

**“Does E-Learning Help Users to Learn: A
Comparative Study of E-learning in Saudi Arabia
and New Zealand”**

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Statement of Originality

“I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person or material which has been accepted for the qualification of any other degree or diploma of a university or other institute of higher learning.”

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Hussain Alqahtani', is written over a light gray rectangular background.

Hussain Alqahtani

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Abstract

The popularity of e-learning has grown extensively in recent years due to advancements in technology and the innumerable benefits of this type of education. As a result of e-learning students have considerable flexibility for advancing their education. However, e-learning is not without its challenges. Further, a review of what has been noted regarding the development of e-learning suggests that this process has not been uniform, with many countries struggling to keep pace with student demand for e-learning resources. With these issues in mind, the current investigation utilizes a qualitative methodology to evaluate student experiences in e-learning in New Zealand and Saudi Arabia. The central focus is to determine if students from each country are able to effectively learn using these platforms. The data collected indicated that while students in both countries report were able to learn, there are notable differences in technology access and student needs which clearly differentiate e-learning in both countries. The implications of the findings are discussed with specific recommendations made for educators, institutions, and governments to provide targeted support for building e-learning in each of these countries.

Chapter 1: Introduction

Over the course of the last three decades, the use of e-learning at all levels of education has proliferated. Even though e-learning platforms have become a standard part of higher education in most countries, the development of e-learning has not been uniform. This assertion is the primary focus of the current investigation. Specifically, the central question examined is whether post-secondary students in New Zealand and Saudi Arabia can successfully learn through using e-learning platforms. Efforts have been made to evaluate student experiences with e-learning in both countries to discern if there are differences in outcomes for student experiences. This chapter provides important background information on the study including a review of the significance of the research and a preview of the remaining chapters.

1.1 Research Goals and Questions

The research goal for this investigation was to understand the learning experiences of students engaged in e-learning in both New Zealand and Saudi Arabia. For the purposes of a fundamental definition, e-learning is collectively understood to be the dissemination of education within and through a technological or digital environment. The aim here is to validate the success of this principle, and whether education is successfully delivered through such unorthodox methods.

More precisely, an effort is made to determine if students in both countries are able to learn effectively from the use of e-learning platforms. In order to evaluate effective learning for students, consideration was given to differences in attitudes of students toward e-learning; differences in perception of autonomy, content quality, and interaction with instructors; differences in technology infrastructure; and peer acceptance of e-learning, that

were present for students in both New Zealand and Saudi Arabia. A critical review of these specific areas of e-learning enabled a more comprehensive understanding of student learning on these platforms, with the ability to discern similarities and differences in experiences for students from both countries.

The objectives and goals for this study incorporated the investigation of critical variables that might affect results for students while using e-learning platforms. These variables have been distinguished from the previous studies evaluated in Chapter 2 and include: general issues, for example, student mentalities toward e-learning (Rhema & Miliszewska, 2014); the capacity to learn independently (Ribbe & Bezanilla, 2013); content quality (Yuvaraj, Ajitha, Nithya, & Geethanjali, 2015); association with teachers (Morrison, Cegielski, & Rainer, 2012); acknowledgment and acceptance of e-learning (Teo, Ruangrit, Khlaisang, Thammetar, & Sunphakitjumnong, 2014); and accessibility of required technology and innovation base to take part in e-learning successfully (Altameem, 2013). The essential study question that emerges from these objectives is the following:

- To what degree do university students in New Zealand and Saudi Arabia effectively gain from the utilisation of e-learning platforms?

Noting the study question requires answering various sub-questions for the current study including the following:

- What are the contrasts and differences in demeanours (perspectives) toward e-learning between students in Saudi Arabia and New Zealand?
- What are the contrasts and differences in regards to impressions of self-sufficiency, content quality, and associations with educators between students in Saudi Arabia and New Zealand?

- What are the contrasts in technology infrastructure and base for students in Saudi Arabia and New Zealand?'
- What are the differences regarding the acceptance of e-learning between students in Saudi Arabia and New Zealand?

