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E3-Electronic Education for English: Developing Mobile Learning and Teaching in Saudi Arabia

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Abstract

Mobile information and communication technologies (ICTs), with advanced capabilities, have created new prospects and opportunities, for both students and faculty who are learning and teaching English as a foreign language, in higher education in Saudi Arabia. Technology acceptance theories and models have been widely developed, used and extended to determine the factors related to the acceptance of such technologies in specific national and subject contexts. However, there have been very few studies of the acceptance of new ICTs in teaching and learning in the higher education context of Saudi Arabia, in general; and none that relate to the teaching of English as a foreign language. To examine the readiness for, and acceptance of, mobile learning and teaching among students and faculty at Taibah University in Saudi Arabia, a theory of technology acceptance, developed for a consumer context, was used as the framework for this study; considering the participants as consumers of mobile technologies within an organization.

This study utilised the extended Unified Theory of Acceptance and Use of Technology (UTAUT2) model to identify the factors responsible for use behaviour and the behavioural intention to use mobile technologies in learning and teaching English as a foreign language. The research model hypothesized that Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Hedonic Motivation, Price of Devices, Price of Services, and Habit will predict Behavioural Intentions to use mobile technologies in learning and teaching EFL and Use Behaviour. It was also hypothesized that Age, Gender, and Experience will moderate the impact of the eight factors included in the research model. This model was empirically tested using data collected from 878 students and 65 faculty members by two cross-sectional surveys at Taibah University in Saudi Arabia.

The results of regression analyses indicated that the research model was partially confirmed, and highlighted key variables as the driving forces of use behaviour and behavioural intention to use mobile technologies in learning and teaching English as a foreign language.

The findings of this empirical research provide crucial information that can guide the implementation of proactive interventions to widely improve the practices of learning

and teaching; and greatly increase our understanding of the reasons for, and effectiveness of, the adoption of mobile technologies in higher education in Saudi Arabia. More importantly, as English continues to develop as the global language of business and commerce, and the lingua franca of academic and social media networks, the increased effectiveness of the use of mobile ICTs in teaching and learning English that results from this research will enable Saudi students to operate as global citizens within the emerging world knowledge economy, and increase significantly the human capital return on the substantial investments in such mobile technologies by the government of Saudi Arabia and its universities.

Statement of Authenticity

I, the undersigned, certify that this thesis is my original work, the data gathered specifically for this study to fulfil the purposes and objectives of the study. It is clearly acknowledged wherever material adapted from other sources is utilised.

Manal Marwani

Manal Ahmad AlMarwani

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When I first started this journey, my father was still alive. He was my biggest supporter telling me all the time how wonderful I was, and telling his friends in front of me that he was always proud of me. He made me confident and at the same time ready to face life suffering and challenges. He passed away during this journey; although it was the hardest time of my life, but, as he taught me, I used the pain to produce more strength and perseverance to finish it.

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Words seem inadequate to express sincere thanks to my children for their unwavering support and encouragement throughout these challenging years of our life. I am grateful to have such amazing children.

It has been a great experience for me and my family studying and living in UK.

DEDICATION

To my father's soul

I wish you were here to see your dream come true.

To my Mom

For your continuous prayers and support.

To my husband, Fawaz

For saying "I love you" every night and proving it every day.

To my sons, Ghazi, Moataz, & Hashem

For your hugs when my spirits sag.

To my daughter, Sumayah

For being a rainbow in my sky.

List of Publications by Manal AlMarwani

AlMarwani, M. (2011) ML for EFL: Rationale for mobile learning. In: The 4th Edition of the International Conference "ICT for Language Learning" , Florence, 20-21 October. Italy: Simonelli Editore. Available from: http://conference.pixel-online.net/ICT4LL2011/common/download/Paper_pdf/IBL52-365-FP-Almarwani-ICT4LL2011.pdf

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1 Chapter One: Introduction

1.1 Introduction

This thesis examines the readiness for, and acceptance of, the use of new ICTs in the teaching of English as a foreign language, among students and staff in a Saudi Arabian university. The study builds on the Extended Unified Theory of Acceptance and Use of Technology, which is adapted in order to address and accommodate the historical and cultural context of Saudi Arabia. The historical, cultural and social customs that prevail in Saudi Arabia (more especially as a result of the impact of Islamic teaching) are very different from those that exist in Western secular societies, such as, for example, the United Kingdom. An appreciation of these differences, and the reasons for them, is crucial to any understanding of the process of technology adoption in higher education in Saudi Arabia. Consequently, the first chapter examines the impact of the historical factors (more especially the discovery of oil), that have led to the development of contemporary Saudi Arabia.

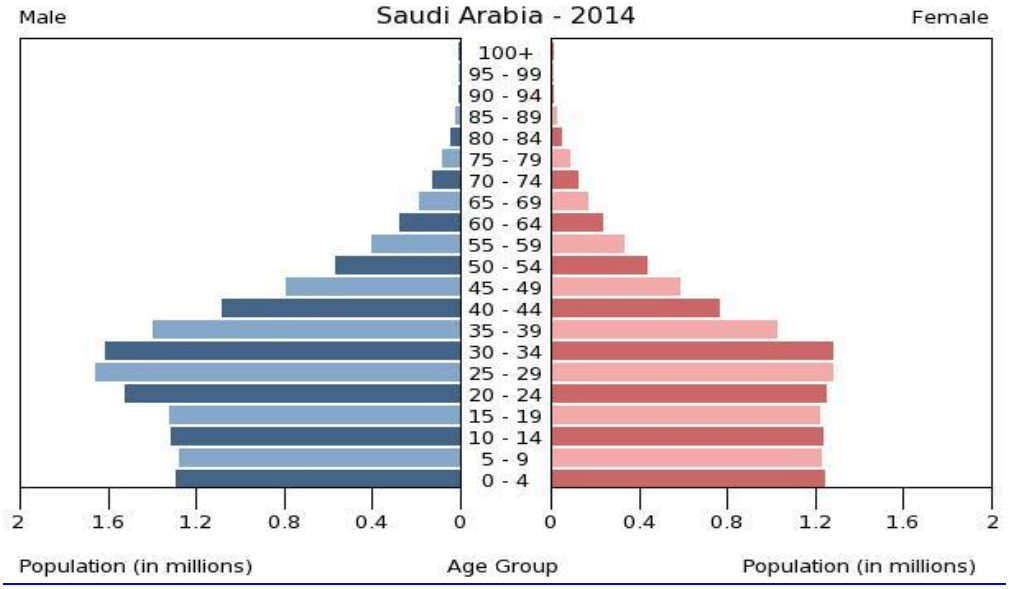
The discovery of oil in the late 1930s prompted the dramatic transformation and development of the economy in Saudi Arabia. A desert nation become a major player in the world's economy, a leading exporter of oil, a member of the G-20 economic group of nations (Abasiekong, 2010), and a key force in the Organization of the Petroleum Exporting Countries (OPEC), which has played a vital role in the world affairs in the last decades (De Santis, 2003). Simmons (2005) considers the development of the economy in Saudi Arabia to be a unique shift. He states “none moved so rapidly from obscurity to glaring prominence as Saudi Arabia” (p. 1).

The oil revenues help to fund the implementation of strategic planning for development, as Saudi Arabia is a leading exporter of oil. According to the World Factbook (2014), oil accounts for 80% of the budget revenues, 45% of GDP, and 90% of export earnings in Saudi Arabia. Moving towards the global knowledge-based economy has forced Saudi Arabia to seek diversification in the economy, in order to reduce the dependence on oil, before it runs out. Therefore, the intensive efforts of development are designed to advance living standards, improve the quality of life, promote further structural changes, and expand and improve social services for the citizens.

Official figures published by the Saudi government indicated a population of 27,136,977 in 2010 (Central Department of Statistics and Information, 2010) with a median age of 26.4 years (CIA, 2014). As Figure 1 graphically illustrates, the majority of people in Saudi Arabia are aged 30 or under. Consequently, to address the needs of the high percentage of young people in Saudi Arabia, and achieve the main objectives of the Ninth Development Plan (Ministry of Economy and Planning, 2010-2014), the Saudi government allocated large financial resources in the development plan to programs and projects, in the area of human development including its main pillar, education.

Figure 1: The Population Pyramid

(Source: https://www.cia.gov/library/publications/the-world-factbook/geos/sa.html)



As Table 1 (below) shows, expenditure on human resource development (which includes education) is the second largest sector in the budget after defence. Spending on human resource development grew by 178% in the decade to 2010 and, averaged 25.1% of government spending over the period, and never dipped below 23.3%, unlike spending on defence, which made up 41% of government spending in 2000, but fell to 31.4% by 2011. Figure 2 illustrates the expenditure on human resources in yellow from the First Development Plan (1970-1975) up to the Ninth Development Plan (2010-2014).

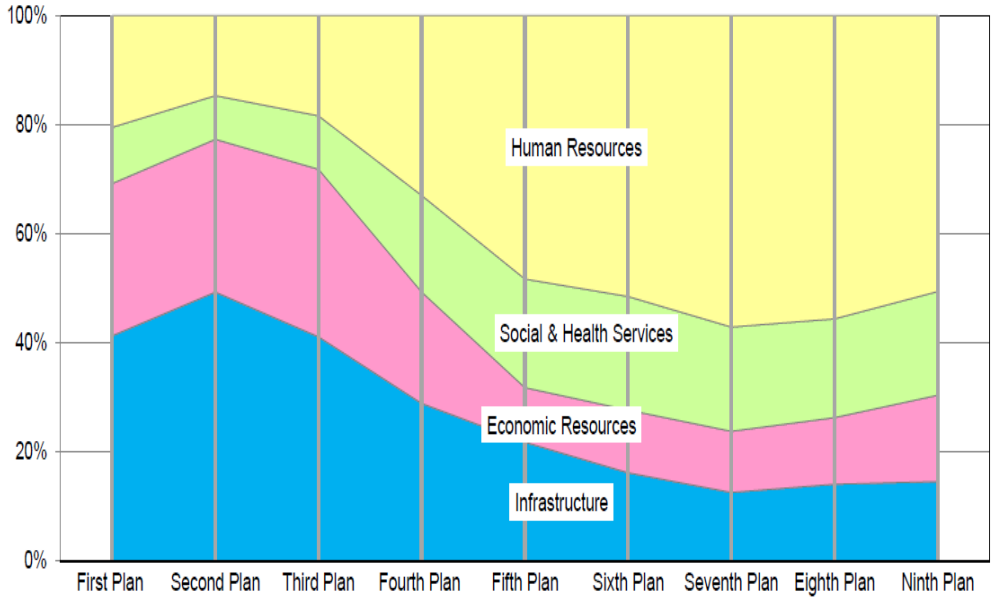
Table 1: Government Budget Data (In Million Saudi Riyals)

Sector	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Human Resource Development	49,284	53,010	47,037	49,609	55,832	69,899	87,164	96,483	104,600	121,942	137,440
Transport & Communications	5,534	5,732	5,464	5,634	6,352	8,629	9,804	11,329	12,143	14,642	16,442
Economic Resource Development	5,955	5,629	4,969	6,927	7,020	10,516	12,454	13,902	16,317	21,692	29,288
Health & Social Development	16,381	18,089	18,970	16,767	17,971	23,057	26,798	31,010	34,426	40,426	46,600
Infrastructure Development	2,067	2,532	2,693	2,544	2,620	3,292	4,555	5,188	6,384	7,762	8,438
Municipal Services	5,710	7,224	7,965	5,393	6,192	8,976	11,588	13,576	14,954	16,509	18,748
Defence & Security	74,866	78,850	69,382	70,303	78,414	95,146	110,779	132,922	143,336	154,752	169,667
Public Administration and Other	19,277	37,372	39,316	44,848	49,936	51,665	62,814	61,756	63,031	79,148	92,017
Government Lending Institutions *	436	411	373	375	387	502	575	1026	479	524	596
Local Subsidies	5,490	6,151	5,831	6,600	5276	8318	8469	12808	14329	17602	20764
Total Expenditures	185,000	215,000	202,000	209,000	230,000	280,000	335,000	380,000	410,000	475,000	540,000
Total Revenues	157,000	215,000	157,000	170,000	200,000	280,000	390,000	400,000	450,000	410,000	470,000

Source: Ministry of Finance

*Includes transfer to Saudi Development Fund

Figure 2: Structure of Government Expenditure 1970-2014 (Source: http://www.mep.gov.sa/)



According to the Ministry of Finance records (https://www.mof.gov.sa/english/DownloadsCenter/Pages/Budget.aspx), the boom in the budget, in general and specifically the allocations for education, started in 2011, with a total amount of SR150 (US$40) billions spent on education only, representing 26% of fiscal year 2011 appropriations, and an increase of 8% over the fiscal year 2010 appropriation. In 2012, total education expenditure had been raised to SR168.6 (US$45) billions, representing 24% of fiscal year 2012 appropriations, and an increase of 13% over the previous year's appropriation. In 2014, total expenditure reached SR210 (US$56) billions, representing 25% of fiscal year 2014 total appropriations, and an increase of 3% over the previous year's appropriation. In a recent statement by the Ministry of Finance (2014) about the national budget for 2015, it was reported that allocations for education are around SR217 (US$57.9) billion, representing 25% of fiscal year 2015 total appropriations. These allocations resulted in the launch of new projects and educational institutions and investing in programs to enhance and boost the national economy.

After, its inception in 1975, the Ministry of Higher Education (which was merged in 2015 with the Ministry of Education, as the new King, Salman bin AbdulAziz, announced a major government shake-up) began to provide the trained manpower needed for economic development. However, the new millennium has created a new set of challenges and opportunities for education across the globe. As a consequence, the information society and the knowledge-based economy are redefining the role of higher

education. Therefore, following this global evolution, the expansion of ICT services is one of the main concerns of the Saudi government, which was reflected in the development policy objectives and measures, particularly during the Seventh and Eighth Development Plans (Ministry of Economy and Planning, 2011).

To stay competitive and face global competition, a continuous stream of new skills, tools, and knowledge is needed in higher education. Much has been done in recent years to expand the educational opportunities to meet the growing number of higher education applicants, and face the new millennium challenges. For that reason, Ministry of Education launched a national project, “Aafaq” (the project name means “Horizons”) in 2005, to develop a comprehensive long-term plan for university education in the Kingdom, to better face the current and the future challenges, and to promote the efficiency and effectiveness of the higher education system in Saudi Arabia. The strategic objectives of the Plan for the Future of University Education (Ministry of Higher Education, n.d.) include: provide a low-cost, high-speed Internet-based communications network for university education institutions; match and complement information technology strategies and educational, research and administrative applications and systems in university education institutions; produce and publish digital information content in all fields, available to those associated with higher education and to society at large; and continue infrastructure development, and provide a stimulating environment for the educational process and scientific research.

As a result of this plan, which encourages the implementation of e-learning and distance education, eight infrastructure projects have been established (National Centre for E-Learning and Distance Education, n.d.) as follows:

1. The National Centre for E-Learning and Distance Education (NCELDE).
2. The Learning Portal of the National Center of E-learning & Distance Learning.
3. JUSUR, LMS System.
4. MAKNAZ, National Repository for Learning Objects.
5. Excellence Award of e-learning in university.

6. Training Programs to faculty members and technical staff in the Saudi universities, in the area of e-learning and its applications.

7. Saudi Digital Library.

8. SANEED, the Saudi Centre for Support and Counselling to provide educational, academic and advisory support and guidance to all beneficiaries of e-learning whether students, faculty members or any other external customers for the NCELDE.

Aafaq's innovative objectives and large scale projects have resulted in the development of the information and communications infrastructure's capacity, and functionality, and at the same time led to a reduction in cost. However, the use and access of new technologies for educational purposes should be increased, by not just by supplementing classroom teaching, but by true blended learning, or fully online learning. Therefore, to help this process, E-units, departments, or specially appointed deans have been set-up in almost every university to apply best practices and international standards. Additionally, many studies have been conducted to investigate the challenges, barriers, concerns, and effectiveness of e-learning in Saudi Arabia (Ali, 2003; Ali, Sait, & Al-Tawil, 2003; Alkhazim, 2003; Allhibi, 2001; Almegren, Al-Yafei, & Hashem, 2007; Almogbel, 2002; Alnujaidi, 2008; Alougab, 2007; Alsaif, 2005; Alshehri, 2005). Technology has proven to be essential to the educational system and has played an important role in meeting educational, administrative, and supportive challenges.

The researcher is a lecturer of TEFL at Taibah University, which is a recently created (2003) higher education institution in Saudi Arabia, that was derived from the integration of the two campuses of King Muhammad Bin Saud University and King AbdulAziz University into one independent university, sited in Medina - a city of 1,614,644 people (Central Department of Statistics and Information, 2010). According to recent statistical data of higher education in Saudi Arabia provided by the Ministry of Education (http://he.moe.gov.sa/ar/ministry/deputy-ministry-for-planning-and-information-affairs/hesc/ehsaat/pages/default.aspx), Taibah University has witnessed a radical increase in the number of students; from 7761 students in 2003 to 63815 students in 2015. The total number of the academic staff is 2694 (https://www.taibahu.edu.sa/Pages/en/CustomPage.aspx?ID=47); and according to the

data obtained for the current study, there are 196 male and female EFL instructors. However, about fifteen thousand new students enrol every year at Taibah University. These students are subjected to intensive English language and basic sciences courses lasting for two semesters, an academic year, via the Preparatory Year English Language (PYEL) program, to prepare them for university study. Hence, due to the large number of students taking this program, the lack of faculty to teach them, and the lack of the appropriate space for face-to-face teaching and learning, new technologies for learning have had to be adopted, to enable English as a foreign language learning outside the classroom and reduce the time that students spend every day (8:00 a.m. to 5:00 p.m. five days a week) in the university. As a lecturer who is teaching several EFL classes in the Preparatory Year English Language (PYEL) program, the researcher has started looking for electronic solutions by using PBworks (formerly PBwiki), e-mails, and Messenger to take learning and teaching outside of the classroom. Looking for better and easier learning, and coping with the new students who have grown up with technology and expect high quality teaching, learning, and facilities, the idea of blending the use of new technologies into the learning process and embedding them in everyday life has become the researcher's ambition.

A significant amount of funds is being invested in information technology across campuses in Saudi Arabia, as well as world-wide, but it is critical for higher education institutions not just to adopt and implement technology for technology's sake, but rather for it to be used to enhance learning and pedagogy, to ensure that money is successfully invested in that technology. To do so, the first customer of these institutions, i.e. the students and their needs, should be the first consideration when planning investments in educational technology. Accordingly, the gap between the students' needs, and the institutions' perceptions of the students' needs, should be filled by studying the students' needs, perceptions, and willingness to accept new implemented technologies in teaching and learning. These studies will be crucial to address one of the biggest challenges in higher education, i.e. the new generation of students. Nowadays, it is clear that the students, not the technology, are changing higher education. To successfully educate this generation, according to Oblinger and Oblinger (2005), higher education must ask, one of the right questions, that is; who are our learners? Hence, they mention that: "Although the institution may have demographic information (date of birth, home town, gender, ethnicity, and so on), we may not understand how students view the world, what is

important to them, or even how they learn best. It is increasingly important that colleges and universities engage learners in a dialogue, to better understand their perspective. Institutions make massive investments (IT infrastructure, residence halls, recreational facilities) for the sake of meeting students' wants and needs; basing these decisions on assumptions is risky" (p. 2.15). Thus, investigating students' readiness and acceptance of new technologies will be crucial. On the other hand, the faculty may be the biggest obstacle facing the implementation of mobile learning (UNESCO, 2011); therefore, investigating the needs, perceptions, and acceptance of mobile technologies of the faculty at the same time, can bridge the gap between traditional teaching and learning in the digital age.

In Saudi Arabia, higher education institutions represented by the Aafaq project want to promote the learning process by the use of technology in a way that encourages the shift in teaching from a teacher-centric model to a learner-centric model (Taylor, 1995). In the late 1990's, higher education institutions in the developed world launched a new application of technology-enabled education that can accomplish this, i.e. blended learning. The use of these technologies in learning was pioneered in the national distance teaching institutions, like the UK Open University and UNED in Spain, but then became mainstream within most universities. Rooney (2003) reported that the American Society for Training and Development (ASTD) identified blended learning, in 2002, as one of the top ten trends becoming prominent in knowledge delivery. This claim was confirmed in a more recent paper for higher education by Campus Technology (2012) which pointed out that findings of studies show a growing prevalence toward the use of blended learning, as it is believed by many educators that this form of learning, blended learning, is more effective than a classroom-based approach alone. Nowadays, as the use of such technologies in the classroom has become so common, many of those implementing blended learning are unaware that they are doing so.

Blended learning has been defined in different ways. The most frequent definition, as indicated by many researches, is the combination of face-to-face instruction and e-learning (Brown, 2003; Finn & Bucceri, 2004; Kumar, 2007; Rooney, 2003; Tang & Byrne, 2007, Throne, 2003; Young, 2002). However, it is not a matter of providing choices and alternatives, as much as it is creating more effective practices. According to Bacsich et al (2010), "blended learning aims towards the most viable and effective synergy of learning

theories and information technology" (p. 42). Osguthorpe and Graham (2003) identified the reasons for blended learning as: pedagogical richness; access to knowledge; social interaction; personal agency; cost effectiveness; and ease of revision. In the case of higher education institutions in Saudi Arabia, most of these reasons are motivators for the implementation of blended learning in the Preparatory Year English Language (PYEL) program at Saudi universities, where the integration of an online learning environment, using both the latest information and communication technology, and a face-to-face environment, is likely to combine ideally the best features of both worlds. Therefore, the blended learning environment "is in many ways the most innovative path, the most difficult to achieve, and where the greatest reward may lie in the long run" (Ross & Gage, 2006, p. 156).

As Livingston (2009, para. 1) makes clear, during the past decade, two revolutions of communication technology have occurred "The first — the Internet revolution — has changed everything in higher education. The second — the mobile phone revolution — has changed nothing. We're vaguely aware that our students have mobile phones (and annoyed when they forget to turn them off in class), but it hasn't occurred to us that the fact they have these devices might have anything to do with our effort to provide them with educational experiences and services". It is challenging to blend the use of mobile technologies into the educational process, in order to better support the new generation of students (Naismith et al, 2004), as this process is not merely an integration of the technology (Pachler, 2010). However, such a revolution has taken place in universities in the United States, United Kingdom, and other developed countries, while it is still at its early stages in Saudi Arabia. Many projects have been done to investigate the potential of mobile technology in education, which is "becoming more embedded, ubiquitous and networked, with enhanced capabilities for rich social interactions, context awareness and internet connectivity" (Naismith et al., 2004, p.5).

In developing countries, as well as in the other parts of the globe, m-learning projects have shown that hand-held technologies can contribute to the learning process, provide access to learning materials, promote student motivation, enhance professional development, and improve communications among all parties of the learning process, i.e., instructors, students, administrators, and parents (see Chapter Two, which discusses the potential of mobile learning). Moreover, "evidence from the Arab Spring further

suggests that mobile phones can enable a stronger sense of agency especially among youth and women" (UNESCO, 2011, p. 5).

In Saudi Arabia, devices using advanced mobile technologies (especially smart phones) are becoming very popular among young people. Alebaikan & Troudi (2010) noted that one reason for the fast uptake of these new technologies is that 60% of the Saudi population are young people aged 20 years old or younger, and they are adapting to new technologies faster than expected. According to the annual report of the Communication and Information Technology Commission in Saudi Arabia (2014), there were around 53 million mobile phone subscriptions by the end of 2014, representing a population penetration rate of 171.4%. This high rate includes a decline in demand for regular (Voice) services and an increase in the demand for data services. The booming of mobile technologies nowadays really encourages and helps the implementation of mobile learning, and the mobile network providers are making these technologies available and affordable. Therefore, there is a need to research the early steps of creating blended learning environments by implementing mobile learning and teaching.

1.2 Statement of the Problem

Due to the novelty of mobile learning and teaching, as well as the significant importance of those who have the power to drive such novelty (i.e., students and faculty) the levels of penetration, acceptance, and readiness for adopting such innovations are highly important, and have been addressed in many studies in Europe, America, and East Asia. Less research in this area has been done in Saudi Arabia. As far as is known, the studies that have been conducted in public universities were gender specific (Al-Fahad, 2009) addressing only female students. Although Nassoura's study (2012) addressed both males and females, it was undertaken in one of the private higher education institutions in Saudi Arabia, surveying a total of 80 students, and hence is not representative, because the majority of students attend public higher education institutions in Saudi Arabia, which are different from private universities, in terms of budget and capacity. Moreover, both of these studies did not focus on the role of the faculty. However, Altameem (2011) developed a framework of a contextual mobile learning system, taking into account the learning environment at Saudi Arabian universities, and to validate this pedagogic model, he provided the model for key figures such as deans, and other administrative staff, looking for their views. Accordingly, certain improvements of the framework were

included based on the suggestions provided by the participants. Also, Abachi & Muhammad (2014) have addressed the notion of the impact of mobile learning technology, by utilizing e-learning in a smart classroom at King Saud University, and they highlighted the principles behind the impact of accessing stored information on LMS using mobile technologies, on students as well as academics.

On the other hand, different research models have been developed to investigate the issue even within the same context, but among all these models there are inconsistencies regarding key determinants and moderators, not to mention different national and institutional contexts.

When investigating the readiness for, and acceptance of, mobile learning and teaching in higher education in Saudi Arabia, one has to acknowledge the high level of mobile technologies penetration among young people, as well as the high technical capabilities and all the social and cultural issues associated with such innovations. In addition, consideration of the national development plan, that links development with technology, and manages the strategic investment in educational technologies, is crucial, as will be considered next.

The government of Saudi Arabia recognized the reciprocal relationships between technology and economic development early on. Hence, the Saudi Arabian National Centre for Science and Technology was founded in 1977 by Royal Decree, with the aim of harnessing science and technology for the developmental needs of the Kingdom. In 1985 it was renamed as the King Abdul Aziz City for Science and Technology (KACST). KACST is the Kingdom's principal agency for promoting scientific and technological research and development (http://www.saudinf.com/index.htm). One of the main responsibilities of this centre is to propose a national policy for the development of science and technology, and develop the strategies, and the plans necessary to implement them (http://www.kacst.edu.sa/en/about/Pages/default.aspx).

The Ministry of Higher Education was established in 1975 to help achieve the national development plan. As part of the implementation of this plan, a consortium of 25 governmental institutions nationwide, including the Saudi Electronic University (SEU), (https://www.seu.edu.sa/sites/ar/Pages/main.aspx) which was launched in 2011 by a royal decree issued by the previous King, Abdullah bin AbdulAziz. Moreover, a wide range

of private higher educational institutions, including 10 universities and 37 colleges, all adopting contemporary trends in scientific research and strategic planning, has been established, which are working together to lead the future development of the kingdom. For that reason, the adoption of educational technologies is accelerating dramatically in Saudi Arabia. Mobile learning is one of the latest trends in educational technologies that has been researched and evaluated world-wide recently, but in the special socioeconomic and cultural context of Saudi Arabia, such research is still in its infancy stage, and so it needs to be investigated before these technologies can be implemented.

English as a foreign language (EFL) has been given a prominent position in different sectors in Saudi Arabia as a consequence of the following reasons. First, the Educational Policy document in Saudi Arabia states that students should be provided with tuition in another living language, besides their native one, so that they acquire sciences, knowledge, arts and useful inventions, and convey our sciences and knowledge to other societies and contribute to the spread of the faith of Islam and the service of humanity (Ministry of Education, 2004). Moreover, English is the language of the academic discourse in most universities' departments, such as medicine, health sciences, nursing, engineering, applied sciences, computer sciences, as well as some vocational and technical institutes and military academies. Besides that, two of the leading higher education institutions in Saudi Arabia (King Fahd University of Petroleum and Minerals & King Abdullah University of Science and Technology) are using English language as a medium of instruction exclusively (Al-Seghayer, 2012). Allied to this, the emergence of the global knowledge economy, and the fact that English is the language of international business, commerce, and banking (Education First, 2014). Even in the private sector in Saudi Arabia, such as in the areas of industries, hospitality, and medical services which rely heavily on foreign manpower besides the national workforce, English is the dominant language. Finally, employability due to the fact that English proficiency is a required skill to access good jobs and get promotions. In relation to that, the Education First Report (2014) claimed that the possession of English, as a skill, is positively correlated with a better quality of life, when comparing the Human Development score (HDI) and the English Proficiency score (EF EPI).

Therefore, there is a high demand to facilitate learning and teaching EFL to a wide group of students. Hence, in their first year of joining higher education, students are provided

with a rigorous schedule of English classes throughout the Preparatory Year English Language (PYEL) program, besides math, science, and university skills classes as well. However, EFL instruction at university level does not have the capacity to cope with the growing numbers of students who need English both to study, and also to operate as global citizens, especially because Saudi Arabia is a non-English environment. Moreover, the number of faculty members able to offer EFL instruction is not increasing fast enough, when compared to the growing number of students. Thus, initiatives need to be implemented to improve the current situation, and mobile learning, via a blended learning strategy, provides an opportunity to better support EFL instruction.

Nevertheless, what makes the situation in Saudi Arabia unique is that the use of new technologies permits a growth in EFL learning and teaching, but without jeopardising or undermining important cultural and religious norms. Due to cultural and religious norms, male university instructors are not allowed to teach females face-to-face. Therefore, due to the lack of female university instructors, male instructors are teaching females through closed circuit television, which needs special expensive facilities and infrastructures that are time and budget consuming. Also, universities have single-sex campuses; male students cannot interact with female students or share information and experiences. Consequently, mobile learning could be an effective tool to promote learning and communication, despite the need for gender segregation. Additionally, if mobile learning is used effectively to reduce the time students and faculty members spend on campus, it would be helpful for female students and female instructors; so, due to their commitments toward their families and the ideological constraints they would not have to spend extended time away from their families. Nonetheless, with the use of ICTs, despite the need to separate men and women for the purposes of tuition, both groups can freely access a large range of high quality learning experiences, and thereby fulfil their personal and intellectual potential. In this way, ICTs can improve equality of opportunity for men and women. However, culture has been always affecting the flow of adopting new technologies across the world. In the case of Saudi Arabia, any new trend in any aspect of life is always being inspected for its compatibility with cultural and religious norms.

Thus, investigating the unique context of Saudi Arabia by understanding the stakeholders of learning and teaching, i.e., students and faculty members, is a prerequisite for the implementation of new technologies.

1.3 Question of the Study

The main research question is:

What are the factors that determine students' and faculty use behaviour and behavioural intention to use mobile technologies in learning and teaching English as a foreign language?

1.4 Purposes of the Study

The purposes of this study are to:

- examine the readiness and acceptance of mobile learning and teaching among students and faculty in Saudi higher education;
- Identify factors responsible for use behaviour and behavioural intention to use mobile technologies in learning and teaching English as a foreign language.
- Identify factors responsible for moderating the factors that determine use behaviour and behaviour intention to use mobile technologies in learning and teaching English as a foreign language.
- Employ and validate the extended Unified Theory of Acceptance and Use of Technology (UTAUT2) with modifications, to be suitable for the higher education context in Saudi Arabia.
- Deduce students and faculty preferences with respect to mobile learning and teaching in EFL.
- Explore the current pattern of mobile technologies use by higher education students and faculty.
- Compare the opinions of students and faculty with regard to mobile technologies use and mobile learning and teaching.
- Investigate any potential barriers might affect the use of mobile technologies in learning and teaching.
- Guide future investments in educational technologies.

1.5 Significance of the Study

The findings of this study will add to the existing body of knowledge regarding the factors related to the acceptance of mobile learning and teaching, by validating the use of the extended Unified Theory of Acceptance and Use of Technology (UTAUT2) that was originally developed by Venkatesh, Morris, Davis, and Davis (2003), and then extended by Vankatesh, Thong, and Xu (2012). The UTAUT2 was tailored to specify the factors related to the acceptance of mobile technologies in a consumer use context, while the UTAUT was developed in an organizational context. What is original in the current study is the application of the UTAUT2 model by considering students and faculty as consumers within an organization, and the particular cultural and religious context of Saudi Arabia.

Findings of previous studies have encouraged the use of mobile technologies in learning and teaching across disciplines, proved students' enthusiasm to use mobile devices, and recorded better achievement among students using mobile technologies. But still, with rapid change and advancement of these technologies, understanding students and faculty is essential to successfully implement mobile learning and teaching, and to ensure economic feasibility of higher education investments.

The findings of this study will provide all stakeholder groups, (students, academics, university managers, and policy makers) with useful information that can guide the implementation of mobile learning and teaching services, and support in higher education. This information will help to formalize the informal practices of students, and bridge the gap between using mobile technologies, inside and outside the classroom. Based on the current research findings, higher education institutions can create students' and faculty mobile technology profiles that will guide the Bring Your Own Personal Handheld Device (BYOPHD) strategy to enable mobile learning and teaching within the institution. Moreover, they can, also, encourage mobile learning and teaching outside the institution to allow fast and accessible distribution of efficient and effective learning and teaching, to cope with gender and geographically segregated campuses, and large student numbers. The study also will reveal barriers and obstacles that might prevent or hinder the use of mobile technologies in higher education.

This study will contribute to the development of teaching and learning English as a foreign language (EFL), which will improve English proficiency for students to participate in the knowledge society and help them to drive the economy of their country towards

globalization. Moreover, by addressing EFL students and faculty, the research will guide the future implementation of mobile learning across other disciplines, as English is the language of academic discourse in a wide range of academic programs (medicine, health sciences, nursing, engineering, applied sciences, computer sciences, etc.). In addition, building up English as an academic skill among undergraduate students is crucial for them to qualify for postgraduate research programs, as most academic literature is published in English.

1.6 Organization of the Study

This study consists of six chapters. Chapter One includes the introduction which provides an insight into the context of the study, the statement of the problem, the purposes, the main question of the study, and its significance. Chapter Two, presents the literature review and related research linked with the problem addressed in the study. Chapter Three introduces the methodology, research framework, and hypotheses; and describes the research settings and participants, as well as the data collection tools and procedures. Chapter Four presents data analysis procedures and findings. Chapter Five includes the discussion of the findings. Finally, Chapter six, the conclusions, provides an overview of the study, including the contribution to knowledge and the implications of the study, plus its limitations, and recommendations for future research.

1.7 Conclusion

In conclusion, this chapter has briefly examined the emergence of Saudi Arabia as the world's largest provider of oil, in the modern era, and the nation's use of oil revenues to fund its subsequent transformation into a global economic power within a knowledge economy. The demographic profile of this young nation has necessitated a high level of expenditure on education, guided by a series of national economic plans. Implementation of these plans has led to the rapid growth in the provision of higher education across the kingdom. The desire to achieve economic prosperity within global business world in which English is the dominant language, has meant that there is a strong emphasis on learning English as a foreign language by all university students in Saudi Arabia. The need to provide pedagogically effective and cost efficient (but gender segregated) EFL training to such a large student body has, naturally, led national policy makers and university leaders alike to promote the use of information and communication technologies for EFL. The use of these technologies in teaching has been

mirrored by an increase in mobile technologies across Saudi society, mostly driven by the very rapid increase in the use of mobile telephones, especially among the young. In order to promote and accelerate the use of these technologies in EFL teaching, the study will use the extended Unified Theory of Acceptance and Use of Technology (UTAUT2) (whose use is well attested in the academic research literature) to address the question: "What are the factors that determine students' and faculty use behaviour and behavioural intention to use mobile technologies in learning and teaching English as a foreign language?".

The next chapter, the literature review, will address the defining attributes of e-, blended and m-learning, by examining the pioneering work within universities offering open and distance learning, which caused the use of new information and communication technologies became to become mainstream, within higher education, in most developed nations. However, as will be seen, the potential of these new technologies to revolutionise teaching and learning has not been fully realised in many nations, more especially in Arabic speaking nations, like Saudi Arabia. The chapter reviews the research into theoretical models that have been developed and utilised to examine and explain why such a gap may exist between the potential for the use of ICTs in higher education and the practical reality, by focusing on factors that affect the readiness for, and acceptance of, these new teaching and learning technologies by staff and students alike.

2 Chapter Two: Literature Review

2.1 Introduction

The purpose of the literature review is to survey previous research that can guide and direct the current study, with respect to the theoretical framework, data collection tools, and data analysis, in order to build on existing knowledge. To achieve this goal, the literature review provides an overview of the main themes included in the main purpose of the study.

Since the main purpose of the current study is to examine the readiness and acceptance of mobile learning and teaching EFL among students and faculty in Saudi higher education, therefore, this chapter provides an overview of previous research on mobile learning, including the definition and potential of mobile learning. It, also, provides a survey of mobile learning and teaching around the world in general, and in the Arab world including Saudi Arabia more specifically. English as a foreign language is the academic subject area of the current study, but mobile learning and teaching studies and projects are reviewed regardless of the subject area. Consequently, a section was provided to review mobile learning in the field of learning and teaching English as a foreign language. Finally, a section was dedicated to review readiness and acceptance of mobile learning and teaching regardless of the academic subject area. Before that, a quick review of information and communication technologies in education is presented as an introduction to mobile learning.

2.2 Information and Communication Technologies (ICTs) in Education

Years ago, learning only took place within the classrooms walls where the teacher was the ultimate source of knowledge, but this situation has been completely different since the dawn of the information and communication technologies.

The first major “communication technology” to have an impact was the establishment of a postal service throughout the British Empire. It meant that bureaucrats ruling India could obtain open and distance learning materials via the mail. They would read the books and study materials, and then write essays, which they would send back to the UK for marking.

The next major communication technology to affect teaching and learning was the radio. This was used in many nations in which the population was widely scattered – in Australia in the 1950's, for example, many children on farms in the outback would get their lessons by means of children's radio (see at: http://www.australia.gov.au/about-australia/australian-story/school-of-the-air). At this stage, the teaching method was largely uni-directional and didactic, but individual students could contact their teachers by means of short wave radio. This changed with the widespread use of the land line telephone, which allowed students to talk to teachers on a one-to-one basis.

The next major development was television, which allowed broadcast of both sound and vision, but was still uni-directional (distance students couldn't interact with the teacher and each other).

The world's first open and distance learning university to use this technology was the UK Open University, set up in 1969, because it was heavily reliant on television, it was originally going to be called "The University of the Air" (http://www.open.ac.uk/researchprojects/historyofou/story/1963-65-the-university-the-air). However, even then, the Open University was heavily reliant on the postal service; learning materials, including video cassettes, would be sent out by post to students, and students would send their assessments in by post. Students would meet face to face with their tutors at regional summer schools. The Open University used to produce very high quality learning materials to send out to students, because they had very large numbers of students, the costs of writing and printing these materials per student was relatively low.

The arrival of email and the internet revolutionised open and distance learning. Firstly, learning materials (printed, plus sight and sound) could be sent great distances at no cost, as could students' assignments. Second, learning materials could be quickly and easily re-engineered and updated. Thirdly, students, although geographically separated, could now interact directly with each other and their tutor via emails, bulletin boards and (more recently) video conferencing, at little or no cost. At this stage, the technology was relatively cumbersome, as televisions and computers were large and heavy. Consequently, open and distance learning had high connectivity, but was geographically situated in the class room, or at home. However, the development of mobile technologies (smart phones, tablets, phablets, etc.) meant that learning no longer needed to be

situated, but could be done on the move – anywhere, anytime. Keegan (2002) has argued that, in correspondence to the influence on society of the Industrial Revolution of the 18th to 19th centuries, the Electronics Revolution of the 1980s and the Wireless Revolution of the last years of the 20th century, have caused an evolution in education and a move from distance learning to e-learning to mobile learning.

On the other hand, conventional universities also started to use ICTs for online delivery for off-campus courses, and use blended learning for on-campus students. The use of new technologies in these universities means that the differences between distance education and traditional teaching and learning are becoming less distinct. Consequently, the impact of new technologies on higher education has been profound, and it has caused academics to undertake research into the efficacy of face to face teaching, and raised the fundamental question: is computer enabled education (e-learning and blended learning) more successful and cheaper than conventional face to face delivery? However, e-learning and blended learning are not just different ways of delivering content, as to be successful they require fundamental changes in the roles of both students and teachers across subject areas.

In the field of English as a foreign language (EFL), research findings provide evidence that that students and teachers can succeed in learning and teaching EFL more effectively using ICTs (Alnujaidi, 2008; Bañados, 2006). Rahimi, Azhan, Normeza, & Baharudin (2015) argued that while the pedagogy of language still focuses on traditional face-to-face teaching and learning, it has become more prevailing and influential when using ICTs. They stated that “language pedagogy in particular, through the years, has undergone many transformations with the advent of ICT, including interactive TV, internet, and the latest, social media networks” (p. 170).

Despite the increasingly widespread access to ICTs, as well as their functionality, and the opportunities they create, many higher education institutions and EFL instructors do not take the advantage of recent advances of ICTs. Nevertheless, with the rapid pace of change in ICTs, there is a regular need for regular investigation on how these technologies can be utilized to support foreign language learning and teaching. Furthermore, it is not only the multiplicity of ICTs, as Stockwell (2012) highlighted several diverse issues with regard to the relationship between technology and language learning that might affect the way we view, use, and evaluate ICTs in language learning. According to Stockwell

(2012), many aspects can shape and make each application of ICTs a unique experience; among those are the diversity in environments in which ICTs are used, the diversity in pedagogies employed, the diversity in the users of ICTs, and the diversity in the research methods. However, any change in one area possibly influences the others and generate new knowledge. Therefore, there is always a need for further examination to guide the potential generalizations.

Among the different waves of ICTs, mobile technologies are developing rapidly, as the whole world is relying more on these handheld devices. This revolution has radically changed our social and economic lifestyles. As many educational institutions and educational projects have inaugurated the use of mobile technologies to enhance learning and teaching and facilitate administrative issues, a new educational concept has been launched, i.e., mobile learning (m-learning). It has been increasingly embedded in higher education, and educators have presented papers on it and discussed it frequently, in related events like the annual MLEARN Conference and International Workshop on Mobile and Wireless Technologies in Education (WMTE), sponsored by IEEE. Definitions of mobile learning can state obviously its attributes as a new trend in education.

2.3 What is Mobile Learning?

During the recent mobile revolution, educators and researchers have delivered various definitions of mobile learning, each emphasising different aspects and dimensions. For example, Quinn (2000) defines it as learning that is assisted by mobile devices. From the same perspective, Traxler (2005) defines it as: “any educational provision where the sole or dominant technologies are handheld or palmtop devices” (p. 262). However, few lines later, he criticizes this definition as he states: “Such definitions merely put mobile learning somewhere on e-learning’s spectrum of portability and also perhaps draw attention to its technical limitations rather than promoting its unique pedagogic advantages and characteristics” (p. 263). With more elaboration, Sharma & Kitchens (2004) define mobile learning as: “learning supported by mobile devices, ubiquitous communications technology, and intelligent user interfaces” (p. 205). In a later work, Traxler (2007) states that: “mobile learning is not about ‘mobile’ or about ‘learning’ as previously understood, but part of a new mobile conception of society” (p. 5). On the other hand, according to Pachler, Bachmair & Cook (2010): “mobile learning is not about delivering content to devices but, instead, about the process of coming to know and being able to operate

successfully in, and across, new and ever changing contexts and learning spaces" (p. 6). Shedding light on different practices and ways of mobile learning, the UNESCO document on Policy Guidelines for Mobile Learning, edited by Kraut (2013) defines mobile learning as "the use of mobile technology, either alone or in combination with other information and communication technology (ICT), to enable learning anytime and anywhere. Learning can unfold in a variety of ways: people can use mobile devices to access educational resources, connect with others, or create content, both inside and outside classrooms" (p. 6).

However, to differentiate between mobile learning and other learning technologies, Laurillard (2007, 156) defines it as: "digitally-facilitated site-specific learning" to emphasize the nature of the physical environment in which the learner is placed. With more focus on productivity and activity theory, the eLearning Guild (Wexler et al., 2008) defines mobile learning as: "any activity that allows individuals to be more productive when consuming, interacting with, or creating information, mediated through a compact digital portable device that the individual carries on a regular basis, has reliable connectivity, and fits in a pocket or purse" (p. 7).

Mobile learning definitions, whether they are focusing on the technologies, physical environment, or the learning theories, reflect the significance and amplify the understanding of mobile learning. In essence, this concept can be readily understood from the two words it comprises: mobile learning gives learners the opportunity to learn whatever, wherever, and whenever they need. Hence, for the purpose of this research mobile learning is defined as: the use of handheld mobile technologies to support teaching and learning anywhere and anytime; and to create a blended learning environment, which contribute to learning in individualized or in collaborative settings; and in which the learner is central and having forward the process of learning.

2.4 The Potential of Mobile Learning

Since the 1990s, people around the world have begun adopting mobile technologies as part of their daily lives. According to the Radicati Group Report on Mobile technologies (2014), the number of mobile devices, both phones and tablets, used worldwide is 7.7 billion, while there are 5.6 billion mobile users. These numbers are expected to increase, by 2018, to 12.1 billion mobile devices and 6.2 billion users. The report claimed that by 2018 roughly 84% of the world population will be using mobile technologies. However,

the Organisation de Coopération et de Dévelopement Économiques (ODEC), in 2007, stated that by 2020 mobile technologies are most likely to be affordable and available to everyone worldwide.

Hence, it is clearly noticeable that e-commerce is becoming m-commerce, online banking is becoming m-banking, and e-learning is becoming m-learning; so mobile technologies are no longer restricted to only telephonic services. The growth of mobile technologies services and products, and the increasing availability of handheld and wireless devices, has created new opportunities for businesses and governments, as well as educational systems and prompt consideration of their applications.

This trend towards greater use of mobile technologies is responsible for several challenges faced by higher education institutions, including the changing nature of knowledge, the changing nature of students, and the changing nature of the expectations of the global market. Therefore, to compete globally and cover the shortage of skilled graduates, universities need to cope with the global challenges. Mason (2006) maintains that, all over the world higher education institutions are under pressure to improve the quality of teaching and learning by integrating up-to-date technologies. In the developing world, such a move is much more appealing, as new technologies can solve critical issues such as access to education.

Many studies have been conducted to investigate the challenges, barriers, concerns, and effectiveness of e-learning all around the world. Therefore, there is no doubt that e-learning, with its all different approaches, can promote the learning process in a way that encourages a pedagogic shift from a teacher-centric model to a learner-centric model. Mobile learning, as a sub-set of e-learning, “is highly promising in complementing conventional ways of learning” (Denk et al., 2007, p. 135) via, for example, the creation of blended learning environments which have been proved to be a successful learning strategy (Banados, 2006; Lim, Morris & Kumpitz, 2006; Osguthrope & Graham, 2003; Thompson, 2003). Denk et al (2007) advocate that mobile learning can support autonomous, flexible, context-aware, life-long, and life-wide learning. Similarly, Campanella (2012) argued that the foremost reasons that are invoked in support of mobile learning are: flexibility, collaboration, motivation, accessibility, and portability.

From the European perspective, the key findings of m-Learning Project funded by the European Commission's Information Society Directorate General, the project partners and, in the UK, the Learning and Skills Council (LSC) indicate that mobile learning allows truly anywhere, anytime, personalised learning; adds variety to conventional lessons or courses; removes some of the formality which non-traditional learners may find unattractive; helps deliver and support literacy, numeracy, and language learning; facilitates both individual and collaborative learning; helps to combat resistance to the use of ICT by providing a bridge between mobile phone literacy and PC literacy; helps learners to remain focused; and helps to raise self-confidence and self-esteem (Attewell, 2005a, 2005b).

From a global perspective, UNESCO (2011) proposes a working definition of mobile technologies, considering the challenging worldviews of relevant concepts and terminology, as follows:

> "For UNESCO mobile technologies refer to a combination of hardware, operating systems, networking and software including content, learning platforms, and applications. Mobile technology devices range from basic mobile phones to tablet PCs, and include PDAs, MP3 players, memory sticks, e-readers, and smartphones. For the purposes of its current engagement, UNESCO proposes to confine the conversation around mobile technologies to the mobile phone. UNESCO recognizes, however, that the mobile phone itself is evolving rapidly and it intends to take cognizance of how this evolution will develop over the coming decade. UNESCO also acknowledges that the integration of mobile phones into education carries a potential to disrupt traditional paradigms. Mobile phones are different to traditional educational tools such as books, chalk and pencils because they enable instantaneous access to vast and growing reservoirs of information, and because they provide a growing array of permutations to communicate and share knowledge between individuals and groups independent of time and physical location. Mobile phones are almost universally accessible. For these reasons, UNESCO is interested in their potential to support learning, teaching and education transformation." (p. 4-5)

Kukulska-Hulme (2005), in a JISC funded project, explored the reasons underpinning the use of mobile technology in (post-16) education and identified three main motivations

which are: improving access; exploring the potential for changes in teaching and learning; and alignment with wider institutional or business aims. If we consider the flexible features of m-learning, four approaches of learning can be supported by mobile technologies, including individualized learning, collaborative or shared learning, situated learning, and informal and life-long learning. In reviewing the related literature on mobile technologies and learning, Naismith et al. (2004) concluded that "the challenge for the educators and technology developers of the future will be to find ways to ensure that this new learning is highly situated, personal, collaborative and long term; in other words, truly learner-centred learning. Educators will need to adapt from a role as transmitters of knowledge to guiders of learning resources." (p. 36).

Since mobile devices became popular, researchers started exploring and investigating how these devices could support teaching and learning. The previous studies on mobile learning vary in their purposes, their addressed population, the kinds of mobile technologies used, and in what discipline. Also, these studies examined mobile learning from different theoretical perspectives (Naismith et al., 2004). However, a meta-analysis approach undertaken by Wu et al. (2012) to systematically review the literature on mobile learning, that encompassed 164 studies from 2003 to 2010, shows that previous studies of mobile learning fall into two broad research directions: evaluating the effectiveness of mobile learning (Cheng, Chang, & Wang, 2008; Evans, 2008), and designing mobile learning systems (Hwang, Yang, Tsai, & Yang, 2009; Trifonova & Ronchetti, 2006; Uden, 2007). A good body of research in both directions has been done. Other important findings of this meta-analysis study (Wu et al., 2012) included: the fact that surveys and experimental methods were the most common research methods used in such studies; the outcomes of these studies demonstrated that the impacts of m-learning were significantly positive; that mobile phones and PDAs are the most commonly used devices; and that mobile learning was more prevalent at higher education institutions, rather than secondary or elementary schools.

The focus of such studies (in terms of the population addressed) varies from higher education students (Al-Fahad, 2009; Corbeil & Valdes-Corbeil, 2007; Thornton & House, 2005) to elementary schools students (Chen et al., 2003), as well as teachers and instructors (Fraga, 2012, Peachy; 2010), but Hwang and Tsai (2011) found that students in

higher education were most frequently the focus of research into mobile learning. This finding was supported by the meta-analysis study conducted by Wu et al. (2012).

Researchers have addressed the impacts of different mobile technologies in their studies. Wu et al. (2012) indicate that mobile phones and PDAs together account for over 75% of all mobile devices used in educational contexts. This finding was supported by a wide range of studies (Basoglu & Akdemir, 2010; Cheng et al., 2010; Cochrane, 2010; Cui & Wang, 2008; Jones, Edwards, & Reid, 2009; Jong, Specht, & Koper, 2010; Kadyte, 2004; Liaw, Hatala, & Huang, 2010; Wexler et al., 2008). On the other hand, many surveys investigate mobile learning in general, without specifying the mobile technology used (Al-Fahad, 2009; Chanchary & Islam, 2011; Derahkhshan, 2012; Lowenthal, 2010; Peachy, 2010). The previous listed studies addressed different disciplines and educational contexts, but most studies did not encompass any one specific discipline, they only investigated perception, attitude, opinions, readiness, motivation, and the concerns of students, teachers, or faculty regarding mobile learning (Akour, 2009; Al-Fahad, 2009; Donaldson, 2011; Fraga, 2012; Lowenthal, 2010; Messinger, 2011; Nassuora, 2012; Wang, Wu, & Wang, 2009; Wexler et al., 2008). When it comes to researching the use of m-learning for a particular discipline, computing and applied sciences are more popular (Hwang & Tsai, 2011; Wu et al., 2012).

The development in education, and the shift in philosophical and theoretical underpinnings, justify the use of mobile technologies in education (Herrington & Herrington, 2007). From a different angle, the era of mobile technologies has influenced teaching and learning practices. Naismith et al. (2004) identify six different theory-based categories of learning activities, i.e., Behaviourist, Constructivist, Situated, Collaborative, Informal and Lifelong, and Learning and Teaching Support activities. Based on the behaviourist perspective, Wang et al. (2009) implemented a mobile learning system, developed at Shanghai Jiaotong University, in a blended (online & face-to-face) English classroom of 1000 students. As their data revealed, this system changed students from passive learners to active participants, who are behaviourally, intellectually and emotionally involved in their learning tasks. Cochrane (2011) investigated the potential of mobile web 2.0 tools to facilitate social constructivist learning environments across multiple learning contexts, from thirteen m-learning projects undertaken between 2007 and 2009. These projects indicate the influence of mobile learning by proposing sustained

engagement and interaction, via communities of practice that facilitate institutional, cultural and strategic shifts, as well as a lecturer and student ontological shift in relation to learning and teaching.

From a situated perspective, Chan, Lee and McLoughlin (2006) placed a group of more experienced students in charge of producing a series of educational podcasts which were targeted at new students, and consistent with the principles of peer tutoring or teaching, where learning is embedded within the activity. The topics of these podcasts were of an applied nature, that new students could use to optimise their study time, assist them in completing assignments, and solve particular types of problems. An online survey was sent to the new students (listeners of the podcasts) and a focus group interview of the experienced students (producers of the podcasts) to elicit their views and experiences. Results indicated that the project proved to be of a valuable learning experience for both, the listeners and the producers of the podcasts.

Based on collaborative activity that stimulates learning through social interaction, Cheong et al (2012) present a mobile-app-based collaborative learning system named myVote, as well as describe a process to use the system by academics and the students to achieve collaborative learning. This app provides an additional channel of communication, especially in a lecture-like- environment where there is a large audience and it is impossible to engage everyone to actively interact during the short time available. It is a flexible system that can achieve collaborative learning and address different levels of thinking, from lower to higher order, according to the activity used by the academics. They state that “the myVote collaborative learning system can be used in a number of different ways in an educational setting to better engage students, promote social interaction, and to lead to higher-order thinking” (p. 107).

