness, these beliefs were found to directly affect students’ attitudes towards VLEs; they jointly predicted students’ attitudes towards the latter and played a key role in forming students’ attitudes. Perceived usefulness was found to explain approximately 80% of the variance in students’ attitudes, while perceived ease of use explained approximately 89% of the variance in students’ attitudes. Thus, these constructs appear to play a critical role in forming positive attitudes towards VLEs and constructing favourable attitudes toward e-learning amongst students. Perceived ease of use and perceived usefulness must therefore be improved. However, perceived usefulness was found to have a more profound effect than perceived ease of use and proved to be a better predictor of students’ attitudes than perceived ease of use. This means that students are more concerned with the usefulness of the tools they use in their learning than with their ease of use in future. This is due to the fact that the majority of students are familiar with new technology and they have sufficient skills to deal with e-learning tools.

Generally, the study concludes that students at Kuwait University will use e-learning tools in their studies for two main reasons: firstly, if they find these tools help them improve their performance, and secondly, if they find these tools support their learning with less effort. The behavioural intention to use e-learning was impacted both by its perceived usefulness amongst students and students’ attitudes towards it, whereas students’ attitudes towards VLEs were identified as a stronger predictor than perceived usefulness on the behavioural intention to use e-learning. Thus, the results of the study emphasise the importance of the students’ attitudes and one should examine them, rather than exclude or ignore them. In fact, there is a logical relationship between students’ attitudes and behavioural intention, where attitudes have a significant impact on encouraging students to use e-learning.
With respect to the relationship between perceived ease of use and perceived usefulness, it was found that perceived ease of use is a direct determinant that significantly affects perceived usefulness. It was also concluded that if VLEs are easy to use and understand, they will directly affect beliefs about the usefulness of VLEs and the usefulness of the available tools will be rapidly recognised, for the reason that ease of use provides motivation to efficiently search through the options presented, thus leading to improved performance. Regarding the factors which mediate relationships in the study model, the outcomes of the current study reveal that students’ attitudes are considered as intermediary factors between perceived ease of use, perceived usefulness and the behavioural intention to use e-learning. This means students' attitudes mediate the influence of perceived ease of use and perceived usefulness on students’ intentions to use e-learning and in turn, perceived ease of use and perceived usefulness are seen to indirectly affect students’ intentions to use e-learning in a positive way. On the other hand, perceived ease of use and perceived usefulness mediate the relationship between students’ attitudes and external factors.

The study concludes that all the external factors in the study model have a positive impact, whether indirectly, on students' attitudes towards these environments, or through the students' belief in the ease of use and usefulness of such environments. From another angle, perceived usefulness mediates the relationship between perceived ease of use and students' intentions to use e-learning, since perceived ease of use positively influences perceived usefulness. This means that perceived ease of use indirectly affects students’ intentions to use e-learning through perceived usefulness. Any increase in the ‘ease of use’ belief will therefore not only improve perceived usefulness, but will also increase students’ intentions to use e-learning in future. In sum, the current study has succeeded in applying a TAM Model (modified with respect to the addition of qualitative components) to an investigation of the factors which affect acceptance and students’ intentions to use an e-learning system at
Kuwait University. The study results were compatible with the assumptions of the TAM Model. It is worth noting that while the interviews were being conducted, some factors arose which should be considered when using e-learning environments, such as language, the difficulty of the assignments and the enjoyment factor.

The following are among the most important findings revealed by the study:

- Those students at Kuwait University who had never used VLEs before did not have sufficient awareness of the benefits of using them.
- Based on the qualitative analysis, it was found that such learning environments are not used effectively at Kuwait University and many of the tutors do not employ such tools in the learning process; even VLEs have not been widely adopted by many tutors. This implies that e-learning in Kuwait University needs to develop. The application of e-learning is still in its early phases, and e-learning level at Kuwait University has not reached its full potential.
- One of the key findings is that the availability of diverse and continuous support, besides the university enlightening students about these environments, can play a vital role in students’ intentions to use e-learning in their studies and the dissemination of the e-learning concept amongst students. It will also prompt students to use e-learning within their course of study. However, Kuwait University support proved to be insufficient.
- Students who have been taught how to use e-learning by tutors who have positive beliefs about it and who are enthusiastic about using technology will have this communicated to them. This will influence students’ decisions to use e-learning and prompt them to use VLEs continuously in their learning. They will be motivated to
use such tools and will continue to use them in future. Moreover, they will want all tutors to use VLEs.

- Students at Kuwait University appear to have favourable attitudes towards e-learning, and are more likely to accept it as part of their education. They also demonstrated a high level of intention to continue using e-learning and VLEs in future.

- The students expressed strong beliefs regarding the ease of use and usefulness of VLEs. Such beliefs were found to play a critical role in shaping positive attitudes toward VLEs. In other words, the students who expressed strong beliefs about ease of use and usefulness also showed a tendency towards a more favourable attitude to e-learning. These were therefore considered to be the main determinants of the acceptance e-learning.

- To a considerable extent, behavioural intention appears to be determined by students’ attitudes toward VLEs. This suggests that positive trends towards e-learning will lead to greater intent to use it in future.

- The study concluded the following sequential result, that the higher the perceived ease of use and perceived usefulness, the more positive the attitude and consequently, the greater the intention to use e-learning.

- Interestingly, students at Kuwait University prefer blended learning, which combines traditional learning with e-learning. Learning is carried out mainly through lectures delivered at specific times, according to the traditional method. As well as these lectures, the student practises self-learning by completing course activities and assignments and participating in course discussions available in the Blackboard environment.