1.2 Motivation and Rationale

Research regarding e-learning in New Zealand and Saudi Arabia has focused primarily on a cursory overview of e-learning systems and statistics regarding the use of e-learning by students in higher education. Research regarding the experiences of students enrolled in e-learning is scant. Further, existing research regarding higher education and online instruction in New Zealand and Saudi Arabia indicates that there are differences in capabilities of educators in both countries. This will have some implication for students, indicating that there is a need to identify and examine these issues. Based on the data obtained, it should be possible to make some recommendations for educators, institutions of higher education, and governments to improve e-learning through targeted recommendations.

There are some challenges and issues facing organisations that are aiming for successful implementation of e-learning. Previous research has pointed out some of the negative influences of using the Internet as a medium of e-learning. The Internet, as an e-learning tool, reduces student concentration on studies and is time consuming; this generally due to access to other mediums, formats and channels which can act as a distraction. Further to this a lack of urgency and flexible access, may promote a more relaxed atmosphere towards studies.

Another aspect, which may result in the failure of e-learning systems, is the failure to prepare students for using e-learning and not obtaining appropriate copyright clearance. In addition, e-learning will fail if the desired learning outcomes are not clearly stipulated, with sufficient budget and time to achieve them. E-learning will also fail if the applied system does not meet the requirements of the organisation. The shortage of skilled IT workforce and so being unable to provide appropriate support for e-learning, can as well be an important factor for the failure of an e-learning system. Also, there is expected to be more than one billion Internet users so there will be a shortage of skilled workforce to sustain this growth.

Based on this assessment, the motivation and rationale for the current research is focused on three specific factors. First, there is an impetus to understand the scope of issues that can impact e-learning for students. Given the proliferation of e-learning across the globe, these issues have relevance for improving e-learning. Second, I believe it is imperative to demonstrate that the e-learning evolution has not been uniform; each country has different needs when it comes to building effective e-learning platforms. Third, it is essential to consider if students are able to effectively learn through using e-learning platforms and ascertain what specific supports are needed to augment this experience to improve educational outcomes, and in turn, support a global effort to improve higher education.

1.3 Significance and Value of the Research

The outcome and results of this study should provide a more integral understanding of e-learning and its implications for students. This information is vital for improving the quality of e-learning and for addressing current gaps in e-learning platforms. By demonstrating differences in the experiences of students it should be possible to make targeted recommendations for improving e-learning in each country. This should enable

institutions of higher education, as well as government agencies, to optimise the use of resources, targeting issues of concern to enhance learning outcomes for students.

1.4 Overview of Chapters

The remainder of this thesis includes a review of literature, methodology, results, discussion, and conclusion. The literature review chapter provides a detailed review of e-learning and critical elements for student success, as well as an overview of existing data regarding e-learning in both New Zealand and Saudi Arabia. Chapter 3 on methodology provides a justification for the use of a qualitative phenomenological framework employing semi-structured interviews with students enrolled in e-learning in New Zealand and Saudi Arabia. The results presented in chapter 4 detail thematic differences in the e-learning experiences of students with the discussion focused on providing insights regarding steps that should be taken to address e-learning development for students in both countries. The research is concluded in chapter 5 with a general evaluation of the implications of the findings and the importance of working to develop e-learning across the globe.

1.5 Summary

E-learning has become a global phenomenon that is being rapidly adopted by institutions of higher education across the globe. Understanding differences in student experiences in e-learning is vital to building a foundation for improving these educational platforms. This chapter provided the background information needed to understand the importance and significance of the issue, providing a definitive structure for this research.

Chapter 2: Literature Review

The purpose of this literature review is to examine e-learning in Saudi Arabia and New Zealand to determine if there are differences in the way that e-learning helps users to learn. While this topic represents the culmination of the literature reviewed in this investigation, some background information regarding the context in which e-learning is effective, including student characteristics and diffusion of e-learning paradigms and technology in organisations, are also investigated. Foundations for understanding e-learning are needed to provide a context for reviewing the use and efficacy of e-learning in both Saudi Arabia and New Zealand.

2.1 Definition and Scope of E-Learning

Over the course of the last three decades, a considerable transformation in education has occurred. Charbonneau-Gowdy and Cechova (2009) considered this process, noting that the use of traditional classroom instruction initially began to evolve with the introduction of computers in the classroom. The proliferation of the Internet made it possible for educators to utilise computers as a teaching tool and subsequently to engage students outside of the classroom to extend the learning experience (Charbonneau-Gowdy & Cechova, 2009). Over time another transformation occurred, one in which students were able to connect with the classroom through the use of computer technology (Charbonneau-Gowdy & Cechova, 2009). Administrative management of education also migrated to computer and Internet technology during this time, creating a vast system in which e-learning was developed (Charbonneau-Gowdy & Cechova, 2009).