In 2000, Sharples (2000) indicated how soon new technologies would be in place to support mobile lifelong learning, and allow people to interact with learning resources and retrieve knowledge, whenever and wherever they are. Years later, Clough et al. (2009) testified what was expected by Sharples (2000). Using a web survey, Clough et al. (2009) found out that users of PDAs (Personal Digital Assistants) and smartphones are using the capabilities of their devices to support a wide range of informal learning activities in innovative ways.

Finally, as an illustration of learning and teaching support activities, the University of Birmingham developed a mobile learning organiser (Holme & Sharples, 2002). During the academic year 2002/2003, Corlett et al. (2005) conducted a ten-month trial of this mobile organiser. A group of 17 students were loaned wireless PDAs, provided with the mobile learning organiser. The results of the follow up surveys and focus group indicated the need for institutional support of mobile learning. Recently, Altameem (2011) presented a framework of a contextual mobile learning system, designed for the learning environment at Saudi Arabian universities. After providing the framework for key figures at Saudi universities, suggestions include the separation of function modules into two sets; mobile learning modules and administrative support service modules. This work indicates the crucial rule of support services in mobile learning environments in Saudi Arabia.

Any discussion of the potential of mobile learning is incomplete without reviewing the work of Marc Prensky, a passionate supporter of mobile learning. In 2005, in his paper entitled "What Can You Learn From a Cell Phone? Almost Anything", he stated: "There are many different kinds of learning and many processes that we use to learn, but among the most frequent, time-tested, and effective of these are listening, observing, imitating, questioning, reflecting, trying, estimating, predicting, 'what-if'-ing, and practicing" (p. 261). According to Prensky (2005), there are several features of cell phones that can promote students' learning. Among these features are the following: tiny pocket computers; brain extenders, quoting a Japanese student "When you lose your mobile, you lose part of your brain"; in voice only cell phones, you don't need anything more than a voice link and a person on the other end worth listening to in order to learn a whole lot; short Messaging Service (SMS) can be used for pop quizzes, to poll students' opinions, and to make learners aware of current events for class discussion; and graphic displays on cell phones allow for meaningful amounts of text to be displayed accompanied with pictures, animation, and, of course, sound. Moreover, cell phones users can download versions of the same kinds of tools and teaching programmes available on personal computers, and, given that the phones are communications devices, use the tools for collaboration in new and interesting ways. Furthermore, web sites specifically designed for cell phones are becoming more and more numerous as a response to the cell phones with built in internet browsers. Also, cell phones with cameras are tools for scientific data collection, documentation, and visual journalism, allowing students to gather evidence, collect and classify images, and follow progressions over time, along with, cell phones

with GPS (Global Positioning Systems) that can be used by students to search for things and places. More than that, video clips on cell phones can be used for modelling in educational context.

On the other hand, Clark (2001) argues that when media are used as a means of delivering learning content, they are unable to influence achievement. He states: "the best current evidence is that the media are mere vehicles that deliver instruction but do not influence student achievement any more than the truck that delivers our groceries causes changes in our nutrition" (p. 2). By contrast, Laurillard (2007) declares that, in the case of mobile learning, motivation has become a focus for what mobile learning offers that is different, and it is clear that learners working with mobile learning enjoy the process. Moreover, she states "The mobility of digital technologies creates intriguing opportunities for new forms of learning because they change the nature of the physical relations between teachers, learners, and the objects of learning" (p. 153).

In 2006, Cobcroft reviewed over 400 numerous mobile learning projects, reports, reviews, conference papers, and books. The main purpose of this review was to provide the basis for an academic book on mobile learning, by identifying key authors and practitioners across this domain. The key outcome of this review was that the "critical success factors for any m-learning implementation are those of the achievement of interactivity, coordination, negotiation and communication, optimal organisation of material, and mobility, motivation and collaboration" (p.76). Furthermore, Cobcroft (2006) concluded that educators and learners need to develop new digital communication skills, new pedagogies, and new practices. In the eight years since then, mobile learning has attracted the attention of a great number of researchers around the globe, which has resulted in a great body of published research worldwide.

The previous list of studies shows the growing pace of the global implementation of mobile learning, but studies of the global phenomenon do not address the moderating impact of contextual differences. Therefore, to remedy this, the following sections address mobile learning in different contexts.

2.5 Mobile Learning around the World

The widespread use of mobile technologies around the world has generated the move toward mobile learning. Hwang & Tsai (2011) analysed the major contributing countries

of mobile learning articles from 2001 to 2010, by dividing the period into two time slots; first 5 years and second 5 years. Unites States contributed the most papers in the first 5 years; United Kingdom came second, and then Taiwan. In the second 5 years, Taiwan outperformed both the US and the UK. In addition, more countries contributed in the second 5 year period, rather than the first. However, Saudi Arabia was not among those countries.

In reviewing the state of mobile technologies in the United States, Wagner (2005) provides examples of the effectiveness of mobile technologies on peoples' lives as, for example, the way in which it was used to track survivors after the tsunami in Java in 2004. He also expects the current state of mobile technologies to change, and he believes that the developing and changing nature of mobile technologies, wireless networks, hardware, and cost of the service would make these technologies friendly to mobile learning.

The following examples of mobile learning initiatives from around the world strongly suggest that mobile learning is becoming more feasible. Feedback from these initiatives contributed to the popularity of mobile learning and teaching in educational contexts; and encouraged a number of educational institutions to consider mobile learning and teaching, shift their strategies from e-learning to m-learning, and formalize the informal practices.

A UNESCO paper authored by Fritschi and Wolf (2012) discusses mobile learning in North America, United States & Canada, using quantitative and qualitative data from an in-depth literature review, one to one interviews, and a survey. Representatives from state, provincial, and local levels, as well as companies marketing mobile technologies in K–20 (kindergarten through postsecondary) education, participated in the study. In the survey distributed for this paper, states and provinces were asked why they are considering mobile learning. A primary reason, especially for the Canadian provinces, is to ensure that students are prepared for the twenty-first century global economy. The interviews revealed the need to establish a job-embedded professional development programme which focuses not only on learning how to use mobile technologies, but on the pedagogical strategies to improve instruction by using these technologies. They conclude that mobile learning is becoming more visible with the potential to increase student achievement.

Moreover, as the quality and quantity of mobile technologies increase, so do the opportunities for mobile learning. In North America, equity is a critical component of any mobile learning initiative. All students should have access to similar devices and internet services regardless of their income. Also, local and district policies and leadership can dramatically effect mobile learning implementations, as much as the national, state and provincial policies and initiatives. Regardless of the widespread ownership and use of mobile technologies in the USA and Canada, mobile learning is only mentioned in the larger context of education technology and access; therefore, the paper suggested policy changes and reforms to specifically address the use of mobile learning.

Stanford is a leading American university, known for the research, design, implementation, and evaluation of innovations and technologies. The use of mobile technologies is among the most important innovations, and is being developed via several projects, such as the Stanford Mobile Inquiry-based Learning Environment (SMILE) (Seol et al, 2011), the Remotely Operated Science Experiment (ROSE), Design-Based Learning (DBL) (http://suseit.stanford.edu/research), and the PocketSchool (Kim et al., 2011). Throughout the pilot studies of these projects, participated students were enthusiastic, focused, and provided positive feedback. Besides researching mobile technologies, Stanford has mobile applications and websites to help students and faculty to access helpful resources (https://itservices.stanford.edu/service/mobile). Similarly, in September 2010, Harvard launched the Harvard Mobile application, which is a University-wide initiative to improve the mobile experience of students, faculty, staff, visitors, and neighbours who interact with Harvard's campus and community. The application provides a Harvard Yard Tour that works on any web-enabled smartphone, enabling applicants to learn about life at Harvard today, as well as the University's 375-year history. Some schools at Harvard have their own mobile applications, too (http://www.harvard.edu/all-harvard-mobile). Recently, other Universities in North America have also developed their own applications.

In Europe, according to Trucano, Iglesias, & Liu (2012) in the World Bank Blog: "The European Commission has for many years played an outsized role in funding early mobile learning projects and where the United Kingdom (through projects like MoLeNET) has been a real leader, with a few notable activities also occurring in Denmark and the Netherlands" (para. 9).

During the last two decades, European researchers have conducted significant mobile learning projects. The largest and the most diverse implementation of mobile learning in UK is MoLeNET, a unique collaborative initiative, which aims to promote mobile learning in the further education sector (Petley, Attewell, Savill-Smith, 2011). HandLeR from the University of Birmingham (Sharples, 2000) is another project. Although there were limitations to the technology at that time, the HandLeR project set out the idea of learning from any location outside the classroom and throughout life.

MOBILearn is a European-led research and development project which ran from January 2002 to March 2005 and involved 24 partners from ten countries. The project explored new ways to use mobile learning environments to address the needs of the learners, new mobile learning systems architectures to support the creation, brokerage, delivery and tracking of learning and information content. Vavoula et al (2004) contributed to the project by reviewing research on mobile learning and theories of learning to produce a set of guidelines for learners, teachers, and policy makers for learning, teaching, deploying, and managing with mobile technology. Also, Vavoula (2005) reported that, as an essential part of this project, learners completed a reflective diary to record learning episodes, which provided useful insights into the practice of mobile learning, compared to non-mobile learning. The results indicated that mobile learning was more interactive, involved more excitement, more communication and collaboration than traditional learning (www.mobilearn.org).

The M-Learning project is a three year pan-European collaborative research and development program that aims to support literacy, numeracy, and life and survival skills of young adults aged 16-24. Attewell & Webster (2005) stated that the essential objective of this project was to engage and motivate disadvantaged young adults who were not participating in education or training, or were unemployed, or homeless. Key findings of the project indicated that 62% of respondents reported that they felt more keen and enthusiastic to take part in future learning, after trying mobile learning. Of these 62% enthusiastic learners, 80% expressed their future preference for learning using mobile devices. In addition, 82% of respondents stated that mobile learning games could help them to improve their reading and spelling, while 78% reported that these games could help them to improve their maths. However, evidence from this project signified that

mobile learning can contribute and attract young people to learning and support their learning and development (Attewell, 2005b).

From E-Learning to M-Learning, and Mobile Learning, The Next Generation of Learning are two projects funded by the Leonardo Da Vinci programme of the European Commission aiming at supporting vocational education and training through mobile learning environments (http://learning.ericsson.net/mlearning2/project one/ project.html, http://learning.ericsson.net/mlearning2/project.shtml).

In the first project, From E-Learning to M-Learning, pedagogical scenarios were designed for PDAs; while in the second, researchers built on the first project and extended the boundaries of mobile learning by involving current and soon-to-be-released technologies (Ericsson, 2008). From E-Learning to M-Learning project solved the problems of mobile learning on PDAs by designing a comfortable and successful digital learning spaces and course materials for students. When Students involved in this project were surveyed, they expressed their satisfaction with mobile learning using PDAs.

However, building on this project, more sophisticated technologies were used in the second project, Mobile Learning, The Next Generation of Learning, moving mobile learning from 2G technologies, i.e. PDAs, to 3G technologies, i.e. smart phones with internet access, moving graphics, SMS, MMS, and streaming video. Feedback from the participants indicated that they enjoyed m-learning experience, and reported positive views (http://learning.ericsson.net/mlearning2/products.shtml).

Many more projects have been done so far in school, university, museums and informal learning, and professional development and workplace settings, such as Learning2Go (Faux et al., 2006), myPad (Wittlestone et al., 2008), Mystery at the Museum (Carbrera et al., 2005), and Flex-Learn (Gjedde, 2008).

The United Kingdom, as a leading European country in mobile learning research, has produced a great body of projects, and research papers. The Open University was one of the first universities worldwide to make its own in-house developed interactive e-books available on iTunes U. The project was launched in 2001 and was funded by a university initiative in e-learning. Kukulska-Hulme (2005) reported the results of a formal evaluation by the Institute of Educational Technology for the project, which indicated that e-books

were welcomed, despite the fact that the users need to be informed how to make the most of this technology, and how plagiarism could be avoided.

Since the last decade, the Joint Information Systems Committee (JISC) has been driving innovation in UK education and research to ensure that UK remains world-class in research, teaching and learning. Mobile Oxford is a mobile information system developed by the University of Oxford and funded by the JISC for prospective students, current students, staff and the wider community, to help in the day-to-day tasks such as finding a library book, checking the next bus or even finding what time the nearest post box is emptied (http://m.ox.ac.uk/desktop/#features). Mobile Oxford project pointed out the potentials that GPS capable mobile devices could bring. Also, among other JISC projects are: Mobiles Enhancing Learning and Support (MELaS) at the University of Wolverhampton; M-Biblio at the University of Bristol; M-Library Support Project at Birmingham City University; and Mobiles and Public Electronic Displays (MoPED) at City University in London (http://www.jisc.ac.uk/whatwedo.aspx).

Despite all the diversity within the nations of Asia, in terms of technological, economical, and educational infrastructure, they all experienced the fastest growing rate in mobile-cellular telephony subscriptions (ITU, 2011), which has encouraged the implementation of mobile learning. The Korean Minister of Education (Lee, 2011) announced Korea as the first country in the world to declare a national plan to distribute digital textbooks to elementary schools and to middle and high schools by 2015. The key encouraging results of this national project were the effectiveness of digital textbooks in reducing the gap between students from rural and urban areas, the cost effectiveness of updating these textbooks, and the dynamic interactivity of the digital content. There are fundamental success factors such as the fast, reliable, and widespread internet across the country, and the Korean educational policies commitment to integrate technology. However, there is the copyright law that needs to be revised and updated.

In 2004, the University of the Philippines Open University (UPOU) launched its mobile learning program in cooperation with one of the biggest cellular phone companies in the Philippines, SMART Communications. This program helps learners to acquire knowledge and develop skills that are crucial to the knowledge-based society.

In China, where the budget is too limited to supply all higher education institutions with up to date hardware and software (Cui & Wang, 2008), the E-learning Lab of Shanghai Jiao Tong University (SJTU) has provided undergraduate courses on mobile technologies (as exemplified by cell phones and PDAs) through the mobile learning system developed by the E-learning Lab (Wang, Shen, Tong, Yang, & Han, 2005). So, while mobile learning is mainly a pedagogical, technical, or developmental issue of teaching and learning in the developed world, it is mainly a matter of problem solving and more affordable learning in the less developed world. UNESCO's latest report (2012) on mobile learning in Asia declares that "mobile technology has proven to be an effective channel for providing inexpensive distance education in some Asian countries" (p. 15). The ZMQ project in India uses mobile phones to provide basic medical education for under-privileged and semi-literate people about popular regional content such as an epidemic and how it spreads (Traxler & Kukulska-Hulme, 2005).

There has been much research done on mobile learning in Asia, but according to a UNESCO report (2012), the countries in this region fall into three categories: countries with a mature mobile market (e.g. Taiwan, Singapore, and South Korea) where mobile learning is embedded under the broad context of national-level ICT policies; countries with a growing mobile market (e.g. India, Bangladesh, and Philippines) where mobile devices are used for distance and informal learning; and countries with an emerging mobile market (e.g. Afghanistan and Nepal) where mobile learning is rare. Therefore, usually mobile learning is correlated with the penetration of mobile phones and the ICT infrastructure.

In Africa, where there are some nations that appear to be completely separated from the rest of the world, due to the poor conditions of every aspect of life including physical infrastructure, we can find good reasons for implementing mobile learning. One of these reasons was stated by Dholakia and Dholakia (2004) when they wrote that "in regions with difficult geography or poor economic conditions, mobile networks can be designed and implemented in far quicker and cost-efficient ways than fixed networks" (p. 1393). Correspondingly, Kraut (2013), in the UNESCO Guidelines for Mobile Learning, states that "Today mobile technologies are often common even in areas where schools, books and computers are scarce. As the price of mobile phone ownership continues to decline, more and more people, including those in extremely impoverished areas, are likely to own and

know how to use a mobile device" (p. 10). According to the International Telecommunications Union (ITU, 2011), there are 12 million fixed line subscriptions (1.4 per 100 inhabitants) compared to 433 million mobile cellular subscriptions (53 per 100 inhabitants) in Africa. In such a case, mobile technologies could provide equality of access to e-learning or educational e-services in parts of the world with poor infrastructure.

Brown (2003) reports on the important role that mobile learning has started to play in e-learning in Africa, which was the reason behind the spread of e-learning in rural areas. In 2002, a project started at University of Pretoria in South Africa using the Short Message Service (SMS) to provide immediate and just-in-time announcements of important dates of classes, exam registration, exam dates, notification of study material distribution, etc. (Brown, 2003). Brown was certain that without SMS "the posted information would have taken between 3 and 18 days (depending on the remoteness of the student) to reach all the students" (p. 9). A follow up workshop was done in 2003 to identify the possibilities of using mobile phones and SMS, not only for administrative purposes, but for academic purposes as well. The workshop and the project helped to learn lessons that underpinned the recommendations and premises for further work. Based on these recommendations and premises, two models were developed: one in 2003 for administrative support through bulk SMS, and the other in 2005 for academic support through bulk SMS. The Bulk SMS system was also used in Kenya to support training 200,000 in-service teachers (Traxler & Dearden, 2005). In a UNESCO report on mobile learning in Africa and Middle East, Isaacs (2012) reviewed the project and stated that "One of the key findings of the project's independent evaluation was that it needed clearly-identified champions within the Ministry of Education who would be responsible for leading the project. It was, also, needed to develop an authoritative policy and guidelines for the use of the system by teachers and government officials" (p.18-19). However, the project was effective in general although it had encountered some technical challenges.

Bridgeit, a ground-breaking project in Tanzania, is targeting 80,000 pupils in 150 Tanzanian schools aiming at increasing the educational achievement at primary schools. This project enables teachers to download videos about math, science, or HIV/AIDS to their mobile phones which are connected to a TV set in the class. Tests show improvements in achievement among students who watched the videos (Kasumuni, 2011).

With a similar goal, the MoMaths project in South Africa was launched to improve the quality of teaching and learning mathematics (Naidoo, 2011). The project developed to provide students and teachers with access to math education on their mobile phones at no fee. They, also, received instant feedback and had the facility to compare their results with other students nationwide. Training sessions were also provided for the math teachers, as well as further support via e-mail. Isaacs (2012) reported that 79% of the trained math teachers were satisfied and most of them agreed that the project positively affected their students' attitudes towards math education.

Recently, Shumba (2012) produced a new mobile interface for access to the Institutional Learning Management System at the University of Cape Town named Vula, due to the fact that number of students with internet enabled mobile phones is growing. Shumba (2012) conducted an evaluation of the new mobile interface in three stages: the first stage involved collecting data on the academic and technical backgrounds of the participants, the second stage was conducted by watching the participants performing designed tasks using the new mobile interface and take note of time taken to accomplish the task, and whether the participants succeeded of failed and what kind of errors they committed, and the third stage involved interviewing the participants to inspect their experience and satisfaction. The results shows that the interface is usable and useful, but it needs more work to be considered as a full system.

It is really clear that most mobile learning projects in Africa depend on the ownership of mobile technologies among participants, while few projects provide the necessary technologies (hardware) such as MoMaths. However, Rao (2011) confirms that "by the year 2015, the mobile network will break the electricity barrier in more than four major regions. Sub-Saharan Africa will have more people with mobile network access than with access to electricity at home" (p. 11).

What has been learned from these initiatives, and based on the conclusions that have been drawn, it was recommended that before embarking on mobile learning and teaching initiatives, several issues are crucial to be considered to enable effective implementation. For example, Fritschi and Wolf (2012) recommend cultivating a sense of ownership among programme implementers and participants before moving forward with mobile learning and teaching projects. Furthermore, Hylén (2012), after detecting strategies, initiatives and projects for mobile learning in formal education in Europe, recommends

identifying best practices of mobile learning and teaching from small project or individuals for scaling up to the organizational and national level; and to capitalize on the potential of informal mobile learning in a formal learning environment. Isaacs (2012) and So (2012), also, indicates a need to promote a bottom-up strategy toward change rather than use a top-down approach, in order to trigger a change in mobile learning policies to have a significant effect on teaching and learning.

As noted above, the significance of the current study could be traced in the conclusions and recommendations of a range of mobile learning initiatives from all around the world. Even though that many of these initiatives have inspected the participants' attitudes and perceptions at the end of the projects; and in many cases these projects positively affected the participants, but it seems to be a challenging task, due to the contextual and cultural differences from one environment to another. Hence, the current research is an attempt to find out the factors that determined students' and faculty use behaviour and behavioural intention to use mobile technologies in learning and teaching English as a foreign language prior to the implementation of any initiative, in order to guide the development of the appropriate policies.

2.6 Mobile Learning in the Arab World

In the Arab world, the Arab Spring was among the most significant mobile technologies phenomena in 2011 (UNESCO, 2012). It is started as peaceful protests in some Arab countries against long-standing governments after a Tunisian young man committed an act of self-immolation on 17 December 2010, as a desperate act of frustration. He was hassled by a policewoman for not having a governmental permit to sell produce on a cart in the street. Moreover, the authorities refused to accept his complaint against the policewoman who slapped him on face and told him to clear off in French "Dégage". This word became the slogan of the Arab Spring to overthrow the presidents. This young man provoked people of different ages, social classes, and gender to march and protest for their dignity and their future; and they forced the Tunisian president to step out (Dabashi, 2012).

The youth population in the region, in nations such as in Egypt and Tunisia, used social media like Facebook and Twitter, accessed via mobile phones, to promote the uprisings. This was possible because "87 percent of young Arabs aged 15 to 29 had access to mobile phones in 2010, an increase from 79 percent in 2009. In the Gulf Cooperation Council

(GCC) countries like UAE and Qatar, the mobile phone penetration rate is more than 100 percent. Even in poorer countries like Palestine and Yemen, a surge in mobile phone penetration is expected in the next few years because of a burgeoning youth market and emergence of new telecom operators" (Muttoo, 2011, para. 2). Events such as these show that mobile technologies are changing the face of the region economically, socially, and politically.

Mutto (2011) provides examples of uses of mobile technologies in the Arab world. One of these examples is due to political issues again, Syria's Electronic Voucher System launched in 2009 to alleviate food insecurity among Iraqi refugee families in Damascus. In this program, the local telecom operator provides free of charge SIM cards to refugee families to receive food vouchers on their mobile phones that can be used in government-owned stores. Another example is that mobile phones are also used to promote health among Bedouin women in Jordan, as they can seek advice from doctors using mobile phones. Such initiative empowered those women, who are culturally unable to seek medical advice without permission from their husbands. According to Isaacs (2012), these examples demonstrate the possibility of using mobile technologies to provide services in alternative ways; however, the growth of mobile learning is part of this phenomenon. The following paragraphs review mobile learning in the Arab world.

Still in Jordan, but from educational perspective, Al-Zoubi et al. (2010) examined the development of mobile learning in Jordan by exploring three examples from two universities. First, the content of an electromagnetic engineering course at the Princess Sumaya University for Technology was developed to be delivered through mobile learning environments, to assist faculty members in their educational mission. Second, a mobile quiz system deployed on a PDA was developed at the Arab Academy for Banking and Financial Sciences to enable instructors to build interactive web-based quizzes. Students can access the quizzes anywhere and at any time using PDAs, and profit from mobility, portability, interactivity, and individualization of mobile learning according to their needs. Third, a mobile virtual laboratory developed at the Princess Sumaya University for Technology to provide students with a tool to perform virtual experiments using mobile devices in order to share resources and equipment. The results of the study show that despite some discouraging facts for the future of mobile learning, such as the shortage for suitable content, slow internet speed and high charges, universities expected to develop

proper mobile learning content in Jordan. The students' perceptions survey shows that mobile learning should be started and extended to other simpler courses with large audiences, such as English language and computing basics courses. Finally, Al-Zoubi et al. (2010) concluded that such initiatives must meet some critical requirements before creating any mobile learning content, such as the establishment of a learning strategy for mobile learning, focusing on the adaptive and the flexible nature of the learning process, and the standardization of content.

In the Arabian Gulf Region, Qatar University, in collaboration with the Corporate Training Department at Qatar Petroleum-QP, launched an innovative project in 2012. This project developed learning objects, which delivered English content via mobile devices, to train oil and gas workers in English grammar, listening and interpreting different workplace situations, and drill and practice on oil and gas terminologies. These learning objects are stored in electronic repositories for oil and gas workers to access the learning materials. This project is crucial to understanding ways in which mobile devices can be used to train oil and gas employees in the workplace in Qatar, to develop English language skills and prepare them for the global workforce in order to contribute to the Qatar National Vision 2030. 27 learners who participated in the pilot study were trainees from five different oil and gas companies. Those learners were assessed; the testing outcome proved that m-learning approach and the m-learning system developed and used in this study was effective in promoting language learning in workplace (Samaka et al., 2012).

While mobile learning has been developed in North America, Europe, and some parts of Asia, it is still in its early stages in Saudi Arabia, although all mobile system providers are making the access of internet connectivity to mobile devices reasonably priced, mobile devices are available and possessed by a wide range of young people, and researchers are investigating the issue.

At King Saud University, one of the largest and oldest universities in Saudi Arabia, Al-Fahad (2009) reported on the results of a survey of 186 undergraduate female students concerning their attitude to, and perception of, the use of mobile technology in education. He also attempted to find out how this technology can be optimally used to improve student retention on Bachelor of Art and Medicine programmes at King Saud University. His study showed that 53.8% (N=100) of students agreed that mobile learning could be an effective method of learning, as it could give immediate support, 78.4%

(N=146) felt that the anytime anywhere mobile learning would be more flexible method of learning, 64% (N=119) agreed that the mobile learning would improve student-teacher communication, and 60.2% (N=112) felt that the mobile learning would bring new opportunities of learning. More significantly, Al-Fahad found that "students in the survey changed from passive learners to truly engaged learners who are behaviourally, intellectually, and emotionally involved in their learning tasks" (p. 118). Hence, the results indicated that mobile learning could improve retention by enhancing teaching and learning, improving communication and enriching students' learning experiences in their open and distance learning.

Also, at King Saud University, Al-Husain & Hammo (2015) explored 317 male and female undergraduate students' ownership, use, and perceptions of ICT and mobile technologies. The researchers designed a questionnaire using multiple-choice questions and five-point Likert scale to collect quantitative data during the academic year 2011/2012. Results indicated that the majority of students (96%) owned laptops, while 23% of students owned, both laptop and desktop, and only 2% did not have any. All students participated in the study owned a mobile phone; 86% of them owned smart phones. The results showed that the majority of students (89%) were in agreement that these technologies provided an effective tool to access learning resources and get help when it is needed. These findings showed that the readiness for integrating mobile technologies is at high level in this institution, which is located in the capital city of Saudi Arabia, but is it the same when it comes to a different region of Saudi Arabia? The current study will investigate not only the readiness, but also the acceptance of mobile technologies in a different institution, with a different budget, in a different region based on a theoretical framework for technology acceptance.

Chanchary & Islam (2011) also surveyed a total of 131 students, 31 female and 100 male students, from the undergraduate level of King Saud University. The dataset for this study was created using a survey and two monthly quizzes. The survey that was built for collecting general information regarding the use of mobile phones and the availability of internet connectivity, as well as for bringing out students' perceptions of mobile learning. The two quizzes were given at different times, one after giving regular classrooms lectures and tutorials and the other after receiving assistance from the teacher via mobile phones, by sending text messages of daily and weekly study tips, reminders for quizzes

and tutorial dates, as well as instant feedback for the students' questions and links of websites for further study. All the participants in this study own mobile phones, with 43% of them having smart phones. While the majority of students who participated in the study (83%) claimed that they know how to use their mobile phone features for general purposes, 85% of them indicated that they do not know how to use their mobile phones features for mobile learning. Their results showed a sharp increase from AlFahad's results with more than 75% of students having a positive attitude towards mobile learning due to the flexibility of when, what, and how students would learn and communicate with teachers and co-learners, despite the fact that most of the students agreed that neither the university (87%), nor they (82%) are ready for mobile learning. However, comparing the average score of the two quizzes (Quiz 1= 72 & Quiz 2= 85) indicated an average improvement of 13 points out of 100 (The significance level was not provided in the study).

Furthermore, Abachi & Muhammad (2014) have conducted several surveys addressing a total of 35 graduate and undergraduate students as well as academics (number of academics have not been specified in the study), in the department of computer engineering, to examine the merits and the outcomes of an e-learning approach followed by the use of mobile technologies to access the course materials uploaded to the LMS at King Saud University. The e-learning approach is developed by utilizing a device (E-podium) that controls all the classrooms' components (two screen projectors, touch control screen, projector screen to display on the smart board, digital camera, internal speakers, microphone, smart card reader, keyboard, digital pen, port to connect a laptop with the projector screen and other devices, eight USB slots, software package including students' attendance system, e-notepad, video conferencing network, lecture conferencing network, live or recorded video airing icon, and camera document icon) by an internal control and including software for a smart classroom environment at King Saud University. Lectures can be recorded and saved on the university servers to be used by students on LMS later on which can be an effective m-learning environment. Abachi & Muhammad (2014) found that "undergraduate and postgraduate students as well as the academics are very much in favour of using m-learning technology for their educational purposes" (p. 495). More than 80% of students and academics who have been surveyed either strongly agree or agree with the merits and advantages of mobile learning.

On the other hand, Altameem (2011) presents the framework of a contextual mobile learning system that was specifically designed to suit the learning environment at Saudi Arabian universities. To validate this framework, the author gathered data by utilizing an interview-based method after providing the framework to key figures at Saudi universities. Most of the participants gave supportive feedback and some suggested improvements to the framework. However, there was no statistical result or any details about the participants presented in this study.

Via a theoretical discussion of mobile learning, Alsaadat (2009) tries to shed light on the concept of mobile learning and how it works, presenting some practices of using mobile learning at university level and how these practices would affect university teachers and students. Alsaadat (2009) concluded that mobile technologies can do much to enrich the learning experience.

In an experimental trial, Amry (2014) compared the achievement of two groups of female students (15 students in each group) taking an educational media course at Taibah University. A WhatsApp mobile learning activities' approach was administered to the experimental group, while the conventional face to face learning activities approach was administered to the control group. An achievement test was administered at the end of the experiment for both groups. T-test results indicated that there was a statistically significant difference at the 5% level between the achievements of the two groups. The experimental group outperformed the control group in the achievement test after using WhatsApp mobile instant messaging. Moreover, two questionnaires were administered at the end of the experiment to inspect the attitudes of the two groups towards WhatsApp mobile learning and face-to-face learning in the classroom. The results showed that there was a significant statistical difference (at the 5% level) in attitudes between the two groups in favour of the experimental group. The author concluded that the use of such a technology improved the social interactions among students and facilitated the construction and sharing of knowledge via a cooperative and collaborative learning approach.

In much more wider execution of mobile technologies, most Saudi universities have already adopted the short message service (SMS) for dealing with administrative and media issues. Bulk messages are used to notify deans of colleges or heads of departments about administrative issues. Staff and students are also notified about events and

emergencies by SMS. This service has been widely used, accepted, and appreciated. In order to get further information, King AbdulAziz University, one of the biggest universities across the country, is providing a paid service, either monthly for the university news or payment per message for a schedule, student status, or GP (Grade-Point) (http://sms.kau.edu.sa/Default.aspx?Site_ID=1003&lng=en).

The national development plans of Saudi Arabia are linking socio-economic development with technology. Particularly, in the Ninth Development Plan (2010-2014), the fourth theme addressed the development of Saudi economy and the need to maximize the role of knowledge as a basic engine of the economic growth. The objectives of this theme required special consideration and an increase in allocations for institutions of research and development, encouragement of innovations, and support of up-to-date information and communication technologies. The recent Tenth Development Plan (2015-2019), also, has ensured the role of optimal utilisation of ICTs and up-to-date innovations and technologies in the transition to knowledge-based economy and enhancing the growth and stability of the national economy (http://www.mep.gov.sa/). Hence, mobile learning research, as one of the latest trends in educational technologies, will be of great interest to stakeholders in Saudi Arabia.

2.7 Mobile Learning and English as a Foreign Language Learning

English is a global language (Crystal, 2003), as well as the language of the internet (http://www.internetworldstats.com/stats7.htm), the language of international business and commerce (Education First, 2014; Graddol, 1997), and the language of academic discourse (http://blog.britishcouncil.org/2014/03/31/english-language-medium-of-instruction/). According to the British Council (2013), English is spoken to a useful level by 1.75 billion people, a quarter of the world's population; and is perceived as crucially important for educational and professional success (O'Neill, 2014). Hence, teaching and learning English as a Foreign Language (EFL) is becoming more and more important every day.

Al-Seghayer (2011), in his book about the history and status of EFL teaching in Saudi Arabia, stated that the introduction of English into Saudi Arabia was a dynamic factor that facilitate the communication of the Kingdom's visions, policies, and needs to the outside world. In general, the aims of EFL teaching in Saudi Arabia were stated in the Policy of Education as follows: "Furnishing the students with at least one of the living languages, in

addition to their original language, to enable them to acquire knowledge and sciences from other communities and to participate in the service of Islam and humanity" (AlHajailan, 2003, p.23).

Nevertheless, it is evident by research that learning English for Arabic speakers, Saudi students, is difficult, and the conventional learning process does not produce the required results (Al-Khairy, 2013; Javid, Farooq, & Gulzar, 2012; Liton, 2012). According to the EF EPI (Education First English Proficiency Index) Report (2014), Saudi Arabia was ranked 59 (Very Low Proficiency) among 63 countries included in the report, after testing the English skills of 750,000 adults, aged 18 and above from all parts of the world in 2013.

Globally, the Middle East and North Africa is the weakest region in terms of English proficiency, excluding the United Arab Emirates which ranked 32 (Low Proficiency). Liton (2012) referred to the challenges faced by Saudi students learning EFL, namely the differences between English and Arabic in grammatical functions, linguistic elements in sentences, idioms and phrases, parts of speech, oral expressions, despite semantic and syntactic differences as well as the differences, in socio-cultural backgrounds from which these two languages originated. But, according to Liton (2012), this reality is not a barrier anymore, since Chinese students are learning English with all the major differences between English and Mandarin Chinese in sound systems and linguistics. Despite all the differences between English and Mandarin Chinese, China is ranked 36 (Low Proficiency) according to the fourth edition of EF EPI Report (2014) and improved its English proficiency by 2.53 difference in the country score while in Saudi Arabia English proficiency fell by 8.57 points when comparing the scores of both countries in the first and the fourth edition of the report (see Table 2).

Table 2: EF EPI Country Scores

Country	EF EPI 1st Edition	EF EPI 4th Edition	Score Change	Rank
Saudi Arabia	48.05	39.48	-8.57	59 (very low proficiency)
China	47.62	50.15	+2.53	36 (low proficiency)

Source: EF EPI Report - English Proficiency Index (2014)

According to Wang (2008), the reason for this development of English as a foreign language in China is to empower individuals with the essential skills in the pursuit of college education in China, education opportunities abroad, career development, job

promotion, and functioning in a globalised context, which resulted in an increase in the number of students learning English as a foreign language. Wang (2008) claimed that the estimated number of EFL learners in China exceeds 300 million. In the case of Saudi Arabia, the policy of promoting EFL education shares almost the same objectives as those pursued by China, but not the same results (Al-Zaharani, 2008; Elyas, 2008). The comparison between the case of China and Saudi Arabia leads to the conclusion although the language acquisition of EFL seems basically easier for Saudi students than for Chinese students, nevertheless still China outperformed Saudi Arabia, in terms of English proficiency. Therefore, EFL instruction in Saudi Arabia is challenging at all levels especially in higher education; and different trials and means of language teaching and learning should be tried.

EFL instruction at Saudi universities is not able to cope with the growing number of students who are joining higher education every year, due to the fact that the population of Saudi Arabia is skewed towards the young (see Figure 1). For example, by the end of the academic year 2010/2011, 340,000 students graduated from secondary schools in Saudi Arabia. This number rose to 380,000 in 2012/2013 (http://www.mohe.gov.sa/ar/news/Pages/default.aspx). Most of these graduates are looking for study places in public higher education institutions every year, which sounds impossible because the capacity of Saudi public universities is limited, compared to the high percentage of young population. According to Alturki (2014), the gap between the secondary school graduates and the places in higher education "continued to grow despite increases in the number of universities, colleges and institutes" (para. 2). Based on a recent Ministry of Education statistical data of the academic year 2014/2015 (http://www.mohe.gov.sa/ar/AcceptedStatus/Pages/default.aspx), the public universities in Saudi Arabia have absorbed 84.1% of secondary school graduates, but that would compromise the quality and efficiency of EFL teaching in higher education if we consider the limitations of capital and the shortage of EFL qualified teaching staff (Ministry of Education, n.d.). For example, the total number of EFL faculty members at Taibah University was 196 compared to 5,865 students enrolled in the Preparatory Year English Language (PYEL) program for the academic year 2012/2013.

However, even if the government decided to build new universities from bricks and mortar, that would be time consuming. Furthermore, even if that building can be done

within a short period of time, the recruitment of qualified EFL staffs is a difficult issue. Consequently, initiatives need to be implemented as a crucial solution for the current situation. The AAFAQ project (http://aafaq.kfupm.edu.sa/default_en.asp), as well as the National Centre for E-Learning and Distance Learning (http://www.elc.edu.sa/portal/index.php?mod=content&page=24), support the need to use new technologies to enhance EFL capacity in both public and private sectors.

Thinking of Saudi Arabia as a non-English environment, where English can only be learned in English classrooms, considering different technologies that could provide language learning settings, and bearing in mind the kind of digital age we are living in, leads to the fact that the contribution of mobile technologies will be crucial in such circumstances. Furthermore, extending foreign language learning outside classrooms, with frequent informal practices, is essential for language acquisition (Kukulska-Hulme, 2009; Kukulska-Hulme, 2012). It is clearly stated by Pemberton et al (2010) that "mobile phones have a number of characteristics that can be exploited to design the most appropriate learning services for language learners" (p. 144). However, the growth in the development and use of mobile technologies is exceeded by the increased level of demand to learn foreign languages, more specifically English.

Kukulska-Hulme and Shield (2008) claim that "the use of mobile devices to support language learning becomes ever more common" (p.273). Their observation refers to the rapid and extensive development of information and communication technologies especially mobile technologies, the wide coverage on wireless networks, and the high diffusion and ownership of mobile devices.

What we refer to by "mobile learning" throughout the current research, is the use of handheld mobile technologies to support teaching and learning by creating a blended learning environment. In several studies, as discussed below, authors use MALL (Mobile Assisted Language Learning) to describe the use of mobile technologies in language learning. In some cases, researchers go beyond the formal education of EFL, for example, Bahrani (2011) argues that MALL can play a significant role in supporting those who want to learn English, even if they cannot join any English classes, and others who want to survive in an English speaking country. Kukulska-Hulme (2009) reflects on what mobile learning could offer and considers whether mobile learning is likely to change how languages are taught and learnt. He indicates that "what makes mobile technology so

intriguing is that it has an affinity with movement between indoors and outdoors, across formal and informal settings, allowing learners to lead at least some of the way" (p. 164), and concludes that the challenge is to develop and design mobile learning in such a way that clearly identifies what it is best to learn in the classroom, what should be learnt outside, and how are these two modes connected together.

It is very common that educators avoid the process of developing and designing mobile learning materials and use ready applications for language learning which are widely available. For example, Hunter & Daly (2013) conducted a small study exploring MALL (Mobile Assisted Language Learning) addressing second-year undergraduate pre-service primary teachers on a course entitled Working with Cultural and Linguistic Diversity in New Zealand at the University of Waikato. This course was designed to guide the support for learners learning English as an additional language to be able to participate in a fully English-medium classroom. There was two phases in their project. The first phase was to survey and choose suitable iPad applications which are appropriate for children, with very low or no cost (considering limited school budgets), and user-friendly design. The second phase was to present these applications to pre-service teachers to explore and comment on these applications by filling an open ended questionnaire on how these applications could be used for language learning in the classroom. Hunter & Daly (2013) concluded that the participants found the four applications included in the study useful for effective language learning in terms of improving pronunciation, communication, and interaction, even though they found two of these applications "were limited in providing language with communicative potential" (p. 107). The participants also realized that they are not always aware of the full potential of some applications, so the phase of exploring the applications had raised their awareness.

Mobile technologies, more especially mobile phones, are very popular in Japan, as "95% of the 15–24 years old population in Japan own web-enabled mobile phones" (as cited in Thronton and Houser, 2005, p. 217). Considering the popularity of these devices, and via two projects, Learning on the Move and Vidioms, Thronton and Houser (2005) surveyed 333 Japanese university students and found that 99% were sending emails via their mobile phones. In the first study, they used mobile-based emails to promote English vocabulary learning among Japanese university students. In the second, videos and web materials were used to help students understand the meaning and context in which

various idioms are used. Students evaluated both projects by responding to a questionnaire. Results showed that mobile devices can be effectively used in teaching and learning EFL, as Thronton and Houser (2005) stated that "The two studies show that Japanese university students are comfortable reading text and viewing video on small screens. Rich multimedia can capture their interest, and pushing study opportunities at students via mobile e-mail is effective in helping them acquire new vocabulary" (p. 226).

In another mobile learning project, designed to promote the development of vocabulary, Cruz (2012) provided thirteen intermediate-level English language learners (ELLs) from a variety of linguistic backgrounds, enrolled in ELL Biology class, at an American high school with a free program for their iPod Touch or iPhones and encouraged them to use this vocabulary tool as a review mechanism when they study for the state biology proficiency test. Cruz (2012) examined how a supplemental iPod/iPhone-based vocabulary review tool influenced students' perceptions of learning biology vocabulary outside of classroom hours. He had collected data by questionnaire, interviews, pre and post vocabulary tests, informal conversations with the participants, and the researcher's reflections throughout the study. Further data was gathered from the ELL Biology class teacher to give more insight on the challenges faced by students in ELL Biology class from a teacher's perspective, and the learning behaviours of students. The findings revealed different students' impressions and perceptions of the iPod/iPhone-based vocabulary review tool. The majority of students found it a useful tool that made learning easier. Those students who have mixed impressions, positive and negative, considered the tool as a useful method to study, despite their negative feelings and attitudes towards studying biology. However, even though those students who complained about the iPod/iPhone-based vocabulary review tool, they still reported using the tool for a minimum of three times to review before the state biology proficiency test. As for the class teacher, even though she had a strong belief in her teaching methods for this class and the effect of after school review sessions, but she still she recognized the impact of such a mobile tool on her students' motivation. However, the direct effect of this mobile tool on vocabulary proficiency was not statistically measured, due to the qualitative nature of the study.

A parallel project in South Africa called Hadeda (Butgereit & Botha, 2009) was launched to help teachers and parents to create spelling lists for pupils and children using either a cell phone or an internet based workstation. The Hadeda software pronounces the words

with electronic voices, and the pupils and children can then practice their spelling on a medium they enjoy (Butgereit, Botha, & Niekerk, 2010). Butgereit & Botha (2009) claimed that "Hadeda has been successful in what it set out to do, allowing spelling lists or vocabulary lists to be created in more than one human language, generating the appropriate sound clips, and packaging and deploying a cell phone application to allow children to practice these spelling words or vocabulary words" (p. 6).

Mobile phones are also used as a mean of instruction for teaching the appropriate use of the preposition in English at the Jahangirnagar University of Bangladesh (Begum, 2010). The research results demonstrated that the cell phone has a great potential as an instructional tool, more especially as it is hardly possible for an individual to have a personal computer in Bangladesh while, by contrast, there has been a rapid growth of mobile phone users (ITU, 2011). Results revealed that mobile phone were owned by almost every student who participated in the study, except 5% of female students who considered the use of mobile phone a disrupting and a social abuse. 60% of students were aware of all the functions of their devices, but they mostly used them for communication with parents, friends, and teachers and not for language learning. As for the challenges associated with using mobile technologies for learning, Begun (2010) assures that they can be resolved by the sincere attempts of the authority, teachers and by changing the traditional point of view, that considers cell phones as merely a disruptive factor in the classroom.

To provide an effective and flexible learning environment for learning English, specifically through reading English news and, within that, enhancing vocabulary learning, Chen & Hsu (2008) present a personalized intelligent mobile learning system (PIMS) which can recommend appropriate English news articles to learners, based on the learners' reading abilities, which are evaluated by the proposed Fuzzy Item Response Theory (FIRT), which proposed to model uncertainly learning response. It is used to construct fuzzy numbers and these numbers are utilised to score psychological measurement (Yu & Wu, 2007). Fifteen university students, 2 males and 13 females, studying in the Department of English Teaching at National Hualien University of Education in Taiwan volunteered to participate in the study. All the participants were studying to become English teachers of elementary schools. Before the experiment, all the participants had received two hours of training on how to use PDA and the proposed system (PIMS). To assess this system, three

procedures were followed: pre-test, post-test, and a questionnaire. The pre-test results indicated an apparent difference in the students' initial reading abilities. The PIMS system has been successfully implemented to run on personal digital assistants (PDAs) and resulted in the promotion of English reading and vocabulary learning to a significant level (i.e. $t = -6.25$, $p < .001$). Chen & Hsu (2008), also, evaluated the students' satisfaction of the proposed system using a questionnaire. Results indicated that 66% of the participants agreed that the PIMS system is beneficial, 86% of the participants agreed that the system has a friendly user interface, and 93% agreed that this system can promote their English news reading ability.

Based on the remarkable advantages of using mobile phones in the learning process, as they provide opportunities to learn outside classrooms, anytime and anywhere, Başoğlu & Akdemir (2010) investigated the effect of using vocabulary learning programs on mobile phones on 60 students studying in the Undergraduate Compulsory Preparatory Program of a public university in the Black Sea region of Turkey. 30 students, whose mobile phones were compatible with the vocabulary learning program, were assigned to the experimental group. The other 30 students, who would use the traditional vocabulary acquisition techniques to learn vocabulary, were assigned to the control group. Results indicated that using mobile phones as a vocabulary learning tool is more effective than one of the traditional vocabulary learning tools. There was a statistically significant difference between the mean score of the experimental group ($M= 13.79$) and the mean score of the control group ($M= 8.62$) ($t=2.191$, $p<0.05$). It also showed students' positive attitudes towards the use of mobile phones for English vocabulary learning.

The study conducted by Jaradat (2014) is worth mentioning in this section, due to the fact that it is a study on the use of mobile learning in language learning in Saudi Arabia, even though it discussed the issue in the context of French language learning. A total of 36 undergraduate female students at Princess Norah University participated in Jaradat's study (2014) that aimed to understand students' attitudes and perception towards using mobile phones as a learning tool for additional reading practices, as well as for grammar and vocabulary learning inside and outside French language classrooms. Following a mixed methods approach, the study showed that the use of mobile technologies was fairly accepted among students. The results indicated that 43% of students agreed that mobile technologies changed the way people perform tasks; while 18% of them stated

that they were not acquainted with the use of technology in general. Also, 39% of students preferred mobile phones over other mobile technologies as a learning tool, while 37% of them preferred laptops. Furthermore, 90% of students were satisfied by using mobile learning to learn the French language, 91% were willing to continue learning via mobile phones, and 74% indicated that using mobile learning in class had raised the interaction with their teacher and classmates. In addition, to compare the difference in students' learning performance before and after the utilization of mobile learning, pre-test and post-test were analysed. The mean scores for the pre-test and post-test were 65.8 and 75.6, respectively. The improvement in learning was manifested by the significant increase in the mean testing score by 9.77 points ($t= -9.07$, $p < .001$). Jaradat (2014) concluded that no matter what kind of attitude or perception a student had about mobile technology in language learning, students were using their mobile devices inside and outside the class for surfing the web for entertainment, social network and reading.

Al-Shehri (2012) took the advantage of the immense popularity of social networks and implemented a design-based research approach to identify appropriate design principles that can be employed for mobile language learning based on students' feedback. These principles were conceptualised and employed in a social media context. Thirty-three Saudi EFL students at King Khalid University studying for Bachelor of Education degree participated in the study. Students were required to use their mobile phones to pool resources on a Facebook group created for the purpose of this study, by posting authentic photos and videos captured by their mobile phones, adding comments or starting a conversation by asking questions to the group. Students were informed that the materials used on Facebook should reflect social or cultural events and aspects. Students, also, were required to connect between the linguistics activities undertaken in class and the contextual materials posted on Facebook. The author applied qualitative research tools including pre and post task focus group interviews, stimulated recall sessions, beside observation of the Facebook group activities. Findings indicated that the utilization of social media had increased the students' motivation for better engagement in the learning task, supported and encouraged collaboration among students, and developed more sophisticated skills as critical thinking and decision-making. Moreover, more student-centred learning was maintained in an informal and friendly community of practice by contextualising language learning using mobile phones and Facebook.

In line with the findings of Al-Shehri (2012), Kim, Rueckert, Kim & Seo (2013) designed 5 class projects to help a total of 53 postgraduate (Masters) students, from different linguistics background, in TESOL at a central US university to practise mobile language learning using their mobile devices. Data collected from a pre-study survey, student reflections for class projects, and a post-study survey revealed that mobile technologies have the potential to provide new learning experiences in which students can more frequently engage in learning activities whenever and wherever. Moreover, students' views regarding mobile learning had significantly changed after getting involved in these projects.

While the studies of Al-Shehri (2012) and Kim, Rueckert, Kim & Seo (2013) were instructor-led mobile learning projects, Steel (2012) reported the experience of 134 language students at an Australian university who used mobile applications to enhance their language learning outside their classes. Ten foreign languages were represented by the sample including French, Japanese, Spanish, German, Chinese, Korean, Indonesian, Russian, Italian, and Portuguese. Students highlighted the advantages of using mobile technologies for learning, including learning on-the-go, time efficiency, portability, accessibility and ease of use. Furthermore, for more specific language learning benefits, students emphasized the advantages of using mobile applications mainly in vocabulary learning as well as reading, writing, grammar and translation tasks. Similarly, Muhammed (2014) used focus group discussion to collect data from 20 EFL students at Sulaimani University in Iraq, to determine the extent to which mobile learning affects EFL learning. The results showed that 99% of the participants used their smartphones to a great extent for developing EFL learning through many applications related to language skills, vocabulary, grammar, and international tests applications such as TOEFL.

Supporting the positive picture of using mobile technologies in language learning, as stated above, Bozdoğan (2015), with a qualitative meta-analysis design, reviewed 32 MALL research papers published between 2010 and the first half of 2015 to outline the current research trends in MALL. This review highlighted more supportive results towards the effectiveness of mobile learning in the context of language learning and teaching at all levels. Also, Taj, Sulan, Sipra, & Ahmad (2016) conducted a meta-analysis of 13 studies published between 2008 and 2015 to find out how effective is MALL and synthesize the

lessons learnt so far. Results confirmed the positive view of using mobile technologies in EFL learning and teaching with overall effect size of 0.8 which considered a large one.

Similarly, but with a wider scope of meta-analysis by including 44 peer-reviewed journal articles and unpublished doctoral dissertation that were written between 1993 and 2013, Sung, Chang, & Yang (2015) revealed that MALL has a moderate effect size of 0.55 on students' achievement and produced a meaningful improvement. As the findings indicated, 70.7% of the students using a mobile device performed significantly better than those who were not using one, which could be solid evidence for the effectiveness of using mobile technologies in language learning.

While many research studies have demonstrated, and in some cases proven, that mobile learning can effectively promote language learning, there are some that express a different, contrary, opinion. For example, Stockwell (2007) proclaims that learners require more time to complete vocabulary activities on mobile phones, when compared to completing the same activities on desktop computers. Moreover, those students on computers achieve better scores. So, mobile phones were less preferred among language learners. In a later article, Stockwell (2010) wonders why students may prefer desktop computers, while they have positive attitudes towards mobile learning. He thought that his previous work had depended too much on limited data, as the study was conducted in a small advanced English class at Waseda University in Japan, and there were only 11 participants in the study.

In his subsequent study, Stockwell (2010) examined 175 pre-intermediate learners of English, enrolled in a compulsory first-year English-language subject in the School of Law at Waseda University, who could choose to complete vocabulary activities on either a mobile phone or a desktop computer, in order to identify the effect of the mobile platform. The vocabulary activity system used in the study was VocabTutor, and was the same system that was used in the earlier analysis. Data were collected from three cohorts of learners over a three-year period, and learner activity was analysed in terms of the amount of time required to complete activities on both platforms, and the scores students achieved for the activities. The results indicate that there were a significant number of learners who did not use the mobile phone at all, but rather elected to complete all activities on the PC. 60% (105 learners) did not use the mobile phone at all for the activities, and a further 18.9% (33 learners) used the mobile phone for 20% or less

of the activities completed. Only very small numbers of learners used the mobile phone for the majority of the activities, with just 3 learners (1.7%) electing to use the mobile phone for all of the vocabulary activities. As for the amount of time required to complete each activity on the PC and mobile platforms, each of the activities took significantly longer to complete on the mobile phone, when compared with the PC. Nevertheless, the longer time spent on mobile platforms (around 1.4 minutes more for each activity) cannot be definitely related to the platforms issues, as there might be any other reasons or issues related to the environment in which the mobile phones were used. When it comes to the learners' progress, there was not a great difference between the two platforms, with higher scores being achieved on the PC for some lessons, and higher scores being achieved on the mobile phone for others. There was also very little difference in the scores in terms of improvement across the semester. Therefore, it was difficult to conclude that using a mobile phone, rather than a PC, had an effect on achievement levels. Moreover, it is clear that the researcher did not investigate other related factors and issues that might produce such results. In this regard, for example, the researcher indicated that he did not know what experience learners had with technology for language learning, prior to the study.