- This present study has provided support for the relationships between model constructs in TAM and has authenticated expectations of a TAM Model within the
context of e-learning and the use of VLEs in a different culture, especially for students at Kuwait University and in Arabic culture. It is considered to be a reliable theoretical model for helping to gain an understanding of students’ behaviour in relation to e-learning, in a coherent and sequential manner. As a result, the TAM Model could be extended to try and explain the students’ acceptance and to predict their intentions to use e-learning or other tools in a different culture.

- Six factors need to be considered when applying VLEs, explicitly: personal innovativeness, self-efficacy, course content quality, course interactivity, ease of use, and its benefits, in order to enhance and understand students’ acceptance of the use of e-learning.
- Perceived usefulness has been shown to have a positive effect on the intention to use VLEs and this works in two directions, with a direct effect on behavioural intention and an indirect effect through attitudes.

Generally, fourteen hypotheses were verified and supported by quantitative data, with only the second hypothesis being rejected, due to the absence of a positive direct effect of personal innovativeness in the use of information technology on the perceived ease of use of VLEs. However, the qualitative data supported all the study hypotheses and all the relationships in these hypotheses were confirmed. Thus, based on the quantitative and qualitative data, all the study hypotheses were accepted.

7.3 Contributions of the Current Study

Some of the contributions drawn from the study results could be helpful for the e-learning context in terms of theory and practice. As regards the TAM Model, the findings of this study provide two forms of evidence of its validity. In other words, the data for the current study were gathered using two different methods - not just questionnaires, but also
interviews - in order to collect deep information and provide a holistic understanding of the proposed model. On the contrary, the majority of previous studies used only questionnaires when applying the TAM Model, which is the main criticism levelled against it. The mixed method approach provides more opportunities to ensure the validity of the TAM Model and also contributes to a better understanding of the effect of particular factors regarding perceived ease of use and perceived usefulness on different cultures and in relation to various e-learning tools.

Another possible contribution that the present study makes is the further evidence that attitudes moderate the relationship between beliefs and the behavioural intention to use e-learning. Consequently, attitudes should not be omitted when studying students’ acceptance, as several studies have done e.g. Lee (2006), van Raaij and Schepers (2008), Abbad, Morris and Nahlik, 2009) and Escobar-Rodriguez and Monge-Lozano (2012). The current study also extends to further external variables, such as the English language, ease of accessibility and the difficulty of assignments. These should be studied in further models in order to shed more light on them, since they might improve students’ intention to use e-learning.

Moreover, the findings could possibly assist policy-makers in developing strategies for e-learning which work on increasing students’ acceptance. The proposed model represents a valid instrument which can be used to investigate various factors that might act as a foundation model for further analysis at Kuwait University. This would help policy-makers relate better to e-learning there and further understand students’ acceptance and intentions of using it. It also provides assumptions and information that could assist policy-makers in the correct implementation of e-learning, in order to create effective e-learning tools and
programmes, with the aim of raising the utilisation rate of e-learning amongst students, increasing the chances of success in integrating technology into the learning process.

The outcomes of the current study offer a meaningful insight into students' intentions to use e-learning at Kuwait University, based on a powerful model, as well as on a theoretical framework. In addition, the study findings also illustrate the extent of Kuwait University students' acceptance of learning through non-traditional means and the extent of their readiness to learn via e-learning, based on this acceptance. The kind of projects planned may be determined for the improvement of students’ acceptance and intentions to use e-learning in the future. It is possible to benefit from the results of this study in developing and re-designing course content in VLEs, in accordance with the most reliable and effective learning theories.

Finally, the current study might help fill the general gap in the literature in the Arabic region, particularly in the State of Kuwait, as regards analysing the factors that influence students’ attitudes and intentions to use e-learning, based on a TAM Model, where a deficiency was found in research related to factors influencing students’ acceptance of e-learning in Kuwait University to date. As a matter of interest, learners’ acceptance and the factors that affect their use of these virtual environments can vary widely from country to country and from culture to culture (Alhawari and Alhalabi, 2011, p. 2). Even the very nature of the relationship between factors may differ across cultures (Straub, Keil and Brenner, 1997). Therefore, information on students’ behaviour in terms of e-learning adoption in various countries is urgently needed (Lee, Yoon and Lee, 2009). In turn, this opens up the way for further studies in the area to build more models for the
examination of other e-learning factors and tools to better understand student participation in the e-learning environment.

7.4 The Study Limitations

The generalisation of the current study's results is confined by the following limitations and these should also be considered when interpreting the respective findings:

The current study was limited to a particular type of VLE, represented by Blackboard, which is the type of VLE officially adopted at Kuwait University to convey its e-learning. The current study did not include any other VLEs used erratically by certain faculty members, such as Moodle. In addition, the current study was applied only to female students and the study sample did not contain any male students. The sample was drawn from only one college, namely the Faculty of Education at Kuwait University and did not cover any others. Therefore, the sample was biased towards a specific data source, because the data were restricted to just one college at Kuwait University. As a result, this may not represent the opinions of other students in other colleges at Kuwait University. Neither does it necessarily represent the opinions of male students, since all the students were female. Consequently, the results will probably not be generalised to the entire population of Kuwait University.

In addition to the above, the study was limited in terms of the sample used, where the participants were intentionally selected using purposive sampling, which is regarded as a non-random method of sampling and in turn, limits the process of generalising the results. This type of sample is considered to be a biased sample, because it is selected based on the researcher's judgment, for example, that the students had sufficient information to respond to the questionnaire. In such cases, however, the researcher’s judgment may be incorrect.
The current study was also limited in the number of courses where the VLEs were used, in that the number of courses actually integrating such environments was small compared to the total number of courses offered and taught at the College of Education. Some tutors did not even allow the distribution of questionnaires to their students and this represented one of the most important obstacles facing the researcher while trying to use the questionnaire tool. This was the case, in spite of the fact that the tutors concerned were making effective use of VLEs and the number of students on these courses was significant. In addition, the researcher found that some courses were registered at the e-learning centre and were supposed to be using Blackboard. However, when the researcher met the tutors in question, it was discovered that they did not in fact use Blackboard.