At the core of the current research is an examination of student experiences with e-learning. As such, it is pertinent to consider some of the background on e-learning, including

its scope and definition. Scholars examining e-learning have argued that this method of education integrates two important areas: learning and technology (Aparicio, Bacao, & Oliveira, 2016). According to Aparicio and coworkers (2016), learning is a cognitive process that can be facilitated by the use of various forms of technology. They emphasised the need for a cooperative relationship between these two components in order to enhance the learning experience (Aparicio et al., 2016). E-learning has, to some extent, become an umbrella term in which technological tools are aggregated to provide students with a comprehensive learning environment (Aparicio et al., 2016). The synthesis and integration of technology and education has led to the proliferation of e-learning tools and platforms, with most post-secondary institutions utilising some form of e-learning (PriceWaterhouseCoopers, 2004).

Statistics regarding e-learning and its use, by both students and post-secondary institutions, are staggering. Wladis, Wladis, and Hachey (2014) provided data regarding the development of e-learning in the US, noting that at the present time 30 percent of all students enrolled in higher education complete some of their coursework online. Further, these authors reported that enrolment in e-learning courses increased by one million students from 2009 to 2010, in an effort to keep pace with this trend; most colleges and universities have adopted e-learning capabilities. However research does indicate that the ability of post-secondary institutions to adopt e-learning is often predicated on the resources available to deliver this type of education (Wickersham & McElhany, 2010).

One reason for the popularity of e-learning, both in the US and globally, is that this method of education appeals to a broad range of students who may not otherwise seek higher education. Shah, Goode, West, and Clark (2014) detailed this issue in their research, noting that international studies of e-learning have demonstrated that a large percentage of ethnically

diverse students typically enroll in e-learning courses. In the UK, for instance, 80 percent of ethnic minorities seeking higher education enrolled in online classes (Shah et al., 2014).

The history provided by Charbonneau-Gowdy and Cechova (2009) clearly demonstrated that e-learning did not develop as a stand-alone entity analogous to traditional classroom education. Rather, e-learning has evolved from the use of computers in the classroom and now represents a broad field that, according to Sangra, Vlachopoulos, and Cabrera (2012), is difficult to succinctly and comprehensively define. The broad scope and history upon which e-learning is built has prompted Sayers, Carter, and Carter (2014) to create an all-encompassing definition of e-learning, arguing that the approach reflects “an integration of pedagogy, content, and technologies within a teaching and learning context” (p. 315). These authors went on to argue that e-learning, therefore, includes the use of technology in traditional classrooms, virtual classrooms, blended learning environments, and full delivery of instruction in an online format.

This definition of e-learning promotes a more complete view in understanding this approach to education. Kahn and Khader (2014) contended that e-learning has not only changed the way in which educators provide instruction for students but also that this paradigm of education has changed the way in which students engage with learning materials and information acquisition. Learners are no longer limited by the boundaries of the classroom, making the learning process one that is both interactive and externalised for the rapid transfer of information (Kahn & Khader, 2014). Vandenhousten, Gallagher-Lepak, and Reilly (2014) further argued that e-learning changes the scope and focus of instruction, requiring educators to be more flexible and collaborative in their approach to instruction. The changes required in the process of education create the need for educators to adapt and learn new skills to meet student needs (Vandenhousten et al., 2014).

E-learning has been defined by many researchers. Waterhouse (2003) defined it as a medium of computer technology that could be utilised to develop the application of learning and teaching. Irwin (2012) described e-learning as the use of new multimedia technologies and the Internet to increase learning quality by easing access to facilities and services, as well as distant exchanges and collaboration. E-learning refers to the use of information and communication technologies to enable access to online learning/teaching resources.

Using a narrower concept, Rosenberg (2001) stated that e-learning permits data saving, sharing, and updating, while Horton (2006) believed that e-learning allows the building up of “learning experiences of information and computer technology”. It is important to note that all definitions agree to the fact that e-learning involves using computer technology to facilitate and enhance learning. In some definitions e-learning encompasses more than just the offering of wholly on-line courses. For instance, Oblinger and Hawkins (2005) noted that e-learning has transformed from a fully-online course to using technology to deliver part or all of a course, independent of permanent time and place.