In some studies, such as the ones conducted by Rodríguez-Arancón, Arús-Hita & Calle-Martínez (2013) and Arús-Hita, Rodríguez-Arancón, & Calle-Martínez (2013) the evaluation of the existing EFL mobile applications focused not on their use, but on their ability to build up the capability of creating educational applications for EFL teaching and learning within the context of SO-CALL-ME (Social Ontology-based Cognitively Augmented) Project which is funded by the Ministry of Science and Innovation in Spain. In order to carry out the project, preliminary studies were conducted. In the first phase, Arús-Hita, Rodríguez-Arancón, & Calle-Martínez (2013) assessed a total of 67 EFL applications, focusing on the pedagogical aspects by considering the cognitive value of the applications, the similarity between the applications and the pedagogic aims of the SO-CALL-ME project, and finally the complementarity of the applications with the pedagogic aims of the SO-CALL-ME project. In the second phase, the top five applications, with the highest potential to guide the development of the applications for the project, were chosen, to examine both their qualities and limitations by assessing their pedagogic and technical features using evaluation rubrics. The five apps were: Englishfeed, SpeakingPal English Tutor, Clear Speech, Learn English Audio and Video, and LearnEnglish

Elementary Podcasts. A key conclusion was represented in the effective use and implementation of the existing strengths of these applications and integrating a sound pedagogy to do further research and develop high quality EFL teaching and learning experience via mobile applications. In the third phase, Calle-Martínez, Rodriguez-Arancón & Arús-Hita (2014) used a rubric for the evaluation of apps in language learning (REALL) which designed to evaluate the linguistic adequacy of the same EFL applications which were evaluated in the second phase, regardless of the pedagogic and technical features of the applications. Calle-Martínez, Rodriguez-Arancón & Arús-Hita (2014) concluded that "the pedagogic and technical quality of the applications does not necessarily go hand in hand with their linguistic value and adequacy for EFL teaching and learning, since only two of the five applications with the highest score in the previous pedagogic assessment achieved a reasonably good score when applying REALL. The evaluation made clear the fact that not all MALL applications are backed up by a sound linguistic content that is adequate for steady language learning" (p. 141).

Finally, mobile learning in EFL teaching and learning is still in its relatively early stages, and so whatever is done and investigated, it still needs to be thoroughly researched, as mobile technologies are rapidly developing and changing. In their overview paper, Kukulska-Hulme and Shield (2008) declare that: "the range of approaches and learning activities using MALL is developing very quickly, expanding in the space of two or three years from a purely teacher-learner, text-based model to one that is beginning to support multimedia, collaborative listening and speaking activities and to allow learners to co-construct knowledge to solve problems and fill information gaps" (p. 283). They also note that Mobile Assisted Language Learning (MALL) differs from CALL (computer-assisted language learning) in the nature of the devices that enable new ways of learning, without regard to the restraints of time and space. Even if most of the MALL projects are teacher-led, it still seems that MALL belongs to, and is directed by, learners for learners and not teachers. Moreover, in the case of teaching, again MALL belongs to, and is directed by, instructors, rather than institutions.

Hence, previous studies demonstrate that before investing in such MALL projects and spending time and money, detailed learners' and instructors' profiles should be built up. It is evident that "mobile learning is proving to be a fertile ground for innovation, but it is important to realise that the success of mobile learning will depend on human factors in

the use of the new mobile and wireless technologies. It is only now that the challenges of mobile learning on a larger scale, and with diverse populations of students, are beginning to be understood" (Kukulska-Hulme, 2007, p. 1). Furthermore, in the new era of the global economy, which affects higher education, and where learners are the consumers whose needs should be addressed, Kukulska-Hulme (2009) argued that conflict might occur since the new generation of learners are adopting new mobile technologies for themselves, irrespective of whether their instructors adopt them or not, in formal education.

Therefore, the following section discusses and reviews studies which address the readiness for, and acceptance of, mobile learning, among both students and instructors.

2.8 Readiness and Acceptance of Mobile Learning and Teaching

Even though recent researches show a positive result for students' perceptions of mobile learning, and although that many studies have proven the effectiveness of mobile technologies in learning and teaching (Al-Fahad, 2009; Rogers et al., 2010; Venkatesh, Nargundkar, Sayed & Shahaida, 2006; Wang et al., 2009), it is still challenging to implement such technologies, due to social, cultural, and institutional factors (Corbeil & Valdes-Corbeil, 2007; Traxler, 2007, 2010).

Studies vary according to: the addressed population (students, instructors, stakeholders, and administrators); the context (higher education, general education, and work-based education); the discipline (language learning, math, science, business, engineering, computing, etc.); the mobile devices (mobile phones, PDAs, MP3s, tablets, etc.); and the models used to investigate the readiness and acceptance [Theory of Reasoned Action (TRA), the Technology Acceptance Model (TAM), the Motivational Model (MM), the Theory of Planned Behaviour (TPB), etc.]. These models have been examined to more depth in the next chapter.

Around the world, multitudes of people are walking, working, studying, living their daily lives, and even going to bed, in the company of a wide range of powerful handheld computers and mobile technologies. It has been realized by people, both in academia and business that these technologies would contribute to socio-economic and cultural development in different ways, and in consequence we have seen the advent of m-internet, m-commerce, m-banking, and finally m-learning.

When the mobile operators noticed the growth of innovations in mobile technologies, they realized that the success of their business is dependent on understanding the concerns of customers and identifying the factors that promote the use of the mobile internet. For example, Cheong and Park (2005) examined the human motivations underlying individual behavioural intentions to use m-internet in Korea, after realizing that the number of m-internet subscribers in Korea was rising exponentially. The authors developed a more comprehensive version of the TAM (Technology Acceptance Model) to better reflect the m-internet context based on the original TAM. The results indicated that attitude toward the m-internet is the most significant factor in predicting the behavioural intention of individuals to use m-internet. In most developed nation states, internet-enabled mobile technologies are not a luxury anymore; they have become basic commodities (Liu & Li, 2010). This is, also, realized in the developing countries and studies were conducted to discover, for example, Alwahaishi and Snášel (2013) identified the factors that affect the acceptance of m-internet in Saudi Arabia. It was found that performance expectancy and perceived playfulness have the strongest effect on behavioural intention to use m-internet in Saudi Arabia.

Consequently, the rapid developments of modern mobile technologies, coupled with the increasingly high penetration rate of the mobile internet, are together promoting mobile commerce (Jen-Her Wua & Shu-Ching Wang, 2005). The need to understand the factors related to the acceptance of mobile commerce became important when businesses realised that they needed to cope with the global development of m-commerce, if they wished to remain competitive. Therefore, Wua and Wang (2005) adapted the extended Technology Acceptance Model (TAM2), integrated it with the Innovation Diffusion Theory (IDT), perceived risk, and cost in order to identify and validate the factors that determine consumers acceptance of mobile commerce. Results indicated that perceived usefulness and perceived ease of use influence the actual usage through behavioural intention. The most important determinant of behavioural intention is compatibility. Also, perceived risk had a significant impact on behavioural intention, while cost had a significant negative impact on behavioural intention. In the context of Saudi Arabia, Alkhunaizan and Love (2013), also, examined the factors that can predict consumers' intention to adopt mobile commerce by expanding Technology Acceptance Model (TAM). They found that perceived usefulness, financial cost, perceived ease of use, and gender had significant impact on consumers' intention to adopt mobile commerce, respectively.

Although a great body of research has been done on technology acceptance which predicts the willingness of individuals to adopt information system, each information system is a unique situation, which therefore needs investigation. When it comes to mobile banking, Luarn and Lin (2005) claim that the additional variable which is required to, more accurately, predict the customer intention to use mobile banking is a trust-based construct. Based on the Theory of Planned Behaviour (TPB) and the TAM, Luarn and Lin (2005) extend the applicability of the TAM to a mobile banking context, by adding one trust-based construct (perceived credibility), and two resource-based constructs (perceived self-efficacy and perceived financial cost), to their research model. To test their model, they collected data from 180 respondents, ranging in age from 17 to 48, who attended an e-commerce exposition and symposium held in Taiwan. The results strongly support the extended TAM in predicting users' intentions to adopt mobile banking.

It is exactly the same in the field of mobile learning. Educators believe that understanding the human factors related to the use of mobile learning and teaching is a crucial research area for researchers to explore further in the field. Such investigations can reveal embedding factors that might save time, efforts, and money if undertaken before the implementation of mobile technologies in learning and teaching begins. Furthermore, the data collected on perceptions, attitudes, readiness, and acceptance helps to clarify important issues regarding impediments, barriers, or obstacles to the diffusion of mobile learning and teaching. For instance, Messinger (2011) investigated the perceptions and attitudes of a high school students and teachers regarding the use of mobile devices to enhance learning in classroom and create learning opportunities outside the classroom. Data, which were collected through surveys and follow-up focus groups, revealed that even if teachers and students agree upon the potential of mobile devices to create a positive classroom environment and increase students' motivation, teachers need additional training to effectively manage a mobile learning environment, and students need to understand proper mobile device etiquette in their school. Also, it shows that teachers were aware that students used these devices to socialize, but they were unaware how often students used them for learning.

Derakhshan (2012) also explored how students and faculty use handheld devices focusing on their perceptions of the usefulness of various Learning Management Systems features that are available in desktop versions but are omitted in the mobile versions, in the

context of higher education. The data were collected using two online surveys, one for students (335 out of 4,400 graduate and undergraduate students) and one for faculty (52 out of 600 professors) at Oklahoma State University. The results show interesting similarities and differences between the faculty and the students regarding the usefulness of LMS features; for example, both faculty and students consider the course calendar to be an important feature. On the other hand, while grades and feedback are the most popular features among all students, by contrast university professors do not find this facility to be very useful in a mobile LMS. Moreover, it is the same regarding content delivered via an LMS, namely that students show more interest in this facility than do faculty. These results indicate that, while students are enthusiastic for a mobile LMS, faculty prefer more traditional ways of teaching and learning and they are unwilling to accept handheld devices as learning tools.

Similarly, Pollara (2011) explored the actual use of mobile devices among students, inside and outside the classroom, and related it to the faculty perceptions of students use, the perceptions of faculty and students regarding the impact of mobile devices on learning and engagement, and the potential of using mobile devices in the classroom, at Louisiana State University. But, instead of using only surveys, Pollara (2011) used mixed methods and collected data using survey and interviews. The results showed that faculty perceptions about student use do not match actual student use of mobile devices. While faculty believed students are primarily using mobile devices to socialize, students reported using them for a variety of educational tasks. Furthermore, even if faculty believe in the positive effect of mobile devices outside classroom, they tend to adhere to the traditional viewpoint, and consider mobile devices a distraction in classroom. Therefore, there is always an advantage in investigating both students and faculty attitudes and opinions to the use of mobile technologies for learning at the same time, to bring out a wider picture.

Unfortunately, this is not always the case, as many studies address only students. For instance, Lowenthal (2010) addresses university students (from the business school at one of the American universities) only in his research, which examined the factors that impact on the behavioural intention of students to use mobile learning technology, based on the Unified Theory of Acceptance and Use of Technology (UTAUT) model. He concluded by showing positive, strong, and significant relationships between

performance expectancy and effort expectancy and the behavioural intention of using mobile learning, while age and gender have no impact.

Lowenthal's results (2010) support the findings of a previous research project in Taiwan by Wang, Wu, and Wang (2009), based on the Unified Theory of Acceptance and Use of Technology (UTAUT) and which added two constructs to the model: perceived playfulness and self-management of learning, to investigate the determinants, as well as the age and gender differences, of the acceptance of mobile learning. Data were gathered using a questionnaire. A sample of 330 responses obtained of participants from five organisations in Taiwan: Aerospace Industrial Development Corporation (AIDC), IBM Taiwan, National Changhua University of Education, Chung Chou Institute of Technology and Yuanlin Community University. The results indicate the significant effects of performance expectancy and perceived playfulness on behavioural intention, with no effects for gender or age. Also, age moderated effort expectancy, which was significant for older users, but not for younger ones. Moreover, the effect of social influence on usage intention was moderated by gender and age, as it was significant for men and older users, but insignificant for women and younger users. Finally, the effect of self-management of learning on the intention to use new technologies was significant across all groups, and moderated by gender, as it was more significant for women than for men.

Using the same model (UTAUT) but coming to a slightly different conclusion, Donaldson (2011) examined the determinants associated with the behavioural intention to use mobile learning and mobile library resources among community college students enrolled in two year courses at North Florida Community College. The results emphasized the significant effect of performance expectancy, social influence, perceived playfulness of learning, and voluntariness of use, on the behavioural intention to use mobile learning, while effort expectancy and self-management are not found to have significant effects.

Abu-Al-Aish & Love (2013) had studied the factors affecting students' intentions to accept mobile learning in the School of Information, Computing and Mathematical Science at Brunel University, UK. Abu-Al-Aish & Love (2013) proposed a model also based on the Unified Theory of Acceptance and Use of Technology (UTAUT) by taking out the variables "use behaviour" and "facilitating conditions" and adding "quality of service" and "personal innovativeness" to the structure of the UTAUT. Data was collected by a questionnaire from 174 participants. Consistent with previous research, the results

indicated that performance expectancy, effort expectancy, influence of lecturers (social influence), quality of service, and personal innovativeness were all significant predictors of the behavioural intention to use mobile learning. Age and gender were excluded from the model, while experience was found to moderate all these predictors. This model was found to explain 55% of the Intention to Use mobile learning among the addressed population.

Seliaman & Al-Turki (2012) used an extended Technology Acceptance Model (TAM) to examine the use of mobile technologies for accessing course materials and related information to their discipline, acquiring and sharing knowledge, and other learning activities. Data was collected using a questionnaire distributed to only male students at the College of Computer Science and Information Technology at King Faisal University in Saudi Arabia. 55 valid responses were analysed, and pearson correlation analysis was used to test the research hypotheses. The findings indicated that only perceived innovativeness positively relates to behavioural intention to use m-learning. However, the authors concluded by indicating the limitations of their study, as they surveyed only male students from one college in the university, and applied a simple correlation analysis. Similarly, Chung, Chen & Kuo (2015) extended the Technology Acceptance Model (TAM) by adding two additional constructs, self-efficacy and compatibility, to identify the factors related to Taiwanese EFL college students' acceptance of mobile vocabulary learning resources. The researchers collected data from 84 EFL students by administering a questionnaire. Regression analysis showed that perceived usefulness, perceived ease of use, self-efficacy, and compatibility account for 71% of the variance in behavioural intention to use mobile English vocabulary learning resources.

Jawad and Hassan (2015) identified the factors that influence the acceptance of mobile learning by students and lecturers in higher education in Iraq, based on the Unified Theory of Acceptance and Use of Technology (UTAUT). Beside the four main factors of the theory, the authors added two other factors (perceived playfulness & self-management of learning) that could explain the variation in the acceptance of mobile learning. Authors adopted a quantitative approach to collect data and used regression analysis to test the research hypotheses. Results indicated that the indicators of behavioural intention were performance expectancy, self-management learning, effort expectancy, perceived playfulness, and social influence, respectively. On the other hand, behavioural intention

followed by facilitating conditions was the strongest indicators of use behaviour. These indicators were able to explain 39% of the variance in the use behaviour. The demographic information of the respondents showed that 114 undergraduate students, 18 postgraduate students, and 27 lecturers from the University of Babylon in Iraq participated voluntarily in the study. However, the authors did not differentiate between students and lecturers with respect to the results.

The most related recent studies were conducted by Lewis et al (2013), Raman & Don (2013), Yang (2013), and Kang et al (2015). Lewis et al (2013) used the Extended Unified Theory of Acceptance and Use of Technology (UTAUT2) to inspect the adoption and acceptance of established and emerging classrooms technology among business faculty members at South-eastern University in the United States. The online survey was developed, based on prior research, and data was collected from 46 respondents representing 51% of the total population. The results indicated that instructors' use and acceptance of classrooms technology were significantly affected by performance expectancy, effort expectancy, social influence, and habit. The moderating effects of age and gender were tested and findings showed a significant moderating effect of gender but not age. The UTAUT2 explained 66% of the variability in behavioural intention and this percentage increased to 78% with the effect of moderators. Furthermore, the research model (UTAUT2) explained 27% of the variability in technology use without the effect of the moderators, and 29% with the moderating interactions. Lewis et al (2013) concluded that further research is needed to explore the potential of the UTAUT2 in the context of higher education.

Raman & Don (2013) had implemented the Extended Unified Theory of Acceptance and Use of Technology (UTAUT2), while eliminating the effect of moderators, to investigate pre-service teachers' acceptance of the Learning Management System (Moodle) in their learning process at Universiti Utara Malaysia (UUM) and assess the effects of performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, and habit on behavioural intention and use behaviour. The researchers dropped the construct price value from the proposed model, as the university provide the LMS (Moodle) for free. Data, which were collected from 288 students via an online survey, revealed that facilitating conditions was the most significant predictor of behavioural intention, followed by hedonic motivation while habit was not a significant

predictor. However, the research model explained 29.5% of the variance in the student's intentions to use LMS (Moodle).

On the other hand, Yang (2013) eliminated the construct "facilitating conditions" and the moderators from the UTAUT2, and collected data from 182 undergraduate students in China, via a web-based survey, to explore the factors that determined the undergraduate students' intention to adopt mobile learning. Results indicated that hedonic motivation, performance expectancy, social influence, and price value were positive determinants of students' mobile learning adoption. The add-on construct, self-management of learning, was found to have a negative effect on the students' intention to use mobile learning. These factors explained 33.5% of the variance in students' intention to adopt mobile learning. Actual use behaviour was not examined in this study.

Kang et al (2015) investigated the determinants of mobile learning acceptance in Korean universities, also, based on the UTAUT2 model. A total of 325 participants in the study, that represented four universities in Seoul, had responded to the survey. 305 cases were analysed, due to missing data and incomplete surveys. The results indicated that performance expectancy, social influence, facilitating conditions, hedonic motivation and habit were significant predictors of the behavioural intention to use mobile learning in Korean higher education, as they explained 45 % of variance in behavioural intention.

Looking at the methods and procedures of studies investigating the readiness and acceptance of mobile learning, we can find many research projects and publications involved the conduct of surveys (Abu-Al-Aish & Love, 2013; Akour, 2009; Al-Fahad, 2009; Alzaza & Yaakub, 2011; Chanchary & Islam, 2011; Cheon, Le, Crooks, & Song, 2012; Corbeil & Valdes-Corbeil, 2007; Derakhshan, 2012; Hashim, Ahmad, & Ahmad, 2010; Trifonova & Georgieva, 2005; Kang et al, 2015; Lewis et al, 2013; Liaw et al, 2010; Lowenthal, 2010; Nassoura, 2012; Peachy, 2010; Percival & Percival, 2008; Raman & Don, 2013; Yang, 2013) and also a mixed methods approach, i.e., surveys & interviews (Donaldson, 2011; Fraga, 2012; Jones et al, 2009; Messinger, 2011; Shohel & Power, 2010; Venkatesh et al, 2006). On the other hand, not many studies rely on interviews only (Cruz, 2012) and on an experimental or quasi-experimental approach (Cheng et al, 2010; Williams, 2009). The justification is that the research model usually adopted requires data gathered from a large population, which needs to be surveyed rather than subjected to experimental methods.

Different research models have been adapted for use in these studies and in different contexts. In the educational context, Lewis et al (2013), Raman & Don (2013), Yang (2013), and Kang et al (2015) implemented the Extended Unified Theory of Acceptance and Use of Technology (UTAUT2) model which was developed by Venkatesh et al (2012). Another study by Escobar-Rodríguez & Carvajal-Trujillo (2013) has implemented the UTAUT2 to inspect the different predictors of online airline ticket purchasing behaviour. All these models have been developed to find out the factors related to technology acceptance and how they drive the intention and behaviour.

The difference is that some studies, for example, Wang & Wang (2010) and Wu, Tao, & Yang (2007), are dealing with people involved with the technology as consumers, while for other studies, like Begum (2011) and Cruz (2012), which were conducted in the field of education, students and faculty are recipients (rather than consumers), as they are provided with the technology without cost. The results of many studies show that in mobile learning projects the ownership of mobile technologies is a motivation, and a prerequisite, for the engagement of students, while it is a challenge for institutions to provide each student and instructor with a mobile device (Naismith et al, 2004). Corlett et al. (2005) affirm that the ownership of mobile devices is clearly important, as students are reluctant to spend their time and money to personalize loaned devices.

Additionally, previous studies have shown the importance of assessing students and faculty readiness for, and acceptance of, mobile learning all over the world, as such data is significant to policymakers, mobile technologies developers, educational technologists, and instructional designers. Moreover, as mobile learning and teaching is still developing pedagogically and technologically, it is important to investigate and understand what do students and faculty think and believe of mobile learning and teaching, as faculty control the technology used in teaching in the classroom, while students take the lead outside. Nevertheless, the utilization of mobile learning cannot be undertaken simply by relying on, and referring to, preceding studies conducted around the world but must consider the specific context in which it will be applied, including students, faculty, social and cultural issues, and the available technology itself.

The review of related literature shows a variety of research models used to examine technology acceptance in different contexts. In the following section, these models are

reviewed in chronological order in order to understand how recent theories were formulated and track the development of the model used in the current research.

2.9 Research Framework and Hypotheses

To successfully implement a new technology, readiness for, and acceptance of, this technology are key prerequisites. Consequently, user intentions and behaviours toward a new technology have been an active research area for some time (Davis, 1989; Davis, et al., 1992; Igbaria, et al., 1996; Taylor & Todd, 1995b; Venkatesh et al., 2003; Venkatesh et al., 2012). Many models and theories have been developed, used and extended to study technology acceptance and its factors. These models include the Theory of Reasoned Action (TRA), the Technology Acceptance Model (TAM), the Motivational Model (MM), the Theory of Planned Behaviour (TPB), a model combining the Technology Acceptance Model and the Theory of Planned Behaviour (C-TAM-TPB), a Model of PC Utilization (MPCU), the Innovation Diffusion Theory (IDT), and Social Cognitive Theory (SCT).

Lately, the Unified Theory of Acceptance and Use of Technology (UTAUT) was formulated and validated to incorporate eight preceding models of technology adoption and acceptance (Venkatesh et al., 2003). The research done by Venkatesh, Morris, Davis, and Davis (2003) solved the problem that confronts the researcher when it comes to choosing among the different models to study technology acceptance. Most recently, Venkatesh et al., (2012) have consolidated the UTAUT by considering the extensive replications, applications, and extensions of the model into UTAUT2. For a better understanding of the genesis and development of the UTAUT/UTAUT2, the eight different models need to be reviewed.

2.9.1 The Theory of Reasoned Action (TRA) 1975

The TRA was proposed by Fishbein and Ajzen (1975). This theory is derived from the theory of attitude. According to Hale, Householder & Greene (2003), TRA was "born largely out of frustration with traditional attitude–behaviour research, much of which found weak correlations between attitude measures and performance of volitional behaviours" (p. 259). TRA assumes there are two constructs related to the intention to perform a behaviour (IB): attitude toward the behaviour (A) and subjective norm (SN). The attitude toward a behaviour is defined as "an individual's positive or negative feelings about performing the target behaviour" (Fishbein and Ajzen, 1975, p. 216) while the subjective norm is defined as "the person's perception that most people who are

important to him think he should or should not perform the behaviour in question" (ibid, p. 302). Based on this theory, the attitude toward a behaviour and the subjective norm can predict a person's behaviour (IB = A + SN). The TRA model has been applied widely in predicting and explaining behaviour across many areas. Much of literature related to technology acceptance has used this theory to study the determinants of IT innovation usage behaviour (Han 2003).

Focusing on attitudes and subjective norms, the TRA model has been found successful in predicting behaviours towards information technologies and computer use in several studies (Han, 2003; Mishra, Akman, & Mishra, 2014; Nink, 2003). On the other hand, Ajzen (1991) pointed out that only those behaviours that consciously considered before they actually performed can be explained by TRA, because of the assumption underpinning this theory, which considered behaviours as completely conscious. Nevertheless, the TRA model does not give considerable attention to other predictors; like effort expectancy and performance expectancy that might have a substantial impact on behaviours. Therefore, and based on this theory, Davis (1989) developed the Technology Acceptance Model.

2.9.2 Technology Acceptance Model (TAM) 1989

In 1989, Davis developed one of the most influential extensions of TRA (Venkatesh et al., 2003) to explain individual system use in the workplace, which is known as the Technology Acceptance Model (TAM). Perceived usefulness and perceived ease of use were hypothesized to be fundamental determinants of user acceptance. Perceived usefulness refers to "the degree to which a person believes that using a particular system would enhance his or her job performance" (p. 320) whereas perceived ease of use is "the degree to which a person believes that using a particular system would be free of effort" (p. 320). This model hypothesizes that a technology that is useful and easy to use, would lead to a positive intention to use it. In reviewing the literature related to TAM, Han (2003) concludes that TAM is appropriate for examining acceptance of any technology by individuals with different characteristics in various organizations.

In contrast to the TRA, the TAM does not reflect subjective norms, which can be defined as the perceived social pressure or the social influence a person possibly will encounter to perform or not perform the behaviour (Fishbein and Ajzen, 1975). On the other hand, TAM proposed the external variables that can have an effect on the internal beliefs and

attitudes, but did not consider any organization or system variables that might have an impact on individual adoption of technology. Following studies, for example, Hubona & Kennick (1996) suggested that these external variables could be system characteristics (functionality of the application), organizational factors (training and education), and individual factors (age, gender, intrinsic cognitive skills). However, TAM seems to be a useful model, subsequent studies have identified its limitations and concluded that it is essential to extend and modify it with other relevant variables and theories.

2.9.3 Theory of Planned Behaviour (TPB) 1991

The theory of Reasoned Action (TRA) had been revised and extended to the Theory of Planned Behaviour (TPB) by Ajzen (1991) to consider the mandatory situations, unlike the TRA that used to predict individual behaviour in voluntary situations. Ajzen (1991) detected a key limitation of the TRA, namely that it is unable to predict "behaviours over which people have incomplete volitional control" (p. 181). The TPB model extended the TRA by adding a third construct, i.e., perceived behavioural control. This is defined as one's perception of the difficulty of performing behaviour, in order to account for situations where an individual lacks the control or resources necessary for carrying out the targeted behaviour freely. Armitage & Conner (2001) emphasized that TRA could adequately predict behaviours that were relatively straightforward (i.e. under volitional control). According to Armitage & Conner (2001), the rationale behind including perceived behavioural control variable to extend the TRA to TPB is to provide information about the potential constraints on acting behaviour; and explain why intentions do not always predict behaviours.

Ajazen (1991) defines the constructs of TPB in a way that leads to prediction and understanding of a particular behaviour in a specified context and he ascertains that they "are usually found to predict behavioural intentions with a high degree of accuracy" (p. 206). Generally speaking, a positive attitude and subjective norm, and good perceived control over the behaviour in question would lead to vigorous individual intend to perform that behaviour. On the other hand, Akour (2009) and Leong (2003) claimed that the TPB lack sufficient scale development and empirical basis for technology acceptance research. However, when TPB is used in the context of information technology, the new construct in the TPB model, which is perceived behavioural control, is replaced by perceptions of internal and external constraints on behaviour (Taylor & Todd, 1995b).

2.9.4 Model of Personal Computer Utilization (MPCU) 1991

Thompson et al. (1991) derived the Model of Personal Computer Utilization (MPCU) from the theory of human behaviour (Triandis, 1977). They refine Triandis's model to predict PC utilization behaviour. The constructs of this model are job-fit, complexity, long-term consequences, affect towards use, social factors, and facilitating conditions. The results show that social norms and three components of expected consequences (complexity of use, fit between the job and PC capabilities, and long-term consequences) have a strong influence on the utilization of PC, so the model seeks to predict use behaviour rather than intention. They found that: "Behaviour is determined by what people would like to do (attitudes), what they think they should do (social norms), what they have usually done (habits), and by the expected consequences of their behaviour" (Thompson et al., 1991, p.126).

The concepts of the job-fit, complexity, long-term consequences, affect towards use, social factors, and facilitating conditions constructs embodied in MPCU also found throughout the development of technology acceptance models. For example, job-fit construct capture the concepts of performance expectancy, perceived usefulness, relative advantage, and extrinsic motivation that embodied in different technology acceptance models.

2.9.5 The Innovation Diffusion Theory (IDT) 1991

The Innovation Diffusion Theory (IDT) is concerned with how innovations spread, and consists of two closely related processes: the diffusion process and the adoption process. Moore & Benbasat (1991) undertook a study by using diffusion research to provide a basis for identifying an individual's attitude towards using IT. Rogers (2003) defines diffusion as, "the process in which an innovation is communicated thorough certain channels over time among the members of a social system" (p. 5), and ascertains five attributes of an innovation that influence adoption and acceptance behaviour: relative advantage, complexity, compatibility, trialability, and observability. Moore and Benbasat's (1991) concepts of relative advantage, compatibility and trialability are the same variables as used by Rogers (2003), but they also use the label "Ease of Use" that was used by Davis (1989), instead of complexity, that was used by Rogers. As for observability, they divided it into two variables: visibility, and results demonstrability. They also add two more variables: image, and voluntariness of use. Based on the models

developed by Rogers (2003) and Moore and Benbasat (1991), IDT has been extensively applied to study the diffusion process of IT (Chen et al.2002; Liao and Lu, 2008).

Based on Rogers's review of the IDT (2003), there are four criticisms of diffusion research: pro-innovation bias, individual blame bias, recall problem, and issues of equality. According to Kamsah & Wood-Harper (1999), pro-innovation bias is perhaps the most serious problem in the research based on the IDT. Kamsah & Wood-Harper (1999) explained the pro-innovation bias as that the IDT "assumes that an innovation should be diffused and adopted by all members of a social system; that it should be diffused more rapidly, and that the innovation should neither be reinvented nor rejected" (p. 247). Furthermore, Lyytinen & Damsgaard (2001) criticised the IDT for trading simplicity and generalizability against accuracy by concentrating on the characteristics of the innovations to explain the diffusion process; and not being robust enough to help address how complex technologies can and will diffuse. Also, Botha & Atkins (2005) argued that insufficient consideration is given to innovation characteristics and how these change over time However, Kamsah & Wood-Harper (1999) claimed that the IDT partially applied to the information technologies context and other approaches should be considered to complement this theory.

2.9.6 Motivational Model (MM) 1992

Davis et al. (1992) applied motivational theory to the process of technology acceptance to develop the Motivational Model (MM). The model discriminates between the effects of extrinsic and intrinsic motivation, in influencing the level of technology acceptance. Extrinsic motivation is defined as the perception that users will want to perform an activity "because it is perceived to be instrumental in achieving valued outcomes that are distinct from the activity itself, such as improved job performance, pay, or promotions" (Davis et al., 1992, p. 1112). Intrinsic motivation relates to perceptions that users will want to perform an activity "for no apparent reinforcement other than the process of performing the activity per se" (Davis et al., 1992, p. 1112). Their results indicate that people's intentions to use computers in the workplace are influenced by their perceptions of how useful the computers will be in improving their job performance, pay or promotions as a principal motivator, which is extrinsic motivation, and by the enjoyment they will experience in using the computers, as a secondary motivator, i.e. intrinsic

motivation. Both Davis et al. (1992), as well as Igbaria, et al. (1996), found that Motivational Model (MM) is useful in understanding new technology adoption and use.

The concepts of extrinsic and intrinsic motivation are also embodied in other technology acceptance models using different constructs. For example, perceived usefulness, relative advantage and outcome expectation are different constructs that capture the concept of extrinsic motivation. On the other hand, hedonic motivation and hedonic outcomes capture the concept of intrinsic motivation. However, even though the MM was useful, but the model explained only between 28% (Igbaria, et al., 1996) and 62% (Davis et al., 1992) of the variance in behavioural intention. The fact that between 72% and 38% of the variance was an unexplained, suggest the need for further research to find out if there are any unmeasured variables that could contribute to the variance in behaviour.

2.9.7 Decomposed Theory of Planned Behaviour (DTPB) 1995

Further, the Decomposed Theory of Planned Behaviour (DTPB) decomposes the constructs of TPB into specific belief dimensions (Taylor & Todd, 1995b). Taylor and Todd developed the theory of planned behaviour through breaking down structure of attitude, subjective norm and perceived behavioural control into "multi-dimensional belief constructs" (p. 151). These constructs are: ease of use, perceived usefulness, and compatibility for attitudes; peer Influence, superiors influence for subjective norm; and self-efficacy, resources facilitating condition, and technology facilitating condition for perceived behavioural control. Taylor and Todd (1995b) claimed that by decomposing these beliefs, "the model becomes more managerially relevant, pointing to specific factors that may influence adoption and usage" (p. 151). However, they concluded that DTPB is more powerful in finding out the usage intentions compared to TPB, as the specific multi-dimensional belief constructs of DTPB provide a better observation of the factors related to IT usage intentions.

The predictive power of DTPB, due to the multidimensionality of its components, was demonstrated in several studies (Sadaf, Newby, & Ertmer, 2012; Shih & Fang, 2004; Taylor & Todd, 1995b). However, based on the context and technology addressed the DTPB might need to be adjusted and extended to include further variables.

2.9.8 Combined TAM and TPB (C-TAM-TPB) 1995

Taylor and Todd (1995a) developed a hybrid model by combining the predictors of the TPB model with the perceived usefulness element from the TAM. Based on data collected

from students using the facilities of computing information resource centre, Taylor and Todd (1995a) found out that the C-TAM-TPB, incorporating experience as a moderating variable, highly fitted to explain user behaviours for using new technologies. The findings of several studies, for example, Chang & Chang's (2009), demonstrate that the combined model is superior to the TPB and the TAM in terms of their ability to explain behavioural intention. Furthermore, Samaradiwakara & Gunawardena (2014) claimed that, with experience as a moderating variable, the C-TAM-TPB is an adequate model of IT usage for users who are both experienced and inexperienced with a technology system. They ascertained that moderators can play a significant role on the explanatory power of all technology acceptance models, even under situations of similar constructs.

2.9.9 Social Cognitive Theory (SCT) 1995

In 1995, Compeau and Higgins applied one of the most accepted and empirically validated theories of human behaviour (that is, the Social Cognitive Theory SCT) to the context of computer utilization. In social cognitive theory, ongoing self-influence of humans motivate and regulate their behaviours (Bandura, 1991). In their developed model, Compeau and Higgins (1995) used some of the constructs included in the SCT to investigate the relationship between cognitive factors (self-efficacy, performance-related outcome expectations, and personal outcome expectations), affective factors (affect and anxiety), and usage. After developing and evaluating a measurement, based on the proposed model, by conducting a survey of Canadian managers and professionals and analysing the structural model using a regression-based technique (Partial Least Squares-PLS), Compeau and Higgins (1995) found out that, in total, the model explained 32% of the variance in computing use behaviour. Results indicated that self-efficacy emerged as the most powerful predictor of usage, compared to the other significant effects of outcome expectations (especially those related to job performance), affect, as well as anxiety.

According to Ratten (2013), social cognitive theory has the advantage over other models and theories because it integrates both individual and organizational level analysis, which means that it incorporates technology innovation that is not always under the control of users but mandated by an organization as well. Despite the advantages of the SCT model, the remaining 68% of unexplained variance in use behaviour (Compeau and Higgins,

1995) encouraged further researches to be conducted to explore other variables and propose models that might explain user behaviour.

2.9.10 The Extended Technology Acceptance Model (TAM2) 2000

The TAM2 was developed by extending the TAM, by including subjective norms to explain perceived usefulness and usage intentions in terms of social influence and cognitive instrumental processes (Venkatesh & Davis, 2000). The extended model was verified using longitudinal data collected from four different systems at four different organizations; two involving voluntary usage and two involving mandatory usage.

According to Venkatesh & Davis (2000), the first organization was a medium-sized manufacturing firm, where 48 floor supervisors were introduced to a proprietary system for their day-today activities. The second one was a large financial services firm, where 50 members of the personal financial services department were asked to move all the current mainframe operations to a Windows based environment. The third one was a small accounting services firm, where 51 employees were introduced to a Windows-based customer account management system as a replacement of a paper-based and a DOS-based system. The fourth organization was a small international investment banking firm, where 51 employees were introduced to a new system to assist in analysing and creating international stock portfolios.

Venkatesh & Davis (2000) measured the constructs of the model at three time points at each organization: pre-implementation, one month post-implementation, and three month post-implementation. The TAM2 was strongly supported for all four organizations at all three points of measurement. Both social influence processes (subjective norm, voluntariness, and image) and cognitive instrumental processes (job relevance, output quality, result demonstrability, and perceived ease of use) were shown to significantly influence user acceptance. Regression analysis indicated that the TAM2 explained, across the four studies, between 37% and 52% of the variance in usage intentions, and the correlation between intentions and usage behaviour were between .44 and .57 in all the four studies across the three implementations points.

Unlike TAM, TAM2 differentiates between mandatory and voluntary usage. Accordingly, Venkatesh & Davis (2000) found that there was a direct effect of subjective norms on usage intentions, when usage was mandatory. On the other hand, when usage was

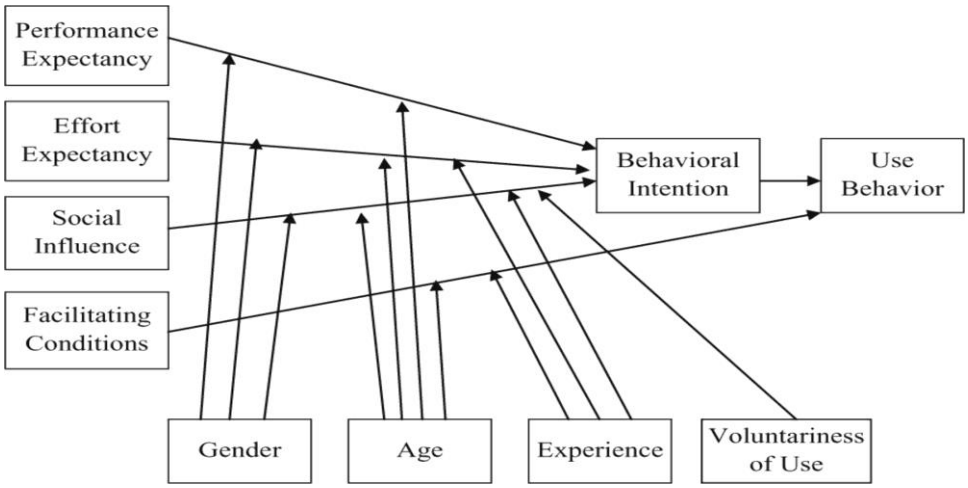
voluntary, the subjective norms had no direct effect on usage intentions. However, Donaldson (2011) and Marshall (2008) suggest that TAM2 assumes access to the technology or the information system and fails to address the barriers to usage which might be other significant factors external to the user and the user's perceptions of usefulness, ease of use, or subjective norms. For example, in the context of mobile technologies for teaching and learning, factors such as the cost of the devices, the cost of internet access, and the facilitating conditions can be prohibitive. In response to this, many studies were conducted to propose modifications and changes to the original TAM or TAM2. The most prominent of these modifications is the proposal of the Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh, Morris, Davis, and Davis (2003).

2.9.11 Unified Theory of Acceptance and Use of Technology (UTAUT) Model 2003

For about three decades, researchers have been developing and testing models that can best study the process of information technology acceptance. These models are widely used, applied, and extended. Out of the previous models, Venkatesh, Morris, Davis, and Davis (2003), conducted research to test the constructs of each model through reviewing the user acceptance literature, and empirically comparing the models and their extensions in order to formulate the UTAUT and validate it. The UTAUT model was then tested using the original data, and found that the UTAUT outperformed the eight individual models and explained 69% of the variance in user intention to use information technology, while the eight models explained between 17% and 53% of the variance in user intention to use information technology. UTAUT was then confirmed with data from two new organizations with similar results, explaining 70% of the variance in user intention to use information technology. Thus, UTAUT appeared as the best model that provides a useful tool for managers needing to assess the likelihood of success for technology introduction. Additionally, UTAUT helps to understand the drivers of acceptance, in order to proactively design interventions, including training and marketing targeted at populations of users that may be less inclined to adopt and use new technology. The main features of the unified model are detailed below in Figure 3.

Figure 3: Unified Theory of Acceptance and Use of Technology (UTAUT)

(Venkatesh et al., 2003, p. 447)



The unified theory implies four core constructs (performance expectancy, effort expectancy, social influence, and facilitating conditions) as direct determinants of usage intention and behaviour while gender, age, experience, and voluntariness of use are manifested to mediate the impact of these constructs on behavioural intention and usage (Venkatesh et al., 2003). The evidence-based results from subsequent research show that the UTAUT model generates better understanding of behaviour intentions and use of new technologies than other similar theories and models (Venkatesh et al., 2003; Wu, Tao & Yang, 2007). Consequently, Venkatesh et al. (2012) have stated that "since its original publication, UTAUT has served as a baseline model and has been applied to the study of a variety of technologies in both organizational and non-organizational settings" (p. 158).

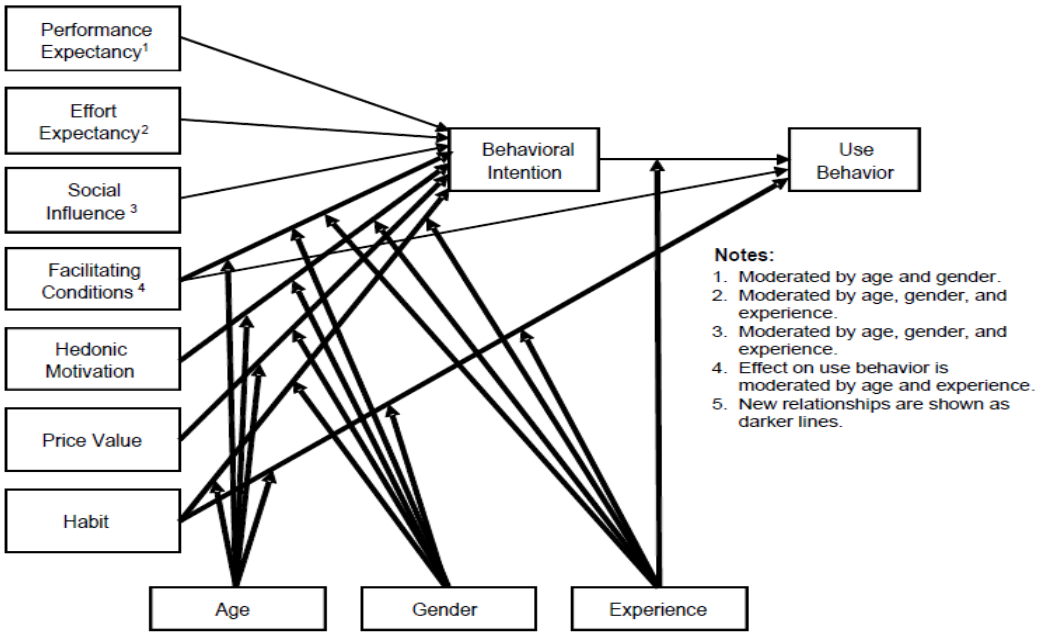
2.9.12 The Extended Unified Theory of Acceptance and Use of Technology (UTAUT2) 2012

Although the UTAUT model out performed all the previous models on which it was based, Venkatesh et al. (2012) assumed that, even with wide range of studies utilizing UTAUT in different contexts by replications, applications, extensions, and integrations, "there is still the need for a systematic investigation and theorizing of the salient factors that would apply to a consumer technology use context" (Venkatesh et al., p. 158). Consequently, Venkatesh et al. (2012) further defined and extended their model to create the UTAUT2 model by adding three additional key constructs (hedonic motivation, price value, habit) into the UTAUT, and dropping one of the moderators (voluntariness) in order to tailor it

into a consumer use context, as most consumer behaviours are voluntary, resulting in no variance in the voluntariness construct. The study confirmed the important roles of hedonic motivation, price value, and habit in influencing technology use in UTAUT2 model, which is tailored to the context of consumer acceptance and use of technology. The main details of the UTAUT2 model are shown in Figure 4 below.

Figure 4: The Extended Unified Theory of Acceptance and Use of Technology (UTAUT2)

(Venkatesh et al., 2012, p. 160)



2.10 Research Framework

The previous research studies outlined above, which were conducted over more than a decade, reveal that, when it comes to the Saudi higher education context and it is desired to measure and evaluate the behavioural intention and the use of mobile technology to teach and learn English at Preparatory Year English Language (PYEL) program, the UTAUT2 is the most suitable model. The main research question of this study is: what are the factors that determine students' and faculty use behaviour and behavioural intention to use mobile technologies in learning and teaching English as a foreign language? To answer this question, a theoretical framework based on the Extended Unified Theory of Acceptance and Use of Technology (UTAUT2) was employed. The choice of the UTAUT2 for the current study is motivated by its inclusiveness and high illustrative and predictive powers as compared with other theoretical models. The UTAUT2 model (Venkatesh et al.,

2012) is the most recent model to measure the acceptance and intention to use IT, in which the authors considered most of the previous work on technology acceptance that resulted in a powerful framework.

This model takes into account several perspectives; and was designed to assess technology acceptance beyond the organizational context by embedding consumer context dimensions. The independent variables in this model (see Table 3) include: performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price, and habit. These variables meet the needs of this study because they serve the objectives of the study, for example, if we consider that our sample (whether composed of students or instructors) are consumers of mobile technologies because they purchase these mobile devices and pay the service providers, then the UTAUT2, which was developed for the consumer use context and has price as independent variable, can better serve the objectives of this research as it has an economic perspective. Compared to UTAUT, the extended UTAUT2 produced a significant enhancement in explanatory power with respect to the variance in behavioural intention and technology use (Venkatesh et al. 2012). With respect to the UTAUT2, Venkatesh et al. (2012) argue that "compared to general theories, in more recent years, theories that focus on a specific context and identify relevant predictors and mechanisms are considered to be vital in providing a rich understanding of a focal phenomenon and to meaningfully extend theories" (p. 158).

Moreover, the model was developed to study the mobile internet, which makes it more relevant to mobile learning. Therefore, the research framework for this study has been adapted from the UTAUT2 with appropriate modifications (see Figure 5 below). The voluntariness of use has been brought back, as it is applicable in the research context, since students and faculty, as consumers of mobile technologies, can voluntarily use them within the organization, or they can be asked by the organization to "Bring Your Own Personal Handheld Devices (PYOPHD)" for teaching and learning. The key constructs (Independent Variables) of the theoretical model are considered in Table 3, and Figure 5 shows how the different elements of the model interact, within the chosen research framework.

The theoretical framework illustrated in Figure 5 served as a guide for developing the research hypotheses. Although the research framework (Figure 5) is applied to two

different groups, i.e., students and faculty, but the same set of hypotheses was generated for both students and faculty. This can be justified by the context of the study and the conceptual framework with the underlying assumption that both groups are considered as consumers of mobile technologies. Hence, both groups are treated equally regarding the variables and factors contributing to the behavioural intention and technology use.

Figure 5: Research Framework for Higher Education Acceptance of Mobile Technologies in Teaching & Learning EFL

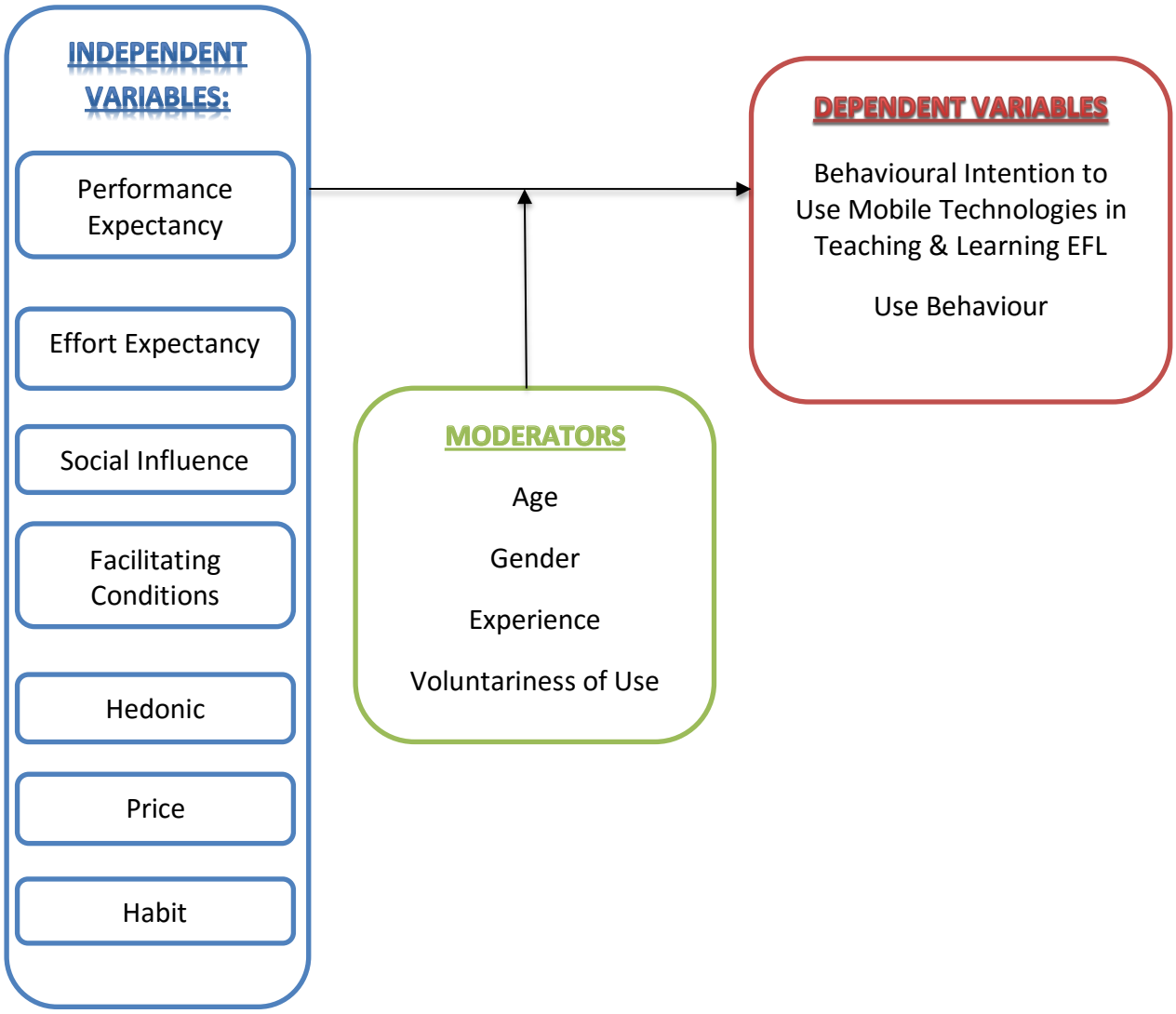


Table 3: Key Constructs (Independent Variables)

Key Construct (Independent Variable)	Definition	Related Constructs	Related Theory
Performance Expectancy	The degree to which using mobile technologies will provide benefit in teaching & learning EFL. Adapted from the UTAUT2 (Venkatesh et al., 2012)	Perceived Usefulness	TAM
		Job Fit	MPCU
		Relative Advantage	IDT
		Extrinsic Motivation	MM
		Outcome Expectation	SCT
Effort Expectancy	The degree of ease associated with using mobile technologies in teaching & learning EFL. Adapted from the UTAUT2 (Venkatesh et al., 2012)	Perceived Ease of Use	TAM
		Complexity	MPCU
		Ease of Use	IDT
Social Influence	The degree to which students & instructors perceive that important others (i.e. family, friends, society) believe they should or should not use mobile technologies in teaching & learning EFL. Adapted from the UTAUT2 (Venkatesh et al., 2012)	Subjective Norm	TRA
		Social Factors	MPCU
		Image	IDT
Facilitating Conditions	The degree to which students & instructors believe that resources and support are available to use mobile technologies in teaching & learning EFL. Adapted from the UTAUT2 (Venkatesh et al., 2012)	Perceived Behavioural Control	TPB
		Facilitating Conditions	MPCU
		Compatibility	IDT
Hedonic Motivation	The degree to which students & instructors have fun or pleasure derived from using mobile technologies in teaching & learning EFL. Adapted from the UTAUT2 (Venkatesh et al., 2012).	Hedonic Outcomes	MATH
		Intrinsic Motivation	MM
Price	The degree to which students & instructors perceived the benefits of using mobile technologies in teaching & learning EFL as of greater value than the monetary cost. Adapted from the UTAUT2 (Venkatesh et al., 2012)	Price Value	(Dodds & Monroe, 1985; Zeithaml, 1988)
		Perceived Price	
Habit	The degree to which students & instructors tend to use mobile technologies in teaching & learning EFL automatically. Adapted from the UTAUT2 (Venkatesh et al., 2012)	Automaticity Repeated Behavioural Pattern	(Triandis,1977; Kim and Malhotra 2005; Limayem et al., 2007)

Based on the research framework the following hypotheses were generated:

Table 4: Research Hypotheses

Students		Faculty	
1.S.	Performance Expectancy will significantly predict behavioural intentions to use mobile technologies in learning EFL and use behaviour.	1.F.	Performance Expectancy will significantly predict behavioural intentions to use mobile technologies in teaching EFL and use behaviour.
2.S.	Effort Expectancy will significantly predict behavioural intentions to use mobile technologies in learning EFL and use behaviour.	2.F.	Effort Expectancy will significantly predict behavioural intentions to use mobile technologies in teaching EFL and use behaviour.
3.S.	Social Influence will significantly predict behavioural intentions to use mobile technologies in learning EFL and use behaviour.	3.F.	Social Influence will significantly predict behavioural intentions to use mobile technologies in teaching EFL and use behaviour.
4.S.	Facilitating Conditions will significantly predict behavioural intentions to use mobile technologies in learning EFL and use behaviour.	4.F.	Facilitating Conditions will significantly predict behavioural intentions to use mobile technologies in teaching EFL and use behaviour.
5.S.	Hedonic Motivation will significantly predict behavioural intentions to use mobile technologies in learning EFL and use behaviour.	5.F.	Hedonic Motivation will significantly predict behavioural intentions to use mobile technologies in teaching EFL and use behaviour.
6.S.	Price will significantly predict behavioural intentions to use mobile technologies in learning EFL and use behaviour.	6.F.	Price will significantly predict behavioural intentions to use mobile technologies in teaching EFL and use behaviour.
7.S.	Habit will significantly predict behavioural intentions to use mobile technologies in learning EFL and use behaviour.	7.F.	Habit will significantly predict behavioural intentions to use mobile technologies in teaching EFL and use behaviour.
8.S.	Age, Gender, Experience, and Voluntariness of Use will moderate the impact of Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, hedonic Motivation, Price, and Habit on behavioural intentions to use mobile technologies in learning EFL and use behaviour.	8.F.	Age, Gender, Experience, and Voluntariness of Use will moderate the impact of Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, hedonic Motivation, Price, and Habit on behavioural intentions to use mobile technologies in teaching EFL and use behaviour.

2.11 Conclusion

Although reviewing related literature indicates that research in the field of technology acceptance in general, and acceptance of mobile learning and teaching in particular is increasing, but still further research is required to develop a robust knowledge; and to cope with the latest advancements in mobile technologies, as well as the increase in ownership of these technologies. The importance of such research varied from one context to another.