There may even be other external factors and salient beliefs which could affect the perceived ease of use and perceived usefulness of e-learning, and students’ intentions and acceptance with regard to e-learning. These should be considered and examined. There are discrepancies amongst the studies that have looked at the same factors as the current research in terms of identifying and defining these factors and what they mean for these studies, such as the characteristics of the tutors, interaction, and the quality of content. These discrepancies have therefore led to different results in some research.

Another considerable limitation of the current study relates to the questionnaires, where this research depends heavily on this tool to gather data. The questionnaire is considered as one of the most widely used tools in quantitative research. It is used to try and understand the thoughts of individuals, as well as their opinions, desires, tendencies, and personal aspects. Nevertheless, despite these features, researchers cannot always gain a deep enough understanding of the beliefs, tendencies, and personal experiences of the respondents through a questionnaire. For instance, there is the chance that the students might feel
pressed into choosing answers that do not give an accurate reflection of their ideas. Sometimes, they may choose to agree with the opinion of the researcher and so a questionnaire may not always provide the opportunity for respondents to give an answer which accurately expresses their genuine desires or one which aligns with their ideas. It may also be considered as a bias to force respondents to choose between alternatives and respondents may feel dissatisfied with their own responses. These issues are all regarded as threats to the validity and reliability of the questionnaire.

7.5 Recommendations of the Current Study

After reviewing and discussing the results of the current study in the researcher’s attempt to interpret them, some recommendations have resulted from the current study that may help stakeholders at Kuwait University apply and develop e-learning, especially through the use of VLEs:

1. The perceptions amongst Kuwait University students of the concept of e-learning and self-learning must be enhanced through the university or workshop’s official electronic site, by supporting it with recent concepts and terms related to e-learning.

2. The use of VLEs has a significant role to play in the e-learning process. It is therefore necessary for the student to master the use of this technology and for the tutor to use this technology to an optimum degree in all aspects of the learning process.

3. Freshman year students need to be educated about e-learning and VLEs and be enlightened about its objectives, importance, potential, the required skills, and how to take advantage of it during their studies. Training opportunities should be provided on how to search for the available information within the Internet and its various resources, by conducting organised sessions or making guides available to attract students render them more effective in using VLEs and e-learning. Students will then possess the experience and
skills needed to deal with e-learning at an early stage of their studies. This should then lead to rapid adaptation and the acceptance of e-learning as part of their university life.

4. The e-learning infrastructure at Kuwait University must be continuously developed, in coordination with rapid developments in this field and the needs of both tutors and students. This is attained through specialist technical personnel. The relevant modern techniques and tools must be expanded and the Blackboard programme updated, as well as access to Blackboard becoming quicker and easier, thus making it available for application at Kuwait University, with various options and information.

5. More support from specialists at the university, on an ongoing basis, must be provided for students at Kuwait University to ensure the success of the e-learning process and also to enhance students’ intentions to use e-learning in the future and to facilitate their learning. This may be fulfilled by activating and developing the Support Department within each college. Diversity of support is required, with the availability of an active help desk. This will facilitate the learning process in these environments, which will in turn influence the acceptance of such environments and e-learning in general.

6. Professionals in the field of instructional design need to be engaged in assisting faculty members with the process of designing electronic courses, as well as with developing learning materials, in accordance with theories of learning and teaching. These materials must be adequately utilised during the design process. Design should not merely imply the presentation of material on pages distributed via the Internet.

7. Courses should be developed for presentation on Blackboard, which would include methods of effective learning that place an emphasis on self-learning. Among these methods is the integration of a variety of activities that fit various learning styles. There is a necessity to activate communication tools within VLEs during the learning process, avoiding shallow use of such tools, based on the idea that the quality and effectiveness of
content are among those factors which most affect students' attitudes and intentions to use these environments in future.

8. Students' attitudes to e-learning at Kuwait University should be identified and positive attitudes must be developed amongst them in this respect, due to the role of these attitudes in students' intentions and the continued use of e-learning in the future.

9. Adequate time must be dedicated to training students in how to use VLEs before the beginning of any learning process that relies on them, so that students can progressively adapt to learning, using such tools.

9. Workshops and training courses should be provided to develop e-learning skills among faculty members at Kuwait University.

11. Clear policies and strategies must be defined by the administration at Kuwait University, so that e-learning can undergo regular development and implementation in processes of assessment and teaching, particularly in e-learning environments as a source of reliable self-learning for students. This should then prompt and encourage students to use e-learning.

12. Standards must be set for the preparation of courses provided through Blackboard, with the evaluation of such electronic courses, so as to enhance their productivity.

13. Encouragement must be given to faculty members at Kuwait University to use the e-learning tools which are available there, including the VLEs represented by Blackboard, along with providing them with additional incentives, since the process of designing and updating electronic courses, besides monitoring students through these VLEs, requires additional time.
7.6 Further Studies

Based on the results revealed in the current study, further research may be useful in the field of education:

1. The current study may be applied to a larger sample of students, to include all students at Kuwait University, with all of their specifications. The results could then be more widely generalised.

2. Studies may be conducted that address the most important learning impediments encountered by students in different colleges at Kuwait University when using various VLEs and with regard to what hinders their usage of these environments.