In its broadest sense, Abbad, Morris and de Nahlik (2009), defined e-learning as any learning that is enabled electronically. They, however, narrowed this definition down to mean learning that is empowered by the use of digital technologies. This definition has been further narrowed by other researchers to describe any learning that is Internet-enabled or web-based (LaRose, Gregg & Eastin, 1998; Keller & Cernerud, 2002). According to Maltz, Deblois, and the EDUCAUSE Current Issues Committee (2005), the term ‘e-learning’ can be applied in different circumstances, including distributed learning, online-distance learning, and hybrid learning. E-learning, according to the OECD (2005) can be defined as the use of information and communication technologies in the diverse processes of education to support and enhance learning in institutions of higher education, and includes the usage of information

and communication technology as a complement to traditional classrooms, online learning, or mixing the two modes. Also, according to Wentling, Waight, Gallagher, La Fleur, Wang, and Kanfer (2000), the term e-learning refers to the attainment and use of knowledge that is predominantly facilitated and distributed by electronic means. To them, e-learning depends on computers and networks, but it is likely it will progress into systems comprising of a variety of channels, such as wireless and satellite, and technologies such as cellular phones (Wentling et al., 2000).

In their literature review on definitions of e-learning, Liu and Wang (2009) found that the features of e-learning processes are chiefly centered on the Internet; global sharing and learning resources; information broadcasts; and knowledge flow by way of network courses; and lastly, flexibility of learning as a computer-generated environment for learning is created to overcome issues of distance and time (Liu and Wang, 2009). Gotschall (2000) argued that the concept of e-learning was proposed based on distance learning, thus it is a transmission of lectures to distant locations by way of video presentations. Liu and Wang (2009) however, claimed that the progression of communications technologies, particularly the Internet, transformed distance learning into e-learning. Other researchers have also defined e-learning as a revolutionary approach (Jennex, 2005; Twigg, 2002) to enable a workforce with the knowledge and skills needed to turn change into benefit (Jennex, 2005).

For instance, Twigg (2002) described the e-learning approach as centered on the learner, as well as its design as involving a system that is interactive, repetitious, self-paced, and customisable. Welsh, Wanberg, Brown, and Simmering (2003) also referred to the term as the use of computer network technology, principally through the Internet, to provide information and instruction to individuals.

Liaw and Huang (2003) defined e-learning based on the summaries of its characteristics. In the first place, they proposed a multimedia environment. Secondly, they incorporated several kinds of information. Thirdly, e-learning systems support collaborative communication, whereby users have total control over their own situations of learning. In the fourth place, they stress the importance of e-learning supports networks for accessing information. And fifth, e-learning allows for the systems to be implemented freely on various kinds of computer operating systems.

Ultimately, e-learning has a massive scope and incorporates a range of methodologies and technologies, and is adaptable. This allows for complete flexibility in the management of learning for the student, and to an extent, the ability to tailor the course to the needs of the student. Across the globe, e-learning can be formatted to the needs of the environment, allowing for a wider range of students from a range of backgrounds to attend, building their own tailor-made infrastructure.

2.2 Benefits of E-Learning

The adoption of e-learning in education, especially for higher educational institutions, has several benefits, and given its several advantages and benefits, it is considered among the best methods of delivering education. Several studies and authors have provided benefits and advantages derived from the adoption of e-learning technologies into schools (Klein & Ware, 2003; Algahtani, 2011; Hameed, Badii, & Cullen, 2008; Marc, 2002). Some studies have stated the advantage of e-learning is its ability to focus on the needs of individual learners. For example Marc (2000), in his book review on e-learning strategies for delivering knowledge in a digital age, noted that one of the advantages of e-learning in education is its focus on the needs of individual learners as an important factor in the process of education, rather than on the instructors', or educational institutions' needs.

The advancement of e-learning has occurred at an accelerated pace due to the overall benefits that have been noted regarding the use of this approach. A cursory overview of the literature regarding the benefits of e-learning has suggested that this approach to education serves as the basis for reducing barriers to the access of information. Pamfilie, Bumbac, and Orindaru (2013) contended that e-learning applications have implications for learners across the entire globe, promising to become “one of the most efficient and accessible methods for acquiring knowledge” (p. 398). These authors went on to argue that e-learning should allow for the proliferation of post-secondary education, providing new opportunities for institutions of higher education as well as new opportunities for students.