It is crucial to investigate the readiness for, and acceptance of, mobile learning at higher education institutions in Saudi Arabia. In Saudi higher education institutions, students are learning complicated subjects such as medicine, health sciences, and science, but by being taught in a language that is not their own mother tongue or even a second language, it is a foreign language. Bearing in mind that technologies impact on the ways that people learn, and create effective learning and teaching environments (Beetham & Sharpe, 2007), for mobile technologies to be used widely and wisely, their implementation needs to be fully informed and practically applied by reference to the specific national, social and cultural contexts in which they will function, and all the associated embedded limitations and challenges (Cobcroft, 2006).

In order to investigate the readiness for, and acceptance of, mobile technology a careful research methodology was developed in the following chapter.

3 Chapter Three: Methodology

3.1 Introduction

Methodologies are needed to help to construct knowledge, and while there is no single valid methodology, there are a variety of useful methods to investigate the same enquiry. This chapter discusses the practical elements and procedures of the research which place the current research within a research paradigm. This Chapter illuminates the specific method employed to detect the readiness and acceptance of mobile learning and teaching among students and faculty in Saudi higher education. It provides details about the research framework and hypotheses, research design, setting and participants, tools, data collection procedures, and strategies used to certify ethical standards.

3.2 Research Design

The philosophical perspective underpinning the research process is determined by the decisions made by the researcher regarding how a research is conducted and with what degree of involvement, i.e. the research paradigm. Bogdan & Biklin (1998) defined the term paradigm as "a loose collection of logically related assumptions, concepts, or propositions that orient thinking and research" (p. 22). On the other hand, Mackenzie & Knipe (2006) considered the research paradigm as the theoretical framework for the research. A wide body of research and textbooks had been dedicated to discuss in details a number of research paradigms, how they shape the way of looking at the world, and guide research enquiries.

Two of the most common paradigms are positivism/postpositivism and constructivism. Johnson & Onwuegbuzie (2004) argued that, for more than a century, the ardent supporters of these two paradigms have been engaged in critical disputes, and that both sides view their paradigms as an ideal philosophy of research. Consequently, an evolution of mixed methods has emerged to combine both paradigms. Creswell & Clark (2011) considered this mixed methods as the third movement (paradigm) after positivism/postpositivism and constructivism.

For clarification, Gall et al (2007) employed the terms quantitative and qualitative research to refer to positivism/postpositivism and constructivism paradigms, respectively, which are commonly used in educational research. However, Creswell (2009) emphasized

three major elements that contributed to the research paradigm: the knowledge claims, the strategies, and the methods (see Table 5).

Table 5: Major elements contributed to research paradigms (Creswell, 2009)

Element	Paradigm		
	Positivism/Postpositivism	**Constructivism**	**Mixed Methods**
Knowledge Claims	• Research is a process of making claims to refine or abandon them based on evidence. • There is no absolute truth (postpositivism). • Objective reality. • Deductive process.	• Seek understanding of the world. • Researchers develop subjective meanings of their own experience. • Subjective meanings are negotiated socially and historically. • Inductive process.	• Problem-centered enquiry. • All approaches can be used to understand the problem. • Truth is what works at the time • Consequences of actions.
Strategies	• Experimental, quasi-experimental, correlational, and survey studies.	• Ethnographies, grounded theory, case studies, phenomenological, and narrative research.	• Transformative procedures, i.e. conducting mixed methods research using a theoretical-based framework
Methods	• Predetermined instruments that yield statistical data. • Statistical analysis.	• Emerging methods to develop themes from the data collected. • Text and image analysis.	• Both predetermined and emerging methods. • Statistical and text analysis.

Source: Summarized from Creswell (2009).

Gall et al (2007) argued that the investigated problem, as well as the available resources of data, acts to define the research approach. Therefore, this research utilizes a quantitative correlational approach to answer the research questions and test the hypotheses using cross sectional survey data. According to Gay et al. (2011), research is a formal systematic application of the scientific method to the study of problems. The scientific method is the process of developing hypotheses, deducing their implications, testing these implications to approve or disapprove of the hypotheses.

The quantitative research method is a useful method to discover and investigate the relationships between variables and to test hypotheses (Gall et al, 2007). It also has the power to translate the collected data on a phenomenon as (such as opinions) into quantifiable numbers to facilitate statistical analysis (Muijs, 2004). Carter & Hurtado (2007) stated that "quantitative methods are best suited when we can anticipate questions to ask and theory to test" (p. 34). On the other hand, correlational design can figure out the relationships between variables as well as the strength and direction of linear relationships (Gall et al, 2007). Moreover, the research model, and the hypotheses generated from it, required data to be gathered from a large population, which justifies the use of quantitative methods rather than qualitative. Therefore, surveys are used to collect the data, as they are the most widely used technique in educational research and work well in producing large samples in order to enable generalizability from a sample to a wider population (Creswell, 2009). Furthermore, a review of related literature of technology acceptance reviewed by Venkatesh et al. (2003) and Venkatesh, Thong, & Xu (2012) indicated the use of surveys to collect data to test various technology acceptance models.

3.3 Data Collection Tools

The data was collected using two surveys, one for students and one for faculty (copies of the surveys are given in appendices 1, 2). The students' survey consisted of 22 questions, while the faculty's survey consisted of 23. These two surveys were based directly on the survey items especially developed by Venkatesh et al. (2003) and Venkatesh, Thong, & Xu (2012), as well as on the literature review of previous research on mobile technologies acceptance. The use of previously developed instruments is essential, as the validity and reliability of these instruments has already been demonstrated. However, previous studies used systematic rating scales for all the measured variables, which could affect the measurements and the relationships between the variables. Therefore, adjustments for the response styles were made to reflect the variables which they were intended to measure.

Both surveys consisted of two sections. The first section was a personal profile of the participants, where students and instructors were asked to indicate their gender, age category, nationality, academic qualification of instructors, and academic track of students; followed by questions that disclosed their experience regarding mobile devices

in general i.e., ownership (respondents had to choose from a list of mobile device) and how often they use these devices (respondents had to tick the appropriate time slot from a nine points frequency scale ranging from not at all to more than 5 times a day). This section ended with two questions; one to clarify why participants were using mobile devices; and the other they would answer only if they indicate previously that they did not own any mobile device on the filter question, i.e. the ownership question (Question no.6 in students' survey, and Question no.7 in faculty survey).

The second section was about participants' opinions regarding using mobile technologies in teaching and learning. A list of statements was provided and participants were asked to indicate their level of agreement with each statement by means of a five point Likert agree/disagree scale with the middle option scored as neutral, as well as Not Applicable N/A. Also, participants' opinions regarding the price of mobile devices and cellular and internet services was addressed in this section, based on a three point price scale (cheap, good value, expensive, I don't know). Furthermore, the actual use of mobile technologies in EFL teaching and learning, and also their use in general, were also featured in the second section by listing possible uses, and asking participants to indicate how frequently they practice these uses, based on a five point frequency scale (never, rarely, occasionally, frequently, very frequently). In addition, a list of possible university services was provided and participants were asked to tick the relevant boxes to specify which of the services they were interested in accessing on mobile devices. Finally, this section ended by two open ended questions requesting further information. For more details see appendices 1, 2, 3 (Student & Faculty Surveys).

The faculty's survey did not need any translation, as it addresses the EFL instructors, while the students' survey was translated into Arabic (the mother tongue of all students). The translated form was given to two Arabic language instructors to check the Arabic version and to one bilingual instructor to check the translation.

To establish trust, the surveys were provided with an opening statement indicating the purpose and importance of the research and explaining how the gathered confidential data will be used, and thanking respondents for participating in this research.

The surveys included questions designed to gather data on the UTAUT/UTAUT2 constructs, Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI),

Facilitating Conditions (FC), Hedonic Motivation (HM), Price (P), and Habit (H) as well as the moderators, Age, Gender, and Experience (E). For more details about the survey items and the research model constructs see appendices 4, 5 (Students & Faculty Survey Items).

3.4 Data Collection Procedures

The estimated time to complete the surveys was 10 to 15 minutes for either the students' or faculty version. The purpose and importance of the study, and the way in which participants' confidentiality were guaranteed, were outlined at the beginning of the survey. Moreover, contact information for the researcher and her supervisor were also provided, in case any participant has any concern or a question. In addition, a prize draw was used to motivate participants to complete the surveys, so if any respondent is interested, he or she could provide their contact details to enter into the prize draw.

The surveys were sent to participants through the Dean of Academic Services at Taibah University. Due to the cultural norms in Saudi Arabia that impede women's interactions in gender segregated campuses, The English Language Centre (ELC) was responsible for letting the potential population know about the study and inviting them to participate. Since all the addressed population (students and faculty) at Preparatory Year English Language (PYEL) program were eligible to participate, they were self-selected participants, volunteered to contribute to the study. However, the process of distributing the surveys, and collecting the completed surveys was supervised by the researcher herself.

3.5 Ethical Considerations

The current study, as with most educational research, involves collecting data from human participants; therefore, the researcher needs to describe how to protect the participants from possible harm (Gall et al, 2007). The University of Lincoln has ethical guidelines to govern the conduct of research within the university. Consequently, in order to guarantee the ethical considerations, it is required to fill a form (Ethical Approval Form EA2 – Appendix 8) and submitted to the designated research ethics committee within the school of education for approval. It was indicated in this form that all participants are 18 years old or above, so parental consent is not a prerequisite to obtain responses.

From an ethical perspective, the respondents were informed on the cover page of the survey of the following: the purpose and the importance of their participation, their right

to refuse to respond or withdraw (voluntary participation), the anonymity and confidentiality of data processing, the declaration of the way of sorting data, and the assurance that their contact details will be kept safe if they wish to take part in the prize draw.

3.6 Response Rate

One hundred and ninety six questionnaires were sent to EFL faculty members and two thousand questionnaires were sent to EFL students at Preparatory Year English Language (PYEL) program during the second semester of the academic year 2012/2013. It was planned to send more copies to students if they are all filled in. 878 (43.9% of the sent questionnaires and 15.2% of the whole population) students and 65 (33.2%) faculty members filled in the questionnaires. 13 additional students' returned questionnaires were considered unusable because they were returned blank. Faculty members and students' participation in the study was optional (self-selection). A prize draw was used to motivate participants to complete the questionnaires.

3.7 Settings and Participants

Higher education institutions in Saudi Arabia offer a wide range of undergraduate and graduate degrees. All students joining the major schools and programs should pass through the Preparatory Year English Language (PYEL) program, which is a compulsory prerequisite for students that is divided into three tracks: science, health, and humanities. The PYEL aims at advancing the English proficiency of Saudi students moving into the higher education.

This study is designed to investigate the opinions of students and faculty at higher education of using mobile technologies in learning and teaching EFL courses, to find out their readiness and acceptance of these technologies. All students and staff of EFL in the Preparatory Year English Language (PYEL) program during the second semester of the academic year 2012/2013 were invited to participate through the Deanery of Academic Services and English Language Centre at Taibah University. The population includes 5,865 undergraduate students, 3,224 males and 2,641 females, from different campuses and academic tracks and 196 EFL male and female instructors. They were all eligible to respond to the survey, and a proactive attempt was made to attract as many participants as possible to contribute to the data set.

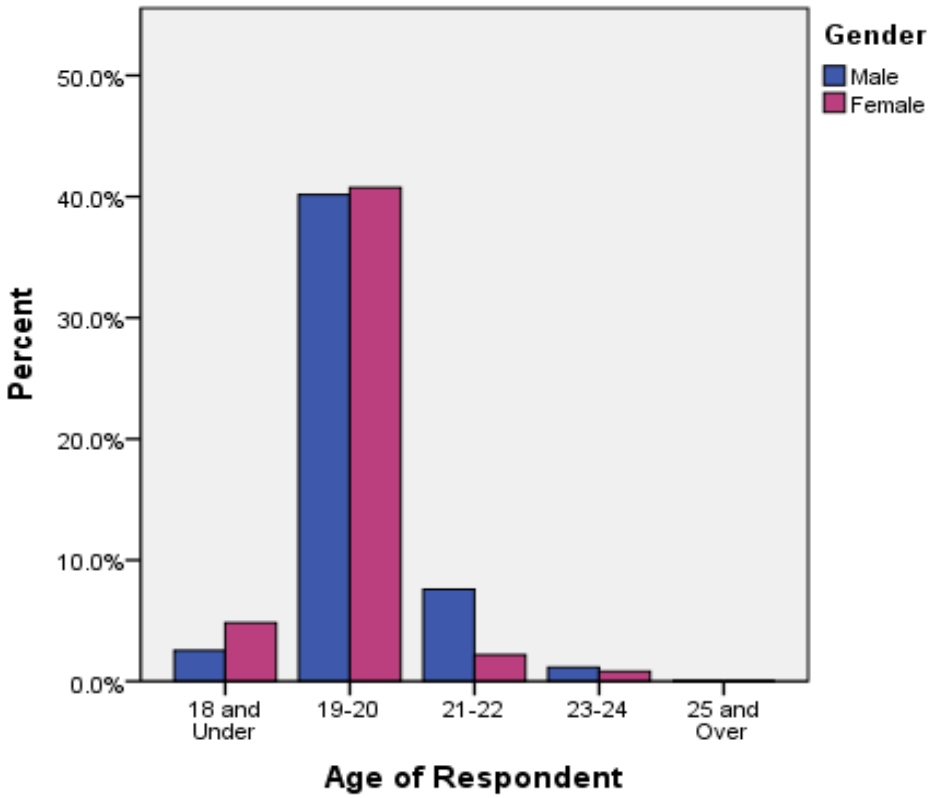
The actual participants were 878 students (51.3% males and 48.7% females) and 65 instructors (40% males and 60% females). They all voluntarily (self-selected) answered the surveys.

Students' age ranged from 18 to 24 years old. When compared gender with age, we found out that 65.6% of students aged 18 and under were females in compare to 34.4% male students. On the other hand, the majority of students (88%) were within the age range of 19-20 years old; hence, it is unlikely that age could be considered as a possible variable in the analysis, because of its lack of variability (see Figure 6). Therefore, age as a moderator was excluded from the research model for the Students.

Table 6: Characteristics of Participants (Students Survey)

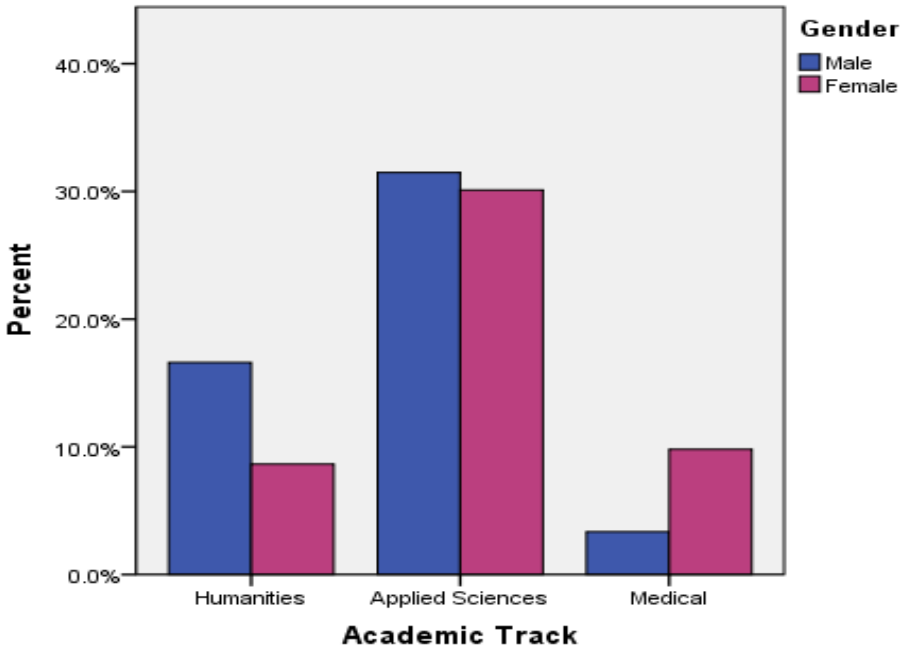
Characteristics	Frequency	Percentage	Cumulative Percent
Gender			
Male	450	51.3	51.3
Female	428	48.7	100.0
Age of Respondents			
18 and Under	64	7.3	7.3
19-20	711	81.1	88.4
21-22	85	9.7	98.1
23-24	17	1.9	100
Academic Track			
Medical	114	13.0	13.0
Applied Sciences	540	61.7	74.7
Humanities	221	25.3	100.0

Figure 6: Age & Gender (Students Survey)



The participants also were categorized according to the academic track they have joined; i.e., medical, applied sciences, and humanities. More than half of the participants (61.7%) were studying the applied sciences academic track, while 13%, 25.3% of students were studying the medical and humanities tracks respectively, which were fairly representative of the actual population across the three tracks (see Table 6). The majority of students (80.9%) across the three tracks were within the age range of 19-20 years old.

Figure 7: Gender & Academic Track (Students Survey)



The Preparatory Year English Language (PYEL) program is running only in three campuses located in Medina, Yanbu, and Al-Ola, moreover, students studying in this program are permanently living in and around these locations. However, in some cases, students are from other big cities out of Medina Province like Jeddah, Taif, and Tabuk. Nevertheless, most of the students are from Medina (55.1%), Yanbu (21.7%), and Al-Ola (10.7%).

Smartphones seem to be the most popular mobile devices, with 81.4% of students reporting that they own them. 47.2% of those owing a smartphone had done so for 2-5 years and nearly the same percentage (48.6%) of students access the internet through their smartphones, more than 5 times per day. Moreover, 43.2% of those students use this kind of mobile technology, as they feel free to communicate everywhere. The least common mobile technology is e-readers, which are owned by 0.3% of students.

As for the faculty sample, Table 7 shows that out of 196 male and female EFL instructors, 65 responses were completed, 40% were male and 60% were female. Ages varied among these respondents, with most of them in the young and middle age groups. These instructors encompassed 14 different nationalities, while 11 participants chose not to mention their nationalities. Master and bachelor degrees were the most common qualifications held by EFL instructors (43.1% and 40% respectively), while Diploma and

PhD were possessed by 9.2% and 7.7% of instructors. Each instructor is authorized to teach one or more of the three teaching tracks.

Figure 8 displays the frequency of males and females faculty across the age categories. 36% of males were in the age category of 25-29 while 28.9% of females were within the same age category. On the other hand, 55% of the participants, within the age category of 25-29, were females and 45% were males. However, there were not much differences between males and females with respect to the age category, except in the age categories of 35-39, 40-44, and 45-49 where the proportion of females was three times larger than of males in the first two categories and 100% of participants within the third age category were males.

Figure 8: Gender & Age of Respondent (Faculty Survey)

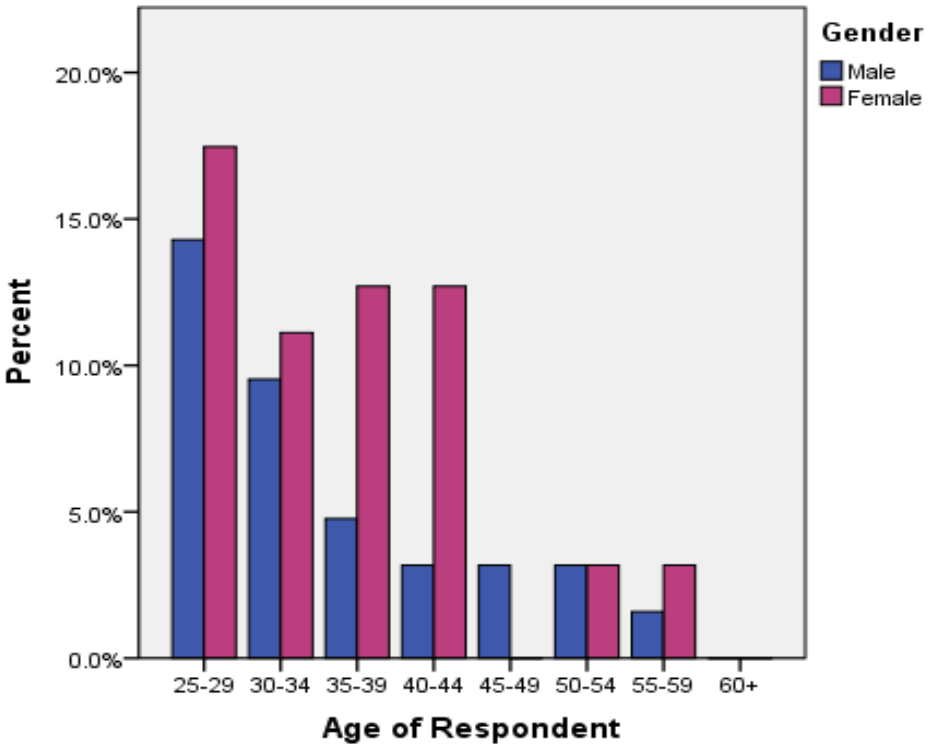


Table 7: Characteristics of Participants (Faculty Survey)

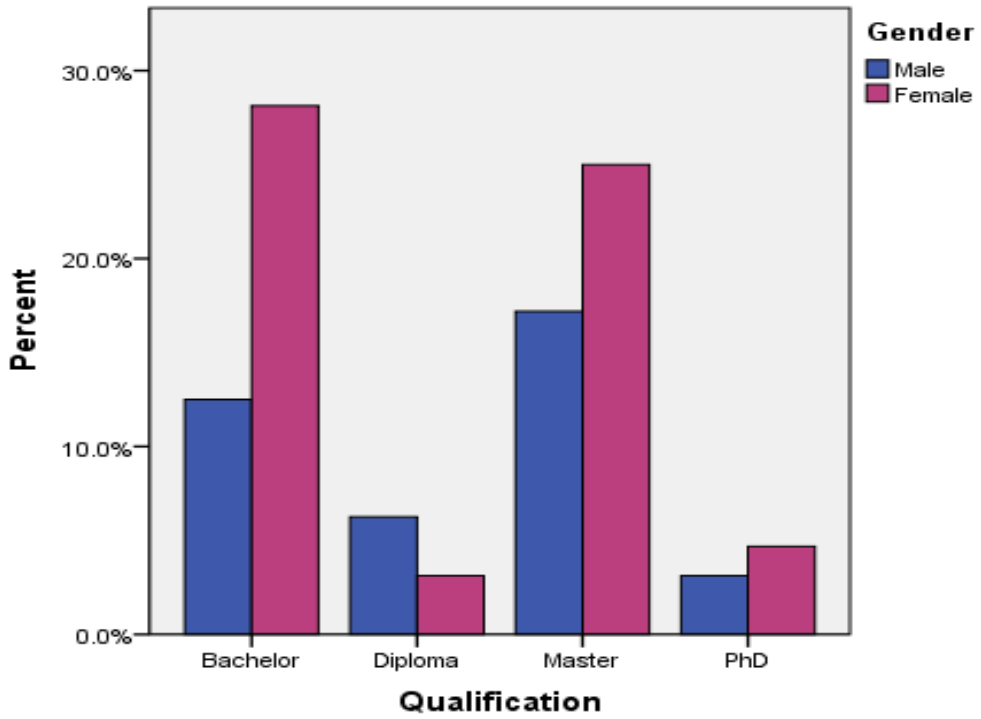
Characteristics	Frequency*	Percentage	Cumulative Percent
Gender			
Male	26	40.0	40.0
Female	39	60.0	100.0
Age of Respondents			
25-29	21	32.8	32.8
30-34	13	20.3	53.1
35-39	11	17.2	70.3
40-44	10	15.6	85.9
45-49	2	3.1	89.1
50-54	4	6.3	95.3
55-59	3	4.7	100.0
Qualification			
Bachelor	26	40.0	40.0
Diploma	6	9.2	49.2
Master	28	43.1	92.3
PhD	5	7.7	100.0
Nationality			
British	12	22.2	22.2
Saudi	8	14.8	37
Jordanian	8	14.8	51.8
Egyptian	7	13.0	64.8
Syrian	7	13.0	77.8
Others*	12	22.2	100.0
Teaching Track			
Medical	13	20.3	20.3
Applied Sciences	27	42.2	62.5
Humanities	24	37.5	37.5

*Total of Frequency varied from one characteristic to another due to missing

*Others include: Canadian(3), American(2), Malaysian(1), Mauritanian(1), Pakistani(1), Sudanese(1), Turkish(1), Uzbekistan(1), Yemeni(1)

The difference between males and females with respect to their qualifications (see Figure 9) might be due to the fact that 60% of instructors who participated in the study were females.

Figure 9: Gender & Qualification (Faculty Survey)



Again, Smartphones seem to be the most popular mobile devices among the faculty sample, with 79.7% reported that they own them, compared to 81.4% of students. 47.6% of those staff who owned smartphones had done so for 2-5 years; and 62.5% of those staff owing smartphones reported accessing the internet through their smartphones more than 5 times per day. Additionally, 32.8% of faculty members use this kind of mobile technology as these devices make their life easier and 21.9% reported using them as they feel free to communicate everywhere. Furthermore, the e-reader was the least common mobile device, with only one staff participant (1.6%) reported owing one.

3.8 Conclusion

As discussed above, this research utilized a quantitative correlational survey approach to answer the research questions and test the hypotheses. The rationale behind this research design is emphasized; and the research hypotheses are generated based on the research framework. Two surveys were administered to collect the data from students and faculty of EFL in the Preparatory Year English Language (PYEL) program at Taibah University, in Saudi Arabia.

After the data collection process had finished, the next step, which is sorting out data, is one of the most challenges throughout the dissertation development. The next chapter is dedicated to explain the procedures of data analysis followed by presenting and discussing the findings.

4 Chapter Four: Data Analysis and Findings

4.1 Introduction

This chapter describes the data analysis procedures followed by a presentation of the research findings. Data was analysed to explore the determinants of students and faculty behavioural intention and use behaviour, with respect to mobile technologies for learning and teaching EFL. Preliminary data analysis has started in the previous chapter with descriptive analysis of the sample; and is continued in the beginning of this chapter with data screening, factor analysis, reliability and validity.

The survey data was entered into version 19 of SPSS on a personal computer of the researcher. Descriptive statistics were calculated on all variables as well as inferential statistics. To test the research hypotheses, several statistical techniques were used including exploratory factor analysis (EFA), correlation, crosstabulation, regression analysis, analysis of variance (AVOVA), and T-test. The significance level for the tests used in this study was set at 5% although when the results were significant at the 1% level, this was reported. According to Gall et al (2007), this significance level is conventionally used in educational research and was established by Sir Ronald Fisher in 1925 as reported by Clowles and Davis (1982). Also, Bryman (2012) and Punch (2014) refer to 5% significance level as an accepted cut-off level of significance in social sciences research. However, the researcher has consulted Steve McKay, a distinguished professor in social research regarding data analysis procedures. In addition, three professional statisticians have been, also, consulted to affirm the appropriateness of the data analysis procedures.

At first, the results of data analysis are arranged according to hypotheses starting with the students' survey then that of faculty, and presented without discussion. Then the results were interpreted in the light of the research objectives and purposes, in order to answer the research question and test the hypotheses in the following chapter (chapter five).

4.2 Accuracy of Data, Missing, & Data Screening

The accuracy of data entry was ensured by re-checking each data point, and checking minimum and maximum values for each variable. Since missing values were few in number across all cases but very frequent within the same few cases, a decision was made to exclude cases with missing elements from the data set. So, in consequence, one case was deleted from the faculty survey and eight cases from the students' survey. If any

demographic information, other than gender, is the only missing element, then the case is included. As parametric statistical methods such as Linear Regression, ANOVA test, Pearson Correlation, and t-Test necessitate that the interval variables should be checked for outliers, normality, linearity, homoscedasticity, multicollinearity, and level of measurement (Pallant, 2010), an exploratory data analysis was conducted. According to Tabachnick & Fidell (2007), for large samples (200+) the presence of skewness and kurtosis in the data set will not make an essential difference to the analysis. A preliminary analysis was conducted on the two different samples (Students 870 & Faculty 64), and the following graphs were checked: Histogram, Normal Q-Q Plot, Boxplot, and Scatterplot and then a correlation matrix derived to detect multicollinearity. Multicollinearity occurs when two or more predictors are highly correlated (Norusis, 2012; Pallant, 2010). The correlation matrix of the independent variables indicated that there is no problem with multicollinearity as there was no r=.9 and above (Pallant, 2010). Furthermore, based on the visual screening, the distribution of data set was nearly normal and homoscedastic, and the few outliers did not lie so far outside the data and in large samples the few outliers do not have a substantial impact on results. To check whether these outliers have an influential impact on the results, regression analysis was conducted twice with and without the outliers (Norusis, 2012; Pallant, 2010). This duplication of regression resulted in nearly similar results; therefore, the outliers were included.

4.3 Factor Analysis

Factor analysis originated in the work of Charles Spearman (1904), when he studied human intelligence. Norusis (2012) defines factor analysis as a "statistical technique used to identify a relatively small number of factors that explain observed correlation among variables" (p. 405). It includes the following: computing a correlation matrix, extracting factors, rotating factors to make variables easy to interpret, and calculating factor scores.

The procedure adopted for factor analysis was to use Principal Components Analysis and orthogonal rotation (Varimax) as well as many options and rules of thumb to create a standardized variable score for individuals that rescaled (Mean=0 & SD=1) in order to be used in further data analysis procedures. This procedure was widely used for factor analysis in similar research such as Abu-Al-Aish & Love (2013), Jairak et al (2009), Lewis et al (2013), and Van Biljon (2006). However, deducing factors that are purely measuring a construct without overlapping with other constructs can be obtained by Principal

Components Analysis and an orthogonal solution; “meaning that the resulting factors are uncorrelated with each other” (Gall et al, 2007, 270). According to Brown (2009), Kim & Mueller (1978), and Tabachnick & Fidell (2007), practically, both methods of factor rotation, orthogonal (uncorrelated factors) and oblique (correlated factors) lead to similar results, but orthogonal solutions are easier to interpret. Both rotational procedures have been tried by the researcher, to test whether the resultant factors are loading on the same component, and assess which method offers the most stringent interpretations of patterns within the data. As a consequence of this trial, orthogonal, rather than oblique, rotation has been implemented. Primarily, Pallant (2010) discussed two steps which are required to check the suitability of the data for factor analysis. The first step in running Exploratory Factor Analysis (EFA) is to compute correlation matrix for all the items which make up all the variables. Following Bryman and Cramer (2011), depending on whether there are significant correlations between items, a decision was made to run factor analysis. Examining the correlation matrix of all variables included in the analysis in both surveys suggests that factor analysis is a valid exercise. The second step is to assess whether the sample size is sufficiently large enough to enable this exercise to be carried out. It is clearly that there is no problem with the students survey sample (870 students) as it is large enough to run the analysis, but for faculty survey (64 staff), the Kaiser-Meyer-Olkin (KMO) and Bartlett’s Test of Sphericity , measures of sampling adequacy, were used to assess the sample size (Norusis, 2012; Pallant, 2010; Tabachnick & Fidell, 2007). Kaiser (1974) stated that KMO measure in the 0.90’s is excellent and in the 0.60’s is average while any KMO measure below 0.50’s is unacceptable. On the other hand, Bartlett’s Test of Sphericity should be significant ($p < .05$) to consider the sample size as suitable and reject the null hypothesis that all correlation coefficients are 0. The results of both measures are shown in Table 8 below. As can be seen, both the KMO and Bartlett’s Test, support the suitability of the data from both samples for factor analysis.

Table 8: KMO and Bartlett's Test

(Student Survey)		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.905
Bartlett's Test of Sphericity	Approx. Chi-Square	12460.677
	df	496
	Sig.	.000
(Faculty Survey)		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.627
Bartlett's Test of Sphericity	Approx. Chi-Square	1421.289
	df	561
	Sig.	.000

Principal Components Analyis and orthogonal rotation (Varimax) was undertaken using a factor loading threshold of 0.30, and this analysis ended by extracting 8 independent variables. Each extracted factor was then correlated with items included in that particular factor, as well as all the other items of all independent variables, as suggested by (Bartholomew et al., 2008, 118-119). As a result, items which belong to a particular factor, that showed a lower correlation with the extracted factor, compared to the items which don't belong to that factor, were removed. Factor analysis showed that the removed items loaded on more than one factor with factor loadings more than .2.

Moreover, Cronbach's Alpha was computed to examine the reliability score for each factor, and whether it might change when items were removed (see Tables 9, 10 below). This process can test the survey items for their unidimensionality and consistency. The factor loadings of factors derived from both faculty and students' surveys are shown in Appendices 6, 7.

Table 9: Reliability Statistics "Cronbach's Alpha" Students Survey

Construct/Variable	α	No. of Items
Performance Expectancy	.890	7
Effort Expectancy	.875	3
Social Influence	.676	3
Facilitating Conditions	.712 to .786 when item FC4 deleted	4
Hedonic Motivation	n/a	1
Price of Devices	.803	5
Price of Services	.773	2
Habit	.922	2
Behavioural Intention	.887	3
Use Behaviour in EFL	.872	11
Use Behaviour in General	.855	9
Experience	.958	21
Voluntariness of Use	.283	3

Table 10: Reliability Statistics "Cronbach's Alpha" Faculty Survey

Construct/Variable	α	No. of Items
Performance Expectancy	.900 to .904 when item PE7 deleted	8
Effort Expectancy	.846	3
Social Influence	.846	3
Facilitating Conditions	.649 to .724 when item FC4 deleted	4
Hedonic Motivation	n/a	1
Price of Devices	.720	5
Price of Services	.673	2
Habit	.852	2
Behavioural Intention	.888	3
Use Behaviour in EFL	.840	11
Use Behaviour in General	.703	9
Experience	.935	21
Voluntariness of Use	.477	3

Based on the results of factor analysis and reliability analysis several changes have been made. All these changes have addressed both, students and faculty surveys except the last two changes which were mentioned below. First, the survey item FC4 (the fourth Item of Facilitating Conditions "The University provides Wi-Fi connectivity on campus") was deleted on both student and faculty surveys due to the factor loading (.326 in Students Survey & .026 in Faculty Survey). In addition, the positive change in the reliability score and variance explained by the extracted factor (Facilitating Conditions), when the FC4 was deleted, supports the decision for deleting it (see Tables 9, 10).

Factor analysis can resulted in adding or deleting an item as in the following two cases. One is that two factors for P (Price) were extracted instead of one in both students and faculty survey, Price of Devices and Price of Services, as factor analysis showed the seven items for P loaded on two components. Hence items for P-Devices have loaded separately from items for P-Services. As a consequence of factor analysis, Price construct is reconceptualised into Price of Devices and Price of Services. On the other hand, Voluntariness of Use has been discarded from the research model due to the low internal consistency of the items (α= .283 & α= .477). According to DeVellis (2011) and Norusis (2012), to be acceptable Cronbach's Alpha needs to be in the range from 0.70 to 0.90 and the greater is the value of Cronbach's Alpha, the more consistent is the scale. In research into technology acceptance theory and practice, a reliability score of 0.60 or greater is considered acceptable (Venkatesh et. al., 2003; Zhang, Li, & Sun, 2006). It has been proved that looking for Voluntariness of Use in indirect way is not fruitful, and deleting items, has not improved the reliability score for the data from both surveys. Moreover, this study has considered students and faculty as consumers of mobile technologies and, in such a context, Voluntariness of Use is not an issue, as all consumers are voluntarily use these technologies. However, this variable was brought back to the model, as an auxiliary measure that would contribute to the implications of the study. If the results would show positive perception and attitude towards mobile technologies, then the organization might call for "Bring Your Own Personal Handheld Devices (PYOPHD)" for teaching and learning. At that point, if the acceptance of mobile technologies is going to be measured, the Voluntariness of Use dimension would be needed.

Since the moderator "Experience" has been measured by asking four different questions (Q.6, Q.7, Q.8, Q.9 in the Student Survey, Q.7, Q.8, Q.9, Q.10 in the Faculty Survey, see

Appendices 1, 2, 3) and each question asked about five different common mobile devices, and running factor analysis in the same way resulted in extracting five different constructs as the items related to each device loaded on the same component. Hence, the sum score for each question was calculated and then used to run factor analysis, correlation, and reliability tests because experience in general, and not with the experience of a specific device, is required.

Additionally, in both surveys there is one item for measuring Hedonic Motivation. At the early stages of developing the surveys there were two items ("Using mobile technologies in EFL learning/teaching is fun" & "Using mobile technologies in EFL learning/teaching is enjoyable" which were adopted from work by Venkatesh et. al. (2012), but, based on the face validity procedure, and as a result of piloting the surveys, it was revealed that one of those items should be removed, because the two statements are in essence identical, and therefore measure the same thing. At that stage, the researcher did not consider the data analysis procedures that require both items to be included. Nevertheless, this item was excluded from the factor analysis and reliability analysis, as it is not applicable to conduct these techniques in this situation.

Only in faculty survey, factor analysis revealed that PE7 (the seventh item of Performance Expectancy "Using mobile technologies is not about teaching, as I am learning too") is significantly correlated with PE, EE, and SI (.589**, .382**, .353**) respectively. Therefore, this item was discarded. Furthermore, it had been mentioned before that age as a moderator was excluded from the research model for the students sample, due to the fact that the large majority (80.9%) of participants (students) were within the age category of 19-20. However, based on the preliminary data analysis an initial research model (Figure 10) was implemented for the current study.

Figure 10: Initial Research Model for Higher Education Acceptance of Mobile Technologies in Teaching & Learning EFL

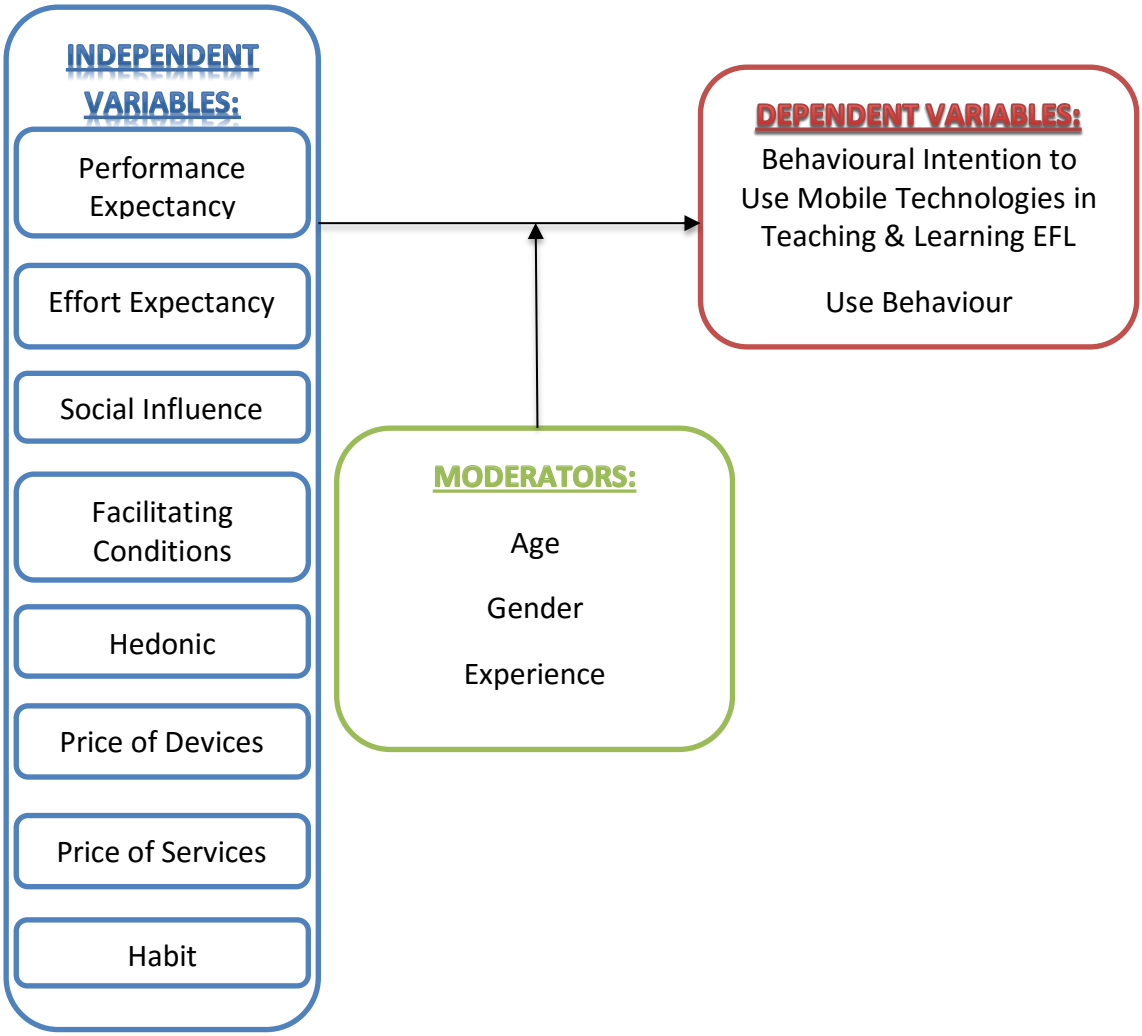


Table 11: Research Hypotheses Based on the Initial Research Model in Figure 10

Students	Faculty
1.S. Performance Expectancy will significantly predict behavioural intentions to use mobile technologies in learning EFL and use behaviour.	1.F. Performance Expectancy will significantly predict behavioural intentions to use mobile technologies in teaching EFL and use behaviour.
2.S. Effort Expectancy will significantly predict behavioural intentions to use mobile technologies in learning EFL and use behaviour.	2.F. Effort Expectancy will significantly predict behavioural intentions to use mobile technologies in teaching EFL and use behaviour.
3.S. Social Influence will significantly predict behavioural intentions to use mobile technologies in learning EFL and use behaviour.	3.F. Social Influence will significantly predict on behavioural intentions to use mobile technologies in teaching EFL and use behaviour.
4.S. Facilitating Conditions will significantly predict behavioural intentions to use mobile technologies in learning EFL and use behaviour.	4.F. Facilitating Conditions will significantly predict behavioural intentions to use mobile technologies in teaching EFL and use behaviour.
5.S. Hedonic Motivation will significantly predict behavioural intentions to use mobile technologies in learning EFL and use behaviour.	5.F. Hedonic Motivation will significantly predict behavioural intentions to use mobile technologies in teaching EFL and use behaviour.
6.S. Price of Devices will significantly predict behavioural intentions to use mobile technologies in learning EFL and use behaviour.	6.F. Price of Devices will significantly predict behavioural intentions to use mobile technologies in teaching EFL and use behaviour.
7.S. Price of Services will significantly predict behavioural intentions to use mobile technologies in learning EFL and use behaviour.	7.F. Price of Services will significantly predict behavioural intentions to use mobile technologies in teaching EFL and use behaviour.
8.S. Habit will significantly predict behavioural intentions to use mobile technologies in learning EFL and use behaviour.	8.F. Habit will significantly predict behavioural intentions to use mobile technologies in teaching EFL and use behaviour.
9.S. Gender and Experience will moderate the impact of Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, hedonic Motivation, Price value, and Habit on behavioural intentions to use mobile technologies in learning EFL and use behaviour.	9.F. Age, Gender, and Experience will moderate the impact of Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, hedonic Motivation, Price value, and Habit on behavioural intentions to use mobile technologies in teaching EFL and use behaviour.

4.4 Reliability and Validity

Pallant (2010) defines the reliability of a scale as a measure that can indicate how free the scale is from random error (p. 6). The most frequent reliability aspects examined are test-retest reliability and internal consistency. Bryman and Cramer (2011) referred to internal reliability as an important measure with multiple-item scales (p. 78). However, administering the survey twice to the same sample on two different times was not possible, so internal consistency was tested to assess the reliability of the surveys. The internal consistency of the variables within a construct was calculated. All reliability scores were at sufficient level according to DeVellis (2011), Gall et al (2007), and Norusis (2012), except for the VoU (Voluntariness of Use) (see tables 9, 10). Therefore, VoU was discarded.

Face validity and content validity means that a "measure apparently reflects the content of the concept in question" (Bryman & Cramer, 2011, p. 82). To obtain content and face validity the surveys have been sent to several academics who have undertaken prominent research in this area, including the theory (UTAUT) producers, i.e., Viswanath Venkatesh, Michael Morris, and Fred Davis. They replied that the surveys were fine and they did not find any obvious problem.

Construct validity, which implies both convergent and discriminant validity, is defined by Gall et al (2007) as "the extent to which a measure used in a case study correctly operationalizes the concepts being studied" (p. 636). Factor analysis, which has been performed, is among the procedures that can be used for assessing construct validity, as stated in Straub et al. (2004) and Venkatesh et al. (2003). Furthermore, AMOS (Version 20), which is statistical technique software, was used to generate a graphical confirmatory factor analysis (Byrne, 2013).

4.5 Regression Analysis

Factor analysis resulted in identified factors and factor scores that used in subsequent analysis. This section describes the subsequent analysis. Based on the initial research model for acceptance of mobile technologies in teaching and learning EFL (Figure 10) and to test the research hypotheses (1 to 8), the statistical technique "Standard Multiple Regression" was used. Bryman & Cramer (2011) claimed that multiple regression is the most widely used technique for multivariate analysis when more than three variables involved in the analysis (p. 296). In addition, Gall et al (2007) state that:

> "It is one of the most widely used statistical techniques in educational research. The popularity of multiple regression stems from its versatility and the amount of information it yields about relationships among variables. It can be used to analyse data from any of the major quantitative research designs: causal-comparative, correlational, and experimental. It can handle interval, ordinal, or categorical data. And it provides estimates both of the magnitude and statistical significance of relationships between variables" (p. 353).

Furthermore, Pallant (2010) assumed that this technique can demonstrate how a set of variables can predict a specific outcome, providing information about the model as a whole, and the contribution of each variable included in that model.

On deciding which regression method to use for building a model, the most common procedures, i.e. Forward, Backward, and Stepwise, were all tried first, to check if they resulted in different conclusions. In forward multiple regression, "the predictor that leads to the largest increase in *R* is added to the current set until the addition no longer leads to a statistically significant increase" while in backward multiple regression, "all possible predictor variables are entered into the analysis first, and then, step by step, the variable that results in the smallest decrease in *R* is deleted until a statistically significant decrease occurs" (Gall et al, 2007, p. 360). On the other hand, according to Gall et al (2007) and Norusis (2012), both procedures, forward and backward, are combined in stepwise multiple regression. Anyway, all the three procedures give the exact R^2 and a Model Summary. Therefore, Stepwise procedure was used, for its inclusiveness, using the probability of *F* (Entry .05 & Removal .10) as a criterion for entering and removing variables. Hence, "the observed significance level had to be less than .05 for a variable to enter" (Norusis, 2012, 258).

4.5.1 Predictors of Behavioural Intention (Students Survey)

Having determined the regression procedures to be adopted, based on research in the area of technology acceptance, a regression model was tested, by using the Behavioural Intention of students to use mobile technologies as the dependent variable and Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Hedonic Motivation, Price of Devices, Price of Services, as well as Habit as independent variables.

Looking in the model summary (Table 12), we find that Facilitating Conditions, Hedonic Motivation, Performance Expectancy, Habit, and Social Influence explain 49.3% of the variance in Behavioural Intention of the students to use mobile technologies in learning EFL. This result were statistically significant (R^2_{Adj}=.493; $F_{(5,864)}$= 169.788, p<.001).

Table 12: Predictors of Behavioural Intention[f] (Students Survey)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.601[a]	.361	.360	.79692379	.361	490.333	1	868	.000
2	.658[b]	.434	.432	.75074315	.073	111.071	1	867	.000
3	.685[c]	.470	.468	.72679979	.036	59.065	1	866	.000
4	.699[d]	.489	.487	.71371976	.020	33.032	1	865	.000
5	.704[e]	.496	.493	.70965788	.006	10.930	1	864	.001

a. Predictors: (Constant), Facilitating Conditions

b. Predictors: (Constant), Facilitating, Hedonic Motivation

c. Predictors: (Constant), Facilitating Conditions, Hedonic Motivation, Performance Expectancy

d. Predictors: (Constant), Facilitating Conditions, Hedonic Motivation, Performance Expectancy, Habit

e. Predictors: (Constant), Facilitating Conditions, Hedonic Motivation, Performance Expectancy, Habit, Social Influence

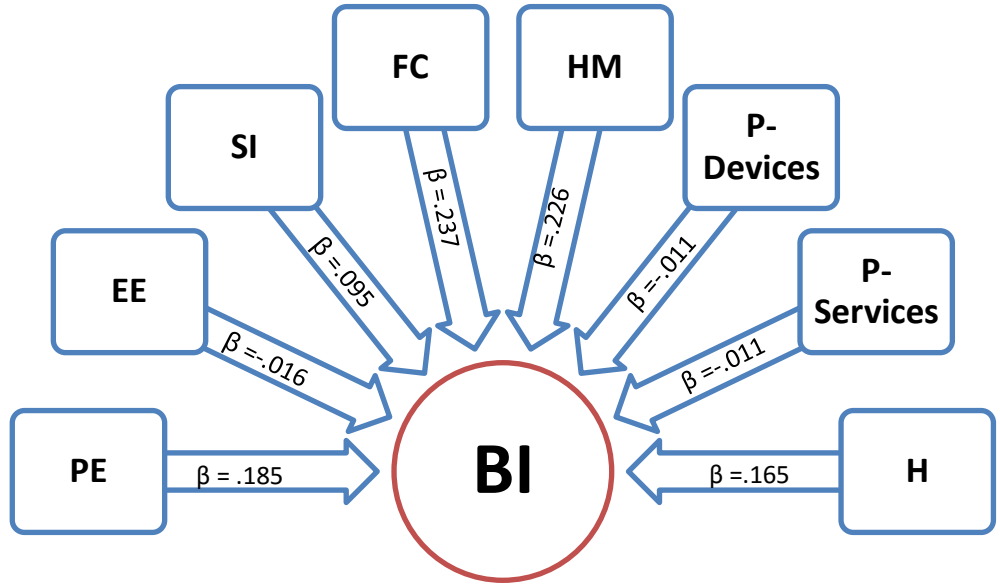
f. Dependent Variable: Behavioural Intention

To compare the contribution of each independent variable to the prediction of the dependent variable, Beta (Standardized Coefficients) weights were used (see Figure 11 below) to assess the importance of the predictors and compare them in respect to their effect on the dependent variable (Bartholomew et al., 2008; Norusis, 2012; & Pallant, 2010). Norusis (2012) states that the "standardized coefficients are the coefficients you get if you standardize both the dependent variable and each of the independent variables to have a mean of 0 and a standard deviation of 1" (p. 249). It is evident that the following variables are making a significant contribution respectively: Facilitating Condition, Hedonic Motivation, Performance Expectancy, Habit, and social Influence. The *p* value (level of significance for each beta weight) for each of these variables is shown in Figure 12.

The initial regression equation includes all the dependent variables. However, in terms of the *p* values (levels of significance for each beta weight), it is evident that not all of the dependent variables have a statistically significant impact on the dependent variable. By adopting a 5% significance level as the threshold for excluding variables, it can be seen that the Behavioural Intention of the students to use mobile technologies in learning EFL

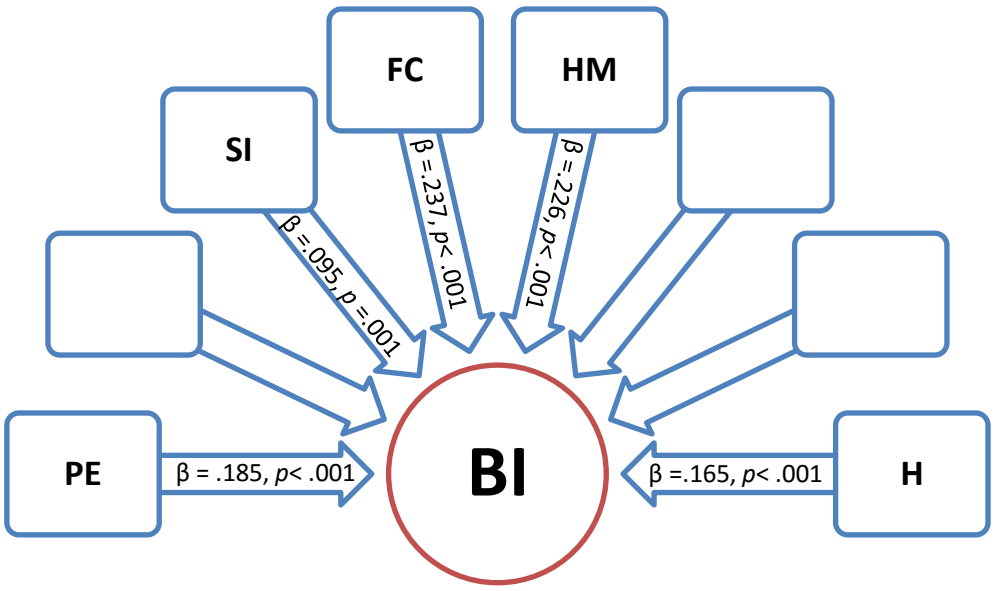
was significantly explained by five out of eight initial independent variables (see Figures 11, 12).

Figure 11: Beta Weights for all Independent Variables on Behavioural Intention (Students Survey)



Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitating Conditions (FC), Hedonic Motivation (HM), Price of Devices (P-Devices), Price of Services (P-Services), Habit (H, Behavioural Intention (BI).

Figure 12: Beta Weights & *p* Values for the all Independent Variables with Significant Contribution to Behavioural Intention (Students Survey)



4.5.2 Predictors of Use Behaviour (Students Survey)

The regression model used to analyse the determinants of students' Behavioural Intention was then used to examine students' Use Behaviour, with respect to mobile technologies for learning EFL. Looking at the model summary (Table 13), we also find that five out of the total eight independent variables are significant and together contribute 28.1% of the variation in the Use Behaviour of mobile technologies in learning EFL. However, the independent variables that determine Use Behaviour are not the same as those that determine Behavioural Intention to use mobile technologies in learning EFL. These five variables that determine students' Use Behaviour are Habit, Facilitating Conditions, Price of Devices, Social Influence, and Price of Services. This result was statistically significant (R^2_{Adj}=.281; $F_{(5,864)}$= 68.767, p<.001).