3. Studies should be conducted that investigate reasons for many tutors at Kuwait University avoiding the use of Blackboard, despite the fact that tools are made available through it to help raise the level of education, as well as saving them time and effort.

4. More broadly, further studies should be conducted to address the effect of other factors which are not included in the current study, as regards the acceptance of e-learning. Moreover, other models may be proposed in an investigation of factors affecting students' use of e-learning environments.

5. Surveys could be carried out on the attitudes of faculty members to e-learning and e-learning environments, in addition to the investigation of students' attitudes to e-learning at the university, as it is represented in VLEs and to the extent of the benefits gained from these learning environments. These environments could then be assessed.

6. Attention could be focused on various stakeholders in the learning process at Kuwait University as regards the most important factors affecting students' usage of VLEs, while working to strengthen these factors to the advantage of the students.
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عزيزي الطلبة

أنا طالبة دكتوراة من جامعة كاردف متروبلتان في المملكة المتحدة، أقوم بإجراء دراسة حول العوامل المؤثرة على اتجاهات الطلبة في استخدام بيئات التعلم الافتراضية (البلاك بورد) في التعليم لطلبة جامعة الكويت. للحصول على بيانات هذه الدراسة يرجى منك قراءة فقرات الاستبانة بدقة ومن ثم اختيار الإجابة التي تناسبك أكثر من غيرها، حيث لا توجد إجابة صحيحة أو خاطئة، وإجابتك تعتبر صحيحة طالما أنها تُعبر عن رأيك الحقيقي.

نبذة عن التعليم الإلكتروني

يعتبر طريقة لتوصل مواد التعليم من خلال استخدام أدوات التكنولوجيا كالحاسوب الآلي وبرمجياتها، الوسائط المتعددة المتنوعة، بيئات التعلم الافتراضية، والإنترنت وغيرها من وسائل تكنولوجيا المعلومات والاتصالات الحديثة (السبراندات، غرفة المحادثة، البريد الإلكتروني-Email) لتوفير مواد التعليم في أي مكان وعمر.

تعريف بيئات التعلم الافتراضية

هي مجموعة من الحزم البرمجية (Software) المزودة على خادم (server) مصممة لدعم وإدارة عمليات التعليم الإلكتروني والتعلم عن بعد، ومساعدة المعلمين على استخدام الإنترنت في عملية التعلم وال التواصل مع الطلبة، ونشر المواد التعليمية بطريقة سهلة دون المعرفة العميقة بأساليب البرمجة، أو إنشاء صفحات خاصة لهم على الإنترنت. ويعتبر البلاك بورد (Blackboard)، الويب سيتي (WebCT) والموديل (Moodle) أفضل أمثلة على بيئات التعلم الافتراضية.

إن مشاركتك في الاستبانة تعتبر شيئاً اختيارياً ولنم حرية الاختيار. ولكن يتم حرية الديسابة في أي وقت دون إبداء أي أسباب. كما إن إجابتك وبياناتك سوف تكون سرية ولا يذكر فيها اسمك، كما أن الوصول لهذه البيانات يكون محدوداً على الباحثة والمشاريع الأكاديميين، بسبب أن إجابتك لن تعتبر جزءاً من تقييم المقررات الخاصة بك بل أنها تستخدم لأغراض البحث.

مع جزيل شكري لكم.
الجزء الأول
( معلومات شخصية)
يرجى منك قراءة الأسئلة التالية واختيار الإجابة التي تناسبك بوضع علامة (✓) أمامها:

1. العمر
   ○ 19-17
   ○ 22-20
   ○ 24-23
   ○ 26-25

2. يرجى تحديد السنة الدراسية:
   ○ أولى (من 0 إلي 29 وحدة)
   ○ الثانية (من 30 إلي 59 وحدة)
   ○ الثالثة (من 60 إلي 89 وحدة)
   ○ الرابعة (من 90 إلي 131 وحدة)
   ○ الخامسة (أكثر من 132 وحدة)

3. التخصص الجامعي:
   ○ علمي
   ○ أدبي

4. كيف تصنف خبرتك في استخدام الإنترنت:
   ○ ضعيفة
   ○ مقبولة
   ○ متوسطة
   ○ ممتازة

5. كيف تصنف خبرتك في استخدام بيئة التعلم الافتراضية (البلاك بورد):
   ○ ليس لدي خبرة
   ○ ضعيفة
   ○ مقبولة
   ○ متوسطة
   ○ ممتازة

6. كم عدد المقررات الدراسية الحالية التي تستخدم فيها بيئة التعلم الافتراضية (البلاك بورد) في التعلم:
   ○ 0
7. إلى أي مدى تستخدم بيئة التعلم الافتراضية (البلاك بورد):

   - لا تستخدمه أبداً
   - نادراً ما تستخدمه
   - مرة في الأسبوع
   - يومياً

8. اسم المقرر الحالي..........................
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أوافق
لا أوافق

الجملة

أطلع دائما إلى تجربة الجديد في تكنولوجيا المعلومات والاتصالات الحديثة.

أستمتع بالدراسة عندما استخدم تكنولوجيا المعلومات والاتصالات الحديثة.

أستخدم دائما أجهزة تكنولوجيا المعلومات والاتصالات الحديثة في أداء واجبتي الدراسية.

أحب استخدام تكنولوجيا الهواتف الذكية مثل (الآيفون) وما يشبهها في التعلم.

أستخدم الإنترنت دائما للبحث عن المعلومات المتعلقة بواجباتي.

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لا أتوقع
لا أتوقع
لا أتوقع
لا أتوقع

أستخدم مواقع التواصل الاجتماعي مثل (فيسبوك, تويتر, والمدونات... الخ)

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لا أتوقع
لا أتوقع
لا أتوقع
لا أتوقع

أستخدم مواقع التواصل الاجتماعي مثل (فيسبوك, تويتر, المنتديات والمدونات... الخ) في التعلم.