Table 13: Predictors of Use Behaviour in EFL[f] (Students Survey)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.475[a]	.226	.225	.88018060	.226	253.431	1	868	.000
2	.513[b]	.264	.262	.85898250	.038	44.370	1	867	.000
3	.526[c]	.277	.275	.85159475	.013	16.108	1	866	.000
4	.530[d]	.281	.278	.84965517	.004	4.958	1	865	.026
5	.534[e]	.285	.281	.84811422	.003	4.146	1	864	.042

a. Predictors: (Constant), Habit

b. Predictors: (Constant), Habit, Facilitating Conditions

c. Predictors: (Constant), Habit, Facilitating Conditions, Price of Devices

d. Predictors: (Constant), Habit, Facilitating Conditions, Price of Devices, Social Influence

e. Predictors: (Constant), Habit, Facilitating Conditions, Price of Devices, Social Influence, Price of Services

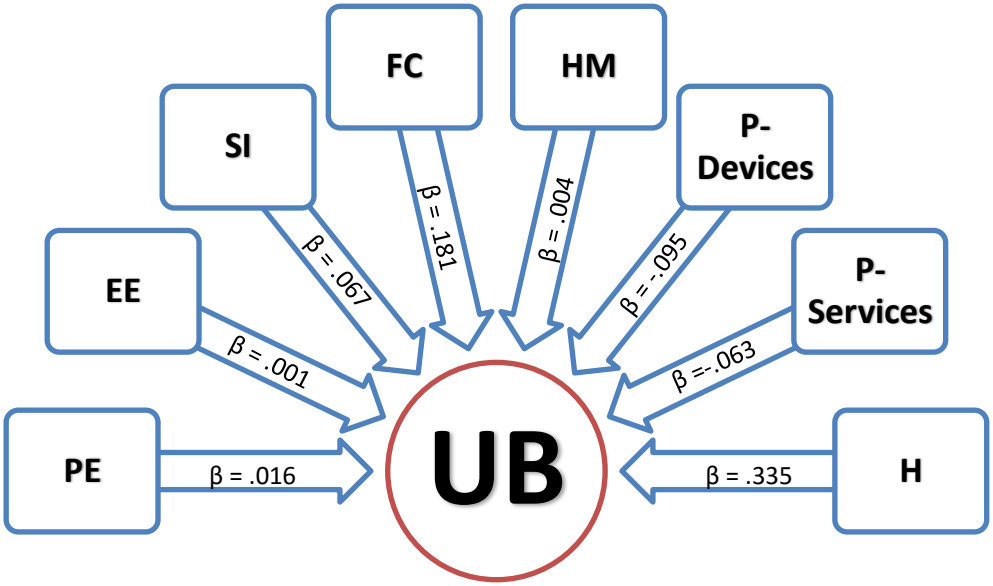
f. Dependent Variable: Use Behaviour in EFL

To compare the contribution of all the independent variables, when they are included as one model, in predicting the dependent variable (Use Behaviour in EFL), Beta weights are displayed in Figure 13.

The results of the multiple regression analysis highlighted the rank of the predictors of Use Behaviour as following: Habit, Facilitating Conditions, Price of Devices, Social Influence, and Price of Services, respectively (See Figures 13, 14). When all the independent variables that do not have a statistically significant effect on the dependent

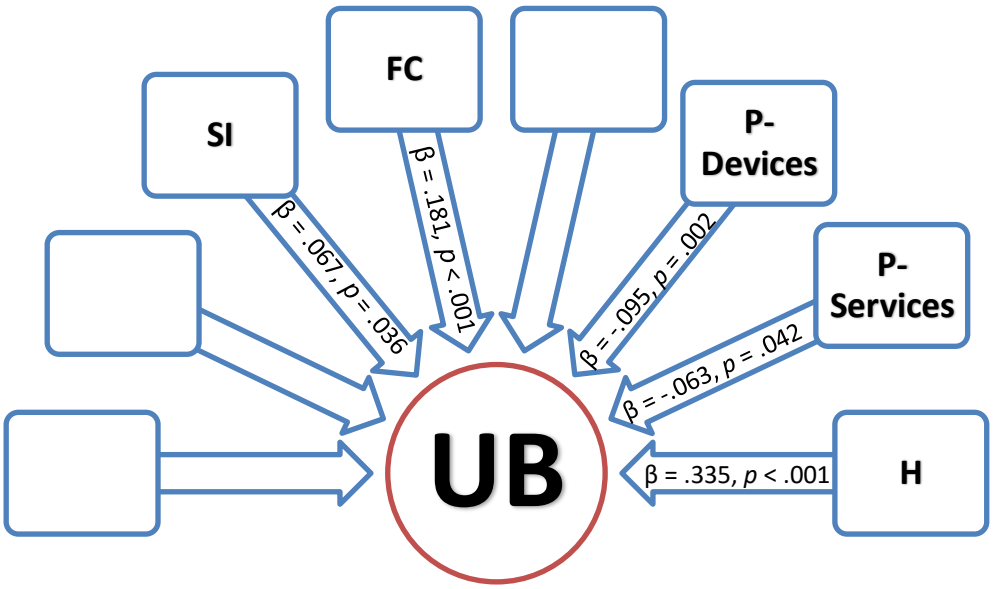
variable (using a 5% threshold level) are excluded, the final model is shown in Figure 14 below.

Figure 13: Beta Weights for all Independent Variables on Use Behaviour in EFL (Students Survey)



Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitating Conditions (FC), Hedonic Motivation (HM), Price of Devices (P-Devices), Price of Services (P-Services), Habit (H), Use Behaviour in EFL (UB).

Figure 14: Beta Weights & *p* Values for the all Independent Variables with Significant Contribution to Use Behaviour (Students Survey)



4.5.3 Predictors of Behavioural Intention (Faculty Survey)

Having examined the determinants of Behavioural Intention and Use Behaviour for students, the same process was adopted to analyse the Behavioural Intention and Use Behaviour of staff. Turning first to Behavioural Intention, the model summary (shown in Table 14) suggests that together Effort Expectancy and Habit are explaining 52% of the variance in Behavioural Intention of faculty to use mobile technologies in teaching EFL. This result were statistically significant (R^2_{Adj}=.520; $F_{(2,61)}$= 35.133, p< .001).

Table 14: Predictors of Behavioural Intention[c] (Faculty Survey)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.670[a]	.449	.440	.74244127	.449	50.478	1	62	.000
2	.732[b]	.535	.520	.68725656	.087	11.357	1	61	.001

a. Predictors: (Constant), Effort Expectancy

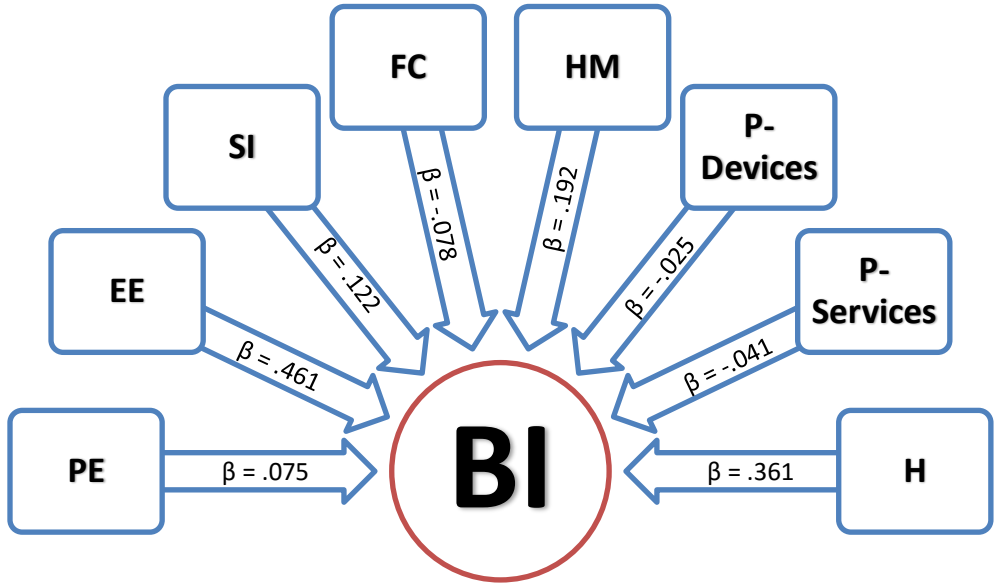
b. Predictors: (Constant), Effort Expectancy, Habit

c. Dependent Variable: Behavioural Intention

The Beta weights in Figure 15 (below) for the model, in which all the variables have been entered, show that Effort Expectancy is the most important variable with respect to determining the variance in Behavioural Intention, as it is alone explains 44% of the variance (β= .461, *p*< .001).

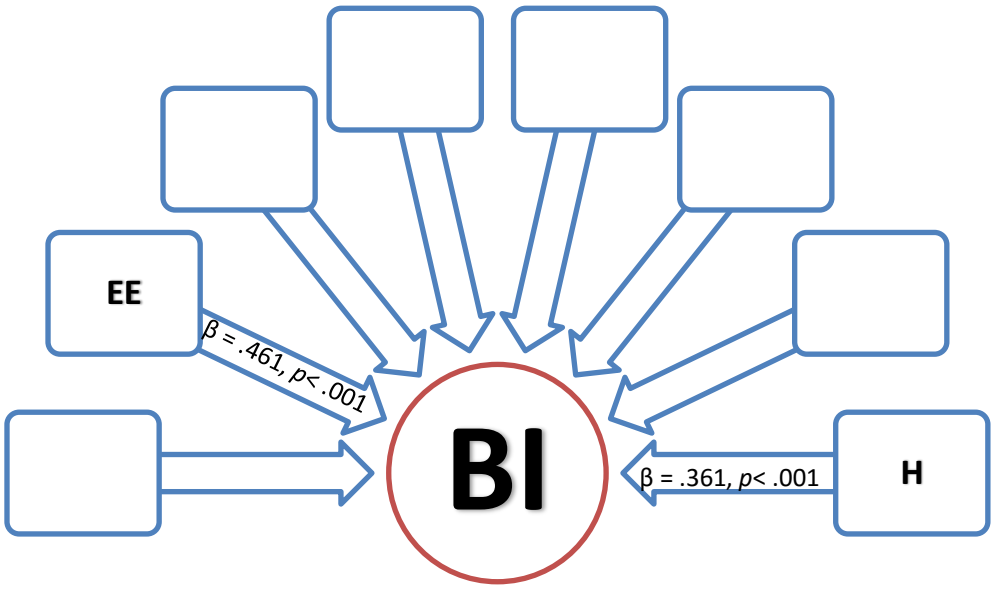
Despite the fact that the beta weight of Social Influence on Behavioural Intention is larger in the faculty survey than the beta weight of the same predictor in the student survey (see Figures 11 & 15), it is statistically insignificant predictor of Behavioural Intention of faculty to use mobile technologies in teaching EFL. When all the beta weights are assessed, and the paths that are statistically insignificant (at the 5% level) are erased, the model that emerges is given in Figure 16.

Figure 15: Beta Weights for all Independent Variables on Behavioural Intention (Faculty Survey)



Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitating Conditions (FC), Hedonic Motivation (HM), Price of Devices (P-Devices), Price of Services (P-Services), Habit (H, Behavioural Intention (BI).

Figure 16: Beta Weights & *p* Values for the all Independent Variables with Significant Contribution to Behavioural Intention (Faculty Survey)



4.5.4 Predictors of Use Behaviour (Faculty Survey)

Having examined the determinants of Behavioural Intention for staff, the same causal path, adopting the same statistical technique was utilised to analyse the Use Behaviour of staff. The model summary (Table 15) shows that fewer independent variables have a statistically significant impact in the case of the Use Behaviour of faculty, when compared with the model that predicts the Use Behaviour of students. Only Habit and Price of Services are contributing to 22.6% of the variance in Use Behaviour of faculty in teaching EFL. This result were statistically significant (R^2_{Adj}= .226; $F_{(2,61)}$= 10.208, p< .001).

Table 15: Predictors of Use Behaviour in EFL[c] (Faculty Survey)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.445[a]	.198	.185	.90261778	.198	15.327	1	62	.000
2	.501[b]	.251	.226	.87965996	.053	4.278	1	61	.043

a. Predictors: (Constant), Habit

b. Predictors: (Constant), Habit, Price of Services

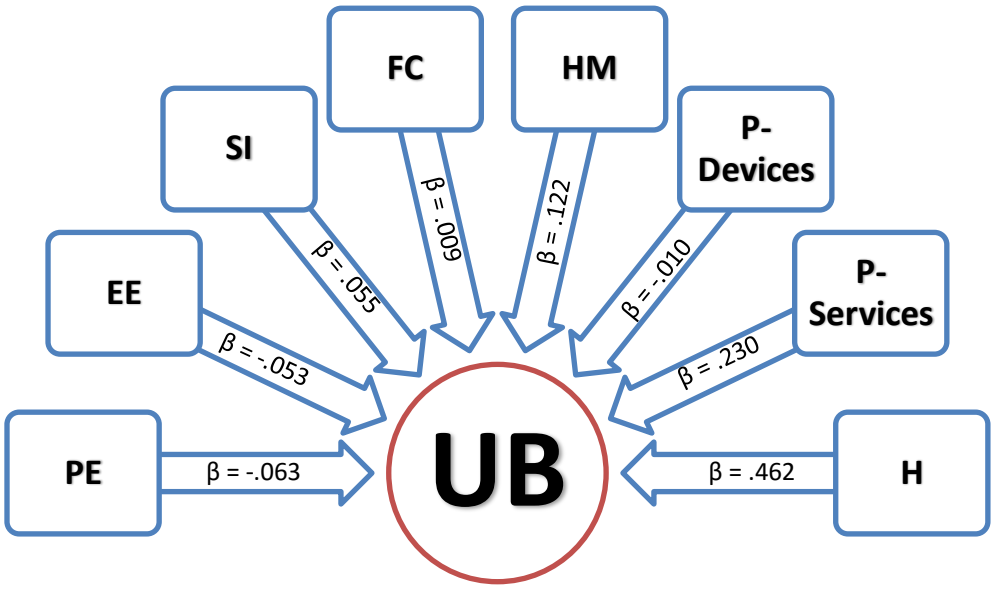
c. Dependent Variable: Use Behaviour in EFL

Habit is mainly predicting the Use Behaviour of faculty and contributing, alone, for 18.5% of the variance with .462 beta weight. As can be seen from Figure 17 Habit and the Price of Services are the only two variables that have a statistically significant impact (at the 5% level) on the Use Behaviour of staff.

The effect of these variables within the model can be seen more easily when all the statistically insignificant are removed, as shown in Figure 18 below. It is noticeable that Habit has an impact that is statistically significant at the 1% level, while the other variable, Price of Services, is only just significant at the 5% level.

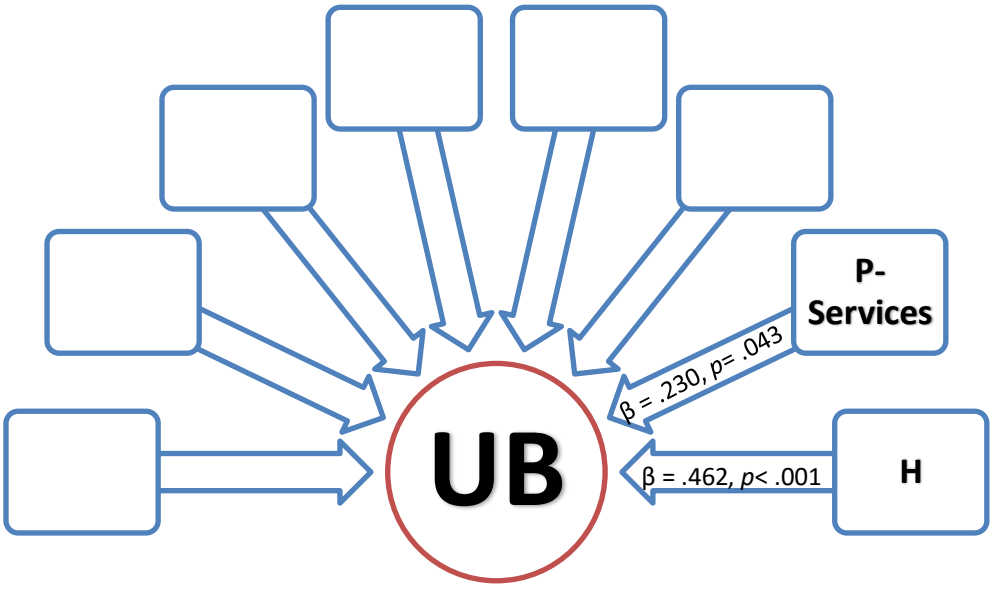
Regression analysis revealed that Habit is the key predictor of Behavioural Intention and Use Behaviour of mobile technologies in EFL learning and teaching among students and faculty as it has a significant contribution on the dependent variables in both surveys.

Figure 17: Beta Weights for all Independent Variables on Use Behaviour in EFL (Faculty Survey)



Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitating Conditions (FC), Hedonic Motivation (HM), Price of Devices (P-Devices), Price of Services (P-Services), Habit (H), Use Behaviour in EFL (UB).

Figure 18: Beta Weights & *p* Values for the all Independent Variables with Significant Contribution to Use Behaviour in EFL (Faculty Survey)



4.6 Regression Analysis with Moderation

As can be seen from the diagram of the research model in Figure 10 (above) there are intervening variables which have a moderating effect on the impact of the independent variables on the dependent variables. The intervening variables which can produce such moderating interactions include Age, Gender, and Experience. Hayes (2013) indicates that "when the goal is to uncover the boundary conditions for an association between two variables, moderation analysis is used" (p. 8). However, it has been previously stated that Age as a moderating variable was excluded from the research model for students, because the majority of students (80.9%) were in the same age category (19-20). An intervening or moderating variable affects the direction or the strength of a relationship between a predictor (independent) variable and a criterion (dependent) variable (Baron & Kenny, 1986; Frazier, Tix, & Barron, 2004). Frazier, Tix, & Barron, (2004) stated that researchers are either using multiple regression or comparing correlations between groups to test the effect of moderators. However, statisticians, as well as Bissonnette, Ickes, Bernstein, & Knowles (1990) and Stone-Romero & Anderson (1994), recommend the use of multiple regression rather than a reliance on correlation. Moreover, Baron & Kenny (1986) claimed that the use of correlation to test the moderating effects of intervening variables might reflect the variances between groups rather, than the effect of the moderating interaction. The apparent problems in relying on correlation are such that regression can be seen to be a more appropriate method. Hence, a hierarchical multiple regression was used to detect the significant effect of moderators on the relationship between the independent and dependent variables through which the researcher can control the entry sequence of the main effect and the interaction term. Hierarchical regression is used instead of stepwise regression, because "allowing stepwise regression to determine whether interaction terms or main effects enter the equation first may result in violation of the conceptual and methodological constraints required for the proper analysis on interactions" (Evans, 1991, p. 118). Moreover, hierarchical regression allows specifying a fixed command of entry for variables in order to control for the effects of specific predictors, independent of the impact of others.

To run the regression equation, taking account of the moderating effect of intermediate variables, the researcher used standardized variables to prevent multicollinearity and designed the regression model to enable the determination of the dependent variable by two discrete blocks of intermediate/independent variables. Block (1) included both the

independent variable and the moderating variables and block (2) included the interaction term which was created by multiplying the independent variables by the moderator (e.g. Social InfluencexExperience). Block (1) applied the *Enter* procedure to make sure that the independent variables and the moderators are included in the model. The interaction terms in block (2) applied *Stepwise* procedure using the probability of F (Entry .05 & Removal .10) as criteria for entering and removing interaction terms to step-up and step-down the multiple regression equation. Moreover, only those independent variables with statistically significant contribution the 5% level) to the prediction of the dependent variables were reported in the moderation analysis, as the rest have been tested with moderation interactions and no significant results revealed. When the regression results indicated a potentially significant moderating effect by the intervening variables, then that specific regression model would be built using and add-on PROCESS, by Andrew F. Hayes (http://www.afhayes.com) for further examination of the significant moderating effects of the intervening variables. According to Hayes (2012), PROCESS is "a computational procedure for SPSS that implements moderation or mediation analysis as well as their combination in an integrated conditional process model" (p. 11).

4.6.1 Moderation Analysis (Students Survey)

Moderation analysis is conducted when the relationship between independent and dependent variable is assumed to be influenced by a particular intervening variable (Gall et al, 2007, 373). Hence, moderation analysis on the extent to which the relationships between the independent variables and Behavioural Intention and Use behaviour in EFL, were affected by the influence of the intervening variables shows that Experience was moderating the effect of most of the relationships, but Gender moderated the relationship between Social Influence and Use Behaviour in EFL, as well as the relationship between Habit and Use Behaviour in EFL.

When the regression equation examined the impact of Performance Expectancy on Behavioural Intention with the extent to which the effects of Gender and Experience moderated the link between the two variables, results indicate that there was no moderation effect on the impact between Performance Expectancy and Behavioural Intention of the students to use mobile technologies in learning EFL (see Table 16).

Table 16: Moderation Effect on the Relationship between Performance Expectancy & Behavioural Intention (Students Survey)

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.582[a]	.339	.336	.81165479	.339	147.825	3	866	.000

a. Predictors: (Constant), Experience, Gender, Performance Expectancy
b. Dependent Variable: Behavioural Intention

Excluded Variables[b]

Model		Beta In	t	Sig.	Partial Correlation
1	PExGender	.108[a]	1.292	.197	.044
	PExExperience	.012[a]	.420	.675	.014

a. Predictors in the Model: (Constant), Experience, Gender, Performance Expectancy
b. Dependent Variable: Behavioural Intention

Table 17: Moderation Effect on the Relationship between Social Influence & Behavioural Intention (Students Survey)

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.446[a]	.199	.197	.89308735	.199	71.854	3	866	.000
2	.458[b]	.210	.206	.88754018	.011	11.859	1	865	.001

a. Predictors: (Constant), Experience, Gender, Social Influence
b. Predictors: (Constant), Experience, Gender, Social Influence, SIxExperience
c. Dependent Variable: Behavioural Intention

Excluded Variables[c]

Model		Beta In	t	Sig.	Partial Correlation
1	SIxGender	.063[a]	.651	.515	.022
	SIxExperience	-.104[a]	-3.444	.001	-.116
2	SIxGender	.091[b]	.940	.347	.032

a. Predictors in the Model: (Constant), Experience, Gender, Social Influence
b. Predictors in the Model: (Constant), Experience, Gender, Social Influence, SIxExperience
c. Dependent Variable: Behavioural Intention

The process was repeated to examine the effects of intervening variables on the relationship between Social Influence and students' Behavioural Intention to use mobile technologies. Only Experience moderated the impact of Social Influence on Behavioural Intention of the students to use mobile technologies in learning EFL. Model 2 (Table 17)

with the interaction term between Social Influence and Experience accounted for 20.7% of the variance. This result was statistically significant (R^2_{Adj}=.206; $F_{(4,865)}$= 57.531, p< .001).

Examining the conditional effect of Social Influence on Behavioural Intention at the values of Experience (Moderator) using the PROCESS procedure for SPSS showed that, as the experience increased, the Social Influence impact on the Behavioural Intention decreased. So, at the low level of Experience there was a significant effect of Social Influence on Behavioural Intention to use mobile technologies in learning EFL. This effect was significantly decreased as the level of Experience increased (See Table 18).

Table 18: Conditional Effect of Social Influence on Behavioural Intention at Values of Experience (Students Survey)

Experience	Effect of SI on BI	se	t	*p*	LLCI	ULCI
-.999	.467	.044	10.718	.000	.382	.553
.000	.367	.033	11.127	.000	.302	.431
.999	.267	.046	5.834	.000	.177	.356

Values for quantitative moderators are the mean and plus/minus one SD from mean.
LLCI/ULCI - Lower and Upper Limit Confidence Intervals.

Using the same statistical method, the procedure was repeated to examine the effect of the intervening variables on the relationship between Facilitating Conditions and Behavioural Intention to use mobile technologies in learning EFL. Table 19 shows that neither Gender nor Experience had moderated the impact of Facilitating Conditions on Behavioural Intention to use mobile technologies in learning EFL.

Table 19: Moderation Effect on the Relationship between Facilitating Conditions & Behavioural Intention (Students Survey)

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.608[a]	.370	.368	.79221873	.370	169.505	3	866	.000

a. Predictors: (Constant), Experience, Gender, Facilitating Conditions
b. Dependent Variable: Behavioural Intention

Excluded Variables[b]

Model		Beta In	t	Sig.	Partial Correlation
1	FCxGender	.011[a]	.131	.895	.004
	FCxExperience	-.031[a]	-1.097	.273	-.037

a. Predictors in the Model: (Constant), Experience, Gender, Facilitating Conditions
b. Dependent Variable: Behavioural Intention

Stepwise regression analysis of the impact of intervening variables on the interaction between Hedonic Motivation & Gender (HMxGender) and Hedonic Motivation & Experience (HMxExperience) revealed that the intervening variable had no significant moderating effect on the impact of Hedonic Motivation on Behavioural Intention (see Table 20).

Table 20: Moderation Effect on the Relationship between Hedonic Motivation & Behavioural Intention (Students Survey)

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.591[a]	.350	.347	.80489022	.350	155.193	3	866	.000

a. Predictors: (Constant), Experience, Gender, Hedonic Motivation
b. Dependent Variable: Behavioural Intention

Excluded Variables[b]

Model		Beta In	t	Sig.	Partial Correlation
1	HMxExperience	.038[a]	.347	.729	.012
	HMxGender	.032[a]	.240	.811	.008

a. Predictors in the Model: (Constant), Experience - ExtractedFactor from SumScores, Gender, Q12HM
b. Dependent Variable: Behavioural Intention ExtractedFactor

The impact of Habit on Behavioural Intention was moderated by the intervening variable Experience, Model 2 (below) that includes the interaction term (HxExperience) was statistically significant (R^2_{Adj}=.270; $F_{(4,865)}$= 81.380, p< .001). However, Gender did not have statistically significant moderating effect on this relationship (see Table 21).

Table 21: Moderation Effect on the Relationship between Habit & Behavioural Intention (Students Survey)

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.516[a]	.266	.264	.85490210	.266	104.780	3	866	.000
2	.523[b]	.273	.270	.85123904	.007	8.469	1	865	.004

a. Predictors: (Constant), Experience, Gender, Habit
b. Predictors: (Constant), Experience, Gender, Habit, HxExperience
c. Dependent Variable: Behavioural Intention

Excluded Variables[c]

Model		Beta In	t	Sig.	Partial Correlation
1	HxExperience	-.085[a]	-2.910	.004	-.098
	HxGender	.021[a]	.231	.817	.008
2	HxGender	.039[b]	.426	.670	.014

a. Predictors in the Model: (Constant), Experience, Gender, Habit
b. Predictors in the Model: (Constant), Experience, Gender, Habit, HxExperience
c. Dependent Variable: Behavioural Intention

Inspecting the conditional effect of Habit on Behavioural Intention at the values of Experience (Moderator) using the PROCESS procedure for SPSS showed that as the experience increased the impact of Habit on the Behavioural Intention decreased. So, at the low level of Experience the biggest was the effect of H on BI to use mobile technologies in learning EFL. This effect was significantly decreased as the level of Experience increased (See Table 22).

Table 22: Conditional Effect of Habit on Behavioural Intention at Values of Experience (Students Survey)

Experience	Effect of H on BI	se	t	*p*	LLCI	ULCI
-.999	.549	.048	11.395	.000	.455	.644
.000	.469	.035	13.401	.000	.400	.537
.999	.388	.043	9.003	.000	.304	.473

Values for quantitative moderators are the mean and plus/minus one SD from mean.
LLCI/ULCI - Lower and Upper Limit Confidence Intervals.

On the other hand, the following is a presentation of the moderation analysis with respect to the effect of the intervening variables on the relationship between the independent variables (predictors), and the dependent variable (outcome), which is Use Behaviour in learning EFL among students.

The impact of social Influence on Use Behaviour in EFL was moderated by Gender and Experience. Model 3 that includes the interaction terms (SIxGender & SIxExperience) was statistically significant (R^2_{Adj}=.214; $F_{(5,864)}$= 48.202, p<.001) (see Table 23).

Table 23: Moderation Effect on the Relationship between Social Influence & Use Behaviour in EFL (Students Survey)

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.456[a]	.208	.205	.89141809	.208	75.778	3	866	.000
2	.461[b]	.213	.209	.88921780	.005	5.291	1	865	.022
3	.467[c]	.218	.214	.88669681	.005	5.926	1	864	.015

a. Predictors: (Constant), Experience, Gender, Social Influence
b. Predictors: (Constant), Experience, Gender, Social Influence, SIxGender
c. Predictors: (Constant), Experience, Gender, Social Influence, SIxGender, SIxExperience
d. Dependent Variable: Use Behaviour in EFL

Excluded Variables[c]

Model		Beta In	t	Sig.	Partial Correlation
1	SIxGender	.220[a]	2.300	.022	.078
	SIxExperience	-.067[a]	-2.230	.026	-.076
2	SIxExperience	-.074[b]	-2.434	.015	-.083

a. Predictors in the Model: (Constant), Experience, Gender, Social Influence
b. Predictors in the Model: (Constant), Experience, Gender, Social Influence, SIxGender
c. Dependent Variable: Use Behaviour in EFL

To explore the conditional effect of Social Influence on Use Behaviour in learning EFL with respect to Gender, a moderation analysis was run using the PROCESS procedure for SPSS. Table 24 shows that the effect of the Social Influence variable on the Use Behaviour of mobile technologies in learning EFL variable was significantly stronger among female students.

Table 24: Conditional Effect of Social Influence on Use Behaviour in EFL at Values of Gender (Students Survey)

Gender	Effect of SI on UB in EFL	se	t	*p*	LLCI	ULCI
-.485	.187	.047	4.003	.000	.095	.278
.515	.346	.045	7.644	.000	.257	.435

Values for dichotomous moderators are the two values of the moderator.
LLCI/ULCI - Lower and Upper Limit Confidence Intervals.

On the other hand, the effect of Social Influence on Use Behaviour in learning EFL has significantly decreased with the increase in level of experience among students (see Table 25).

Table 25: Conditional Effect of Social Influence on Use Behaviour in EFL at Values of Experience (Students Survey)

Experience	Effect of SI on UB in EFL	se	t	*p*	LLCI	ULCI
-.999	.255	.041	6.169	.000	.174	.337
.000	.195	.032	6.022	.000	.131	.258
.999	.134	.042	3.198	.001	.052	.216

Values for quantitative moderators are the mean and plus/minus one SD from mean.
LLCI/ULCI - Lower and Upper Limit Confidence Intervals.

Statistical analysis demonstrated that the impact of the independent variable Facilitating Conditions on the dependent Use Behaviour in EFL variable was moderated by the intervening variable, Experience. Table 26 reveals that Model 2 which includes the interaction term (FCxExperience) was statistically significant at the 1% level (R^2_{Adj}=.265; $F_{(4,865)}$= 79.438, p< .001).

Table 26: Moderation Effect on the Relationship between Facilitating Conditions & Use Behaviour in EFL (Students Survey)

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.513[a]	.263	.261	.85966827	.263	103.195	3	866	.000
2	.518[b]	.269	.265	.85706036	.005	6.278	1	865	.012

a. Predictors: (Constant), Experience, Gender, Facilitating Conditions
b. Predictors: (Constant), Experience, Gender, Facilitating Conditions, FCxExperience
c. Dependent Variable: Use Behaviour in EFL

Excluded Variables[c]

Model		Beta In	t	Sig.	Partial Correlation
1	FCxGender	.044[a]	.491	.624	.017
	FCxExperience	-.075[a]	-2.506	.012	-.085
2	FCxGender	.049[b]	.544	.587	.018

a. Predictors in the Model: (Constant), Experience, Gender, Facilitating Conditions
b. Predictors in the Model: (Constant), Experience, Gender, Facilitating Conditions, FCxExperience
c. Dependent Variable: Use Behaviour in EFL

Further analysis shows that this effect of the Facilitating Conditions variable on the Use Behaviour of mobile technologies in learning EFL is significantly stronger at a low level of experience (see Table 27).

Table 27: Conditional Effect of Facilitating Conditions on Use Behaviour in EFL at Values of Experience (Students Survey)

Experience	Effect of FC on UB in EFL	se	t	*p*	LLCI	ULCI
-.999	.375	.036	10.325	.000	.303	.446
.000	.306	.032	9.555	.000	.243	.368
.999	.237	.045	5.305	.000	.149	.324

Values for quantitative moderators are the mean and plus/minus one SD from mean.
LLCI/ULCI - Lower and Upper Limit Confidence Intervals.

The impact of the independent variable, Price of Devices, on the dependent variable, Use Behaviour in EFL, was moderated by only one intervening variable, Experience; hence, Gender had no statistically significant effect on the relationship. Table 28 indicates that Model 2 that includes the interaction term (P-DevicesxExperience) was statistically significant (R^2_{Adj}=.188; $F_{(4,865)}$= 51.300, p< .001).

Table 28: Moderation Effect on the Relationship between Price of Devices & Use Behaviour in EFL (Students Survey)

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.430[a]	.185	.182	.90440350	.185	65.388	3	866	.000
2	.438[b]	.192	.188	.90100234	.007	7.550	1	865	.006

a. Predictors: (Constant), Experience, Gender, Price of Devices
b. Predictors: (Constant), Experience, Gender, Price of Devices, P-DevicesxExperience
c. Dependent Variable: Use Behaviour in EFL

Excluded Variables[c]

Model		Beta In	t	Sig.	Partial Correlation
1	P-DevicesxGender	.038[a]	.398	.691	.014
	P-DevicesxExperience	.085[a]	2.748	.006	.093
2	P-DevicesxGender	.005[b]	.055	.956	.002

a. Predictors in the Model: (Constant), Experience, Gender, Price of Devices
b. Predictors in the Model: (Constant), Experience, Gender, Price of Devices, P-DevicesxExperience
c. Dependent Variable: Use Behaviour in EFL

Running the same regression model on PROCESS indicated the direction for the effect of the independent variable, Price of Devices on the dependent variable, Use Behaviour in learning EFL when it was moderated by the intervening variable, Experience. Table 29 shows that at the low level of Experience there was a significant negative relationship between Price of Devices and Use Behaviour in learning EFL. At the medium level of experience, there was also a significant negative relationship between the two variables but not that strong as at the low level of Experience while at the high level of experience there was no significant relationship between Price of Devices and Use Behaviour in learning EFL.

Table 29: Conditional Effect of Price of Devices on Use Behaviour in EFL at Values of Experience (Students Survey)

Experience	Effect of P-Devices on UB in EFL	se	t	*p*	LLCI	ULCI
-.999	-.206	.039	-5.277	.000	-.282	-.129
.000	-.133	.034	-3.959	.000	-.198	-.067
.999	-.059	.046	-1.297	.195	-.149	.031

Values for quantitative moderators are the mean and plus/minus one SD from mean.
LLCI/ULCI - Lower and Upper Limit Confidence Intervals.

Statistical analysis revealed that the impact of the independent variable, Price of Services, on the dependent variable, Use Behaviour in EFL, has not been affected by any of the moderating intervening variables (see Table 30).

Table 30: Moderation Effect on the Relationship between Price of Services & Use Behaviour in EFL (Students Survey)

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.423[a]	.179	.176	.90768622	.179	62.832	3	866	.000

a. Predictors: (Constant), Experience, Gender, Price of Services
b. Dependent Variable: Use Behaviour in EFL

Excluded Variables[b]

Model		Beta In	t	Sig.	Partial Correlation
1	PVServicesxGender	-.179[a]	-1.831	.067	-.062
	PVServicesxExperience	.058[a]	1.877	.061	.064

a. Predictors in the Model: (Constant), Experience, Gender, Price of Services
b. Dependent Variable: Use Behaviour in EFL

The impact of the independent variable, Habit, on the dependent variable, Use Behaviour in EFL, was moderated by both the Gender and Experience intervening variables. Table 31 specifies the significance of the moderation effects as Model 3 which includes the interaction terms (HxGender & HxExperience) was statistically significant (R^2_{Adj}=.325; $F_{(5,864)}$= 84.604, p< .001).

Table 31: Moderation Effect on the Relationship between Habit & Use Behaviour in EFL (Students Survey)

Model Summary[d]									
					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.560[a]	.314	.312	.82965774	.314	132.057	3	866	.000
2	.569[b]	.324	.321	.82411798	.010	12.682	1	865	.000
3	.573[c]	.329	.325	.82160895	.005	6.291	1	864	.012

a. Predictors: (Constant), Experience, Gender, Habit
b. Predictors: (Constant), Experience, Gender, Habit, HxExperience
c. Predictors: (Constant), Experience, Gender, Habit, HxExperience, HxGender
d. Dependent Variable: Use Behaviour in EFL

Table 32 identifies the relationship between Habit and Use Behaviour in learning EFL among students with respect to Gender. For both, males and females, there was a significant positive relationship, but this relationship was stronger among males.

Table 32: Conditional Effect of Habit on Use Behaviour in EFL at Values of Gender (Students Survey)

Gender	Effect of H on UB in EFL	se	t	*p*	LLCI	ULCI
-.485	.553	.039	14.052	.000	.476	.630
.515	.395	.042	9.306	.000	.311	.478

Values for dichotomous moderators are the two values of the moderator.
LLCI/ULCI - Lower and Upper Limit Confidence Intervals.

At all level of the intervening variable, Experience, Low, medium, & high, there was a significant positive relationship between the independent variable, Habit, and the dependent variable, Use Behaviour in learning EFL among students. However, this relationship increased as the level of experience decreased (see Table 33).

Table 33: Conditional Effect of Habit on Use Behaviour in EFL at Values of Experience (Students Survey)

Experience	Effect of H on UB in EFL	se	t	*p*	LLCI	ULCI
-.999	.510	.037	13.667	.000	.436	.583
.000	.413	.029	14.406	.000	.357	.469
.999	.317	.036	8.679	.000	.245	.388

Values for quantitative moderators are the mean and plus/minus one SD from mean.
LLCI/ULCI - Lower and Upper Limit Confidence Intervals.

4.6.2 Moderation Analysis (Faculty Survey)

Having undertaken the analysis of the impact of the intervening variables on the relationship between the dependent and independent variables, with respect to the student sample, this process was then repeated for the staff sample. The moderation analysis for the faculty survey revealed that the impact of the two independent variables, Effort Expectancy and Habit, on the dependent variable, Behavioural Intention, were moderated by the intervening variables, Gender and Experience respectively, while the impact of the Price of Services and Habit independent variables, on the dependent Use Behaviour in teaching EFL variable were not influenced by any intervening moderators. Only Gender (Table 34), significantly, moderated the impact of Effort expectancy on Behavioural Intention (R^2_{Adj}=.577; $F_{(5,57)}$= 17.926, p<.001).

Table 34: Moderation Effect on the Relationship between Effort Expectancy & Behavioural Intention (Faculty Survey)

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.759[a]	.576	.547	.67191052	.576	19.734	4	58	.000
2	.782[b]	.611	.577	.64931688	.035	5.107	1	57	.028

a. Predictors: (Constant), Experience, Age of Respondent, Gender, Effort Expectancy
b. Predictors: (Constant), Experience, Age of Respondent, Gender, Effort Expectancy, EExGender
c. Dependent Variable: Behavioural Intention

Excluded Variables[c]

Model		Beta In	t	Sig.	Partial Correlation
1	EExGender	.691[a]	2.260	.028	.287
	EExAge	-.085[a]	-.464	.644	-.061
	EExExperience	-.078[a]	-.870	.388	-.114
2	EExAge	.010[b]	.052	.958	.007
	EExExperience	-.019[b]	-.208	.836	-.028

a. Predictors in the Model: (Constant), Experience, Age of Respondent, Gender, Effort Expectancy
b. Predictors in the Model: (Constant), Experience, Age of Respondent, Gender, Effort Expectancy, EExGender
c. Dependent Variable: Behavioural Intention

The result of running the regression model on PROCESS indicated that there was a significant relationship between the independent variable, Effort Expectancy, and the dependent variable, Behavioural Intention of using mobile technologies in teaching EFL, but this significance varied from males to females instructors as it is highly significant and stronger among females (p< .001) and less significant among males (p< .05) (see Table 35).

Table 35: Conditional Effect of Effort Expectancy on Behavioural Intention at Values of Gender (Faculty Survey)

Gender	Effect of EE on BI	se	t	*p*	LLCI	ULCI
-.609	.399	.189	2.110	.039	.021	.778
.391	.770	.088	8.717	.000	.594	.947

Values for dichotomous moderators are the two values of the moderator.
LLCI/ULCI - Lower and Upper Limit Confidence Intervals.

Only the intervening variable, Experience (Table 36), significantly, moderated the impact of the independent variable, Habit on the dependent variable, Behavioural Intention. Model 2 which includes the interaction term HxExperience accounted for 48.6% of the variance in the dependant variable BI (R^2_{Adj}=.486; $F_{(5,57)}$= 12.739, p<.001).

Table 36: Moderation Effect on the Relationship between Habit & Behavioural Intention (Faculty Survey)

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.699[a]	.488	.453	.73846179	.488	13.842	4	58	.000
2	.726[b]	.528	.486	.71569151	.039	4.749	1	57	.033

a. Predictors: (Constant), Experience, Age of Respondent, Gender, Habit
b. Predictors: (Constant), Experience, Age of Respondent, Gender, Habit, HxExperience
c. Dependent Variable: Behavioural Intention

Excluded Variables[c]

Model		Beta In	t	Sig.	Partial Correlation
1	HxGender	.404[a]	1.137	.260	.149
	HxAge	-.020[a]	-.104	.918	-.014
	HxExperience	.217[a]	2.179	.033	.277
2	HxGender	.402[b]	1.168	.248	.154
	HxAge	-.069[b]	-.362	.719	-.048

a. Predictors in the Model: (Constant), Experience, Age of Respondent, Gender, Habit
b. Predictors in the Model: (Constant), Experience, Age of Respondent, Gender, Habit, HxExperience
c. Dependent Variable: Behavioural Intention

Checking the conditional effect of the independent variable, Habit, on the dependent variable, Behavioural Intention to use mobile technologies among instructors, using PROCESS, indicated the significant positive relationship between Habit and Behavioural Intention at all levels of Experience (low, medium, high), however, this relationship got stronger as the level of Experience increased (see Table 37).

Table 37: Conditional Effect of Habit on Behavioural Intention at Values of Experience (Faculty Survey)

Experience	Effect of H on BI	se	t	*p*	LLCI	ULCI
-.999	.521	.187	2.785	.007	.147	.895
.000	.651	.136	4.776	.000	.379	.924
.999	.782	.220	3.555	.000	.342	1.222

Values for quantitative moderators are the mean and plus/minus one SD from mean.
LLCI/ULCI - Lower and Upper Limit Confidence Intervals.

The impact of the independent Price of Services variable on the dependent Use Behaviour in teaching EFL variable was not affected by any of the intervening moderating variables in the research model (see Table 38).

Table 38: Moderation Effect on the Relationship between Price of Services & Use Behaviour in EFL (Faculty Survey)

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.346[a]	.120	.059	.97222945	.120	1.977	4	58	.110

a. Predictors: (Constant), Experience, Age of Respondent, Gender, Price of Services
b. Dependent Variable: Use Behaviour in EFL

Excluded Variables[b]

Model		Beta In	t	Sig.	Partial Correlation
1	P-ServicesxGender	.071[a]	.180	.858	.024
	P-ServicesxAge	.063[a]	.279	.782	.037
	P-ServicesxExperience	.035[a]	.280	.781	.037

a. Predictors in the Model: (Constant), Experience, Age of Respondent, Gender, Price of Services
b. Dependent Variable: Use Behaviour in EFL

Similarly, Table 39 indicates that there was no moderating effect by any of the intervening variables on the impact of the independent Habit variable on the dependent Use Behaviour in teaching EFL variable within the faculty sample. In fact, none of the intervening variables added to the variance in the Use Behaviour in EFL variable that was explained by the Habit variable.

Table 39: Moderation Effect on the Relationship between Habit & Use Behaviour in EFL (Faculty Survey)

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.489[a]	.240	.187	.90374948	.240	4.568	4	58	.003

a. Predictors: (Constant), Experience, Age of Respondent, Gender, Habit
b. Dependent Variable: Use Behaviour in EFL

Excluded Variables[b]

Model		Beta In	t	Sig.	Partial Correlation
1	HxGender	.275[a]	.631	.531	.083
	HxAge	.109[a]	.458	.649	.061
	HxExperience	-.060[a]	-.475	.637	-.063

a. Predictors in the Model: (Constant), Experience, Age of Respondent, Gender, Habit
b. Dependent Variable: Use Behaviour in EFL

To sum up, the findings so far identified the following relationships:

- The following five factors were responsible for the Behavioural Intention to use mobile technologies in learning EFL among students; listed according to their contribution to the variance in the outcome (Behavioural Intention): Facilitating Conditions; Hedonic Motivation; Performance Expectancy; Habit; and Social Influence.
- The intervening Experience variable moderated the impacts of the two independent Social Influence and Habit variables on the dependent Behavioural Intention to use mobile technologies in learning EFL among students variable. For both these factors, as the level of Experience decreased, the effect of these two factors on Behavioural Intention increased and got stronger. However, even if the size of effect increased from one level of experience to another (low, medium,

high), it was still positive and significant. There were no other moderated effects among this set of factors.

- The following five independent variables were responsible about the Use Behaviour of mobile technologies in learning EFL among students; listed according to their contribution to the variance in the outcome (Use Behaviour in EFL): Habit, Facilitating Conditions, Price of Devices, Social Influence, and Price of Services.
- Experience, also, played a significant intervening role on the previous set of factors as it moderated the effect of Habit, Facilitating Conditions, Price of Devices, and Social Influence. Nevertheless, these moderated effects were similar for all the variables (Habit, Facilitating Conditions, and Social Influence) except Price of Devices. The effects of these three factors on Use Behaviour in learning EFL were all positive and significant throughout the levels of Experience (low, medium, high), but they all got stronger as the level of experience decreased. On the other hand, the effect of the Price of Devices variable on the Use Behaviour in learning EFL variable started with a negative significant effect that got weaker but still highly significant (p<.001) at the medium level of Experience and finished with no significant effect at the high level of Experience.
- The Gender variable moderated the effects of the Habit and the Social Influence variables on the Use Behaviour of mobile technologies in learning EFL variable. The effect of Habit on the Use Behaviour in EFL was positive and highly significant (p<.001) among male and female students, but this effect got stronger among male students. The intervening variable, Gender, had the same the effect on the relationship between the independent variable, Social Influence, and the dependent variable, Use Behaviour in EFL, as it was positive and highly significant among male and female students, but on contrary to the effect of Habit, this effect got stronger among female students.
- Only two variables had a significant effect on the Behavioural Intention to use mobile technologies in teaching EFL variable among instructors. These were the Effort Expectancy and Habit variables.
- Gender, significantly, moderated the effect of the Effort Expectancy variable on Behavioural Intention to use mobile technologies in teaching EFL variable. The effect of Effort Expectancy variable on Behavioural Intention was positive for both

male and female instructors, but was more significant for females (p<.001) than for males (p<.05).

- Experience significantly moderated the effect of the Habit variable on the Behavioural Intention to use mobile technologies in teaching EFL variable. At the low level of Experience, the effect of Habit on Behavioural Intention was positive and significant (p<.05). This positive effect got stronger and highly significant (p<.001) as the level of Experience increased.
- Only two variables had an effect on the Use Behaviour of mobile technologies in teaching EFL variable among instructors. These variables were Habit and the Price of Services. Neither the effect of the Habit variable nor the Price of Services variable moderated by the Gender, Age, or Experience variables.

4.7 Additional Analysis

The analyses described above were directed at testing the model, in order to assess the validity of the research hypotheses. As is frequently the case in empirical work of this nature, the previous analyses raised further questions concerning the reasons of for the use of new technologies in learning and teaching EFL in Saudi Arabia. The following analysis of data addresses these emergent issues and contributes to the discussion and the implications of the study.

To assess mobile devices' ownership in the two samples, the participants were asked to specify what devices they currently own. Table 39 indicates that the Smart Phone was the most popular device and was owned by 81.4% of students and 79.7% of instructors. Faculty were more likely than students to own a cell phone and electronic dictionary, but were less likely to possess a tablet/ipad than students.

Table 40: Descriptive Statistics for Owing Mobile Devices

Owing Mobile Devices	Frequency	Percentage
Students Survey		
Cell Phone	294	33.8
Smart Phone	708	81.4
Electronic Dictionary	95	10.9
Tablet/iPad	347	39.9
e-Reader/Kindle	3	0.3
Don't have any	18	2.1
Faculty Survey		
Cell Phone	38	59.4
Smart Phone	51	79.7
Electronic Dictionary	14	21.9
Tablet/iPad	18	28.1
e-Reader/Kindle	1	1.6
Don't have any	0	0

As the smart phone was the most popular mobile device used by the participants, it is worth examining how frequently they use this device, more especially to access the internet (see Table 41). As can be seen from the table, the proportion of faculty using their smart phones more than five times each day was higher (70.3%) than that of students (61.7%). Moreover, a greater proportion of this group of staff making the heaviest use of their smart phones were also more likely to access the internet (62.5%) than the comparable group of students (48.6%). So, in essence, staff were more likely than students to use their smart phones, and were also more likely to use their smart phones to access the internet.

Table 41: Descriptive Statistics for Smart Phone

Frequency of using Smart Phone	No. (%) of General Usage	No. (%) of Accessing Internet
Students Survey		
More than 5 times per day	537 (61.7%)	423 (48.6%)
2-5 times per day	117 (13.4%)	149 (17.1%)
Once a day	27 (3.1%)	54 (6.2%)
4-6 times per week	7 (0.8%)	22 (2.5%)
2-3 times per week	10 (1.1%)	26 (3%)
Once a week	3 (0.3%)	18 (2.1%)
2-3 times per month	4 (0.5%)	8 (0.9%)
Once a month	3 (0.3%)	7 (0.8%)
N/A	162 (18.6%)	163 (18.7%)
Faculty Survey		
More than 5 times per day	45 (70.3%)	40 (62.5%)
2-5 times per day	4 (6.3%)	6 (9.4%)
Once a day	2 (3.1%)	2 (3.1%)
4-6 times per week	0 (0%)	1 (1.6%)
2-3 times per week	0 (0%)	0 (0%)
Once a week	0 (0%)	1 (1.6%)
2-3 times per month	0 (0%)	0 (0%)
Once a month	0 (0%)	0 (0%)
N/A	13 (20.3%)	13 (20.3%)

Besides reporting the Use Behaviour of mobile technologies in learning and teaching EFL as part of the research model, participants were also asked to indicate how frequent they use their mobile devices for a list of common possible usages, and these frequencies are reported in Table 42 below.

Table 42: Use Behaviour of Mobile Technologies in General

Usage	Frequency No. (%)				
	Very Frequently	Frequently	Occasionally	Rarely	Never
Students Survey					
Phone calls	348 (40%)	359 (41.3%)	109 (12.5%)	30 (3.4%)	24 (2.8%)
Video-conversation	57 (6.6%)	64 (7.4%)	204 (23.4%)	269 (30.9%)	276 (31.7%)
Sending & receiving text messages	203 (23.3%)	193 (22.2%)	280 (32.2%)	150 (17.2%)	44 (5.1%)
Accessing the internet	401 (46.1%)	254 (29.2%)	100 (11.5%)	53 (6.1%)	62 (7.1%)
Sending & receiving e-mails	188 (21.6%)	145 (16.7%)	245 (28.2%)	147 (16.9%)	145 (16.7%)
Scheduling appointments	88 (10.1%)	86 (9.9%)	206 (23.7%)	207 (23.8%)	283 (32.5%)
Banking	79 (9.1%)	90 (10.3%)	186 (21.4%)	167 (19.2%)	348 (40%)
Playing non-academic games	153 (17.6%)	139 (16%)	195 (22.4%)	188 (21.6%)	195 (22.4%)
Reading or editing documents	74 (8.5%)	84 (9.7%)	198 (22.8%)	200 (23%)	314 (36.1%)
Faculty Survey					
Phone calls	43 (67.2%)	13 (20.3%)	3 (4.7%)	4 (6.3%)	1 (1.6%)
Video-conversation	7 (10.9%)	14 (21.9%)	12 (18.8%)	14 (21.9%)	17 (26.6%)
Sending & receiving text messages	31 (48.4%)	15 (23.4%)	9 (14.1%)	9 (14.1%)	0 (0%)
Accessing the internet	39 (60.9%)	13 (20.3%)	8 (12.5%)	4 (6.3%)	0 (0%)
Sending & receiving e-mails	40 (62.5%)	14 (21.9%)	6 (9.4%)	2 (3.1%)	2 (3.1%)
Scheduling appointments	8 (12.5%)	12 (18.8%)	16 (25%)	17 (26.6%)	11 (17.2%)
Banking	4 (6.3%)	20 (31.3%)	11 (17.2%)	15 (23.4%)	14 (21.9%)
Playing non-academic games	1 (1.6%)	8 (12.5%)	18 (28.1%)	14 (21.9%)	23 (35.9%)
Reading or editing documents	6 (9.4%)	16 (25%)	16 (25%)	17 (26.6%)	9 (14%)

***Higher score has been highlighted.**

Table 42 reveals the general usage frequency of mobile technologies among students and instructors, and points to some interesting differences between the groups. 40% of students use mobile devices very frequently for phone calls and 46.1% used them very frequently for accessing the internet. However, these figures were lower than those reported for the comparable group of staff. 67% of staff used mobile devices very frequently to make phone calls, and 60.9% used them frequently to access the internet. Not surprisingly, perhaps, a considerable proportion (17.6%) of students used mobile technologies to very frequently play non-academic games, the comparable figure for staff was 1.6%. Conversely, a larger proportion of the staff reported using mobile technologies very frequently for sending and receiving text messages (48.4%) and e-mails (62.5%), than

students, for which the comparable figures were 23.3% and 21.6% respectively. Without further research, it is difficult to accurately interpret these results. However, it is possible that students no longer use e-mails or send text-messages via SMS, but rely more heavily on using Facebook or applications like WhatsApp (which is a cross-platform mobile messaging app which allows the exchange of messages without having to pay for SMS) to communicate with their friends and family.

Both students and instructors were provided with a list of services to tick if they were interested in having them on mobile devices (see Table 43). The three most requested services for students were Grades (86.25%), email (64.1%), and instant messaging with EFL staff and students (61.6%). These figures were similar to those of the staff, 87.5% of instructors chose University email as the most requested service on mobile devices, followed by instant messaging (78.1%) and reference materials (70.3%). It is perhaps, unusual to discover that nearly two-thirds of students and four-fifths of staff requested university official email to be made available on mobile devices, which may suggest that the university's IT infrastructure is unable to supply this basic service. The remainder of the results are unsurprising, and reflect similar desires for both staff and students to make greater use of mobile devices to access academic related data and information.

Table 43: Descriptive Statistics for Required Services to be accessed on Mobile Devices

Service	Frequency	Percentage
Students Survey		
Grades	750	86.2
University email	558	64.1
Instant messaging with EFL faculty or students	536	61.6
Videos and audios of lectures	505	58
Admission and registration	491	56.4
Lecture slides	481	55.3
University library	439	50.5
Reference material, applications and links	383	44
Course content	362	41.6
Chat with Information Technology service	338	38.9
Course Management System	336	38.6
Educational games	306	35.2
Faculty Survey		
University email	56	87.5
Instant messaging with EFL faculty or students	50	78.1
Reference material, applications and links	45	70.3
Grades	43	67.2
Educational games	42	65.6
Course content	41	64.1
University library	40	62.5
Lecture slides	37	57.8
Videos and audio of lectures	35	54.7
Course Management System	35	54.7
Chat with Information Technology service	26	40.6
Admission and registration	24	37.5

4.8 Conclusion

This section presented the findings of the study generated by the statistical analyses of both; Students & Faculty surveys. A number of variables proved to be responsible factors for behavioural intention and use behaviour of mobile technologies in learning and teaching EFL among students and faculty. Comparing the findings of students' survey to

those of the faculty revealed that the research model (UTAUT2) was strongly endorsed with respect to the students, with five significant factors contributing to the variance in behavioural intention and use behaviour of mobile technologies in EFL learning among students. On the other hand, only two factors contributing to the variance in behavioural intention and use behaviour of mobile technologies in EFL teaching among faculty. The impacts of some of those factors were moderated by experience or gender and in some cases by both.

In the next section, these findings are discussed in more detail and with reference to previous studies, and in the light of the objectives and purposes of the study.

5 Chapter Five: Discussion

5.1 Introduction

This chapter provides a thorough discussion of the results presented in Chapter Four. This study is based and built on one research model, to determine the use behaviour and behavioural intention to use mobile technologies in learning and teaching, but addresses two different samples, students and faculty, who have different characteristics, like age and experience, that might lead to different perceptions and utilizations of mobile technologies in learning and teaching. Hence, these two categories of participants were discussed separately, and then findings were compared to plan and guide the learning and teaching process in higher education, particularly in learning and teaching English as a foreign language.

5.2 Pilot Study

Before a proper consideration of the main results is undertaken, it is worth noting the value and impact of the pilot study which informed, and substantially improved, the survey and, by extension, the main corpus of the thesis. Gall et al (2007) highlight the importance of pilot-testing surveys to enhance validity and reliability of the research instruments. Therefore, the two surveys were sent to several eminent academics who have undertaken prominent research in this area, including some seminal theoretical analysts in the UTAUT field, including Viswanath Venkatesh, Michael Morris, and Fred Davis. Feedback from these recognised experts in the field was received by email, and used to re-engineer the survey. Additionally, other academics were met face to face for feedback at the UNED-ICDE 2013 International Conference in Madrid, Spain (7-9 March 2013) and the 19th international conference of the Association for Learning Technology, which was held at the University of Manchester in the UK (11-13 September 2012), besides several academics from Saudi universities as well. Furthermore, three EFL students at Taibah University (convenience sample) were contacted and provided with electronic copies of the Students Survey to print it out. Those students were given 10 to 15 minutes to try answering the survey questions, in order to provide feedback through phone conversations immediately after they finished concerning their comprehension of the survey and whether there were any ambiguous statements.

Most of the received comments were related to layout and linguistic style. Additionally, in both surveys there were two items ("Using mobile technologies in EFL learning/teaching is fun" & "Using mobile technologies in EFL learning/teaching is enjoyable" which were adopted from work by Venkatesh et. al. (2012) for measuring Hedonic Motivation, but, as a result of piloting the surveys, it was revealed that one of those items should be removed, because the two statements are in essence identical, and therefore measure the same thing. After pilot-testing the surveys and receiving feedback from academics and students, necessary changes were made to the surveys.

The pilot survey also enabled identification of the optimum system for distributing the surveys. The two surveys were distributed electronically, by using SurveyMonkey. However, the distribution of pilot copies of the survey electronically, in order to check the electronic responses, revealed that this method was not effective for gathering data. Of five academics contacted, only one used SurveyMonkey to respond, and there was no response from the nine students who were also invited to pilot the survey electronically. Consequently, the decision was made to use a paper-based version of the survey for the research.

5.3 Factors that Determine Students Use Behaviour and Behavioural Intention to Use Mobile Technologies in Learning EFL

The study attempted to find out the factors that determine students' Use Behaviour and Behavioural Intention to use mobile technologies in learning EFL by utilizing the Extended Unified Theory of Acceptance and Use of Technology (UTAUT2) in the higher education environment. Regression and moderation analyses were conducted to test the research hypotheses. The results indicated that Facilitating Conditions, Hedonic Motivation, Performance Expectancy, Habit, and Social Influence were significant predictors of the Behavioural Intention to use mobile technologies in learning EFL among students. On the other hand, Habit, Facilitating Conditions, Price of Devices, Social Influence, and Price of Services were significant predictors of the Use Behaviour of mobile technologies in learning EFL among students. Gender and Experience had moderated the effect of some of those factors (See Table 44 for details). Accordingly, the basic structure of the research model was partially confirmed. Results on Table 44, provides evidence that the research model (based on the UTAUT2) is fairly robust, valid, and reliable across the students' sample.

Table 44: The Results of Hypotheses Testing (Students Survey)

Hypotheses	Result	Conclusion
1.S. Performance Expectancy will significantly predict behavioural intentions to use mobile technologies in learning EFL and use behaviour.	**PE→BI** is significant (β=.185,p< .001). **PE→UB** is not significant.	**PE→BI** Supported **PE→UB** Not Supported
2.S. Effort Expectancy will significantly predict behavioural intentions to use mobile technologies in learning EFL and use behaviour.	**EE→BI** is not significant. **EE→UB** is not significant.	**EE→BI** Not Supported **EE→UB** Not Supported
3.S. Social Influence will significantly predict behavioural intentions to use mobile technologies in learning EFL and use behaviour.	**SI→BI** is significant (β=.095,p< .001). **SI→UB** is significant (β=.067,p<.05).	**SI→BI** Supported **SI→UB** Supported
4.S. Facilitating Conditions will significantly predict behavioural intentions to use mobile technologies in learning EFL and use behaviour.	**FC→BI** is significant (β=.237,p<.001). **FC→UB** is significant (β=.181,p<.001).	**FC→BI** Supported **FC→UB** Supported
5.S. Hedonic Motivation will significantly predict behavioural intentions to use mobile technologies in learning EFL and use behaviour.	**HM→BI** is significant (β=.226,p< .001). **HM→UB** is not significant.	**HM→BI** Supported **HM→UB** Not Supported
6.S. Price of Devices will significantly predict behavioural intentions to use mobile technologies in learning EFL and use behaviour.	**P-D→BI** is not significant. **P-D→UB** is significant (β=-.095,p< .05).	**P-D→BI** Not Supported **P-D→UB** Supported
7.S. Price of Services will significantly predict behavioural intentions to use mobile technologies in learning EFL and use behaviour.	**P-S→BI** is not significant. **P-S→UB** is significant (β=-.063,p< .05).	**P-S→BI** Not Supported **P-S→UB** Supported
8.S. Habit will significantly predict behavioural intentions to use mobile technologies in learning EFL and use behaviour.	**H→BI** is significant (β=.165,p< .001). **H→UB** is significant (β=.335,p<.001).	**SI→BI** Supported **SI→UB** Supported
9.S. Gender and Experience will moderate the impact of Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, hedonic Motivation, Price value, and Habit on behavioural intentions to use mobile technologies in learning EFL and use behaviour.	**SIxEx→BI** is significant (p≤.001). **HxEx→BI** is significant (p<.01). **HxEx→UB** is significant (p<.001). **FCxEx→UB** is significant (p .01). **P-DxEx→UB** is significant (p≤.01). **SIxEx→UB** is significant (p<.05). **HxGe→UB** is significant (p<.01). **SIxGe→UB** is significant (p<.05). *Only significant interactions highlighted.	**SIxEx→BI** Supported **HxEx→BI** Supported **HxEx→UB** Supported **FCxEx→UB** Supported **P-DxEx→UB** Supported **SIxEx→UB** Supported **HxGe→UB** Supported **SIxGe→UB** Supported *This hypothesis is partially supported.

The findings of this part of the study, as the data from the students' survey revealed, did not confirm the basic structure of the Extended Unified Theory of Acceptance and Use of Technology UTAUT2 proposed by Venkatesh et al. (2012) as Effort Expectancy and Price of Devices and Services were found not to be significant in predicting the Behavioural Intention (see Table 43). However, the results of the current study must be discussed in accordance with few main studies which have used the current research framework. The first of these is the study that originally proposed the UTAUT2, conducted by Venkatesh et al (2012) in a mobile internet consumers' context in Hong Kong. The second is the study conducted by Raman & Don (2013) which is more related to the current study, as it applied the UTAUT2 in the higher education context addressing pre-service teachers studying at University Utara Malaysia (UUM) in Malaysia. The third is a study conducted by Yang (2013) which also applied the UTAUT2 in higher education in China. Recently, Kang et al (2015) used the UTAUT2 to investigate the acceptance of mobile learning among Korean university students. The lack of related studies encouraged the researcher to compare the findings to studies that implemented the original UTAUT in an educational context, particularly higher education.

Furthermore, in line with the results reported here, most studies implementing the UTAUT or UTAUT2 weakened or eliminated the use of the moderators (Bere, 2014; Donaldson, 2011; Jairak et al, 2009; Kang et al, 2015; Nassuora, 2012; Rama & Don, 2013; Wang et al, 2009; Yang, 2013). In the current study, the demographic section in the Students Survey revealed the lack of heterogeneity among students with respect to age, therefore, Age as a moderator was removed from the research model and the moderating effects of experience and gender have been discussed.

In the following parts, the factors (independent variables) that determine students Use Behaviour and Behavioural Intention to use mobile technologies in learning EFL and the significant intervening variables of the research model for Students Survey are discussed individually.

5.3.1 Performance Expectancy (PE)

Performance Expectancy, in this part of the study (Students Survey), was defined as the degree to which using mobile technologies will provide benefits in learning EFL. Previous studies (Donaldson, 2012; Jawad & Hassan, 2015; Lowenthal, 2010; Venkatesh et al, 2003; Wang et al, 2009) indicated that Performance Expectancy is the strongest predictor of

Behavioural Intention (BI), but all these studies were applying the UTAUT (Venkatesh et al, 2003) model, or part of it, and not the extended version UTAUT2 model (Venkatesh et al, 2012) that was adopted as a framework for the current study. The findings obtained from the current study showed that PE is an important predictor of BI (β= .185***), but not the strongest one. However, in such circumstances, the organizational context may be crucial, which led Venkatesh et al (2012) to state "prior technology acceptance and use research has investigated the phenomenon in organizational contexts where performance expectancy is the main driver of employees' technology use intentions and behaviours" (p. 171). Similarly, the study of Kang et al (2015) revealed performance expectancy as the most significant factor contributing to the variance in behavioural intention. However, according to Venkatesh et al (2012) "in the case of consumers' acceptance and use of technology, other drivers come to the fore" (p. 171). In the current study, Performance Expectancy was still the third most important predictor, when considering the contribution of the factor to the overall variance explained by the model. The significance of this predictor was consistent with the previous results obtained by Venkatesh et al (2012) (β= .210***), Raman & Don (2013) (β= .256**), Yang (2013) (β= .152*), and Kang et al (2015) (β= .21**). Hence, the results of the current study were not unexpected, as performance expectancy, throughout different models of technology acceptance, remained a significant predictor, if not the strongest. Eight different models of technology acceptance were reviewed in the comparative study by Venkatesh et al (2003) which concluded that "the performance expectancy construct within each individual model is the strongest predictor of intention and remains significant at all points of measurement in both voluntary and mandatory settings" (p. 447).

On the other hand, PE was insignificant predictor of Use Behaviour of mobile technologies in learning EFL (UB in EFL). There was no direct effect of Performance Expectancy on the Use Behaviour of mobile technologies in learning EFL. Again, this result was consistent with previous studies by both Venkatesh et al (2012) and Raman & Don (2013). Also, the intervening variables, Gender and Experience, had no moderating effects on the relationship between Performance Expectancy and Behavioural Intention or Use Behaviour of mobile technologies in learning EFL.

5.3.2 Effort Expectancy (EE)

Effort Expectancy, in this part of the study (Students Survey), was defined as the degree of ease associated with using mobile technologies in learning EFL. The findings of the current study identified Effort Expectancy as an insignificant predictor of Behavioural Intention, which was consistent with the findings of Yang (2013) and Kang et al (2015), but this result was inconsistent with the findings of Venkatesh et al. (2012) and Raman & Don (2013). Moreover, even the studies which applied the Unified Theory of Acceptance and Use of Technology (UTAUT) had found effort expectancy a significant predictor of Behavioural Intention (Jawad & Hassan, 2015; Lowenthal, 2010; Wang et al., 2009; Wang & Shih, 2009). Venkatesh et al. (2003), in the original work on the UTAUT, stated that the effect of effort expectancy on behavioural intention would decrease as the user's experience increased. Results indicated a good level of experience, as 81.4% of students who participated in the study owing smartphones, 61.7% using these devices more than 5 times per day, and 48.6% of students accessing the internet via these smartphones also more than 5 times per day. This level of experience might be related to the insignificant effect of Effort Expectancy on Behavioural Intention.

With regard to the Use Behaviour in EFL, Effort Expectancy was not a significant predictor; there was not a direct effect, which is consistent with the results in Venkatesh et al.'s (2012) study that proposed the UTAUT2, and the following research by Raman & Don (2013). Moreover, the intervening variables, Gender & Experience, did not have any moderating effect that would make any changes to the significance level of the relationship between the independent variable, Effort Expectancy, and the dependent variables, Behavioural Intention and Use Behaviour in learning EFL.

5.3.3 Social Influence (SI)

Social Influence, in this part of the study (Students Survey), was defined as the degree to which students perceive that important others (i.e. family, friends, and society) believe they should, or should not, use mobile technologies in learning EFL. The findings of the current study showed that Social Influence was a positive predictor of Behavioural Intention as indicated by previous studies (Raman & Don, 2013; Venkatesh et al, 2012), and many other studies using UTAUT (Donaldson, 2012; Jairak et al, 2009; Jawad & Hassan, 2015; Wang et al, 2009). However, when the β value is compared across these studies, the current study showed the lowest but most highly significant ($\beta = .095^{***}$), compared to Donaldson (2012) $\beta = .13^{*}$, Jairak et al (2009) $\beta = .274^{***}$, Jawad & Hassan

(2015) β= .261**, Wang et al (2009) β= .120*, , Venkatesh et al (2012) β= .140*, Raman & Don (2013) β= .258**, Yang (2013) β= .200*, and Kang et al (2015) β= .12*. This highly significant contribution might be as a result of the large sample (870 participants), as stated by Gall et al (2007) "the larger the sample size, the smaller the results needed to reach a given level of statistical significance" (p. 141). However, as Venkatesh et al (2012) collected data from 1,512 respondents and reported similar results to those with much smaller samples, the impact of sample size may be negligible.

Unlike previous studies that tested the Social Influence as part of the UTAUT2 including the actual use behaviour (Raman & Don, 2013; Venkatesh et al, 2012), Social Influence, in the current study, was a significant predictor (β= .067*) and has a direct positive effect on the Use Behaviour of mobile technologies in learning EFL. Al-Gahtani et al (2007) argued that it is not questionable in high power distance context like Saudi Arabia, where individuals conform to the expectations of others in superior social roles, that social influence would be strongly associated with the behavioural intention and use behaviour of the individuals (p. 683). Practically, it is likely that these findings reflect the change in social attitudes towards the use of mobile technologies in Saudi Arabia, where people used to be very reluctant to use such technologies, but where these technologies have become much more acceptable nowadays, as the diffusion of mobile technologies has dramatically increased recently, not only in Saudi Arabia, but globally.

With regard to the moderating effect of Experience on Social Influence, as a predictor of Behavioural Intention and Use Behaviour in EFL, Venkatesh et al (2003) claimed that social influence acts significantly only in the early stages of experience with technology, which is consistent with the results of the current study, that showed an increased effect of Social Influence on Behavioural Intention and Use Behaviour in EFL at the lower level of experience with mobile technologies. Similarly, Taylor and Todd (1995a) and Carrillo (2014) ascertained that students with no, or low, levels of experience are more likely to rely on others and are therefore subject to social influence in forming their intention to use new technologies.

On the other hand, gender also moderated the effect of Social Influence on Use Behaviour in EFL. Although the results indicated a significant positive effect for Social Influence on Use Behaviour in EFL among both males and females, this effect was stronger among female students. Such a finding is consistent with previous work.

Venkatesh et al (2003), for example, pointed out that "women tend to be more sensitive to others' opinions and therefore find social influence to be more salient when forming an intention to use new technology" (p. 453).

In China, where social pressures are crucial and have an impact on whether people perform or do not perform certain behaviours, Park et al (2007) investigated the adoption of mobile technologies among Chinese nationals by using the UTAUT model. The results indicated that females were more likely than males to be affected by social pressures when it comes to the adoption of mobile technologies. Venkatesh & Morris (2000), also, found that females were more strongly influenced by social influence than males, with respect to the use (or not) of mobile technology devices. In the conservative culture of Saudi Arabia, both men and women are usually under social pressure to perform or not to perform particular behavioural patterns, in line with cultural (more especially, Islamic) norms. Hence, it is not surprising that women are more affected by these social pressures than men, as Saudi Arabia is a highly patriarchal society, in which legal and social gender inequalities are pervasive.

5.3.4 Facilitating Conditions (FC)

The Facilitating Conditions variable, in this part of the study (Students Survey), was defined as the degree to which students believe that resources and support are available to use mobile technologies in learning EFL. Results indicated that Facilitating Conditions was the strongest positive predictor (β=.237***) of Behavioural Intention to use mobile technologies in learning EFL. This result was consistent with the findings of Raman & Don (2013) as facilitating conditions had the largest β Value (β= .632**) in their study. Facilitating Conditions was not the strongest predictor of Behavioural Intention in Venkatesh et al.'s (2012) study that proposed the UTAUT2. However, it was still a significant positive predictor (β= .160**), bearing in mind, that the study conducted by Venkatesh et al (2012) was conducted in a non-educational context. Kang et al.'s (2015) study, which was in an educational context, indicated that facilitating conditions was a significant predictor of behavioural intention (β= .16**).

On the other hand, Facilitating Conditions was also a highly significant predictor of Use Behaviour of mobile technologies in learning EFL (β= .181***). It is the second strongest predictor of Use Behaviour in EFL after Habit, which was also supportive of the findings of Venkatesh et al (2012) (β= .150*) and Raman & Don (2013) (β= .791**). Also, Jawad &

Hassan (2015), who implemented the UTAUT, indicated a significant impact of facilitating conditions on use behaviour (β= .214**).

The high importance of the "Facilitating Conditions" factor indicates that it is the driving force for the acceptance and use of mobile technologies in learning EFL. However, Iqbal & Qureshi (2012) referred to the technical challenges that can make mobile learning difficult to manage and make students worried and reluctant to accept and use the new technology. Accordingly, when students were asked, at the end of the survey, to indicate any reason that could make them enthusiastic, or reluctant, to use mobile technologies for academic purposes, 65.2% of the total number who answered the open ended question mentioned facilitating conditions of one kind or another. For example, the availability of Wi-Fi on campus, difficulties with Wi-Fi connectivity on campus, a lack of knowledge on how to use mobile technologies, or the availability of training on the use of mobile technologies.

The participants of the current study are consumers of mobile technologies; consequently, it is essential to consider the impact of recent advances of 4G wireless technology (LTE - Long Term Evolution) in Saudi Arabia. The 4G provision not only supports the internet traffic with its large and bandwidth and faster transfer frequency but also provides high quality wireless connections, that are demanded by the consumers of mobile technologies. Ahmed (2013) stated that all three 4G service providers in Saudi Arabia (STC, Mobily, & Zain) launched their services in the last quarter of 2011. However, Albabtain et al (2014) have asserted that it is most likely that Saudi Arabia will be the prominent 4G (LTE - Long Term Evolution) market in the Middle East by 2016.

With regard to the effect of the intervening variables, the effect of Facilitating Conditions upon the Use Behaviour of mobile technologies in EFL learning was also moderated by experience. This finding is supported by Venkatesh et al (2012), who differentiated between users with greater experience and those with less experience, with regard to their dependence on facilitating conditions, and asserted that less experienced users of technology would depend more on facilitating condition; by contrast, experienced users, who are familiar with technology, would be less dependent on external support and facilitating conditions. Also, Venkatesh et al.'s (2003) study was based on a thorough review, which provided empirical evidence on the role of experience in moderating the effect of facilitating conditions on use behaviour, in conjunction with age. They stated

that “the effect of facilitating conditions on usage was only significant when examined in conjunction with the moderating effects of age and experience, i.e., they only matter for older workers in later stages of experience” (p. 467).

5.3.5 Hedonic Motivation (HM)

Hedonic Motivation, in this part of the study (Students Survey), was defined as the degree to which students have fun or pleasure derived from using mobile technologies in learning EFL. The current study showed that Hedonic Motivation comes second after Facilitating Conditions when predicting Behavioural Intention to use mobile technologies in learning EFL, with a β of .226*** indicating a highly significant positive effect. This result was consistent with the results obtained in studies by Raman & Don (2013), and Venkatesh et al (2012) as hedonic motivation, also, comes second after Facilitating Conditions in contributing to the variance explained in Behavioural Intention (β= .553**) in Raman & Don’s study, and after Habit (with β= .23***) in the study conducted by Vekatesh et al (2012). As a result of excluding Facilitating Conditions in Yang’s study (2013), hedonic motivation was the most contributed factor to the variance in Behavioural Intention with β= .282***. Also, Kang et al (2015) revealed the significant effect of hedonic motivation (β= .19**) on behavioural intention to use mobile learning in the higher education context in Korea. Similarly, studies implementing the UTAUT, that included hedonic motivation as an independent variable (Wang et al, 2009; Bere, 2014), have showed a positive effect for hedonic motivation on the behavioural intention to use mobile technologies in learning (β= .21**, β= .25**). Moreover, within a technology acceptance context, Van der Heijden (2004) claimed that perceived enjoyment is a stronger predictor of behavioural intention to use a hedonic information system, which focuses on leisure activities and fun aspects of using information systems, than is perceived usefulness.

However, Hedonic Motivation was not a significant predictor for Use Behaviour of mobile technologies among EFL learners. Moreover, this result was consistent with previous research by Venkatesh et al (2012) and Raman & Don (2013).

The current study shows that, when using mobile technologies for learning, users experienced high levels of enjoyment, as 75.3% of the respondents agreed that using mobile technologies in EFL learning is enjoyable, which positively affects the behavioural intention to use these technologies, which in turn will affect use behaviour.

5.3.6 Price of Devices & Services (P-Devices & P-Services)

The Price of Devices & Services variable, in this part of the study (Students Survey), was defined as the degree to which students perceived the benefits of using mobile technologies in learning EFL to be of greater value than the monetary cost. Zeithaml (1988) stated that studies indicated that consumers generally do not remember the actual price of a product, but they usually encode prices in more comprehensive ways that reflect the perceived value of the product. Therefore, the Price of Devices & Services variable reveals participants perception of the price of these devices and services, when compared with the perceived benefits of using these devices and services.

The insignificant effect of Price of Devices and Services on Behavioural Intention might be related to the fact that 46.4% of the students who participated in the study were not responsible themselves for purchasing the mobile devices or paying for mobile services. The cost of the devices and services is usually covered by parents or an older member of the family. Consequently, the cost of using these mobile devices is effectively nil to students who use them, which is why their behavioural intentions are not price sensitive. Moreover, according to the Saudi Communication and Information Technology Commission, in 2013, there were 51 million mobile phone subscriptions (170%) and 14.4 million mobile broadband subscriptions (48.5%). This high penetration indicates that the cost of these devices and services, generally, is not an issue. It is very common in urban areas of Saudi Arabia to see young people owning smart phones or tablets and sometimes both. This finding was inconsistent with previous studies, such as Venkatesh et al (2012) and Yang (2013). Yang's study (2013) indicated that "the cost and pricing structure of use m-learning have a significant influence on undergraduate students' intention to accept m-learning" (p. 976). But, in accordance with the current study, the findings of Kang et al (2015) rejected the hypothesis that suggested a significant effect for price value on the behavioural intention to use mobile learning. Kang et al (2015) explained the insignificant effect of price value in terms of the fact that most Korean university students have access to free Wi-Fi, both inside and outside the campuses.

In contrast, the results of the current study indicated that both the Price of Devices and the Price of Services were significant predictors (at the 5% level) of Use Behaviour of mobile technologies in EFL learning. The current study showed a negative effect of Price on the Use Behaviour, as the greater the perception of price, the less is the actual use of

mobile technologies in EFL learning by students, and in the general use of mobile technologies as well.

To investigate the effects of these variables in more depth, Pearson product-moment correlation coefficients were computed to assess the relationships between the variables (see Table 45 below). There were negative correlations between the two independent variables (Price of Devices, Price of Services) and the Use Behaviour in EFL learning variable and the Use Behaviour in general.

Table 45: Correlations between Price of Devices, Price of Services and Use Behaviour (Students Survey)

		Use Behaviour in General	Use Behaviour in EFL
Price of Devices	**Pearson Correlation**	-.187**	-.224**
	Sig. (2-tailed)	.000	.000
	N	870	870
Price of Services	**Pearson Correlation**	-.157**	-.200**
	Sig. (2-tailed)	.000	.000
	N	870	870

**. Correlation is significant at the 0.01 level (2-tailed).

Overall, Table 45 indicates that there were small but highly significant correlations between P-Devices, P-Services and the Use Behaviour of mobile technologies in EFL learning and the Use Behaviour in general. Gall et al (2007) relate that highly significant but relatively small correlations may occur when using large sample, which is the case in this part of the current study (Students Survey), as the sample was 870. Gall et al (2007) stated that "the larger the sample size, the smaller the result needed to reach a given level of statistical significance" (p. 141).

However, the regression analysis presented in the previous part indicated that the Price of Devices explained only 1.3% of the variance in the Use Behaviour of mobile technologies in EFL learning, while the Price of Services explained only 0.3%. Nevertheless, even if these two predictors were theoretically and statistically significant predictors of Use Behaviour in EFL, from a practical perspective, Saudi Arabia is witnessing a rapid and very fast growth of the mobile technologies' marketplace. Alwahaishi & Snásel (2013) pointed out the increase in mobile phones penetration in Saudi Arabia. Their findings were confirmed by Albabtain et al (2014) who reported a high penetration rate of 186% in Saudi Arabia due to the popularity of mobile phones in terms

of purchase, compared to the developing world average rate of 73% and the developed world average rate of 116%. This increase in mobile phones' penetration has led to an increase in mobile broadband subscriptions in Saudi Arabia which reached 14.27 million by the end of 2013, representing a population penetration rate of about 47.6% (CITC, 2013). Hence, this rapid expansion could obviously reflect the actual impact of Price of Devices and Services on Behavioural Intention and the actual Use Behaviour of mobile technologies in learning EFL and in general use as well.

However, the analysis showed that the effect of the Price of Devices upon Use Behaviour in EFL was moderated by experience. The negative effect of Price of Devices on Use Behaviour in EFL was highly significant at the low level of experience. This effect got weaker, but was still significant at the medium level of experience; and finally the effect disappeared at the high level of experience. This finding revealed that the price of devices can restrain inexperienced students of mobile technologies from using these technologies in EFL learning. However, as students get more experience, this obstacle will disappear. AlFahad (2009) reported that the majority of respondents to his survey (56%), who were considered as inexperienced users of mobile technologies, agreed that using mobile technologies for learning would be of high cost.

Similarly, Chanchary & Islam (2011) pointed out the cost of mobile technologies among the unfavourable features of mobile learning, when he reviewed the prospects and technological challenges of mobile learning in Saudi Arabia, based on a survey addressing undergraduate university students. However, most of the respondents (85%) in the study of Chanchary & Islam (2011) were inexperienced users, as they did not know how to use the features in their devices for mobile learning. Hence, the findings of AlFahad (2009) and Chanchary & Islam (2011) support the current research result that indicated the negative effect of the price of mobile technologies on using these technologies in EFL learning among inexperienced users.

Conversely, experienced users of mobile technologies underestimate the price of devices and concentrate more on the potential benefits.

5.3.7 Habit (H)

Habit, in this part of the study (Students Survey), was defined as the degree to which students tend to use mobile technologies in learning EFL automatically. Results indicated that Habit was a significant predictor of both Behavioural Intention ($\beta = .165^{***}$) and Use Behaviour (UB) of mobile technologies in learning EFL ($\beta = .335^{***}$). Habit was the fourth

most important predictor, with regard to its contribution of the variance in Behavioural Intention, and the first and the most contributing predictor of Use Behaviour in EFL learning. This finding was consistent with research by Venkatesh et al (2012) where habit, also, was a significant predictor of Behavioural Intention (β= .32***) and Use Behaviour (β= .24***). Also, Kang et al (2015) showed that habit was a significant predictor of behavioural intention (β= .19**), but the actual use of mobile learning was not included in their study.

By contrast, Raman & Don (2013) and Yang (2013) found that habit was an insignificant predictor of both Behavioural Intention and Use Behaviour. Yang (2013) indicated that "students with a stronger automaticity level of using mobile phone did not mean that they will more likely to use m-learning. The reason may be that students use their mobile phone primary for connecting with people, and the fitness between mobile devices and learning activities is relative lower than between mobile devices and communications" (p. 976). On the other hand, Raman & Don (2013) justified their finding regarding habit, as the Learning Management System (Moodle) was used for academic purposes only and not for chatting or communications, therefore, students are more likely not to develop a robust habit.

According to Gefen (2003), the stronger the habit, the more dominating and ingrained is the behaviour associated with that habit. Therefore, students' habits to use mobile technologies can be created and guided to assist their EFL learning, for example, as students are excessive users of social networks using their smartphones; enhancing EFL learning using these networks can be used as triggers to create automatic habits of using mobile technologies for EFL learning. Indeed, creating a strong bond between the triggers and the required habits should result in the desired behaviour.

As for moderation, the current study showed a significant effect of Experience as a moderator of the relationship between Habit and Behavioural Intention, indicating a slightly stronger effect of Habit upon Behavioural Intention for less experienced students with mobile technologies. However, this result was supported by the empirical evidence provided by Carrillo (2014) regarding the significance of experience as a moderator of the effect of habit upon behavioural intention, but showing a different direction. Carrillo (2014) claimed that the effect of habit on behavioural intention was stronger with more experienced respondents.

According to Limayem et al (2007), as people become more experienced with technologies, they will be more willing to use these technologies; however, consistent use will build habits and resistance to change. Considering the setting of the current study (Students Survey), 37% of respondents preferred to give a neutral response and 25% were disagree regarding their positive habits towards the use of mobile technologies in EFL learning. However, these responses indicate that positive habits towards the use of mobile technologies are not well formed among Taibah University EFL students. This might be referred to the students' voluntary use of these devices in EFL learning to support their own learning process. Therefore, being an experienced user of mobile technologies may not guarantee triggering positive habits of using mobile technologies for EFL if the learning and teaching environment did not support the use of mobile technologies. Hence, as Venkatesh et al (2012) state: "experience is a necessary but not sufficient condition for the formation of habit" (p. 161).

Experience also moderated the effect of Habit on Use Behaviour of mobile technologies in EFL learning, in the same direction as it moderated the effect of Habit on Behavioural Intention. Prior studies indicated that habit is more likely to affect use behaviour as a result of experience (Limayem et al, 2007; Venkatesh et al, 2012; and Carrillo, 2014). By contrast, the current study suggests that Habit positively affects the Use Behaviour of mobile technologies in EFL learning, as a result of enthusiastic and extensive use of recently owned mobile technologies.

The study demonstrated that Gender, statistically, is a significant moderator. There was a significant positive relationship between Habit and Use Behaviour of mobile technologies in EFL learning, but this relationship was stronger among male students (See Table 32). This result was consistent with the findings of Venkatesh et al (2012). Still, the differences between males and females, with regard to the effect of Habit upon Use Behaviour in EFL, are not enormous; moreover, the effect of Gender still positive for both.

To sum up, the Facilitating Conditions variable was the most significant predictor of Behavioural Intention, accounting for 36% of the variance in Behavioural Intention, while Habit was the most significant predictor of Use Behaviour, accounting for 22.5% of the variance in Use Behaviour in EFL.

However, Naismith et al (2004), after conducting a literature review on mobile learning, concluded that for effective mobile learning implementation training and ongoing technical support, i.e. facilitating conditions, for both staff and students are crucial for enabling the mobile learning process. Furthermore, Donaldson (2011) argued that students will be more likely to use mobile technologies for learning if they have confidence in the organizational and the technical facilitating conditions available for them to support mobile learning. On the other hand, Sarrab et al (2013) found that both students and staff were not tending to adopt mobile learning, in the absence of facilitating conditions.

Furthermore, Van Biljon (2006), in his study of the influence of motivational needs and cultural factors on mobile phones usage variety, stated that facilitating conditions variable become a significant predictor of accepting new technology, in the absence of organizational context and basic infrastructure. Hence, the high significance of Facilitating Conditions as a predictor of Behavioural Intention can be traced back to the voluntary use of mobile technologies in learning EFL, as it is not an organizational approach to teaching and learning at Taibah University. According to Van Biljon & Kotzé (2008), the effect of facilitating conditions is that it distinguishes the voluntary use of new technology, from the use of new technology within an organization supporting and facilitating the new technology use.

Habit, as the most influential predictor of Use Behaviour of mobile technologies in EFL learning and also one of the significant predictor of Behavioural Intention in the current study, has been empirically tested in previous researches. Indeed, although Raman & Don (2013) and Yang (2013) found habit to be an insignificant predictor of both behavioural intention and use behaviour, there were 36 studies that observed a direct relationship between habit and use behaviour. Moreover, 28 studies indicated a direct relationship between habit and behavioural intention, as reported by Carrillo (2014) in his review of 54 studies, testing the relationship of habit on behavioural intention and use behaviour, and which included the research about the mobile Internet conducted by Venkatesh et al (2012). However, these studies were conducted by using different research models from those in this analysis; moreover these studies sought to test the acceptance and use of different new technologies.

Additionally, this study found that, Experience was as a key moderating variable. It moderated the effects of Social Influence and Habit on Behavioural Intention to use mobile technologies in EFL learning; and the effect of Habit, Facilitating Conditions, Price of Devices, and Social Influence on the Use Behaviour of mobile technologies in EFL learning variable (See Table 44). These results were consistent with the findings of Taylor and Todd (1995a), who found that there were significant differences in the effects of the determining factors of intention and usage, depending on experience.

5.4 Factors that Determine Faculty Use Behaviour and Behavioural Intention to Use Mobile Technologies in Teaching EFL

In parallel to the previous section, which discussed the factors that determine students' Use Behaviour and Behavioural Intention to use mobile technologies in learning EFL, this section discusses the utilization of the same research model, the Extended Unified Theory of Acceptance and Use of Technology (UTAUT2), to determine the factors that predict Use Behaviour and the Behavioural Intention to use mobile technologies in teaching EFL by staff at Taibah University.

In general, there is a dearth of studies applying the UTAUT2 model for mobile learning in higher education. This shortage is much more noticeable when it comes to investigate the acceptance of mobile technologies among faculty members in higher education, and even more so, in regard to studies in Arabic speaking nation states. The only study found addressing faculty members' acceptance of new technologies in higher education using the UTAUT2 was conducted by Lewis et al (2013) at a Southeastern University in the United States. Although Jawad & Hassan (2015) reported investigating 27 lecturers and 132 students from the University of Babylon in Iraq, in the respondents' profile, but they did not report any results regarding those lecturers, they only reported inclusive results. On the other hand, several studies (Aubusson, 2009; Derakhshan, 2012; Pollara, 2011; Shohel & Power, 2010) have investigated the attitudes, readiness, and acceptance of mobile technologies among faculty members in higher education and school teachers, and assessed the obstacles to and benefits from, using mobile technologies in higher education. But, unlike Lewis et al (2013), these studies have not used the UTAUT2 model. This lack of studies encouraged the researcher to study the EFL faculty members, as well as the students, in order to be able to compare the level of acceptance and the degree to

which the constructs of the UTAUT2 model could explain the use behaviour of using mobile technologies in teaching and behavioural intention among EFL instructors.

Following the same procedures that were applied to the students survey, regression and moderation analysis were conducted to test the research hypotheses related to the faculty survey. The results indicated that both Effort Expectancy and Habit were significant predictors of the Behavioural Intention to use mobile technologies in teaching EFL among instructors. Additionally, Habit and Price of Services were significant predictors of the Use Behaviour of mobile technologies in teaching EFL among instructors. Gender moderated the effect of Effort Expectancy on Behavioural Intention; and Experience moderated the effect of Habit on Behavioural Intention (See Table 46 for details). Consequently, the basic structure of the proposed research model was not confirmed. Accordingly, Table 46 provides evidence that the research model (based on the UTAUT2) is not robust enough to determine the factors that predict the behavioural intention and use behaviour of mobile technologies. Moreover, these results suggest that there is no definite model for technology acceptance that can be valid and reliable across different contexts. Moreover, even within the same context, the robustness of the model might differ across different samples, as in the case of students and faculty in the current study.

Table 46: The Results of Hypotheses Testing (Faculty Survey)

Hypotheses	Result	Conclusion
1.F. Performance Expectancy will significantly predict behavioural intentions to use mobile technologies in teaching EFL and use behaviour.	**PE→BI** is not significant. **PE→UB** is not significant.	**PE→BI** Not Supported **PE→UB** Not Supported
2.F. Effort Expectancy will significantly predict behavioural intentions to use mobile technologies in teaching EFL and use behaviour.	**EE→BI** is significant (β=.461, p< .001). **EE→UB** is not significant.	**EE→BI** Supported **EE→UB** Not Supported
3.F. Social Influence will significantly predict behavioural intentions to use mobile technologies in teaching EFL and use behaviour.	**SI→BI** is not significant. **SI→UB** is not significant.	**SI→BI** Not Supported **SI→UB** Not Supported
4.F. Facilitating Conditions will significantly predict behavioural intentions to use mobile technologies in teaching EFL and use behaviour.	**FC→BI** is not significant. **FC→UB** is not significant.	**FC→BI** Not Supported **FC→UB** Not Supported
5.F. Hedonic Motivation will significantly predict behavioural intentions to use mobile technologies in teaching EFL and use behaviour.	**HM→BI** is not significant. **HM→UB** is not significant.	**HM→BI** Not Supported **HM→UB** Not Supported
6.F. Price of Devices will significantly predict behavioural intentions to use mobile technologies in teaching EFL and use behaviour.	**P-D→BI** is not significant. **P-D→UB** is not significant.	**P-D→BI** Not Supported **P-D→UB** Not Supported
7.F. Price of Services will significantly predict behavioural intentions to use mobile technologies in teaching EFL and use behaviour.	**P-S→BI** is not significant. **P-S→UB** is significant (β=.230,p< .05).	**P-S→BI** Not Supported **P-S→UB** Supported
8.F. Habit will significantly predict behavioural intentions to use mobile technologies in teaching EFL and use behaviour.	**H→BI** is significant (β=.361,p< .001). **H→UB** is significant (β=.462,p<.001).	**SI→BI** Supported **SI→UB** Supported
9.F. Age, Gender, and Experience will moderate the impact of Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, hedonic Motivation, Price value, and Habit on behavioural intentions to use mobile technologies in teaching EFL and use behaviour.	**EExGe→BI** is significant (p<.001). **HxEx→BI** is significant (p<.001). *Only significant interactions highlighted.	**EExGe→BI** Supported **HxEx→BI** Supported *This hypothesis is partially supported.

In the following sections of the thesis, the impact of the independent variables on the dependent variables and effects of the moderating variables within the research model for Faculty Survey are discussed in depth.

5.4.1 Performance Expectancy (PE)

Performance Expectancy, in this part of the study (faculty Survey), was defined as the degree to which using mobile technologies will provide benefit in teaching EFL. The results of the statistical analyses indicated that Performance Expectancy is not a significant predictor of the Behavioural Intention or of the Use behaviour of mobile technologies in EFL teaching, so the hypotheses related to the effect of Performance Expectancy on Behavioural Intention and Use Behaviour in EFL were rejected, even in the presence of interactions with the moderating variables: Age, Gender, and Experience upon this relationship. These results differ from those of Lewis et al (2013) who reported a significant positive direct effect of performance expectancy on behavioural intention ($\beta = .39^{**}$) and technology use ($\beta = .17^{**}$). Also, they reported only gender as a significant moderating variable on the effect of performance expectancy on behavioural intention.

In a consumer context, Venkatesh et al. (2012) also indicated that performance expectancy had a highly significant positive effect on behavioural intention, when the analysis was done using both the basic structure of the UTAUT ($\beta = .44^{***}$) and the extended structure, UTAUT2 ($\beta = .21^{***}$).

However, it is clearly that the usefulness of mobile technologies is not a driving force for the Behavioural Intention or the Use Behaviour of EFL instructors at Taibah University, although Venkatesh et al (2003), who investigated the factors related to the acceptance of information system in an organizational context, and Wong et al (2012), who employed the UTAUT to understand student teachers acceptance and use of new technology (Interactive Whiteboard), had reported performance expectancy as the most significant predictor of behavioural intention ($\beta = .53^{***}$, $\beta = .54^{**}$). According to Venkatesh et al (2012), the effect of this variable was even more significant for younger men. Consequently, the results of this research indicated that the instructors' perception of the usefulness of mobile technologies is not in parallel with the students' perception, as Performance Expectancy is one of the driving forces of the students' Behavioural Intention to use mobile technologies in learning EFL.

5.4.2 Effort Expectancy (EE)

Effort Expectancy, in this part of the study (Faculty Survey), was defined as the degree of ease associated with using mobile technologies in teaching EFL. The current study showed that Effort Expectancy is the most significant variable (β= .461***) contributing to the variance in Behavioural Intention of EFL instructors. However, Lewis et al (2013) found that there was no direct effect between effort expectancy and behavioural intention or technology use. On the other hand, Wong et al (2012) reported effort expectancy as a significant predictor of behavioural intention (β= .33**). However, the current study is in agreement with the findings of Lewis et al (2013) when it comes to the effect of Effort Expectancy on the Use Behaviour of mobile technologies in EFL teaching.

With regard to the moderating effects on Effort Expectancy as a predictor of Behavioural Intention, only Gender was found to be a significant moderator. Venkatesh et al (2003) concluded that "the effect of effort expectancy on intention is moderated by gender and age, such that it is more significant for women and older workers" (p. 467). While Lewis et al (2013) indicated that the effect of effort expectancy on behavioural intention was stronger among male instructors; the current study showed that this effect is stronger among female instructors, in agreement with the results reported in Venkatesh et al (2003) and Venkatesh et al (2012). Comparing the two samples, Students and faculty, the hypothesis related to Effort Expectancy is fully rejected, for both dependent variables: Behavioural Intention and Use behaviour of using mobile technologies in learning EFL, based on the data obtained from students' survey. On the other hand, the same hypothesis is partially confirmed, as discussed above (see Tables 44 & 46 above).

5.4.3 Social Influence (SI)

Social Influence, in this part of the study (Faculty Survey), was defined as the degree to which instructors perceive that important others (i.e. family, friends, and society) believe they should or should not use mobile technologies in teaching EFL.

Unlike previous studies (Lewis et al, 2013; Venkatesh et al, 2012), the current study revealed that Social Influence was not a significant predictor of Behavioural Intention or Use Behaviour of mobile technologies in teaching EFL, even in the presence of the intervening variables: Age, Gender, and Experience. This concurs with Venkatesh et al.'s (2003) conclusion that social influence "found to be nonsignificant when the data analysed without the inclusion of moderators" (p. 467). However, consistent with the

current research, Wong et al (2012) found that social influence was not a significant predictor of behavioural intention, although this conclusion may be due to a biased sample, as all the respondents who completed the survey questionnaire (112 student teachers) were female.

The statistical analysis revealed that 85.2% of EFL instructors who participated in the current study are from different cultures and educational backgrounds, 32.1% of them from western culture (UK, Canada, USA) and the rest from different parts of Asia and North Africa (See Table 7). Consequently, the high power culture of Saudi Arabia (as identified by Al-Gahtani et al, 2007) did not contribute to the effect of Social Influence on the acceptance and use of mobile technologies in teaching EFL among instructors. In contrast, Social Influence variable was a significant predictor of, both Behavioural Intention and Use Behaviour of mobile technologies in learning EFL among students, who were all Saudi nationals. Based on evidence from the literature review, Venkatesh et al (2003) claimed that "the role of social influence constructs has been controversial" (p. 469) due to the number and variety of the related constructs that were included and excluded in different studies in the literature. On the other hand, Venkatesh et al (2012) pointed out the effect of individual characteristics on the relationship between social influence and behavioural intention or technology use, while Sun & Zhang (2006) concluded that "moderating factors influence most of the relationships and therefore should be considered when studying user technology acceptance" (p. 71). Among the reported moderating factors were: the purpose of using technology; gender; experience; age; and cultural backgrounds.

5.4.4 Facilitating Conditions (FC)

Facilitating Conditions, in this part of the study (Faculty Survey), was defined as the degree to which instructors believe that resources and support are available to help them to use mobile technologies in teaching EFL. The positive views of Facilitating Conditions among EFL instructors did not resulted in a significant effect on either Behavioural Intention or User Behaviour of mobile technologies in teaching EFL, even in the presence of the intervening variables (moderators): Age, Gender, and Experience. This result could not be compared to the findings of Lewis et al (2013), because facilitating conditions as a construct was removed from the proposed model, due to a lack of consistency and validity. But, according to Venkatesh et al (2012), who introduced the UTAUT2 in a

consumer context, facilitating conditions is a significant predictor of behavioural intention (β= .16**) and technology use (β= .15*). Moreover, Venkatesh et al (2003), provided empirical evidence that the effect of facilitating conditions was only significant in the presence of the moderating effect of age and experience (β= .22**). However, of the previous mentioned studies that are similar to the current study, Wong et al (2012) reported facilitating conditions to be an insignificant predictor of behavioural intention.

With regard to the result of the current study, if facilitating Conditions was not a significant determinant of Behavioural Intention or Use Behaviour in a voluntary context within an organization, it is highly likely that Facilitating Conditions will be a significant predictor of Behavioural Intention and Use Behaviour when the context changed to be mandatory (when Taibah University introduced mobile learning and teaching as institutional approach). However, when Anderson et al (2006) utilized the UTAUT model to analyse Tablet PC usage among faculty members of College of Business at East Carolina University in the United States, they found that facilitating conditions was not a significant factor in predicting new technology use. Anderson et al (2006) referred the result to the expectations that the faculty had, as they stated that "faculty appear to expect that the needed knowledgeable and supportive support personnel will be available", therefore, "administrators should make sure that the support staff is in place to address this dimension" (p. 437).

However, comparing the two samples, Students and faculty, the hypothesis related to Facilitating Conditions is fully rejected, for both dependent variables: the Behavioural Intention and the Use behaviour of using mobile technologies in teaching EFL, based on the data obtained from faculty survey. In opposition to this result, the Facilitating Conditions variable is a driving force for the acceptance and use of mobile technologies in learning EFL among students; and the same hypothesis is fully confirmed for both dependent variables: the Behavioural Intention and the Use behaviour of using mobile technologies in learning EFL (see Tables 44 & 46 above).

5.4.5 Hedonic Motivation (HM)

Hedonic Motivation, in this part of the study (Faculty Survey), was defined as the degree to which instructors have fun or pleasure derived from using mobile technologies in teaching EFL. In accordance with the findings of Lewis et al (2013), the results of the current study indicated that Hedonic Motivation was not a significant determinant of

either Behavioural Intention or Use Behaviour of mobile technologies in teaching EFL. The moderating effects the intervening variables (Age, Gender, and Experience) did not make any difference.

On the other hand, Venkatesh et al (2012) claimed that hedonic motivation is a critical predictor of behavioural intention among consumers of mobile Internet technology; moderated by age, gender, experience; and plays a more important role in determining behavioural intention than performance expectancy, effort expectancy, social influence, facilitating conditions, and price value.

The prior research emphasized the role of hedonic motivation, but in the case of the current study, the insignificant effect of Hedonic Motivation on Behavioural Intention and Use Behaviour of mobile technologies in EFL teaching might be as a result of gender or experience. Based on empirical evidence and a literature review, Venkatesh et al (2012) stated that "the effect of hedonic motivation on behavioural intention is stronger for younger men with less experience with a technology" (p. 171). However, in the current study, the majority of the instructors were female (60.9%) rather than male (39.1%) which may go some way to explain these findings.

On the other hand, as 79.7% of EFL instructors participated in the current study owing smart phones, 62.5% of them using their smartphones to access the internet more than 5 times per day, and 75% and 62.5% of them reported a frequent use of e-mail and educational websites, respectively, using their mobile technologies to teach or support teaching EFL, it is obvious that EFL instructors have built a good level of experience of using these mobile technologies. However, Venkatesh et al (2012) argued that the effect of hedonic motivation on technology use will decrease and diminish as the experience increases.

Comparing the results obtained from the two samples, the Hedonic Motivation variable was not a significant determinant of either Behavioural Intention or Use Behaviour of mobile technologies in teaching EFL among instructors; and the hypothesis is fully rejected. However, the same variable was a highly significant predictor of Behavioural Intention to use mobile technologies in learning EFL among students; and the hypothesis is partially confirmed for one dependent variable only (see Tables 44 & 46 above).

5.4.6 Price of Devices & Services (P-Devices & P-Services)

The Price of Devices & Services, in this part of the study (Faculty Survey), was defined as the degree to which instructors perceived the benefits of using mobile technologies in teaching EFL to be of greater value than the monetary cost. Results showed that the Price of Devices and Services have no effect on Behavioural Intention. These results were in common with the results obtained from the students' survey, as the Price of Devices and Services, also, have no effect on Behavioural Intention among students. On the other hand, only Price of Services has a significant effect (β= .230*) on Use Behaviour of mobile technologies in teaching EFL. According to Venkatesh et al (2012), when the perceived price of a technology has a positive effect on the use behaviour, it means that the user perceived the benefits of that technology to be greater than the cost. However, while only Price of Services has a significant effect on Use Behaviour among instructors, both Price of Devices and Price of Services have significant effects on Use Behaviour among students.

With the rapid expansion of 4G wireless technology in Saudi Arabia (Ahmed, 2013) which allows for the ultrafast connection at low cost and high performance, consumers would more likely to perceive the price of mobile technologies as good, compared to the usefulness of these devices. So (2012), in reviewing the current state of mobile learning in Asia for the UNESCO, argued that there are multiple factors that affect public policies and social attitudes towards the mobile learning; among these factors is the cost of mobile devices and subscriptions, which in some cases can be a barrier, but the high penetration of mobile phones and the availability of infrastructure and wireless networks are key success factors in mobile learning.

5.4.7 Habit

Habit, in this part of the study (Faculty Survey), was defined as the degree to which instructors tend to use mobile technologies in teaching EFL automatically. Throughout the results of the current study, Habit showed a significant effect upon Behavioural Intention and Use Behaviour of mobile technologies, in both learning and teaching EFL.

Habit was a significant predictor contributing to the variance in Behavioural Intention by 8.7% (β= .361***) and in common with the findings of Lewis et al (2013). Also, it was the most significant predictor of Use Behaviour contributing for 18.5% of the variance (β= .462***). However, Lewis et al (2013) had rejected the later effect. The empirical evidence

provided by Venkatesh et al (2012) was in accordance with the current research findings, as habit has a highly significance effect in predicting behavioural intention and technology use as well. However, the hypotheses related to the Habit variable are fully confirmed for the two samples, students and faculty.

With regard to the moderating effects, the current study indicated that only Experience was a significant moderator of the relationship between Habit and Behavioural Intention, indicating a positive effect that got stronger as the level of Experience increased. However, while Lewis et al (2013) did not include experience as a moderator and rejected the hypotheses that indicated that age and gender would moderate this relationship, Venkatesh et al (2012) found that age, gender, and experience were all significant moderators; they stated that "the impact of habit on behaviour differs with age, gender, and experience. Specifically, older men with extensive experience, more than others, tend to be driven by habit" (p. 174).

On the other hand, in the current study, none of the moderators have a significant moderating effect on the relationship between Habit and Use Behaviour of mobile technologies in teaching EFL.

To sum up, Effort Expectancy was the most contributing factor to the variance in Behavioural intention among EFL instructors. Out of the total 52% of the variance in Behavioural Intention explained by the independent variables, 44.9% explained by Effort Expectancy. On the other hand, Habit was the most significant factor affecting Use Behaviour of the instructors, accounting for 18.5% of the total variance, which is 22.6%, in Use Behaviour of mobile technologies in EFL teaching explained by the independent variables.

For mobile learning and teaching, investigating and understanding factors that affect the behavioural intention and use behaviour is an essential prerequisite for successful implementation. Kukulska-Hulme (2007) argued that paying more attention to the context of use, understanding the requirements and motivators of all those involved in mobile learning including students and instructors, and investigating the factors impacting the usability of mobile technologies in education would ensure the acceptability and usability of new technology.

Overall, Habit was the most prominent factor, playing a significant role in both samples (students and instructors) more especially with respect to its effect on the Use Behaviour of mobile technologies in EFL learning and teaching. This result suggests that the efficiency of mobile learning and teaching and the engagement of students and instructors in such environment are highly determined by personal factors, i.e., Habit. Ouellette and Wood (1998) asserted that automaticity and strength of habit is the best predictor of future behaviour; and claimed that "one performed a behaviour because of habit provides an understandable explanation for an act that otherwise might seem irrational or even harmful" (p. 54). Consequently, the habits of being heavily immersed in using mobile technologies for a significant time, among both students and instructors, can be the driving force for developing automaticity and habitual behaviours toward mobile learning and teaching which may lead to increased future usage.