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أنا قادر على استخدام أدوات البلاك بورد بشكل جيد وبدون مساعدة.

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أشعر بالثقة عند استخدام أدوات البلاك بورد في التعلم.

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أنا قادر على إنجاز واجباتي بسهولة عند استخدام أدوات البلاك بورد.

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أنا قادر على استخدام أدوات الاتصال مثل (غرفة المحادثة, لوحة المناقشات...) المتوفرة في البلاك بورد في التعلم.

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أنا قادر على تحميل وتوزيع الملفات من وإلى البلاك بورد.

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أشعر بتقى كبيرة جداً عند استخدام المواد التعليمية المتوفرة في البلاك بورد.

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أستاذ المقرر لديه خبرة في استخدام أدوات تكنولوجيا المعلومات والاتصالات الحديثة.
<table>
<thead>
<tr>
<th>الجملة</th>
<th>لا أوافق بشدة</th>
<th>لا أوافق</th>
<th>أوافق غير متأكد</th>
<th>أوافق بشدة</th>
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</thead>
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<tr>
<td>15 من السهل التواصل مع أستاذ المقرر من خلال برامج التواصل الاجتماعي مثل البريد الإلكتروني (Email) تويتير .... الخ</td>
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<td>16 يزودني أستاذ المقرر بتعليمات واضحة حول استخدام البلاك بورد</td>
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<td>17 أستاذ المقرر متحمس لاستخدام البلاك بورد في التعلم</td>
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<td>18 أستاذ المقرر يستخدم أدوات البلاك بورد بشكل فعال في عملية التعلم</td>
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<td>19 أستاذ المقرر يشجعني على استخدام البلاك بورد</td>
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<td>21 استخدام البلاك بورد يسهل عملية الاتصال الفعّال بين أعضاء هيئة التدريس والطلبة</td>
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<td>22 استخدام البلاك بورد يمكنني من التواصل الفعّال مع زملائي</td>
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<td>23 استخدام البلاك بورد يسمح لي بالعمل الجماعي مع زملائي بشكل جيد</td>
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<tr>
<td>24 أدوات الاتصال المتوفّرة في البلاك بورد مثل البريد الإلكتروني، حجرات الدردشة، لوحة المناقشات ... تعتبر فعالة</td>
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<tr>
<td>25 يحتوي البلاك بورد على أنشطة تعليمية تفاعلية جيدة</td>
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<tr>
<td>26 محتوى المقرر في البلاك بورد يتطلب احتياجاتي للحصول على تعلم فعال</td>
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<td>27 محتوى المقرر في البلاك بورد يتوافق بشكل جيد مع أهداف المقرر</td>
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<tr>
<td>28 مواد التعلم في البلاك بورد متوفّرة بأشكال متنوعة مثل (باوربوينت، ملفات ورد، مواقع إنترنت، محاضرات ...)</td>
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<tr>
<td>29 محتوى المقرر في البلاك بورد مدعوم بشكل جيد بالوسائط المتعددة مثل صور متحركة، رسومات، صوت ...)</td>
<td></td>
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<tr>
<td>الجملة</td>
<td>لا موافق بشدة</td>
<td>لا موافق</td>
<td>موافق غير متأكد</td>
<td>موافق بشدة</td>
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<tr>
<td>يتتوفر في البلاك بورد معلومات حديثة عن المقرر الدراسي.</td>
<td>30</td>
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<tr>
<td>توفر الجامعة مختصين لمعالجة المشاكل الفنية في البلاك بورد.</td>
<td>31</td>
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<tr>
<td>استطيع الاستفسار عن البلاك بورد عن طريق البريد الإلكتروني الخاص بالدعم الفني.</td>
<td>32</td>
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<tr>
<td>استطيع الاستفسار عن أي مشكلة فنية في البلاك بورد عن طريق خدمة الاتصال المباشر بالدعم الفني.</td>
<td>33</td>
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<tr>
<td>توفر الجامعة دورات تدريبية حول كيفية استخدام البلاك بورد.</td>
<td>34</td>
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<tr>
<td>استطيع الاستفسار عن كل مشكلة فنية في البلاك بورد عن طريق خدمة الدعم الفني.</td>
<td>35</td>
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<td>توفر الجامعة دورات تدريبية حول كيفية استخدام البلاك بورد.</td>
<td>36</td>
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<td>توفر الجامعة دورات تدريبية حول كيفية استخدام البلاك بورد.</td>
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<td>توفر الجامعة دورات تدريبية حول كيفية استخدام البلاك بورد.</td>
<td>38</td>
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<tr>
<td>توفر الجامعة دورات تدريبية حول كيفية استخدام البلاك بورد.</td>
<td>39</td>
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<td>توفر الجامعة دورات تدريبية حول كيفية استخدام البلاك بورد.</td>
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<td>توفر الجامعة دورات تدريبية حول كيفية استخدام البلاك بورد.</td>
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<td>توفر الجامعة دورات تدريبية حول كيفية استخدام البلاك بورد.</td>
<td>43</td>
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<td>توفر الجامعة دورات تدريبية حول كيفية استخدام البلاك بورد.</td>
<td>44</td>
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<td>توفر الجامعة دورات تدريبية حول كيفية استخدام البلاك بورد.</td>
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<td>توفر الجامعة دورات تدريبية حول كيفية استخدام البلاك بورد.</td>
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<tr>
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<td>48</td>
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<tr>
<td>لا أوافق بشدة</td>
<td>لا أوافق</td>
<td>غير متأكد</td>
<td>أوافق</td>
<td>أوافق بشدة</td>
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<tr>
<td>استخدام البلاك بورد يجعل التعلم أكثر متعة.</td>
<td>49</td>
<td></td>
<td></td>
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<tr>
<td>البلاك بورد يدعم تعلمي الذاتي.</td>
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<td></td>
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<tr>
<td>استخدام البلاك بورد يوفر لي الوقت والجهد عند القيام بالبحث عن المعلومات.</td>
<td>51</td>
<td></td>
<td></td>
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<tr>
<td>يعتبر البلاك بورد من الأدوات الأساسية للتعلم الإلكتروني.</td>
<td>52</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>البلاك بورد يُساعد التعليم التقليدي في الجامعة</td>
<td>53</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>أناني التسجيل مستقبلا في مقررات أخرى تدرس من خلال البلاك بورد</td>
<td>54</td>
<td></td>
<td></td>
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<tr>
<td>أناني زيادة استخدامي لأدوات البلاك بورد من أجل تحسين مهارات التعلم لدي</td>
<td>55</td>
<td></td>
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<tr>
<td>أناني استخدام أدوات التعليم الإلكتروني لتساعني في دراسي مستقبليه</td>
<td>56</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>أناني استخدام أدوات التعليم الإلكتروني للحصول على المحاضرات والمناقشات الإلكترونية.</td>
<td>57</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>سوف استخدام أدوات التعلم الإلكترونية المختلفة مثل (المدونات, البريد الإلكتروني, الإنترنت والتويتر... الخ) وغيرها من أجل تبادل المعرفة والمناقشة.</td>
<td>58</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* إذا كانت ترغب في إضافة عوامل أخرى تؤثر في استخدامك للبلاك بورد، برجى كتابتها.*