In spite of the fact that there is an agreement that habits are non-volitional and unintentional and performed automatically with minimal attention (Ronis, Yates, & Kirscht, 1989), but Ajzen (2002), Ouellette and Wood (1998), and Polites (2005) claimed that habits can also be volitional and part of intentional behaviour systems. In the case of the current study, the analysis of data indicated that social media networks were the most frequent mobile applications used by both, students and instructors. Moreover, the Social Clinic (2013) reported Saudi Arabia as the country of the highest percentage of internet users who are active on Twitter. Therefore, by guidance, the habits of using social media can be transformed into learning and teaching process and maximise the potential benefits of these technologies in the educational context.

5.5 Mobile Technologies in Learning and Teaching EFL

The purpose of this study was to discover the students' and instructors' acceptance of mobile technologies in learning and teaching English as a foreign language in Saudi Arabia. Understanding the practices of those involved in the learning and teaching process is an essential step. Kim, Rueckert, Kim & Seo (2013) emphasized the importance of understanding how students use mobile technologies to create new learning experiences, which would be decisive in showing how these technologies open up new pedagogical scaffoldings.

The results of this study showed that social networks (Facebook, Twitter) are the most frequent mobile applications reported by students (42.5%) to be used in EFL learning.

Websites, also, were reported as being accessed on mobile devices frequently by 31.6% of students who participated in the study. Moreover, online educational EFL content was frequently accessed on mobile devices by 27% of students while 25.5% of students reported frequent use of e-mail in EFL learning.

On the other hand, the Faculty Survey revealed more frequent uses of mobile technologies and mobile applications in EFL teaching, as 75% of instructors who participated in the study reported a frequent use of e-mail, in support of EFL teaching, on their mobile devices. Furthermore, 62.5% of instructors reported frequent use of websites on their mobile devices to teach or support EFL teaching. Other uses and applications frequently reported by EFL instructors included accessing educational content online (45.3%), social networking (43.8%), and SMS (Short Messaging Service) (43.7%).

It is obvious that, even though mobile learning and teaching is a voluntary choice by individuals within an educational organization, it is still frequently used and involved in the learning and teaching of EFL. The current study is not a trial for evaluating the current situation of mobile learning and teaching at Taibah University, but is designed to shed light on the frequency of practice and acceptability of mobile learning, in order to draw the attention of the organization to guide the process of supporting learning and teaching of EFL, by implementing up to date mobile technologies which are already available to most students and instructors.

However, with the frequent uses of mobile technologies and applications among EFL students and instructors, the educational organization (Taibah University) should do more than approving and just letting such practices happen within the organization. The potential of mobile technologies to address the challenges of EFL teaching and learning in the context of Saudi Arabia are undeniable. Almarwani (2011) discussed several unique challenges of using mobile technologies for EFL learning and teaching in Saudi Arabia including: the large scale projects, the increased demand for education, limitations of capital and labour, geographical distances, and traditional cultural norms. Hence, the significant factors that impacted the behavioural intention and use behaviour of mobile technologies in EFL learning and teaching among students and instructors, which have been discussed in the two previous sections, should be used to guide the efforts of the organization in the future.

Both surveys, Students and Faculty, showed high percentages of ownership of mobile devices, as represented by smart phones (owned by 81.4% of students and 79.7% of instructors - see Table 40 for more details on the ownership of mobile devices among students and instructors). Kukulska-Hulme (2009), in his paper entitled: "Will Mobile Learning Change Language Learning", highlighted the role of mobile device ownership by stating that "ownership of the device makes a difference, since a tool that has only been borrowed may not be used in the same way as one that is owned and very familiar" (p. 159). Therefore, the university could usefully implement "Bring Your Own Personal Handheld Device" (BYOPHD) policy among students and staff in order to promote the integration of the use of mobile technologies into learning and teaching.

Innovative individual practices can function as a beacon for an organization, when those individuals are using existing skills and technologies to accomplish and enhance their learning and teaching tasks. Here, by adopting new mobile technologies to assist their teaching and learning, students and instructors become stakeholders in the process of institutional progress, and direct the vision of the university towards a greater use of mobile technologies.

There is already a mobile application developed by Taibah University for administrative purposes and news dissemination which addresses all students and personnel of the university. This single advanced project includes a YouTube channel, latest news from the university media centre, a tracking queries tool, a university forum, and the academic calendar. For students' services, it allows students to display personal and academic data, course schedule (weekly and daily), and students' grades. For personnel services, employees can display their personal database, and access all information related to holidays and wages.

However, when students were asked which services should be made accessible by mobile devices, 86.2% of the participated students chose course grades as a required service. This indicated that most of the students were not aware of the existing available service for accessing grades via the university's internal ICT system. Additionally, students were interested in accessing university email (64.1%), instant messaging with EFL faculty or students (61.6%), videos and audios of lectures (58%), and many other services on their mobile devices, as detailed in Table 43 in the previous chapter.

In contrast to the requirements of the students' cohort, most instructors were interested in accessing university email (87.5%), instant messaging with EFL faculty or students (78.1%), reference material (70.3%), Grades (67.2%), educational games (65.6%), and many other services on their mobile devices. A list of the required services is presented in Table 43.

The list of services required by students and staff can be categorized as academic, administrative, technical, and library services; these required services indicated that students and instructors would be interested in using a course management system on their mobile devices which could provide them with most of the required services. Indeed, 54.7% of instructors and 38.6% of students showed an interest in accessing a course management system on their mobile devices.

Both students and instructors have highlighted several practices and concerns related to the use of mobile technologies in learning and teaching EFL. The most frequent concern of the students was that mobile technologies are not allowed to be used during classes, despite the need to motivate students by all possible means, including the use of mobile technologies, in order to promote higher achievement levels by students taking EFL courses. Another raised issue was that mobile technologies provide an opportunity of opening communication channels with native speakers of English via social networks and other applications or platforms especially, which would very helpful as it is hard to practice English language in Saudi non-English environment. However, both students and instructors have raised the same concern that mobile learning and teaching should not replace face-to-face learning and teaching, but they considered the benefit of mobile technologies very much as described by Campanella (2012) in that "it offers a way to extend the support of learning outside the classroom, to the conversations and interactions of everyday life" (p. 55-56).

All the practices and use behaviour in learning and teaching English as a foreign language were informal practices as these practices were not facilitated by the university. However, the current practices and the recommended services by students and instructors were not limited to one specific type of learning or teaching, on the contrary, the features and functions of mobile technologies allow for a wide range of activities. This was in accordance with the findings of the literature review conducted by Naismith et al

(2004) that revealed six broad theory-based categories of activity as a consequence of considering new practices against existing theories.

The potential of mobile technologies in learning and teaching is manifested throughout the literature. For example, Wang, Shen, Novak, & Pan (2009) reported a formal implementation of a mobile learning system in a blended English classroom of 1000 students at Shanghai Jiaotong University in China. As the collected data indicated, it was a successful implementation, changing the students from passive learners to truly engaged and active learners. They stated that "mobile phones have undeniable potential to expand the accessibility of learning opportunities. But the best practices of using mobile devices in teaching and learning are largely undefined" (p. 677). According to Quinn (2011), the trend in mobile learning should go further than the classic mobile learning represented by content delivery, with the capabilities of mobile devices used for communication, interaction, and capturing and transferring local context, thoughts, or location-based information.

Mobile learning should follow the boom in mobile technologies because, as Quinn (2011) pointed out, "mobile is real. The devices are out there, the learning and performance opportunities exist, and the time is ripe. Distributing capability to where you need it, and tapping into the new opportunities, is possible. So the only remaining issue is for you to figure out how to start" (p. 26). So, the current study is a starting point that analyses the existing situation and the significant factors which are contributing to the successful implementation of mobile learning and teaching at higher education institutions in Saudi Arabia. Being informed by the findings of the current study that smart phones are the most popular mobile device across the two samples (81.4% of students and 79.7% of instructors) would encourage the policy makers in higher education to incorporate these technologies with their evolutionary advantages, especially smart phones which become more and more powerful, according to Corbeil & Valdes-Corbeil (2007), "combines multitude of communication and computing features in one compact system" (p. 54).

However, there were insightful suggestions especially from students that should also be considered by the university authorities and relevant national policy makers. Among these suggestions were the support provided by the university, and the availability of WiFi connection on campus. Both, students (61.1%) and instructors (45.3%), reported unavailability of WiFi connectivity. However, difficulties in WiFi connectivity was the most

frequent reason for being unwilling to use mobile technologies for academic purposes. Indeed, it is obvious that there is an urgent need to invest in fast and unrestricted broadband access. However, this was in agreement with the conclusion derived by Colbran and Al-Ghreimil (2013), who investigated the use of information technology to support the quality of teaching and learning at higher education institutions in Saudi Arabia; as they stated that "If Saudi Arabia aspires to have a number of leading universities by world standards, it will need to invest heavily in technology, infrastructure, and skilled human resources" (p. 81). They added that "All technologies have pros and cons, but what they share in common is a requirement for fast, unfettered broadband access" (p. 81).

Other suggestions which emerged during the research were the use of mobile technologies as means of communication between students and instructors, the use of distinguished mobile applications, the availability of e-books for EFL courses, the availability of training on the use of mobile technologies for learning and teaching, and the availability of codes of conduct for using mobile technologies at the university.

Also, students and instructors have raised several issues that would inhibit the use of mobile technologies for academic purposes, aside from the WiFi connection. Among these issues were the lack of knowledge on how to use mobile technologies in learning and teaching, the dominant influence of traditional teaching, concerns about the health risks of using mobile technologies, the misuse of mobile technologies, and cultural constraints on females using such technologies.

Mobile technologies are wide spread and used by students and instructors on daily basis, but for learning and teaching, it is still a new practice for many of them, as Bacsich et al (2010) stated that "around the world, digital and mobile technologies are rapidly changing the way young people learn, showcase their knowledge, and share their ideas outside the classroom. Still, few students have the chance to apply these skills to their classroom learning" (p. 19).

The popularity of mobile technologies, the high demand for better EFL learning and teaching, the tools and features of mobile technologies and the wide range of available mobile applications for EFL pedagogy are all valid reasons to utilize up-to-date mobile technologies for EFL learning and teaching.

Prensky (2007) discussed the use of technologies of the twenty-first century while keeping both students and instructors comfortable and concluded that "to use the twenty-first century's rapidly emerging technology effectively for education, we must invent best practices together. In an era whose often unbelievable technological changes we are all struggling with, the mantra – for both educators and students -- must be this: We are all learners. We are all teachers" (p. 46). Also, Kukulska-Hulme (2009) argued that "we are living in interesting times, in which teachers and learners must try to work together to understand how portable, wireless technologies may best be used for learning" (p. 161). Therefore, this study was an attempt to find out the factors leading to better and naturally integrated mobile technologies into EFL learning and teaching in higher education in Saudi Arabia.

Finally, despite a widespread ownership of mobile technologies and an increased access to the internet through these technologies represented by smart phones among both students and instructors, the patterns of using these devices in teaching and learning, as well as general use, varied between both groups.

5.6 Conclusion

This chapter reflected on the main findings of the study and organized in three sections. The first section discussed the factors that determine students use behaviour and behavioural intention to use mobile technologies. The second section discussed the same factors, with respect to the faculty sample. Predictors of behavioural intention and use behaviour of mobile technologies in EFL learning and teaching varied greatly between students and instructors, as the research model better endorsed and validated by the data collected from students.

The last section discussed the practices of using mobile technologies in learning and teaching EFL among students and faculty. Because mobile technologies, especially smart phones, are taken for granted as part of our daily life, become affordable and easy to use with much more than a medium of communication as their computational features are becoming more advanced nowadays, most students and instructors are naturally attempting to use them for formal and informal practices of learning and teaching, to satisfy their personal needs.

To conclude, it cannot be denied that face to face teaching and learning remains important. However, integrated mobile technologies have the potential to enable instant connections to the world, to access information conveniently whenever and wherever needed, and to allow interactions with others. The findings discussed in this thesis can help to guide any mobile learning initiatives in the future, as they built a baseline that can support students and instructors to amplify their learning and teaching practices using mobile technologies. However, the challenge is in designing mobile language learning and teaching materials, tasks, and activities, in a way that enable students to utilise them to create knowledge and acquire skills via mobile technologies.

The following chapter is the last chapter of the dissertation. It will present an overview of the study, contributions and implications for policy and practice, limitations of the study, recommendations, and further research opportunities.

6 Chapter Six: Conclusions

6.1 Introduction

This final chapter presents a summary of the dissertation, outlining the contributions and implications of the key findings. Also, it acknowledges the limitations of the study, and provides recommendations and future research opportunities.

6.2 Overview of the Dissertation

The study set out to explore the key factors that determine students' and instructors' use behaviour and behavioural intentions to use mobile technologies in learning and teaching EFL, in an effort to determine the readiness and acceptance of mobile learning and teaching among students and instructors at Taibah University, a higher education institution in Saudi Arabia.

The first step in conducting this study was to explore the related literature on mobile learning, around the world in general, and in the Arabic speaking nations in particular. Moreover, the potential benefits of mobile technologies in language teaching and learning were highlighted. This review ended by exploring academic studies on the acceptance of mobile learning and teaching, and reviewing technology acceptance theories, by focusing on the eight models that were creating during the development of the Unified Theory of Acceptance and Use of Technology (UTAUT) model, to assist and guide the researcher in the refinement process for the plan of the study and the formulation of the research enquiry.

The main research question was: What are the factors that determine students and faculty use behaviour and behavioural intention to use mobile technologies in learning and teaching English as a foreign language in an Arabic speaking university in Saudi Arabia?

To answer this question, the Extended Unified Theory of Acceptance and Use of Technology (UTAUT2) was employed as a theoretical framework, which takes into account several perspectives and embeds all previous eight technology acceptance theories and models. The model that emerged from this process, and which is at the heart of this thesis, was designed to assess technology acceptance beyond the organizational context by including consumer context dimensions. The relationships

between the different variables in the model formed the basis for the underlying hypotheses of the study. Data was gathered to statistically test the strengths of the relationships in the model, and thereby assess whether the hypotheses were disapproved, or accepted. Based on this research framework and methodology, two survey instruments were designed to collect quantitative data, one in English (Faculty Survey) and one in Arabic (Students Survey).

All Preparatory Year English Language (PYEL) Program students and instructors at Taibah University were invited to participate. However, 878 students and 65 instructors voluntarily participated in the study. Once the data was obtained, statistical techniques were used to analyse the responses, and to confirm or reject the hypotheses. Descriptive and inferential statistics were calculated, and various statistical techniques were utilised: exploratory factor analysis (EFA), correlation, crosstabulation, regression analysis, analysis of variance (AVOVA), and the T-test. In line with comparable statistical analyses in the social sciences, and the literature on technology acceptance models, the significance level for the tests used in this study was set at 5%, although when the results were significant at the 1% level, this was reported.

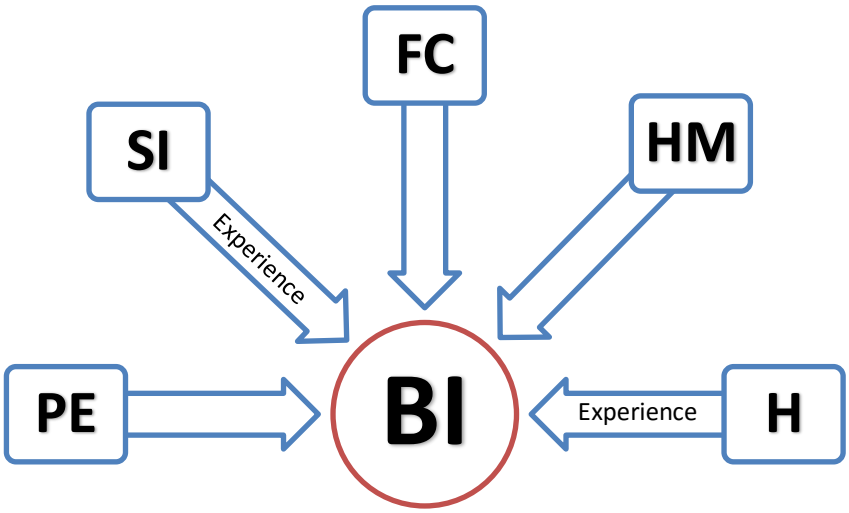
6.3 Key Contributions and Implications

The study constitutes a significant addition to the existing generic body of knowledge on students' and instructors' use behaviour and behavioural intention to use mobile technologies in learning and teaching EFL, considering them as consumers of these technologies within a higher education institution. Additionally, it constitutes a major addition to the few such studies that have been undertaken of an Arabic speaking nation, in which English language competence (and, by extension, the success of EFL teaching) may prove crucial in enabling economic development and membership of the emerging global knowledge economy, which is centred on English as the language of business, commerce, and personal communication. Also, the deductive process of testing the Extended Unified Theory of Acceptance and Use of Technology (UTAUT2) allowed for further specification of the theory and resulted in reconceptualising the Price construct into two independent variables, Price of Devices and Price of Services, and empirically investigating their effect as determinants of Behavioural Intention and Use Behaviour.

Overall, the results of the students' study indicated that the Facilitating Conditions, Hedonic Motivation, Performance Expectancy, Habit, and Social Influence variable, acting

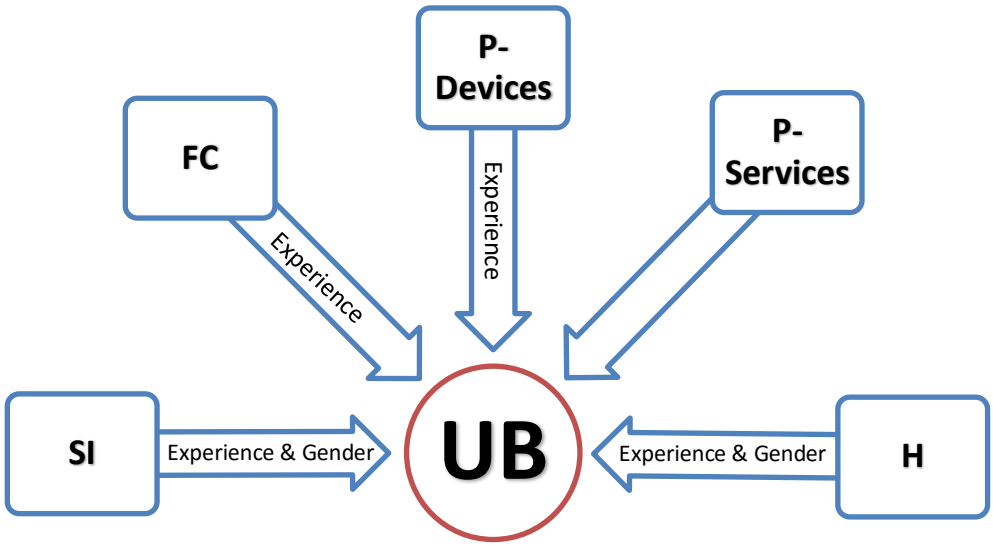
in unison, accounted for 49.3% of the variance in the Behavioural Intention to use mobile technologies in learning EFL. Additionally, the Experience variable moderated the effect of Social Influence and Habit on the Behavioural Intention of students (see Figure 19, below).

Figure 19: Factors Determining Students' Behavioural Intention



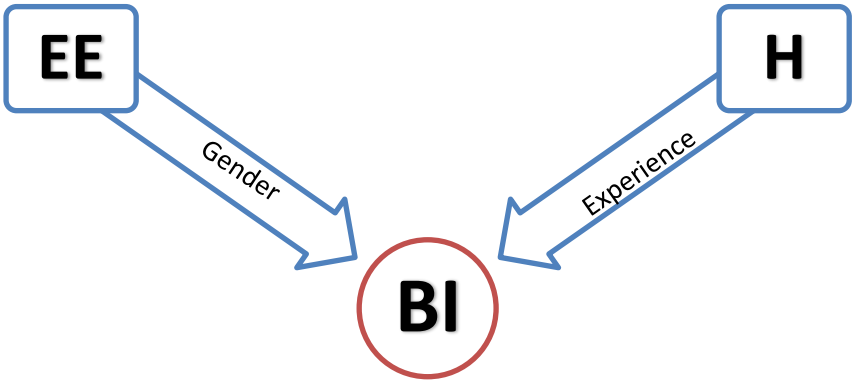
Furthermore, five variables contributed 28.1% of the variation in the Use Behaviour of mobile technologies in learning EFL among students. These variables were Habit, Facilitating Conditions, Price of Devices, Social Influence, and Price of Services. As was the case for Behavioural Intention, Experience had a moderating effect, with respect to the impact of Habit, Facilitating Conditions, Price of Devices, and Social Influence on the Use Behaviour variable. Additionally, Gender moderated the effect of the Habit variable as well as that of Social Influence (See Figure 20, below).

Figure 20: Factors Determining Students' Use Behaviour



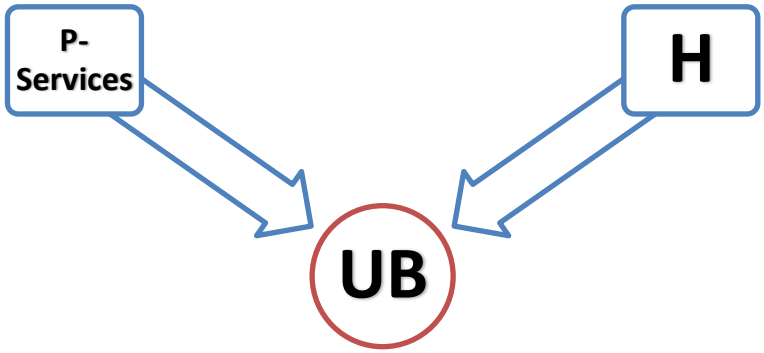
For university faculty, the Behavioural Intention to use mobile technologies in teaching EFL variable was significantly affected by the Effort Expectancy and Habit variables. These two variables contributed 52% of the variance in Behavioural Intention. In addition, Gender moderated the effect of Effort Expectancy, while Experience moderated the effect of Habit on Behavioural Intention to use mobile technologies in teaching EFL (See Figure 21, below).

Figure 21: Factors Determining Faculty Behavioural Intention



Also, two variables significantly contributed 22.6% of the variance in the Use Behaviour of mobile technologies in teaching EFL variables. These were Habit and Price of Services. None of the moderating variables, (Age, Gender, and Experience), had a significant effect upon these interactions (See Figure 22, below).

Figure 22: Factors Determining Faculty Use Behaviour



The major theoretical and empirical contribution of this thesis is to test the explanatory power of the Extended Unified Theory of Acceptance and Use of Technology model (UTAUT2) in the context of mobile learning and teaching in Saudi Arabia. Comparing the findings of the Faculty Survey with the Student Survey revealed that the UTAUT2 research model was strongly endorsed with respect to the students, with five significant of the eight initial factors contributing significantly to the variance in Behavioural Intention and Use Behaviour in EFL learning among students. By contrast, only two out of the eight initial variables had a significant impact on the Behavioural Intention and Use Behaviour in EFL teaching among instructors variables. It could be argued that some of these differences may relate to the differing sample sizes for the surveys. 878 students completed the survey, compared with 65 instructors. However, this argument has limited validity, as the respondents of the Student Survey represented 15.2% of the total relevant students' population, while the respondents who completed the Faculty Survey represented 33.2% of the whole population. Hence, the proportion of staff in the population who completed the survey was more than twice the comparable proportion of students. However, there is a noteworthy difference regarding the determinants of technology acceptance among different categories, such as students and faculty.

Results revealed that the driving force for the Behavioural Intention of using mobile technologies in learning EFL among students was the Facilitating Conditions variable, which indicated that fulfilling the students' need for support and guidance in using their mobile technologies for learning EFL, is critical to ensure successful implementation of mobile learning. Hence, a detailed needs analysis is an essential further step. On the other hand, the Effort Expectancy variable was primary determinant of the Behavioural Intention to use mobile technologies in teaching EFL variable among instructors. Therefore, making sure that instructors have received adequate training and gained the required skills to use mobile technologies effortlessly to facilitate teaching and learning is a crucial prerequisite for the implementation of mobile learning and teaching across the institution.

The Habit variable played the most significant role in predicting the Use Behaviour of mobile technologies among both EFL students and instructors. This study showed that the automaticity in using mobile technologies in learning and teaching EFL is positively related to actual use. Hence, the habits of being heavily immersed in using mobile technologies for a significant time, among both students and instructors can be transformed into the context of learning and teaching, by implementing the same technologies and applications, like social media platforms.

Moreover, when comparing the current research results to the work done by the developers of the theory (UTAUT2), Venkatesh et al (2012), even though it was done in a different context (concerning mobile internet among consumers in Hong Kong) the current findings indicated a strong predictive power for the UTAUT2 model in a consumer context within an organization. This study revealed that the direct effect of the significant independent variables explained 49.3% of the variance in Behavioural Intention and 28.1% of the variance in Use Behaviour of mobile technologies in EFL learning among students; and 52% of the variance in Behavioural Intention and 22.6% of the variance in Use Behaviour of mobile technologies in EFL teaching among instructors. These figures can be assessed against comparable data calculated by Venkatesh et al (2012). The model developed by Venkatesh et al (2012) explained 44% of the variance in Behavioural Intention and 35% of the variance in Use Behaviour. Hence, with respect to Behavioural Intention, the model utilised in this study has greater predictive power, in statistical terms, than that of the pioneers of this technique of analysis.

However, Raman & Don (2013) concluded that this model, the UTAUT2, was less suitable for educational settings. Nevertheless, their criticism has limited applicability to the current study as, even if it is within an educational organization, the participants still considered themselves as consumers of mobile technologies, using their own mobile technologies to support EFL learning and teaching. Hence, the research models represent the unique context of Saudi Arabia represented by Taibah University.

The unexplained variance in behavioural intention and the use behaviour of mobile technologies in learning and teaching EFL may be due to several factors. For instance, the cultural values operating in the context of Saudi Arabia, which is a combination of religious beliefs and traditions, affect every aspect of life including technology acceptance. The difference between the results of applying the model (UTAUT2) proposed by Venkatesh et al (2012) in different nations, such as Saudi Arabia, suggests that to successfully integrate the use of mobile technologies in learning and teaching, the national context must be considered. Such a conclusion is supported by the findings of Al-Gahtani et al (2007) who found that cultural differences affect the acceptance and adoption of new information technologies (IT) in different societies when analysed by means of the validated UTAUT model. Also, when Im et al. (2011) tested the UTAUT in two different cultures, Korea and US, in the contexts of adopting MP3 players and using Internet banking, this international comparison revealed that the magnitudes of the effects of the constructs included in the UTAUT varied across countries. Therefore, the success factors of technology acceptance in the developed world and western culture might not be totally applicable to the less developed world and eastern culture. Even though, as a consequence of globalization, individuals may or may not choose to follow their cultural values, but still considered as a significant factor which may promote or inhibit individuals' behaviour in the context of Saudi Arabia. Moreover, these cultural values can shape more conservative personal values, for example, considering any new technology developed in and for western culture as a threat. Al-Gahtani (2004) argues that, in general, cultural factors play major roles in the context of information technology acceptance. In particular, the effect of culture on technology acceptance would be more prominent in a conservative country like Saudi Arabia (Baker, Al-Gahtani, & Hubona, 2010). On the other hand, individuals' acceptance of new technologies in Saudi Arabia is highly influenced by explicit national policy of harnessing new technologies for the developmental needs of the country (http://www.mep.gov.sa/). Furthermore, in the case

of mobile technologies, the high penetration of mobile phone subscriptions (170%) and mobile broadband subscriptions (48.5%) in Saudi Arabia indicate the diffusion of these technologies within the community. Therefore, cultural conflicts against the implementation of mobile learning and teaching might be less critical, but still can encourage or discourage individuals' behaviour.

Another factor that may contribute to the unexplained variance in behavioural intention and the use behaviour of mobile technologies in learning and teaching EFL is the demographic variable. Figure 1 in Chapter One shows that the majority of people in Saudi Arabia are aged 30 or under; and the youth population are growing unlike other nations in the developed world. Consequently, when a technology acceptance model like the UTAUT2 is applied in different contexts where the demographic variable is varied, the results and the variance explained by the model are also varied. On the other hand, the demographic variable of the faculty sample that consists of EFL instructors from different backgrounds and nationalities, also contributing to the variation in the results and the unexplained variance.

Technical factors may, also, contribute to the unexplained variance in his study. The software and hardware, as well as the physical settings and infrastructure can affect the implementation of mobile learning and teaching. With a fast growing market of mobile technologies, the technical specifications are getting old and outdated very fast. For example, smartphones seems to slow down in a couple of years and struggle to perform task or download applications. Also, new applications need updated software to operate, and usually these updates cause devices to freeze and crash. Furthermore, lack of infrastructure and access to the internet through these devices in rural and remote areas compared to urban areas in Saudi Arabia affect the acceptance of using these technologies in learning and teaching.

Despite the cultural, demographic, and technical variations observed by the use of the UTAUT model in different contexts, the integrity of the model in this thesis, as a valid means of exploring the different reasons for technology acceptance, was confirmed, rather than negated.

Surveying the related literature revealed that most of the technology acceptance studies (Abu-Alaish & Love, 2013; Akour, 2009; Cheon et al, 2012; Donaldson, 2011; Jairak et al,

2009; Kang et al, 2015 Lowenthal, 2010; Nassoura, 2012; Park, 2009; Park et al, 2007; Wang et al, 2009, 2014; Yang, 2013) only investigated behavioural intention, despite the fact that, as Limayem et al (2007) point out: "one important implication of our research is to urge scholars studying technology acceptance in general, and/or IS continuance in particular, not to stop at intention, but to include measurements for actual behaviour in their methodological design. For one, this practice would prevent scholars from making potentially erroneous conclusions. Further, it would lend additional credibility to the results and conclusions obtained" (p. 730). For this reason, the current research gave the same consideration to both the Behavioural Intention and Use Behaviour variables, thereby allowing the testing of the effects of all the initial and intervening variables on both dependent variables.

The effect of Behavioural Intention on the Use Behaviour variable was not included in the research model, due to the basic conception underlined in many of the acceptance models examined (e.g., the Theory of Reasoned Action TRA, the Technology Acceptance Model TAM, the Theory of Planned Behaviour TPB, the Decomposed Theory of Planned Behaviour DTPB, the Extended Technology Acceptance Model TAM2, the Unified Theory of Acceptance and Use of Technology UTAUT, and the Extended Unified Theory of acceptance and Use of Technology UTAUT2) that behavioural intention is a key predictor of actual behaviour; indeed, as Ajzen (1991) points out: "as a general rule, the stronger the intention to engage in a behaviour, the more likely should be its performance" (p. 181). On the other hand, according to Webb & Sheeran (2006), "many behaviours require resources, skills, opportunities, or cooperation to be performed successfully" (p. 249). As technology acceptance theories developed, via testing of more sophisticated models, more attention was given to the factors that might affect the actual behaviour directly, and not through the behavioural intention (see Chapter Three). Hence, the current study devoted more attention to the use behaviour variable, and how it might be directly affected by the eight suggested variables, without considering the effect of behavioural intention variable, which had been validated by previous work identified via the literature review. Although Wang et al (2009) did not include the actual use behaviour in their study (which investigated the determinants of m-learning acceptance in Taiwan), they justified the exclusion of the actual use behaviour, as there was a significant empirical support for the causal link between the intention and the actual use behaviour in the research literature, as demonstrated by the findings of Taylor & Todd (1995a), Venkatesh & Davis

(2000), and Venkatesh & Morris (2000), amongst others. Nevertheless, Wang et al (2009) concluded that the behavioural intention is only partially useful in predicting the actual behaviour, as the correlation between them is low, mediated, and moderated by many variables. Therefore, they recommended further research to be done, investigating the determinants of actual use behaviour.

However, studying students' and faculty acceptance of mobile learning and teaching is of paramount importance for government policymakers and educationalists in academia. This study has provided an empirically based insight that helps to understand the underlying factors that would encourage or impede the use of mobile technologies in learning and teaching in higher education in Saudi Arabia.

There are several important implications of this study for all those involved in the learning and teaching process, especially policymakers and the leaders of educational institutions, in seeking to make the transition from individual practices and personal attempts of integrating mobile technologies into learning and teaching, to institutional implementation at a cost effective level, by calling for a Bring Your Own Personal Handheld Device (BYOPHD) institution-wide strategy. First, the ownership of mobile devices, and internet access through these devices, can predict the attainment of mobile learning and teaching. Naismith et al (2004) consider the ownership of mobile technologies as a key consideration for the successful implementation of mobile learning and teaching. Similarly, the UNESCO Policy Guidelines for Mobile learning, edited by Kraut (2013), highlights the convenience associated with owing mobile technologies which facilitate the implementation of BYOPHD strategy. Kraut (2013) describes BYOPHD strategy as "attractive because it is inexpensive" and such strategies "can be implemented quickly in areas where most people have mobile devices" (p. 36). However, the surveys of the current study indicated that smart phones were the most popular devices, owned by 81.4% of students and 79.7% of instructors. Despite the positive effect of ownership, Savill-Smith & Kent (2003) claimed that the personal ownership of mobile devices presents a challenge to institutional control over these technologies, within a university setting. Therefore, Savill-Smith & Kent (2003) suggested that: "any project involving personal technology must set out a 'fair use' policy which balances the freedoms and responsibilities of students" (p. 15). Interestingly, this need for a code of conduct for integrating the use of mobile technologies within the organization, suggested

by Savill-Smith & Kent (2003), was among the suggestions provided by students and faculty in their responses to the open ended questions at the end of the survey undertaken for this thesis.

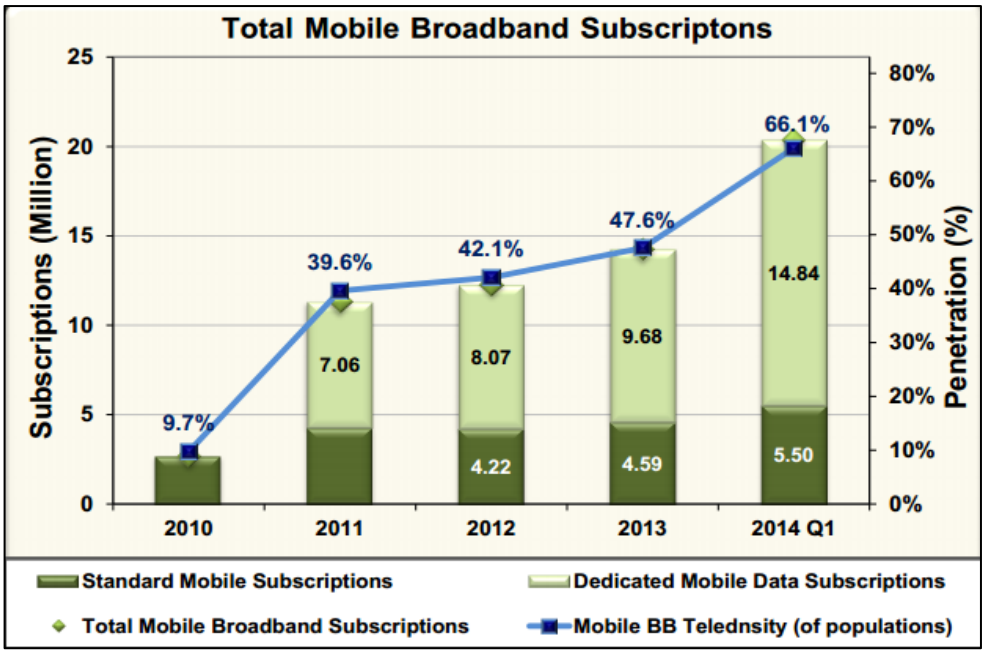
Second, the successful implementation of mobile technologies is not guaranteed either by the ownership of these technologies or the familiarity with the features and functions of these technologies, but there is an important success factor, which is professional development. This success factor was also highlighted, by both students and faculty in their responses to the open ended questions at the end of the survey. Hence, it is evident that when educational institutions plan for professional development, they should consider the more sophisticated users (students and faculty) of mobile technologies. When such users look for training and facilitating conditions, Sudhaus (2013) argued that they are seeking more advanced uses of these technologies, with a scaffolding process between training and actual practice. Consequently, training and facilitating conditions should not only include technical issues, more importantly, they should also cover pedagogical practices. UNESCO's researches (Kraut, 2013 & Vosloo, 2012) have recommended training instructors on how successfully they can incorporate mobile technologies to advance learning. Vosloo (2012) states that "teachers need to be shown how mobile learning can improve teaching, learning and administration. Teachers should be trained to incorporate mobile devices into classroom pedagogy, teach digital literacy, and manage disruptive behaviour" (p. 34). Additionally, Kraut (2013) proclaims that "a government's investment in teacher training is more important than its investment in technology itself" (p.31).

Furthermore, self-motivated learners and self-motivated instructors are key factors in advancing the integration of up-to-date technologies into learning and teaching in higher education institutions. Therefore, understanding what motivates those self-motivated staff and students to use such technologies, regardless of the institutional policies or technological infrastructure available in the institution, is crucial for creating effective training, led by those self-motivated people who are able to transfer their experience, skills, beliefs, and behaviours regarding the use of mobile technologies to their colleagues and students.

Third, analysis of the data indicated that social media networks were the most frequent mobile applications that were used by 42.5% of students to enhance their learning

experience. Similarly, 43.8% of faculty reported frequent use of social media networks in their teaching, although email was the most frequent mobile application used by faculty in teaching. According to the Ministry of Communications and Information Technology (MCIT) (2014), the increased demand for mobile broadband services (See Figure 23), which represented a population penetration rate in 2014 of 66.1% in Q1 and 68% in Q2 (in respect to mobile broadband subscriptions), is related to the expansion in the use of smart phones, the wide coverage of the 3G and 4G networks, the high level of competition between telecommunications companies for new customers, and, finally, the high demand and use of social media networks.

Figure 23: Mobile Broadband Subscriptions in Saudi Arabia (MCIT, 2014, p.6)



Moreover, the Social Clinic (2013) reported Saudi Arabia as the country of the highest percentage of Internet users who are active on Twitter. In 2014, twitter penetration kept breaking records, such that the Social Clinic (2014) reported a growth of 300% of Saudi tweets from 50 million per month, to 150 million tweets per month just one year later. Also, Facebook's mobile users in Saudi Arabia have increased in numbers by more than 150%. The expansion and popularity of these social networks, means that they have the potential to improve learning and teaching in higher education. According to Selwyn (2011), the features of social media networks "support forms of knowledge consumption and knowledge construction that are very different to the epistemological principles of

formal education" (p. 3), allowing students to be active co-producers of knowledge, rather than passive consumers of content. Moreover, the formal and informal learning and teaching communities created on social media networks could encourage both students and their instructors to become lifelong learners. However, the challenge for higher education institutions is not to decide whether to integrate social media networks in learning and teaching, because this is already happening. The challenge is how to maximise the potential benefits of these technologies in an educational context.

Fourth, although focusing on English as a foreign language learning and teaching, this study also has implications for other disciplines, especially those where English is the frequent or usual language of instruction, such as medicine, health sciences, nursing, engineering, applied sciences, and computer sciences. University students, in such specialities, are usually overwhelmed and stressed by the subject matter itself and the necessity of using their English skills in order to cope with the process of learning in a foreign language. Having to cope successfully with English as the medium of instruction, in a non-English context, is a big challenge, but once it is overcome, it guarantees that graduates can compete globally, and that staff can participate more widely in the development of their subject areas through research and publications, as English is the language of academic research and publications. The integration of mobile technologies in learning and teaching English in the Preparatory Year English Language (PYEL) program will strengthen and advance learning and teaching English as a foreign language and guide the future specialized learning and teaching process in university studying.

When Fareh (2010) investigated the challenges encountered in teaching English as a foreign language in the Arab World countries, he pointed out that students' minimal exposure to authentic English and the fact that the teaching process that is based mainly on teacher-centred rather than students-centred activities are among the main challenges that account for the failure of many EFL programs. However, Oberg & Daniels (2013), in an experimental study, examined the advantages of using mobile technologies to support a student-centred instructional method for teaching English as a foreign language in higher education. The results of their study indicated that the experimental group, where a student-centred instructional method using personal mobile technologies was employed, scored consistently and significantly higher marks than students in the control group. Moreover, a post-treatment survey, which was administered to the

experimental group, indicated very positive learners' attitudes towards the use of mobile technologies to foster a student-centred approach. Consequently, if the use of mobile technologies to support a student-centred approach in teaching English as a foreign language is effective, then academic teaching staff and university leaders alike giving much more consideration to the integration of mobile technologies into the process of learning and teaching English as a foreign language is justified. Moreover, using these mobile technologies, in hands with access to the World Wide Web, and guidance to authentic English language contents, would maximize the learning impact of the exposure of students to the English language content.

Finally, this thesis has demonstrated that the networked use of mobile technologies could improve equity and equality in the context of higher education in Saudi Arabia (which is gender-segregated and has geographically-segregated campuses), as it has the power to create virtual teaching and learning spaces and introduce new opportunities for both students and instructors regardless of their gender or their physical space to interact, collaborate, exchange knowledge and experience, and receive information from the institution, while observing and honouring existing cultural norms, within an Islamic context. Furthermore, in the conservative society of Saudi Arabia, that impedes women's interactions in a male dominated society, mobile technologies can create new, easily accessible ways of communication that allow both female students and female instructors to overcome physical, personal, and cultural boundaries and improve the accessibility to information in a feasible way regardless of any spatial restrictions.

6.4 Limitations

In retrospect, it is evident that the thesis has some limitations. In the first place, the results of the study were generated from a single higher education institution in Saudi Arabia, in consequence, the results may have limited generalizability to other higher education institutions, although it must be recalled that the sample sizes (878 students and 65 staff) were such as to suggest that the results are statistically authoritative. In addition, it could be argued that, as the addressed population of the study was the students and faculty of the Preparatory Year English Language (PYEL) program, this, also, could limit the generalizability of the results. However, the results are still to some extent representative and could guide any mobile learning and teaching projects in the future, due to the fact that those students who enrolled in the PYEL program will represent

students across the institution in further years. Furthermore, the results obtained from the study can only be tied to the time when the study took place, because the study was cross-sectional, and as the results of the students' survey are geographically and culturally limited to the context of Saudi Arabia, this may present a limitation to the generalizability of the study – although this may not be the case when considering similar countries, like, for example, Arabian Gulf Countries.

In terms of the methods adopted, similarly there are some limitations. For example, the use of self-report scales to measure the variables in the study might result in a bias for some of the results. More significantly, however, the study was limited to investigate Hedonic Motivation, one of the independent variables; in the same way as the others variables had been investigated. Hedonic Motivation was excluded from the factor analysis and reliability analysis as it is not applicable to conduct these techniques, due to the fact that there is only one item in the surveys measuring this variable.

However, in spite of its limitations, the study resulted in robust findings which encourage the researcher to suggest several recommendations as follows in the next section.

6.5 Recommendations

Based on the results of the study, several recommendations are offered to policymakers and stakeholders in higher education institutions to successfully use mobile technologies in learning and teaching by calling a Bring Your Own Personal Handheld Device (BYOPHD) strategy.

First of all, based on the findings that showed the significant impact of Facilitating Conditions variable on both Behavioural Intention and Use Behaviour of students, the institution can conduct a detailed needs analysis to reveal the students' needs and expectations regarding the facilitating conditions, which should be provided by the institution to enable mobile learning and teaching at the institution. On the other hand, based on the results that highlighted Effort Expectancy variable as the most important variable with respect to determining the variance in Behavioural Intention to use mobile technologies in teaching EFL among faculty; therefore, providing Faculty with training on the capabilities of mobile technologies to ensure that they gained the required skills to use mobile technologies effortlessly to facilitate teaching and learning.

In addition, as Habit variable was the most prominent factor that played a significant role across both samples (students and faculty), it is obvious to suggest recruiting students' and faculty habit of being immersed in social media to enhance learning and teaching. Moreover, the findings of the study suggest founding a partnership with mobile networks providers to reduce the cost of the devices or the data plan.

Furthermore, the data obtained from both samples (students and faculty) recommend to explore creative methods of teaching and learning using mobile technologies to incorporate them into course designing; invest in mobile learning applications to address the lack of mobile learning and teaching resources, especially those addressing the objectives of the courses; provide a resource page on every department website including recommended mobile applications for students and faculty.

Finally, findings also suggest that taking the advantage of those students and faculty who have personal innovativeness to use mobile technologies in their learning and teaching to develop more positive perceptions and beliefs among their classmates and colleagues regarding the use of mobile technologies in learning and teaching. This would be crucial to raise the awareness across the institution regarding the potential of mobile learning and teaching to develop life-long learning habits, anywhere and anytime using mobile technologies.

6.6 Further Research Opportunities

There are a number of further research opportunities that have been highlighted by the research undertaken for this dissertation, as follows:

- The findings of the study recommend further research to evaluate the Extended Unified Theory of Acceptance and Use of Technology (UTAUT2) cross culturally.
- Further research can strengthen the UTAUT2 measures by adjusting them for multiple response styles measures.
- The dominating predicting power of Facilitating Conditions and Effort Expectancy in explaining the variance in Behavioural Intention, as well as the dominating predicting power of Habit in explaining the variance in Use Behaviour suggest that further research can be done to explore the effect of these factors in practice.
- As the UTAUT2 factors with significant contribution to the variance in Behavioural Intention and Use Behaviour of mobile technologies in learning and teaching EFL

explained 49.3% of the variance in Behavioural Intention of students to use mobile technologies in learning EFL, 28.1% of the variance in Use Behaviour of mobile technologies in learning EFL, 52% of the variance in Behavioural Intention of faculty to use mobile technologies in teaching EFL, and 22.6% of the variance in Use Behaviour of mobile technologies in teaching EFL, therefore, there is a need for further research to find out additional factors that could predict the remaining variance in Behavioural Intention and Use Behaviour.

- Further research can collect longitudinal data to evaluate the predictive power of the UTAUT2 and find out whether it supports the findings of this study or not.
- Further research can examine specific mobile applications designed for EFL learning to evaluate the effectiveness of these applications.
- Based on the findings that suggest the use of social media as most of the participants already immersed in the use of these networks via their mobile devices.
- Further research can focus on the capabilities of latest mobile technologies and the investigating the best practices in higher education around the world to formulate and develop mobile learning and teaching theory that can also contribute to the articulation of a unique definition of mobile learning and teaching.
- Further research can be conducted to inspect the feasibility of implementing Bring Your Own Personal Handheld Device (BYOPHD) strategy to integrate mobile learning and teaching experience institution-wide.
- Further research can examine the students and faculty acceptance and perceptions of mobile learning and teaching after formally integrating the use of mobile technologies in learning and teaching in the EFL coursework, or even across disciplines, as the individuals' acceptance and perceptions of change over time as they become more experienced.

6.7 Dissemination

The dissemination of the research results is an important step to maximise the use of the research results, therefore, it should be properly disseminated. Writing up this dissertation is among the ways of disseminating the research results, even though it is mainly written as a requirement for an academic degree.

Hood (2002) defines the dissemination as the "gap-filler" between research and application; the gap that is responsible for the difficulty in transferring knowledge between researchers and practitioners. Researches are conducted to find out valuable contributions to knowledge; to disseminate these contributions is the responsibility of the researcher. However, since the digital revolution, communications of knowledge has changed dramatically to be more efficient and convenient; therefore, it is now much more easier to package and disseminate the research findings through the digital channels, especially if the objective of the dissemination is to raise the awareness or the understanding of the topic, not to put it into an action.

At a local level, digital and printed copies of the dissertation will be available on the digital repository of Taibah University and at the library. At a national level, a digital copy of the dissertation will be deposited to the Saudi Digital Library. Moreover, the researcher will disseminate the findings in a national conference. At an international level, to disseminate the findings of the research, a research paper will be written and submitted to a peer-reviewed journal. Also, a conference presentation will be prepared to be presented in an international conference.

However, the findings of the study can be used to create an effective environment for mobile technologies acceptance among students and faculty in higher education, especially in EFL learning and teaching, and guide the implementation of these technologies in higher education. The end users of the findings are students and faculty, since they are going to be affected by these findings; and English language centres in Saudi universities and policymakers in higher education, since they can influence the application of these findings.

To disseminate the findings steps will be taken to raise the awareness of the end users regarding the potential of mobile technologies in learning and teaching English as a foreign language using different channels of communication, such as, publications, conferences, formal and informal meetings, social networks using simple academic language or even informal language to make sure that the findings are clear and understandable by the audiences.

Waiting for a response from the policymakers usually takes long time, therefore, on a more personal level; transferring findings into action can be done by creating a website

dedicated to the use of mobile technologies in learning and teaching to review useful mobile applications in learning and teaching EFL, post experiences and stories from around the world, and share these reviews and posts on social media networks to get people who are interested back to the website where they can found more information. To review the effectiveness of this website, an online survey can be posted addressing the visitors and the users of the website to measure the success of this step.

6.8 Conclusion

This study should be considered as a beacon, illuminating the path and guiding the journey towards the successful integration and implementation of mobile technologies in higher education. The ability to use information and communication technologies, in both teaching and the creation of new knowledge, will determine whether Saudi Arabia is able to successfully compete in the emerging global knowledge economy. At an individual level, failure to act on the findings of research such as this, threatens the fulfilment of the intellectual development of not only the current generation of students, but of their children, as yet unborn, in a globally networked world in which English is the normal language of both social discourse and intellectual debate. At an institutional level, failure to act will limit the abilities of the Saudi higher education sector to provide teaching and learning appropriate to enable students to compete in the knowledge economy, and to compete both within the fast emerging global market for higher education, and the international rankings that determine university excellence and reputation. At national level, failure to act will hinder the transition of Saudi Arabia from a nation whose economy is based on extractive industries, to a knowledge based economy when, as is inevitable, the oil finally runs out.

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Appendices

Appendix 1: Students Survey (English)

UNIVERSITY OF
LINCOLN

For Office Purposes Only

Entry Number:

April 2013

Survey on the
Use of Mobile Technologies in Learning EFL in Saudi Arabia

Student Survey

Please return questionnaires to
Deanery of Academic Services,
Taibah University

Dear Student,

You are invited to participate in this research about the acceptance and use of mobile technologies in learning EFL. You have been selected as you are an EFL student in the Preparatory Year Program at Taibah University, where this research is taking place. This research is being conducted by Manal Almarwani, PhD student at the Centre of Educational Research and Development (CERD), University of Lincoln.

The purpose of this research is to examine the factors related to the acceptance and use of mobile technologies. Mobile Learning is the use of handheld technologies such as smart-phones, pocket-size computers, or tablets to access learning content, and taking the advantage of the learning opportunities offered by mobile technologies. This research will contribute to understanding the use and acceptance of mobile technologies.

Your contribution to this research is valuable. The results of the study may be published, but personal identifiable information is not going to be collected. Although there are some demographic (sex, age, academic tracks, nationality) data, no one will be able to attach a particular set of responses to a particular person. There will be no risk or discomfort if you agree to participate in this research. Even though there is no direct benefit to you of participating in the research unless you choose to enter the prize draw, your participation will contribute to the development of mobile learning in our institution. The returned questionnaire will be kept confidential. The electronic data will be kept secured; no one would have access to it except the researcher herself. Once the research submitted and approved, all the questionnaires will be destroyed.

You may ask the researcher conducting this study any question you are concerned with. The researcher's name is Manal Almarwani, you may contact me by phone on 0044 740 3636 036 or by e-mail at m_almarwani@hotmail.com . If you have any concern and you would like to contact someone rather than the researcher, you can contact Dr. Terence Karran in the Centre of Educational Research & Development at University of Lincoln by email at terencek@lincoln.ac.uk.

If you complete the questionnaire you could be eligible to win an e-reader (Kindle). If you want to enter into the prize draw, please provide your details below: (This is optional. This part will be cut out and separated from the questionnaire for the purpose of the draw and to ensure that your answers remain anonymous)

Name:.....

e-Mail:.....

Many thanks for your help in completing this survey

Kind Regards,

Manal Almarwani,

PhD Candidate, CERD, University of Lincoln, UK
Lecturer at Taibah University, Saudi Arabia

SECTION 1 - Personal Profile

Please tick ☑ the appropriate answers:

1 **Your Gender:** Male ☐ Female ☐

2 **Age category:**

18 & under ☐ 19-20 ☐ 21-22 ☐ 23-24 ☐ 25 & over ☐

3 **Your nationality?** Saudi ☐ Non-Saudi ☐

4 **Where do you live permanently?**

Madinah ☐ Yanbu ☐ Khaibar ☐ Mahd Alzahab ☐

AlHenakiya ☐ AlOla ☐ Other (please specify)..... ☐

5 **What is your academic track?** *(please tick the relevant boxes)*

Medical Sciences ☐ Applied Sciences ☐ Humanities ☐

6 **Do you have any of the following mobile devices?** (*please tick the relevant boxes*)

Cell Phone ☐ Smart Phone ☐ Electronic Dictionary ☐

Tablet/iPad ☐ e-reader/Kindle ☐ I don't have any ☐ (*go to Q11*)

7 **If you have any of these devices, for how long have you had them?**

	1 year or less	2 - 5 years	6 - 10 years	10 years or more
Cell Phone	☐	☐	☐	☐
Smart Phone	☐	☐	☐	☐
Electronic Dictionary	☐	☐	☐	☐
Tablet / iPad	☐	☐	☐	☐
e-reader (Kindle)	☐	☐	☐	☐

8 **On average, how often do you use these mobile devices?**

	Not at all	Once a month	2-3 times a month	Once a week	2-3 times a week	4-6 times a week	Once a day	2-5 times a day	>5 times a day
Cell Phone	☐	☐	☐	☐	☐	☐	☐	☐	☐
Smart Phone	☐	☐	☐	☐	☐	☐	☐	☐	☐
Electronic Dictionary	☐	☐	☐	☐	☐	☐	☐	☐	☐
Tablet / iPad	☐	☐	☐	☐	☐	☐	☐	☐	☐
e-reader (Kindle)	☐	☐	☐	☐	☐	☐	☐	☐	☐

9 **On average, how often do you access the internet using these mobile devices?**

	Not at all	Once a month	2-3 times a month	Once a week	2-3 times a week	4-6 times a week	Once a day	2-5 times a day	>5 times a day
Cell Phone	☐	☐	☐	☐	☐	☐	☐	☐	☐
Smart Phone	☐	☐	☐	☐	☐	☐	☐	☐	☐
Electronic Dictionary	☐	☐	☐	☐	☐	☐	☐	☐	☐
Tablet / iPad	☐	☐	☐	☐	☐	☐	☐	☐	☐
e-reader (Kindle)	☐	☐	☐	☐	☐	☐	☐	☐	☐

10 **Why do you use your mobile devices?** *(please tick boxes as appropriate)*

	It makes my life easier	I feel free to communicate everywhere	It is a fashion	Other (please specify) .....
Cell Phone	☐	☐	☐	☐
Smart Phone	☐	☐	☐	☐
Electronic Dictionary	☐	☐	☐	☐
Tablet / iPad	☐	☐	☐	☐
e-reader (Kindle)	☐	☐	☐	☐

11 **If you do not have a mobile device, why is this?** *(please tick boxes as appropriate)*

	High prices of the device	High prices of the servcies	I do not want to be disturbed everywhere	It is not useful for me	Other (please sepcify) .....
Cell Phone	☐	☐	☐	☐	☐
Smart Phone	☐	☐	☐	☐	☐
Electronic Dictionary	☐	☐	☐	☐	☐
Tablet / iPad	☐	☐	☐	☐	☐
e-reader (Kindle)	☐	☐	☐	☐	☐

SECTION 2 - Your Opinions on Using Mobile Technologies

12 Please indicate the extent to which you agree with the following statements regarding using mobile technologies in learning EFL by putting a tick in one of the boxes for each statement.

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	(N/A) Not Applicable
I would find mobile technologies useful in learning EFL.						
Using mobile technologies enables me to accomplish EFL tasks more quickly.						
Using mobile technologies would increase my chances for better EFL achievement.						
Using mobile technologies would help me to communicate effectively in an English language environment.						
Using mobile technologies would make it easier for me to study EFL courses content.						
Using mobile technologies in EFL learning would contribute to my study at university in general.						
Using mobile technologies helps in building up successful lifelong learning habits.						
Learning how to use mobile technologies in learning EFL is easy for me.						
I find mobile technologies easy to use in learning EFL.						
It is easy for me to become skilful at using mobile technologies in EFL learning.						
People who are important to me (family) think that I should use mobile technologies to learn EFL.						
The EFL faculty at university think I should use mobile technologies to learn EFL.						
People whose opinions I value prefer that I use mobile technologies to learn EFL.						
People who are important to me (family) think that mobile technologies have a bad effect on EFL achievement.						
The EFL faculty does not encourage me to use mobile technologies.						

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	(N/A) Not Applicable
My organization supports the use of mobile technologies.						
I have the knowledge necessary to use mobile technologies in EFL learning.						
I can get help from others (friends/faculty/ family) when I have difficulties using mobile technologies in EFL learning.						
I have access to the resources necessary to learn EFL using mobile technologies.						
Using mobile technologies in EFL learning is enjoyable.						
Using mobile technologies in EFL learning is a habit for me.						
I use mobile technologies in EFL learning automatically.						
I intend to start using mobile technologies in EFL learning.						
I will always try to use mobile technologies in EFL learning.						
I plan to continue using mobile technologies in EFL learning frequently.						

13 **The university provides Wi-Fi connectivity on campus:**

Yes ☐ No ☐ I do not know ☐

14 **What is your opinion about the cost of purchasing the following mobile technology devices?**

	Cheap	Good value	Expensive	I do not know
Cell Phone	☐	☐	☐	☐
Smart Phone	☐	☐	☐	☐
Electronic Dictionary	☐	☐	☐	☐
Tablet / iPad	☐	☐	☐	☐
e-reader (Kindle)	☐	☐	☐	☐

15 **What is your opinion about the price of cell-phone services?**

Cheap ☐ Good value ☐ Expensive ☐ I do not know ☐

16 **What is your opinion about the cost of the internet connection?**

Cheap ☐ Good value ☐ Expensive ☐ I do not know ☐

17 **Who pays for your mobile technologies?**

Myself ☐ My Parents ☐ The University ☐ Other (please specify)..... ☐

18 **Please indicate how frequently you use the following mobile applications and technologies to learn or support EFL learning, by putting ticks in the relevant boxes.**

Mobile Applications and Technologies	Never	Rarely	Occasionally	Frequently	Very Frequently
Commercial applications that you buy or download for free from the applications store on your device to help you learn English.					
Commercial applications recommended by faculty or friends					
Applications developed by the university, department or faculty.					
Course Management System (e.g. Jusur/Moodle/Tadarus/Dokeos)					
Websites					
Short Message Service (SMS)					
Multimedia Messaging Service (MMS)					
E-mail					
Social Networking (Facebook/Twitter)					
Access educational EFL content online					
Access educational EFL content off-line					
Other (Please specify)					

20. **Please indicate how frequently you use your mobile technology devices for the following:**

Mobile Device Usage	Never	Rarely	Occasionally	Frequently	Very Frequently
Phone calls					
Video-conversations					
Sending & receiving text messages					
Accessing the internet					
Sending & receiving e-mails					
Scheduling appointments					
Banking					
Playing non-academic games					
Reading or editing documents such as Word, PDF, or Excel					
Other (please specify)					

20 **Which of the following services would you be interested in accessing on mobile technology devices? (tick the relevant boxes)**

University email	☐
Instant messaging with EFL faculty or students	☐
Chat with Information Technology service	☐
Admission and registration	☐
Grades	☐
Lecture slides	☐
Course content	☐
Reference material, applications and links	☐
Educational games	☐
Videos and audio of lectures	☐
Course Management System (e.g. Jusur)	☐
University Library	☐
Other (please specify).....	☐

21 **Is there anything not mentioned in the questionnaire that would make you enthusiastic or reluctant to use your mobile technologies for academic purposes?** (please write below):

.....

.....

.....

.....

.....

22 **Would you like to mention anything else related to mobile technologies and EFL learning?**

.....

.....

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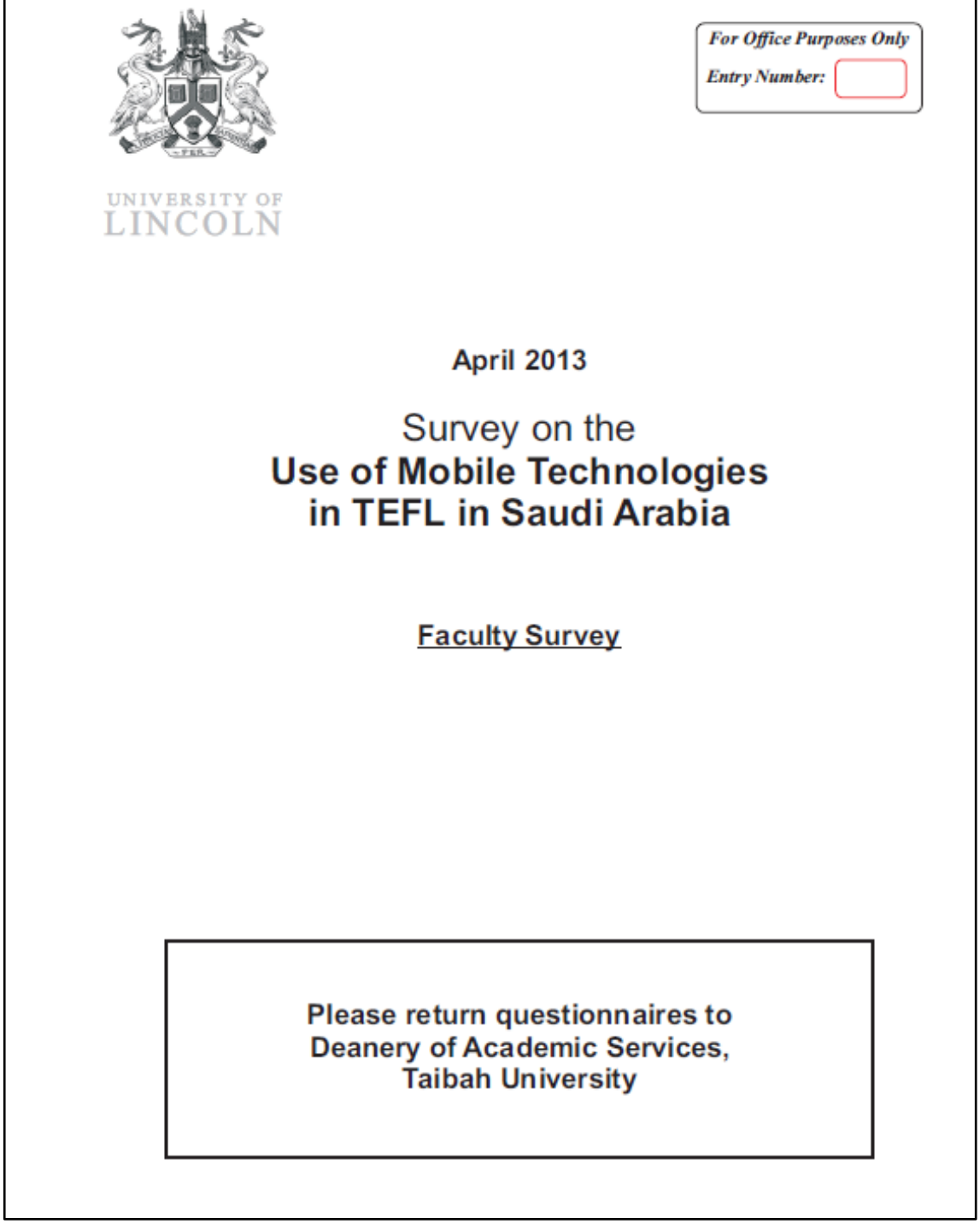
.....

.....

Thank you for your valuable time in completing this questionnaire

Appendix 2: Faculty Survey



UNIVERSITY OF LINCOLN

For Office Purposes Only

Entry Number:

April 2013

Survey on the

Use of Mobile Technologies in TEFL in Saudi Arabia

Faculty Survey

Please return questionnaires to
Deanery of Academic Services,
Taibah University

Dear Colleague,

You are invited to participate in this research about the acceptance and use of mobile technologies in teaching EFL and facilitating mobile learning. You have been selected as you are an EFL instructor in the Preparatory Year Program at Taibah University, where this research is taking place. This research is being conducted by Manal Almarwani, PhD student at the Centre of Educational Research and Development (CERD), University of Lincoln.

The purpose of this research is to examine the factors related to the acceptance and use of mobile technologies in teaching and learning. Mobile Learning/teaching is the use of handheld technologies such as smart-phones, pocket-size computers, or tablets to access learning and teaching content, and taking the advantage of the learning and teaching opportunities offered by mobile technologies. This research will contribute to understanding the use and acceptance of mobile technologies.

Your contribution to this research is valuable. The results of the study may be published, but personal identifiable information is not going to be collected. Although there are some demographic (sex, age, academic tracks, academic degree, nationality) data, no one will be able to attach a particular set of responses to a particular person. There will be no risk or discomfort if you agree to participate in this research. Even though there is no direct benefit to you of participating in the research, your participation will contribute to the development of mobile learning in our institution. The returned questionnaire will be kept confidential. The electronic data will be kept secured; no one would have access to it except the researcher herself. Once the research submitted and approved, all the questionnaires will be destroyed.

You may ask the researcher conducting this study any question you are concerned with. The researcher's name is Manal Almarwani, you may contact me by phone on 0044 740 3636 036 or by e-mail at m_almarwani@hotmail.com . If you have any concern and you would like to contact someone rather than the researcher, you can contact Dr. Terence Karran in the Centre of Educational Research & Development at University of Lincoln by email at terencek@lincoln.ac.uk.

If you complete the questionnaire you could be eligible to win an e-reader (Kindle). If you want to enter into the prize draw, please provide your details below: (This is optional. This part will be cut off and separated from the questionnaire for the purpose of the draw and to ensure that your answers remain anonymous)

Name:.....

e-Mail:.....

Many thanks for your help in completing this survey

Kind Regards,

Manal Almarwani,

PhD Candidate, CERD, University of Lincoln, UK
Lecturer at Taibah University, Saudi Arabia

SECTION 1 - Personal Profile

Please tick ☑ the appropriate answers:

1 **Your Gender:** Male ☐ Female ☐

2 **Age category:** 25-29 ☐ 30-34 ☐ 35-39 ☐

40-44 ☐ 45-49 ☐ 50-54 ☐ 55-59 ☐ 60+ ☐

3 **What is your nationality?** (*please write it here*).....

4 **What are your academic qualifications?**

Bachelor ☐ Diploma ☐ Master ☐ PhD ☐

5 **From where did you obtain your last degree?** (*Please state country*).....

6 **Which track are you teaching?**

Medical Sciences ☐ Applied Sciences ☐ Humanities ☐

7 **Do you have any of the following mobile devices?** (*please tick the relevant boxes*)

Cell Phone ☐ Smart Phone ☐ Electronic Dictionary ☐

Tablet/iPad ☐ e-reader/Kindle ☐ I don't have any ☐ (*go to Q12*)

8 **If you have any of these devices, for how long have you had them?**

	1 year or less	2 - 5 years	6 - 10 years	10 years or more
Cell Phone	☐	☐	☐	☐
Smart Phone	☐	☐	☐	☐
Electronic Dictionary	☐	☐	☐	☐
Tablet / iPad	☐	☐	☐	☐
e-reader (Kindle)	☐	☐	☐	☐

9 **On average, how often do you use these mobile devices?**

	Not at all	Once a month	2-3 times a month	Once a week	2-3 times a week	4-6 times a week	Once a day	2-5 times a day	>5 times a day
Cell Phone	☐	☐	☐	☐	☐	☐	☐	☐	☐
Smart Phone	☐	☐	☐	☐	☐	☐	☐	☐	☐
Electronic Dictionary	☐	☐	☐	☐	☐	☐	☐	☐	☐
Tablet / iPad	☐	☐	☐	☐	☐	☐	☐	☐	☐
e-reader (Kindle)	☐	☐	☐	☐	☐	☐	☐	☐	☐

10 **On average, how often do you access the internet using these mobile devices?**

	Not at all	Once a month	2-3 times a month	Once a week	2-3 times a week	4-6 times a week	Once a day	2-5 times a day	>5 times a day
Cell Phone	☐	☐	☐	☐	☐	☐	☐	☐	☐
Smart Phone	☐	☐	☐	☐	☐	☐	☐	☐	☐
Electronic Dictionary	☐	☐	☐	☐	☐	☐	☐	☐	☐
Tablet / iPad	☐	☐	☐	☐	☐	☐	☐	☐	☐
e-reader (Kindle)	☐	☐	☐	☐	☐	☐	☐	☐	☐

11 **Why do you use your mobile devices?** *(please tick boxes as appropriate)*

	It makes my life easier	I feel free to communicate everywhere	It is a fashion	Other (please specify) .....
Cell Phone	☐	☐	☐	☐
Smart Phone	☐	☐	☐	☐
Electronic Dictionary	☐	☐	☐	☐
Tablet / iPad	☐	☐	☐	☐
e-reader (Kindle)	☐	☐	☐	☐

12 **If you do not have a mobile device, why is this?** (*please tick boxes as appropriate)*

	High prices of the device	High prices of the servcies	I do not want to be disturbed everywhere	It is not useful for me	Other (please sepcify) .....
Cell Phone	☐	☐	☐	☐	☐
Smart Phone	☐	☐	☐	☐	☐
Electronic Dictionary	☐	☐	☐	☐	☐
Tablet / iPad	☐	☐	☐	☐	☐
e-reader (Kindle)	☐	☐	☐	☐	☐

SECTION 2 - Your Opinions on Using Mobile Technologies

13 Please indicate the extent to which you agree with the following statements regarding using mobile technologies in TEFL by putting a tick in one of the boxes for each statement.

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	(N/A) Not Applicable
I would find mobile technologies useful in teaching EFL.						
Using mobile technologies enables me to prepare EFL tasks more quickly.						
Using mobile technologies would increase my chances for better EFL instruction.						
Using mobile technologies would help me to communicate effectively in an English language environment with other academics						
Using mobile technologies would make it easier for me to teach EFL courses content.						
Using mobile technologies in EFL teaching would contribute to my career at university in general.						
Using mobile technologies is not all about teaching, as I am learning too.						
Using mobile technologies helps in building up successful lifelong learning habit.						
Learning how to use mobile technologies in teaching EFL is easy for me.						
I find mobile technologies easy to use in teaching EFL.						
It is easy for me to become skilful at using mobile technologies in EFL teaching.						
People who are important to me (family) think that I should use mobile technologies to teach EFL.						
The EFL program leaders at university think I should use mobile technologies to teach EFL.						
People whose opinions I value prefer that I use mobile technologies to teach EFL.						
People who are important to me (family) think that mobile technologies would never contribute to teaching.						
The EFL program leader does not encourage me to use mobile technologies.						

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	(N/A) Not Applicable
My organization supports the use of mobile technologies.						
I have the knowledge necessary to use mobile technologies in EFL teaching.						
I can get help from others (friends/faculty/ family) when I have difficulties using mobile technologies in EFL teaching.						
I have access to the resources necessary to teach EFL using mobile technologies.						
Using mobile technologies in EFL teaching is enjoyable.						
Using mobile technologies in EFL teaching is a habit for me.						
I use mobile technologies in EFL teaching automatically.						
I intend to start using mobile technologies in EFL teaching.						
I will always try to use mobile technologies in EFL teaching.						
I plan to continue using mobile technologies in EFL teaching frequently.						

14 **The university provides Wi-Fi connectivity on campus:**

Yes ☐ No ☐ I do not know ☐

15 **What is your opinion about the cost of purchasing the following mobile technology devices?**

	Cheap	Good value	Expensive	I do not know
Cell Phone	☐	☐	☐	☐
Smart Phone	☐	☐	☐	☐
Electronic Dictionary	☐	☐	☐	☐
Tablet / iPad	☐	☐	☐	☐
e-reader (Kindle)	☐	☐	☐	☐

16 **What is your opinion about the price of cell-phone services?**

Cheap ☐ Good value ☐ Expensive ☐ I do not know ☐

17 **What is your opinion about the cost of the internet connection?**

Cheap ☐ Good value ☐ Expensive ☐ I do not know ☐

18 Who pays for your mobile technologies?

Myself ☐ The University ☐ Other (please specify)..... ☐

19 Please indicate how frequently you use the following mobile applications and technologies to teach or support EFL teaching, by putting ticks in the relevant boxes.

Mobile Applications and Technologies	Never	Rarely	Occasionally	Frequently	Very Frequently
Commercial applications that you buy or download for free from the applications store on your device to help you teach English.					
Commercial applications recommended by faculty or friends					
Applications developed by the university, department or faculty.					
Course Management System (e.g. Jusur/Moodle/Tadarus/Dokeos)					
Websites					
Short Message Service (SMS)					
Multimedia Messaging Service (MMS)					
E-mail					
Social Networking (Facebook/Twitter)					
Access educational EFL content online					
Access educational EFL content off-line					
Other (Please specify)					

20 Please indicate how frequently you use your mobile technology devices for the following:

Mobile Device Usage	Never	Rarely	Occasionally	Frequently	Very Frequently
Phone calls					
Video-conversations					
Sending & receiving text messages					
Accessing the internet					
Sending & receiving e-mails					
Scheduling appointments					
Banking					
Playing non-academic games					
Reading or editing documents such as Word, PDF, or Excel					
Other (please specify)					

21 **Which of the following services would you be interested in accessing on mobile technology devices? (tick the relevant boxes)**

University email	☐
Instant messaging with EFL faculty or students	☐
Chat with Information Technology service	☐
Admission and registration	☐
Grades	☐
Lecture slides	☐
Course content	☐
Reference material, applications and links	☐
Educational games	☐
Videos and audio of lectures	☐
Course Management System (e.g. Jusur)	☐
University Library	☐
Other (please specify).....	☐

22 **Is there anything not mentioned in the questionnaire that would make you enthusiastic or reluctant to use your mobile technologies for academic purposes?** (please write below):

.....

.....

.....

.....

.....

23 **Would you like to mention anything else related to mobile technologies and EFL teaching?**

.....

.....

.....

.....

.....

Thank you for your valuable time in completing this questionnaire

Appendix 3: Students Survey (Arabic)

UNIVERSITY OF
LINCOLN

For Office Purposes Only
Entry Number:

ابريل ٢٠١٣

استبيان حول استخدام التقنيات المتنقلة في تعلم اللغة الإنجليزية كلغة أجنبية بالمملكة العربية السعودية

استبيان الطلاب و الطالبات

بعد الانتهاء من تعبئة الاستبيان يرجى إعادته
إلى عمادة الخدمات التعليمية بجامعة طيبة

عزيزي الطالب/ عزيزتي الطالبة

أنت مدعو للمشاركة في بحث عن قبول و استخدام التقنيات المتنقلة و الهواتف الذكية في تعلم اللغة الإنجليزية، وقد تم اختيارك للمشاركة لكونك أحد الدارسين للغة الإنجليزية في برنامج السنة التحضيرية بجامعة طيبة حيث يتم تطبيق هذه الدراسه التي تقوم بها الباحثة منال أحمد المرواني من مركز البحوث التربوية و التطوير في جامعة لينكولن بالمملكة المتحدة.

يهدف هذا البحث إلى دراسة العوامل المتعلقة بقبول و استخدام التقنيات المتنقلة، و المقصود هنا باستخدام التقنيات المتنقلة في تعلم اللغة الإنجليزية- التعليم النقال- هو استخدام التقنيات المحمولة باليد كالهواتف الذكية، القواميس الإلكترونية، القارئ الإلكتروني، والكمبيوترات اللوحية للوصول للمادة العلمية. و سيسهم البحث في توضيح هذه العوامل و فعاليتها.

مشاركتك في هذا البحث مهمه و ذات قيمة، و لن يكون هناك أي مجازفة أو خطر إذا ماقررت المشاركة و إذا ما نشرت نتائج البحث، فليس مطلوبا منك في هذا الاستبيان أي معلومات شخصية يمكن من خلالها التعرف على الطالب أو الطالبة. و بالرغم من عدم وجود فائدة فورية – إلا في حالة الدخول في السحب على الجائزة التي رصدت لمن يكمل/ تكمل تعبئة الاستبيان- إلا أن مشاركتك ستسهم في تطوير التعلم النقال في جامعة طيبة .
سيتم الاحتفاظ بالاستبيانات المعبأة و البيانات المدخلة إلكترونيا بسرية تامة، و بمجرد تسليم البحث و اعتماده سيتم إتلاف جميع الاستبيانات.

في حال وجود أي سؤال بإمكانك التواصل مع الباحثة (منال أحمد المرواني) عن طريق الإيميل(m_almarwani@hotmail.com) وإذا كان هناك استفسار و رغبة في التواصل مع شخص آخر غير الباحثة فبإمكانك مراسلة الدكتور/ تيرانس كارين من مركز البحوث التربوية و التطوير بجامعة لينكولن على الإيميل (terencek@lincoln.ac.uk) .

في حال أكملت الاستبيان ستكون/تكوني مؤهلا للفوز بقارئ إلكتروني (Kindle). فإذا أردت الدخول في السحب على الجائزة املأ البيانات في المكان المخصص أدناه بوضوح. الدخول في السحب من اختيارك وسيتم قص هذا الجزء الذي يوجد فيه اسمك و إيميلك و عزله عن الاستبيان لغرض السحب و لتبقى إجاباتك مجهولة الهوية.

الاسم: .....

الإيميل: .....

و لكم جزيل الشكر
مع أطيب التحيات و التقدير

الباحثة/ منال أحمد المرواني
مركز البحوث التربوية و التطوير - جامعة لينكولن - المملكة المتحد ة
محاضر - جامعة طيبة

الجزء الأول: البيانات الشخصية

الرجاء اختيار ☑ الإجابة المناسبة:

١ الجنس ☐ ذكر ☐ أنثى

٢ العمر

☐ ١٨ أو أقل ☐ ١٩-٢٠ ☐ ٢١-٢٢ ☐ ٢٣-٢٤ ☐ ٢٥ أو أكثر

٣ الجنسية ☐ سعودي ☐ غير سعودي

٤ أين تقيم بصفة دائمة؟

☐ المدينة المنورة ☐ ينبع ☐ خيبر ☐ مهد الذهب

☐ العناكية ☐ العلا ☐ أخرى (أرجو التحديد) .....

٥ المسار الأكاديمي

☐ العلوم الصحية ☐ العلوم التطبيقية ☐ العلوم الإنسانية

6 هل لديك أي من الأجهزة النقالة التالية؟ (ضع إشارة أمام الجهاز أو الأجهزة التي لديك)

☐ هاتف خلوي ☐ هاتف ذكي ☐ قاموس إلكتروني

☐ كمبيوتر لوحي/ آيباد ☐ قارئ إلكتروني ☐ ليس لدي أي منها

(إذا لم يكن لديك أي من هذه الأجهزة انتقل للسؤال الحادي عشر)

7 إذا كان لديك أي من الأجهزة السابقة، فمنذ متى و هي لديك؟

	سنة أو أقل	٢-٥ سنوات	٦-١٠ سنوات	١٠ سنوات أو أكثر
هاتف خلوي	☐	☐	☐	☐
هاتف ذكي	☐	☐	☐	☐
قاموس إلكتروني	☐	☐	☐	☐
كمبيوتر لوحي/ آيباد	☐	☐	☐	☐
قارئ إلكتروني	☐	☐	☐	☐

٨ ماهو متوسط استخدامك لهذه الأجهزة النقالة؟

	لا أستخدمها مطلقاً	مرة واحدة في الشهر	٢-٣ مرات في الشهر	مرة واحدة في الأسبوع	٢-٣ مرات في الأسبوع	٤-٦ مرات في الأسبوع	مرة واحدة في اليوم	٢-٥ مرات يومياً	أكثر من ٥ مرات يومياً
هاتف خلوي	☐	☐	☐	☐	☐	☐	☐	☐	☐
هاتف ذكي	☐	☐	☐	☐	☐	☐	☐	☐	☐
قاموس إلكتروني	☐	☐	☐	☐	☐	☐	☐	☐	☐
كمبيوتر لوحي/ آيباد	☐	☐	☐	☐	☐	☐	☐	☐	☐
قارئ إلكتروني	☐	☐	☐	☐	☐	☐	☐	☐	☐

٩ ماهو متوسط استخدامك للانترنت عن طريق الأجهزة النقالة؟

	لا أستخدمه مطلقاً	مرة واحدة في الشهر	٢-٣ مرات في الشهر	مرة واحدة في الأسبوع	٣-٢ مرات في الأسبوع	٤-٦ مرات في الأسبوع	مرة واحدة في اليوم	٢-٥ مرات يومياً	أكثر من ٥ مرات يومياً
هاتف خلوي	☐	☐	☐	☐	☐	☐	☐	☐	☐
هاتف ذكي	☐	☐	☐	☐	☐	☐	☐	☐	☐
قاموس إلكتروني	☐	☐	☐	☐	☐	☐	☐	☐	☐
كمبيوتر لوحي/ آيباد	☐	☐	☐	☐	☐	☐	☐	☐	☐
قارئ إلكتروني	☐	☐	☐	☐	☐	☐	☐	☐	☐

١٠ لأي سبب تستخدم الأجهزة النقالة؟

	يجعل حياتي أسهل	أستطيع التواصل في كل مكان	لكونه موضة سائدة	أخرى (أرجو التحديد) _____
هاتف خلوي	☐	☐	☐	☐
هاتف ذكي	☐	☐	☐	☐
قاموس إلكتروني	☐	☐	☐	☐
كمبيوتر لوحي/ آيباد	☐	☐	☐	☐
قارئ إلكتروني	☐	☐	☐	☐

١١ إذا لم يكن لديك أجهزة نقالة، فلماذا؟

	ارتفاع سعر الجهاز	ارتفاع قيمة الاشتراك في الخدمة	لا أريد إزعاجاً في كل مكان	ليس مفيداً بالنسبة لي	أخرى (أرجو التحديد) .....
هاتف خلوي	☐	☐	☐	☐	☐
هاتف ذكي	☐	☐	☐	☐	☐
قاموس إلكتروني	☐	☐	☐	☐	☐
كمبيوتر لوحي/ آيباد	☐	☐	☐	☐	☐
قارئ إلكتروني	☐	☐	☐	☐	☐

الجزء الثاني: رأيك في استخدام التقنيات النقالة

١٢ يُرجى الإشارة إلى أي مدى توافق على العبارات التالية فيما يتعلق باستخدام التقنيات النقالة في تعلم اللغة الإنجليزية و ذلك بوضع علامة ☑ في المربع المناسب أمام كل عبارة:

العبـــــــــــــــــارة	أوافق بشدة	أوافق	محايد	لا أوافق	لا أوافق بشدة	لا ينطبق
أجد أن التقنيات النقالة مفيدة في تعلم اللغة الإنجليزية كلغة أجنبية.						
استخدام التقنيات النقالة يمكنني من إنجاز مهام اللغة الإنجليزية بسرعه أكبر.						
استخدام التقنيات النقالة يساعد على تحصيل أفضل للغة الإنجليزية.						
استخدام التقنيات النقالة يساعدني على التواصل الفعال في بيئة اللغة الإنجليزية.						
استخدام التقنيات النقالة يسهل دراسة محتوى مقررات اللغة الإنجليزية.						
استخدام التقنيات النقالة في تعلم اللغة الإنجليزية يساهم في دراستي الجامعية بشكل عام.						
استخدام التقنيات النقالة يساعد في بناء عادة التعلم مدى الحياة.						
من السهل علي تعلم كيفية استخدام التقنيات النقالة في تعلم اللغة الإنجليزية.						
من السهل علي استخدام التقنيات النقالة في تعلم اللغة الإنجليزية.						
من السهل علي أن أستخدم التقنيات النقالة بمهارة في تعلم اللغة الإنجليزية.						
يعتقد الناس المهمون بالنسبة لي كأسرتي أنه يفترض أن أستخدم التقنيات النقالة في تعلم اللغة الإنجليزية.						
يعتقد أساتذة اللغة الإنجليزية في الجامعة أنه يفترض أن أستخدم التقنيات النقالة في تعلم اللغة الإنجليزية.						
يفضل الناس الذين أقدر آراءهم استخدام التقنيات النقالة في تعلم اللغة الإنجليزية.						
يعتقد الناس المهمون بالنسبة لي كأسرتي أن استخدام التقنيات النقالة في تعلم اللغة الإنجليزية لها تأثير سلبي على التحصيل العلمي.						
لا يشجع أساتذة اللغة الإنجليزية في الجامعة على استخدام التقنيات النقالة.						

العبـــــــــــــــــــــارة	أوافق بشدة	أوافق	محايد	لا أوافق	لا أوافق بشدة	لا ينطبق
تدعم جامعتي استخدام التطبيقات النقالة.						
لدي المعرفة اللازمة لاستخدام التقنيات النقالة في تعلم اللغة الإنجليزية.						
يمكنني الحصول على المساعده من الآخرين كأصدقائي، أساتذتي، و أسرتي عندما تكون لدي صعوبات في استخدام التقنيات النقالة في تعلم اللغة الإنجليزية.						
يمكنني الوصول إلى المصادر اللازمة لتعلم اللغة الإنجليزية باستخدام التقنيات النقالة.						
استخدام التقنيات النقالة في تعلم اللغة الإنجليزية ممتع.						
استخدام التقنيات النقالة في تعلم اللغة الإنجليزية هو عادة و روتين بالنسبة لي.						
أستخدم التقنيات النقالة في تعلم اللغة الإنجليزية تلقائيا.						
سوف أبدأ باستخدام التقنيات النقالة في تعلم اللغة الإنجليزية.						
سوف أحاول دائما استخدام التقنيات النقالة في تعلم اللغة الإنجليزية.						
أخطط للاستمرار في استخدام التقنيات النقالة في تعلم اللغة الإنجليزية.						

١٣ الجامعة توفر شبكة لاسلكية (واي فاي) للاتصال بالانترنت في الحرم الجامعي

☐ نعم ☐ لا ☐ لا أعلم

١٤ ما رأيك في أسعار شراء الأجهزة النقالة؟ (اختار الإجابة المناسبة)

	منخفض القيمة (رخيص)	قيمة جيدة (متوسط)	عالي القيمة (غالي)	لا أعلم
هاتف خلوي	☐	☐	☐	☐
هاتف ذكي	☐	☐	☐	☐
قاموس إلكتروني	☐	☐	☐	☐
كمبيوتر لوحي/ آيباد	☐	☐	☐	☐
قارئ إلكتروني	☐	☐	☐	☐

١٥ ما رأيك في أسعار خدمة الهاتف الخلوي (شركات الاتصال)؟

☐ منخفض القيمة (رخيص) ☐ قيمة جيدة (متوسط) ☐ عالي القيمة (غالي) ☐ لا أعلم

١٦ ما رأيك في أسعار خدمة الاتصال بالانترنت التي تقدمها شركات الاتصال؟

☐ منخفض القيمة (رخيص) ☐ قيمة جيدة (متوسط) ☐ عالي القيمة (غالي) ☐ لا أعلم

١٧ من يدفع ثمن التقنيات النقالة التي لديك؟

☐ أنا أدفعها ☐ والدي ☐ الجامعة ☐ أخرى (حدد) .....

١٨ يُرجى الإشارة إلى أي مدى يتكرر استخدام تطبيقات الأجهزة النقالة و التقنيات النقالة في دعم أو تعلم اللغة الإنجليزية، و ذلك بوضع علامة ☑ في المربع المناسب:

التطبيقات و التقنيات النقالة	لا يستخدم أبداً	نادراً	أحياناً	بشكل متكرر	دائماً
التطبيقات التجارية (برامج و تطبيقات لتعلم اللغة الإنجليزية يتم شرائها أو تحميلها مجاناً من متجر التطبيقات على جهازك النقال)					
التطبيقات التجارية الموصى بها من قبل أساتذة اللغة الإنجليزية أو الأصدقاء					
التطبيقات التي يتم تطويرها من قبل الجامعة أو مركز اللغة الإنجليزية أو الأساتذة					
نظام إدارة المحتوى (جسور/ موودل/ تدارس/ دوكيوس ....)					
المواقع الإلكترونية					
خدمة الرسائل القصيرة SMS					
خدمة رسائل الوسائط المتعددة MMS					
البريد الإلكتروني					
الشبكات الاجتماعية (فيسبوك/ تويتر....)					
الوصول إلى المحتوى التعليمي للغة الإنجليزية من طريق الاتصال بالانترنت					
الوصول إلى المحتوى التعليمي للغة الإنجليزية دون الاتصال بالانترنت					
أخرى (أرجو التحديد)					

١٩ يرجى الإشارة إلى أي مدى يتكرر استخدام التقنيات و الأجهزة النقالة في الأمور التالية:

التطبيقات و التقنيات النقالة	لا يستخدم أبداً	نادراً	أحياناً	بشكل متكرر	دائما
المكالمات الهاتفية					
محادثات الفيديو					
إرسال و استقبال الرسائل النصية					
الوصول للانترنت					
إرسال و استقبال رسائل البريد الالكتروني					
جدولة و تنظيم المواعيد					
الخدمات البنكية					
ألعاب غير تعليمية					
قراءة أو تحرير المستندات مثل الوورد أو اكسل					
أخرى (أرجو التحديد)					

٢٠ أي من الخدمات التالية ترغب بالوصول إليها عن طريق الأجهزة النقالة: (اختار الخدمات المرغوبة)

- ☐ البريد الالكتروني الجامعي
- ☐ الرسائل الفورية مع الأساتذة و الأقران
- ☐ المحادثة الفورية مع خدمة تقنية المعلومات
- ☐ القبول و التسجيل
- ☐ الدرجات
- ☐ شرائح عرض المحاضرات (باوربوينت)
- ☐ محتوى المقرر
- ☐ المراجع، التطبيقات، و الروابط التعليمية
- ☐ الألعاب التعليمية
- ☐ مقاطع الفيديو و التسجيلات الصوتية للمحاضرات
- ☐ أنظمة إدارة المحتوى التعليمي كجسور مثلا
- ☐ مكتبة الجامعة
- ☐ أخرى (أرجو التحديد) .....

٢١ هل هناك أي شيء لم يرد ذكره في الاستبيان و من شأنه أن يزيد من حماسك أو يجعلك تتردد في استخدام التقنيات النقالة للأغراض الأكاديمية؟ (يرجى الكتابة في المكان المخصص بالأسفل)

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٢٢ هل ترغب بإضافة أي شيء آخر له علاقة بالتقنيات النقالة و تعلم اللغة الإنجليزية كلغة أجنبية؟

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شكراً لكم على وقتكم الثمين الذي قضيتموه في تعبئة هذا الاستبيان

Appendix 4: Students Survey Items

Students Survey Items		
Construct	**Items**	**Statements**
Performance Expectancy	PE1	I would find mobile technologies useful in learning EFL.
	PE2	Using mobile technologies enables me to accomplish EFL tasks more quickly.
	PE3	Using mobile technologies would increase my chances for better EFL achievement.
	PE4	Using mobile technologies would help me to communicate effectively in an English language environment.
	PE5	Using mobile technologies would make it easier for me to study EFL courses content.
	PE6	Using mobile technologies in EFL learning would contribute to my study at university in general.
	PE7	Using mobile technologies helps in building up successful lifelong learning habit.
Effort Expectancy	EE1	Learning how to use mobile technologies in learning EFL is easy for me.
	EE2	I find mobile technologies easy to use in learning EFL.
	EE3	It is easy for me to become skilful at using mobile technologies in EFL learning.
Social Influence	SI1	People who are important to me (family) think that I should use mobile technologies to learn EFL.
	SI2	People whose opinions I value prefer that I use mobile technologies to learn EFL
	SI3	People who are important to me (family) think that mobile technologies have a bad effect on EFL achievement.
Facilitating Conditions	FC1	I have the knowledge necessary to use mobile technologies in EFL learning.
	FC2	I can get help from others (friends/faculty/family) when I have difficulties using mobile technologies in EFL learning.
	FC3	I have access to the resources necessary to learn EFL using mobile technologies.

Students Survey Items		
Construct	**Items**	**Statements**
	FC4	The university provides Wi-Fi connectivity on campus.
Hedonic Motivation	HM	Using mobile technologies in EFL learning is enjoyable.
Price	P1a	The cost of purchasing Cell Phone.
	P1b	The cost of purchasing Smart Phone.
	P1c	The cost of purchasing Electronic Dictionary.
	P1d	The cost of purchasing Tablet.
	P1e	The cost of purchasing e-Reader.
	P2	Opinion on price of Cell Phone Services.
	P3	Opinion on the cost of internet connection.
Habit	H1	Using mobile technologies in EFL learning is a habit for me.
	H2	I use mobile technologies in EFL learning automatically.
Behavioural Intention	BI1	I intend to start using mobile technologies in EFL learning.
	BI2	I will always try to use mobile technologies in EFL learning.
	BI3	I plan to continue using mobile technologies in EFL learning frequently.
Use Behaviour in EFL	UBEFL1	Commercial applications that you buy or download for free from the applications store on your device.
	UBEFL2	Commercial applications recommended by faculty or friends
	UBEFL3	Applications developed by the university, department or faculty.
	UBEFL4	Course Management System (e.g. Jusur/Moodle/Tadarus/Dokeos)
	UBEFL5	Websites
	UBEFL6	Short Message Service (SMS)
	UBEFL7	Multimedia Messaging Service (MMS)
	UBEFL8	E-mail
	UBEFL9	Social Networking (Facebook/Twitter)

Students Survey Items		
Construct	**Items**	**Statements**
	UBEFL10	Access educational EFL content online
	UBEFL11	Access educational EFL content off-line
Use Behaviour in general	UBG1	Phone calls
	UBG2	Video-conversations
	UBG3	Sending & receiving text messages
	UBG4	Accessing the internet
	UBG5	Sending & receiving e-mails
	UBG6	Scheduling appointments
	UBG7	Banking
	UBG8	Playing non-academic games
	UBG9	Reading or editing documents such as Word, PDF, or Excel
Experience	E1a	Ownership of Cell Phone
	E1b	Ownership of smart phone
	E1c	Ownership of Electronic Dictionary
	E1d	Ownership of Tablet
	E1e	Ownership of e-Reader
	E1f	Don’t have any
	E2a	How long you have had Cell Phone
	E2b	How long you have had Smart Phone
	E2c	How long you have had Electronic Dictionary
	E2d	How long you have had Tablet
	E2e	How long you have had e-Reader
	E3a	How often do you use Cell Phone
	E3b	How often do you use Smart phone
	E3c	How often do you use Electronic Dictionary

Students Survey Items		
Construct	**Items**	**Statements**
	E3d	How often do you use Tablet
	E3e	How often do you use e-Reader
	E4a	How often do you access the internet using Cell Phone
	E4b	How often do you access the internet using Smart Phone
	E4c	How often do you access the internet using Electronic Dictionary
	E4d	How often do you access the internet using Tablet
	E4e	How often do you access the internet using e-Reader
Voluntariness of Use	VoU1	The EFL faculty at university think I should use mobile technologies to learn EFL.
	VoU2	The EFL faculty does not encourage me to use mobile technologies.
	VoU3	My organization supports the use of mobile technologies.

Appendix 5: Faculty Survey Items

Faculty Survey Items		
Construct	**Items**	**Statements**
Performance Expectancy	PE1	I would find mobile technologies useful in teaching EFL.
	PE2	Using mobile technologies enables me to prepare EFL tasks more quickly.
	PE3	Using mobile technologies would increase my chances for better EFL instruction.
	PE4	Using mobile technologies would help me to communicate effectively in an English language environment with other academics.
	PE5	Using mobile technologies would make it easier for me to teach EFL courses content.
	PE6	Using mobile technologies in EFL teaching would contribute to my career at university in general.
	PE7	Using mobile technologies is not all about teaching, as I am learning too.
	PE8	Using mobile technologies helps in building up successful lifelong learning habit.
Effort Expectancy	EE1	Learning how to use mobile technologies in teaching EFL is easy for me.
	EE2	I find mobile technologies easy to use in teaching EFL.
	EE3	It is easy for me to become skilful at using mobile technologies in EFL teaching.
Social Influence	SI1	People who are important to me (family) think that I should use mobile technologies to teach EFL.
	SI2	People whose opinions I value prefer that I use mobile technologies to teach EFL.
	SI3	People who are important to me (family) think that mobile technologies would never contribute to teaching.
Facilitating Conditions	FC1	I have the knowledge necessary to use mobile technologies in EFL teaching.
	FC2	I can get help from others (friends/faculty/family) when I have difficulties using mobile technologies in EFL teaching.
	FC3	I have access to the resources necessary to teach EFL using mobile

Faculty Survey Items		
Construct	**Items**	**Statements**
		technologies.
	FC4	The university provides Wi-Fi connectivity on campus.
Hedonic Motivation	HM	Using mobile technologies in EFL teaching is enjoyable.
Price	P1a	The cost of purchasing Cell Phone.
	P1b	The cost of purchasing Smart Phone.
	P1c	The cost of purchasing Electronic Dictionary.
	P1d	The cost of purchasing Tablet.
	P1e	The cost of purchasing e-Reader.
	P2	Opinion on price of Cell Phone Services.
	P3	Opinion on the cost of internet connection.
Habit	H1	Using mobile technologies in EFL teaching is a habit for me.
	H2	I use mobile technologies in EFL teaching automatically.
Behavioural Intention	BI1	I intend to start using mobile technologies in EFL teaching.
	BI2	I will always try to use mobile technologies in EFL teaching.
	BI3	I plan to continue using mobile technologies in EFL teaching frequently.
Use Behaviour in EFL	UBEFL1	Commercial applications that you buy or download for free from the applications store on your device to help you teach English.
	UBEFL2	Commercial applications recommended by faculty or friends
	UBEFL3	Applications developed by the university, department or faculty.
	UBEFL4	Course Management System (e.g. Jusur/Moodle/Tadarus/Dokeos)
	UBEFL5	Websites
	UBEFL6	Short Message Service (SMS)
	UBEFL7	Multimedia Messaging Service (MMS)
	UBEFL8	E-mail

Faculty Survey Items		
Construct	**Items**	**Statements**
	UBEFL9	Social Networking (Facebook/Twitter)
	UBEFL10	Access educational EFL content online
	UBEFL11	Access educational EFL content off-line
Use Behaviour in general	UBG1	Phone calls
	UBG2	Video-conversations
	UBG3	Sending & receiving text messages
	UBG4	Accessing the internet
	UBG5	Sending & receiving e-mails
	UBG6	Scheduling appointments
	UBG7	Banking
	UBG8	Playing non-academic games
	UBG9	Reading or editing documents such as Word, PDF, or Excel
Experience	E1a	Ownership of Cell Phone
	E1b	Ownership of smart phone
	E1c	Ownership of Electronic Dictionary
	E1d	Ownership of Tablet
	E1e	Ownership of e-Reader
	E1f	Don't have any
	E2a	How long you have had Cell Phone
	E2b	How long you have had Smart Phone
	E2c	How long you have had Electronic Dictionary
	E2d	How long you have had Tablet
	E2e	How long you have had e-Reader
	E3a	How often do you use Cell Phone
	E3b	How often do you use Smart phone

Faculty Survey Items		
Construct	**Items**	**Statements**
	E3c	How often do you use Electronic Dictionary
	E3d	How often do you use Tablet
	E3e	How often do you use e-Reader
	E4a	How often do you access the internet using Cell Phone
	E4b	How often do you access the internet using Smart Phone
	E4c	How often do you access the internet using Electronic Dictionary
	E4d	How often do you access the internet using Tablet
	E4e	How often do you access the internet using e-Reader
Voluntariness of Use	VoU1	The EFL program leaders at university think I should use mobile technologies to teach EFL.
	VoU2	The EFL program leader does not encourage me to use mobile technologies.
	VoU3	My organization supports the use of mobile technologies.

Appendix 6: Factor Loadings (Students Survey)

Factor Loadings (Students Survey)												
Item	**Component (Loadings)**											
	PE	**EE**	**SI**	**FC**	**PD**	**PS**	**H**	**BI**	**UBEFL**	**UBG**	**E**	**VoU**
PE1	.763											
PE2	.767											
PE3	.822											
PE4	.760											
PE5	.777											
PE6	.791											
PE7	.724											
EE1		.853										
EE2		.926										
EE3		.884										
SI1			.864									
SI2			.723									
SI3			.582									
FC1				.842								
FC2				.757								
FC3				.877								
FC4				.326								
P1a					.685							
P1b					.806							
P1c					.777							
P1d					.818							
P1e					.846							

Factor Loadings (Students Survey)												
Item	**Component (Loadings)**											
	PE	**EE**	**SI**	**FC**	**PD**	**PS**	**H**	**BI**	**UBEFL**	**UBG**	**E**	**VoU**
P2						.901						
P3						.909						
H1							.965					
H2							.965					
BI1								.516				
BI2								.912				
BI3								.889				
UBEFL1									.689			
UBEFL2									.654			
UBEFL3									.463			
UBEFL4									.548			
UBEFL5									.771			
UBEFL6									.661			
UBEFL7									.502			
UBEFL8									.784			
UBEFL9									.758			
UBEFL10									.765			
UBEFL11									.618			
UBGeneral1										.594		
UBGeneral2										.625		
UBGeneral3										.629		
UBGeneral4										.771		
UBGeneral5										.816		
UBGeneral6										.707		

Factor Loadings (Students Survey)												
Item	**Component (Loadings)**											
	PE	**EE**	**SI**	**FC**	**PD**	**PS**	**H**	**BI**	**UBEFL**	**UBG**	**E**	**VoU**
UBGeneral7										.667		
UBGeneral8										.643		
UBGeneral9										.668		
E1 Sum											.962	
E2 Sum											.917	
E3 Sum											.974	
E4 Sum											.918	
VoU1												.794
VoU2												.572
VoU3												.566

Appendix 7: Factor Loadings (Faculty Survey)

Factor Loadings (Faculty Survey)												
Item	**Component (Loadings)**											
	PE	**EE**	**SI**	**FC**	**PD**	**PS**	**H**	**BI**	**UBEFL**	**UBG**	**E**	**VoU**
PE1	.771											
PE2	.822											
PE3	.840											
PE4	.705											
PE5	.838											
PE6	.815											
PE7	.592											
PE8	.651											
EE1		.882										
EE2		.913										
EE3		.846										
SI1			.910									
SI2			.857									
SI3			.765									
FC1				.827								
FC2				.696								
FC3				.724								
FC4				.026								
P1a					.548							
P1b					.668							
P1c					.815							
P1d					.795							

Factor Loadings (Faculty Survey)												
Item	**Component (Loadings)**											
	PE	**EE**	**SI**	**FC**	**PD**	**PS**	**H**	**BI**	**UBEFL**	**UBG**	**E**	**VoU**
P1e					.619							
P2						.782						
P3						.832						
H1							.941					
H2							.938					
BI1								.462				
BI2								.951				
BI3								.951				
UBEFL1									.531			
UBEFL2									.725			
UBEFL3									.590			
UBEFL4									.579			
UBEFL5									.722			
UBEFL6									.673			
UBEFL7									.655			
UBEFL8									.623			
UBEFL9									.523			
UBEFL10									.608			
UBEFL11									.610			
UBGeneral1										.523		
UBGeneral2										.450		
UBGeneral3										.738		
UBGeneral4										.546		
UBGeneral5										.702		

Factor Loadings (Faculty Survey)												
Item	**Component (Loadings)**											
	PE	**EE**	**SI**	**FC**	**PD**	**PS**	**H**	**BI**	**UBEFL**	**UBG**	**E**	**VoU**
UBGeneral6										.614		
UBGeneral7										.601		
UBGeneral8										.434		
UBGeneral9										.568		
E1 Sum											.968	
E2 Sum											.894	
E3 Sum											.980	
E4 Sum											.816	
VoU1												.711
VoU2												.598
VoU3												.794

Appendix 8: Ethical Approval

EA2

APPROVED (90)

Ethical Approval Form: Human Research Projects

Please word-process this form, handwritten applications will not be accepted

UNIVERSITY OF LINCOLN

This form must be completed for each piece of research activity whether conducted by academic staff, research staff, graduate students or undergraduates. The completed form must be approved by the designated authority within the Faculty.

Please complete all sections. If a section is not applicable, write N/A.

1 Name of Applicant	Manal Ahmad Almarwani
	Department: CERD — Faculty: Education
2 Position in the University	Postgraduate Student
3 Role in relation to this research	Researcher
4 Brief statement of main Research Question	This research is an attempt to answer the following questions: 1. To what extent Preparatory Year students access and use mobile technologies (handheld computing devices)? 2. To what degree do Preparatory Year students accept mobile technologies to support their EFL learning? 3. Is there a correlation between the degree of acceptance and the extent to which Preparatory Year students' access and use mobile technologies in EFL learning? 4. Are there any demographic differences, i.e. male & female, academic tracks (science, health, and humanities), and urban and rural with respect to readiness and acceptance of mobile learning? 5. In which aspects of EFL teaching and learning do Preparatory Year students prefer mobile learning?
5 Brief Description of Project	This research aims to investigate the readiness and acceptance of mobile learning among Preparatory Year students at Taibah University in Saudi Arabia. The Preparatory Year English Language (PYEL) program is a compulsory prerequisite for students to join the university's various undergraduate programs. Due to the large number of students, the lack of faculty to teach them, and the lack of the appropriate space for face-to-face teaching and learning, new technologies for learning have to be adopted to enable learning outside the classroom and reduce the time that students spend every day at the university. A questionnaire will be designed and sent to EFL Preparatory Year students. Data will be analysed to answer the research questions.
	Approximate Start Date: — Approximate End Date:
6 Name of Principal Investigator or Supervisor	Dr. Terence Karran
	Email address: terencek@lincoln.ac.uk — Telephone: 0044 (0) 1522 886346
7 Names of other researchers or student investigators involved	1. 2. 3. 4.
8 Location(s) at which project is to be carried out	Preparatory Year English Language Program at Taibah University in Madinah, Saudi Arabia

9 Statement of the ethical issues involved and how they are to be addressed –including a risk assessment of the project based on the vulnerability of participants, the extent to which it is likely to be harmful and whether there will be significant discomfort. (This will normally cover such issues as whether the risks/adverse effects associated with the project have been dealt with and whether the benefits of research outweigh the risks)	A questionnaire is going to be distributed to all Preparatory Year English Language Program students (age 18-20). Students at this age in Saudi Arabia are considered to be adults. Hence, parental approval would not be required in order to send surveys to these students. The participants have the right to refuse to respond. Personal identifiable information is not going to be collected. Although there are some demographic (sex, academic tracks, urban or rural) data, no one will be able to attach a particular set of responses to a particular person. Participants will be informed of the research topic, procedures, possible contribution the research will make to the field. All survey results will be reported as anonymous responses

Ethical Approval From Other Bodies

10 Does this research require the approval of an external body ?	Yes ☒ No ☐
	If "Yes", please state which body:- Taibah University
11 Has ethical approval already been obtained from that body ?	Yes ☐ **-Please append documentary evidence to this form.** No ☒ **If "No", please state why not:-** **Please note that any such approvals must be obtained and documented before the project begins.**

I hereby request ethical approval for the research as described above.
I certify that I have read the University's ETHICAL PRINCIPLES FOR CONDUCTING RESEARCH WITH HUMANS AND OTHER ANIMALS.

Manal marwani
Applicant Signature

Date

PRINT NAME

Manal A. Almarwani

FOR STUDENT APPLICATIONS ONLY –
Academic Support for Ethics

Academic support should be sought prior to submitting this form to the Faculty Research Ethics Committee.

• Undergraduate / Postgraduate Taught application	Academic Member of staff nominated by the School/Department (consult your project tutor)
• Postgraduate Research Application	Director of Studies

I support the application for ethical approval

[illegible]
Academic / Director of Studies Signature

18th July 2011
Date

TERENCE KARRAN
PRINT NAME

FOR COMPLETION BY THE FACULTY RESEARCH ETHICS COMMITTEE

Please select ONE of A, B, C or D below:

☐ **A. The Faculty Research Ethics Committee gives ethical approval to this research.**

☐ **B. The Faculty Research Ethics Committee gives conditional ethical approval to this research.**

10 Please state the condition (inc. date by which condition must be satisfied if applicable)	

☐ **C. The Faculty Research Ethics Committee cannot give ethical approval to this research but refers the application to the University Research Ethics Committee for higher level consideration.**

11 Please state the reason	

☐ D. The Faculty Research Ethics Committee cannot give ethical approval to this research and recommends that the research should not proceed.

12 Please state the reason, bearing in mind the University's ethical framework, including the primary concern for Academic Freedom.

Signature of the Chair of the Faculty Research Ethics Committee

Signature

15.7.11
Date