* إذا رغبت في المشاركة في المقابلة الشخصية بشأن أهم العوامل التي تؤثر في استخدامك لبيئة التعلم الافتراضية (البلاك بورد) برجى كتابة رقم الهاتف وعنوان بريدك الإلكتروني للاتصال بكم:
• رقم الهاتف...
• البريد الإلكتروني...
Appendix 2: Study Questionnaire in English

An Investigation of the Factors Affecting Learning in Virtual Learning Environments (VLEs): A Case Study at Kuwait University

Dear students,

I am a PhD research student at Cardiff Metropolitan University in the United Kingdom and I am conducting a questionnaire to investigate the Factors Affecting Learning in Virtual Learning Environments at Kuwait University.

E-learning is a method of delivering learning resources using any type of technology, such as the Internet, audio material, video tapes, interactive TV, and CD-ROMs. Also included are Web-based learning, computer-based learning, VLEs (virtual learning environments), satellite TV, video conferencing, I-pods, emails, blogs and mobile phones.

Virtual Learning Environments (VLEs) are web based course management systems, initially created to utilise the advantages offered by the Internet. They provide a resource for exchanging, transforming and managing information, as well as various academic and administrative services. Blackboard, WebCT and Moodle are examples of VLEs.

Your answers and data will be confidential as data access is limited to the researcher and academic supervisors. The answers will not be counted as part of your course assessment or used for other scientific purposes.

Your participation in the questionnaire is optional. Please note that the questionnaire is confidential and anonymous. All responses will be securely stored. By completing the questionnaire you are agreeing for the data to be used for research and other dissemination purposes, but it will not be possible to identify individuals. Unfortunately, due to the nature of the electronic questionnaire, once you submit your responses you are unable to withdraw them. Many thanks once again. The answers will not be counted as part of your course assessment but will be used for other scientific purposes.

I thank you in advance for your cooperation.

Best regards,
## Part One

### Personal Information

Read the following questions and tick the answer that best relates to you:

<table>
<thead>
<tr>
<th>1. Indicate your age</th>
<th>5. How would you classify your VLE experience?</th>
</tr>
</thead>
<tbody>
<tr>
<td>17-19</td>
<td>None</td>
</tr>
<tr>
<td>20-22</td>
<td>Little</td>
</tr>
<tr>
<td>23-24</td>
<td>Quite good</td>
</tr>
<tr>
<td>25-26</td>
<td>Good</td>
</tr>
<tr>
<td></td>
<td>Excellent</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Indicate year of study</th>
<th>6. How many modules are you taking this term which use VLEs in learning?</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>0</td>
</tr>
<tr>
<td>Second</td>
<td>1-3</td>
</tr>
<tr>
<td>Third</td>
<td>4-5</td>
</tr>
<tr>
<td>Fourth</td>
<td>Other</td>
</tr>
<tr>
<td>Fifth</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Study discipline</th>
<th>8. How often do you use VLEs in learning?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science</td>
<td>Never</td>
</tr>
<tr>
<td>Humanity</td>
<td>Rarely</td>
</tr>
<tr>
<td></td>
<td>Once a week</td>
</tr>
<tr>
<td></td>
<td>Daily</td>
</tr>
<tr>
<td></td>
<td>Many times a day</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. How would you classify your Internet experience?</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Weak</td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td></td>
</tr>
<tr>
<td>Excellent</td>
<td></td>
</tr>
</tbody>
</table>
Part Two

Please indicate the extent to which you agree or disagree with these statements:

Please choose only one option for each statement below.

Options will be: Strongly Agree, Agree, neither agree nor disagree, Disagree, Strongly Disagree.

<table>
<thead>
<tr>
<th>NO</th>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>uncertain</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I always look forward to experimenting with new technology and ICT</td>
<td></td>
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<tr>
<td>2</td>
<td>I enjoy studying when I use new information technologies</td>
<td></td>
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<tr>
<td>3</td>
<td>I always utilise modern ICT tools to do my assignments</td>
<td></td>
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<tr>
<td>4</td>
<td>I like using Smartphones such as iPhones and similar in the learning process</td>
<td></td>
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<tr>
<td>5</td>
<td>I always use the Internet to search for information that relates to my homework</td>
<td></td>
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<tr>
<td>6</td>
<td>I use communication media such as Facebook, Twitter and blogs to keep in touch</td>
<td></td>
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<tr>
<td>7</td>
<td>I use communication media such as Facebook, Twitter and blogs in my learning</td>
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<tr>
<td>8</td>
<td>I am able to use VLEs well without assistance</td>
<td></td>
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<tr>
<td>9</td>
<td>I feel confident when I use Blackboard tools in learning</td>
<td></td>
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<tr>
<td>10</td>
<td>I am able to accomplish my tasks easily when I use Blackboard tools</td>
<td></td>
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<tr>
<td>11</td>
<td>I am able to use communication tools in Blackboard, e.g. discussion tools, chat rooms</td>
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<tr>
<td>12</td>
<td>I am able to upload and download files to and from the Blackboard.</td>
<td></td>
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<tr>
<td>13</td>
<td>I feel very confident when using learning material available on the Blackboard</td>
<td></td>
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<tr>
<td>14</td>
<td>The instructor has experience in using modern ICT Tools</td>
<td></td>
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<tr>
<td>15</td>
<td>Instructors are easily contacted via communication tools e.g. email, Twitter, etc.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>NO</td>
<td>Statements</td>
<td>Strongly Agree</td>
<td>Strongly Disagree</td>
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<tr>
<td>16</td>
<td>Instructors provide me with clear instructions for using VLEs</td>
<td></td>
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</tr>
<tr>
<td>17</td>
<td>Instructors are enthusiastic about using VLE tools in the learning process</td>
<td></td>
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<tr>
<td>18</td>
<td>Instructors use Blackboard tools in effective ways in learning processes</td>
<td></td>
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</tr>
<tr>
<td>19</td>
<td>There are instructors who encourage me to use VLEs</td>
<td></td>
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<tr>
<td>20</td>
<td>Instructors provide fast feedback on my queries</td>
<td></td>
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<tr>
<td>21</td>
<td>VLEs facilitate effective interactive communication between instructors and students</td>
<td></td>
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<tr>
<td>22</td>
<td>Using VLE tools allows me to communicate effectively with colleagues</td>
<td></td>
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<tr>
<td>23</td>
<td>Using VLE tools allows me to work together well on group tasks</td>
<td></td>
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<tr>
<td>24</td>
<td>The communication tools in the VLEs (email, chat rooms, discussion board, etc.) are very effective for study purposes</td>
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<tr>
<td>25</td>
<td>Learning material in the VLEs contains interactive learning activities</td>
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<tr>
<td>26</td>
<td>The course content meets my requirements for effective learning</td>
<td></td>
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<tr>
<td>27</td>
<td>Learning materials in VLEs correspond well to the course objectives</td>
<td></td>
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<tr>
<td>28</td>
<td>Learning material in VLEs is available in various formats (PowerPoint, Word documents, websites, an e-library, etc.)</td>
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<td>29</td>
<td>Course content is well supported by multimedia (audio recordings, videos, pictures, animated photos, etc.)</td>
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<td>30</td>
<td>Blackboard provides me with updated information for the course</td>
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<tr>
<td>31</td>
<td>The University offers specialists to address technical problems in Blackboard</td>
<td></td>
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</tr>
<tr>
<td>32</td>
<td>When there is a technical problem with Blackboard I can always make email enquiries to a dedicated email address</td>
<td></td>
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<tr>
<td>33</td>
<td>A hotline is always available when there is a technical problem with the VLE</td>
<td></td>
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</tr>
<tr>
<td>34</td>
<td>The institution always offers training courses on how to use VLEs</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>NO</td>
<td>Statement</td>
<td>Strongly Agree</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
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</tr>
<tr>
<td>35</td>
<td>Internet speed on campus is very good for using VLEs</td>
<td></td>
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</tr>
<tr>
<td>36</td>
<td>Overall I found that VLE technical support is very good</td>
<td></td>
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<tr>
<td>37</td>
<td>It is very easy for me to become skilful in using VLEs</td>
<td></td>
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<tr>
<td>38</td>
<td>Interaction with VLE tools is clear and coherent</td>
<td></td>
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<tr>
<td>39</td>
<td>It is very easy for me to access learning materials</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>40</td>
<td>Overall, I find VLEs easy to use</td>
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<tr>
<td>41</td>
<td>Using VLEs improves the quality of the work I do</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>42</td>
<td>Using VLEs improves my learning performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>43</td>
<td>VLEs enable me to accomplish tasks more quickly</td>
<td></td>
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<tr>
<td>44</td>
<td>Using VLEs makes it easier to do my assignments</td>
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<td>45</td>
<td>Overall, I find Blackboard systems useful in my learning</td>
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<tr>
<td>46</td>
<td>Blackboard enables me to access learning resources anywhere, and at any time</td>
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<tr>
<td>47</td>
<td>Blackboard provides various activities and learning materials</td>
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<td>48</td>
<td>Using VLEs makes the learning process more effective for me</td>
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<td>49</td>
<td>Using VLEs makes my learning more interesting</td>
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<td>50</td>
<td>VLEs support my self-learning and independent study</td>
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<tr>
<td>51</td>
<td>VLEs save me time and effort when researching information</td>
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If you would like to add other factors that affect your use of VLEs, please write them in the box below.

If you would like to participate in the interview please give me the following information:

Name.................. Phone number......................

Email......................
Appendix 3: Interview Guide

Speciality:……………

Experience in using Blackboard……………

How often do you use VLEs in your learning?……….

Number of Courses Using Blackboard:……………

Academic Level:……………

1. What kind of information technology tools do you use in your learning? How did you find using Blackboard after using other information technology tools?
2. Do you search for information technology tools that will help you in your studies? If so, why?
3. Are you confident in your skills in using Blackboard? How has this affected your use of Blackboard in your learning?
4. Do you hesitate and need more time when using Blackboard tools in your learning?
5. How has the University helped you in your use of Blackboard and in overcoming any difficulties?
6. When facing difficulties using Blackboard, how has the course tutor helped you?
7. How has the course tutor helped you use Blackboard in your learning and to benefit from it?
8. What communication tools are available on Blackboard? What is the purpose of using them?
9. How have you found using communication tools on Blackboard to communicate with your peers and teachers, especially regarding their ease of use and benefits for your learning?
10. What kinds of learning resources are available on Blackboard? What do you think of them?
11. In using learning resources on Blackboard, did you find they improved your learning and made it easier?
12. From your perspective, what are the main advantages of using Blackboard?
13. Do you find Blackboard is an essential tool in your academic learning at university? If so, why?
14. Do you have any desire to use Blackboard when studying for other courses? If so, why?
15. Are you planning to register on courses that use e-learning? If so, why?

Appendix 4: Permission letter from Cardiff Metropolitan University

Date: 5 July 2012
Tel: 029 20415462
Email: channigan-davies@cardiffmet.ac.uk

TO WHOM IT MAY CONCERN

Dear Sir/Madam

I am writing to ask if one of my PhD students, Badria Alkandari, can conduct a study in Kuwait University. The title of her study is "An Investigation of The Factors Affecting Students' Attitudes to Learning in Virtual Learning Environments (VLEs): A Case Study at Kuwait University". This study is to fulfill the requirements of full-time PhD studies at the Cardiff Metropolitan University in the United Kingdom. The study will use a mixed methods approach and fieldwork will include questionnaires and interviews. All responses will be treated in strict confidence and in accordance with research ethics approval by the Cardiff Metropolitan University. Anonymity will be guaranteed for all participants. Access to the data will be restricted to the researcher and supervisors.

Informed consent will be gained from all participants and they will be free to withdraw from the project at any time without penalty and without giving any reason. If they choose to withdraw after data have been collected, but prior to any possible publication, their data will be destroyed and not included in the study.

The main use of the data will be in the context of the doctoral study, although the content might later be published in academic or professional journals. In both instances, all data will be anonymised and it will not be possible to identify participants.

If you wish to clarify any issues, I would be happy to answer any questions.

Yours faithfully

Cecilia Hannigan-Davies
Cecilia Hannigan-Davies Bed (Hons) MSc PhD FHEA MBCS CITP MAPM
Senior Lecturer
CPD Framework Programme Director
Appendix 5: Approval letter from the Faculty of Education, Kuwait University
Appendix 6: Information sheet

Title of study: An Investigation of the Factors Affecting Learning in Virtual Learning Environments (VLEs): A Case Study at Kuwait University

I am a PhD research student at Cardiff Metropolitan University in the United Kingdom.

What is the project about?

I am gathering data with the aim of investigating the Factors Affecting Learning in Virtual Learning Environments at Kuwait University and will analyse these data to ascertain which factors affect students' attitudes to learning using VLEs. The outcome of this research could assist and guide those who develop, implement, and deliver e-learning systems at Kuwait University to improve these systems, leading to a better understanding of student participation in the online learning environment. I would appreciate your help with my research by participating in this questionnaire.

Your involvement in the project

I am looking for people to undertake a questionnaire and possibly to take part in an individual interview.

What will I be asked to do?

I will ask you to complete a questionnaire, which will take approximately 15 minutes to complete. Then you will be asked if you are willing to participate further, in an interview. The interview should last approximately 40 minutes. Here, you will be asked more detailed questions about the factors that affect using VLEs.

Do I have the right to withdraw from the project when I want?

Your participation is entirely voluntary there is no obligation to join the study, and you have the right to withdraw at any time and for any reason. If you choose to withdraw after data have been collected, but prior to any possible publication, your data will be destroyed and not included in the study.

Will confidentiality be guaranteed?

Please note that the questionnaire and interview are confidential and anonymous. All responses will be securely stored. By completing the questionnaire and/or taking part in the interview, you are agreeing for the data to be used for research and other dissemination purposes, but it will not be possible to identify individuals. The answers will not be counted
as part of your course assessment and there will be no advantage or disadvantage to you as students by taking part in this study. Your answers and data will be confidential as data access is limited to me and my academic supervisors.

Has the questionnaire been piloted?

I have asked a small group of students the questions I will be asking you, and they said that they were very straightforward and easy, and not stressful. However, while answering my questions, if you feel that there is any stress involved you can ask to stop at any time.

If you want to find out more about the study, or if you need more information, please contact me at badriah71@hotmail.com.

Thank you in advance for your cooperation.

Best regards,

Badriah Alkandari,
Appendix 7: Consent Form

If you consent to participate in the study, please complete the form below and return it to me (Badriah Alkandari) when we meet.

I ________________________________ consent to participate in the study on An Investigation of The Factors Affecting Learning in Virtual Learning Environments (VLEs): A Case Study at Kuwait University, being undertaken by Badriah Alkandari. I have been informed of and understand the purposes of the study. I have been given the opportunity to ask questions and I understand that I can withdraw from the study without prejudice. I understand that any information that might potentially identify me will not be used in published material.

Signature: ________________________________

Thank you in advance for assisting us with our study.