Even though the assertions made by Pamfilie et al. (2013) are grounded in a theoretical framework for exploring the benefits of e-learning, empirical data definitively demonstrating the benefits of e-learning is scant. Alibec and Sandiuc (2015) attempted to demonstrate the benefits of e-learning by examining the specific case of WebQuests for English language learners. Alibec and Sandiuc were able to illustrate that when students undertook e-learning (WebQuest) in this specific educational setting, English language skills, as well as technological competency of students, could be improved. Although this insight does suggest that e-learning can and will have important benefits in this particular area, it is difficult to generalise the findings of this study to all students engaging in various forms of e-learning. Thus, there are some challenges when it comes to quantifying the benefits of e-learning in practice.

Chircu and Neascu (2015) employed a more extensive methodological framework to acquire insights into the impact of e-learning on student outcomes. Specifically, these authors examined the responses of 350 students attending Politehnica University, in Bucharest, to better understand the usefulness and effectiveness of online education for these individuals.

In general, respondents noted that e-learning tools kept them connected with the classroom to help motivate them in completing work and acquiring passing grades (Chircu & Neascu, 2015). E-learning tools were also helpful for students to maintain contact with other class members and to share information and knowledge (Chircu & Neascu, 2015). Even though these results focused on outcomes for e-learning in one institution—limiting their generalisability—they do indicate the practical value of e-learning. Clearly, more empirical support for understanding the benefits of e-learning is needed to help ensure that this approach is being utilised to its fullest potential and that the theoretical benefits of the approach are being realised in practice.

Wu, Xu, and Ge (2012) found that the benefits of e-learning, as an interactive and appealing mode of instruction and learning, motivated students and increased their global awareness, and it encouraged learners to work independently, as each student could work on different tasks within the “integrated learning environment”. In other words, it addresses differentiation and allows students to work at their own pace. Advanced learners could thus be able to work faster, and finish more activities, than novice learners (Nedeva & Dimova, 2010). This encourages students to manage their personal schedules, as they work at their own place and according to their own preferences. E-learning improves students’ language skills as they practice reading, listening, speaking, and writing via the different e-learning resources and tasks. It increases human sustainability as students acquire skills, attitudes, and attributes that benefit themselves and others and last in the long-term (Irwin, 2012). According to Soliman (2014), e-learning appeals to students’ different learning styles, as they can choose from a variety of activities and resources. It allows introverted students the chance to interact virtually through forums and chats, which improves their communicative

competency. It also increases the time students spend studying in English, which improves their overall language proficiency.

2.3 Drawbacks of E-Learning

E-learning, in spite of the advantages it has when adopted in education, also has some disadvantages (Collins, Hammond, & Wellington, 1997; Klein & Ware, 2003; Hameed et al., 2008; Almosa, 2002; Akkoyuklu & Soylu, 2006; Arkorful & Abaidoo, 2014). For example, despite the claims that e-learning can improve education quality, Soliman (2014) argued that making learning materials available online only results in improved learning results for specific forms of collective assessment. Also Al-Hunaiyyan, Al-Huwail, and Al-Sharhan., (2008) asked whether e-learning is simply a support device for existing methods of learning. The most noticeable condemnation of e-learning is the complete absence of vital personal interactions, not only between learners and instructors, but also among colleague learners (Alhomod & Shafi, 2013). Although there are a lot of benefits which inspire the use of e-learning, we need to take note of all drawbacks of e-learning so as to encourage the search for ways to reduce or eliminate the disadvantages.

The disadvantages of e-learning, identified in various studies, include the following:

1. E-learning, as a method of education, is remote, so students experience lack of interaction or relations with other staff or students.
2. With respect to clarification, explanations, and interpretations, the e-learning method might be less effective than the traditional method of learning. The learning process can be much easier with the use of face-to-face interactions with instructors or teachers.
3. E-learning, as a method, might have a negative effect on the improvement of learners communication skills.

4. Since tests for assessments in e-learning may be performed using a proxy, it will be difficult, if not impossible, to control or regulate bad activities like cheating.
5. E-learning may also lead to piracy and plagiarism, predisposed by inadequate selection skills as well as the ease of copy and paste.
6. E-learning may also deteriorate institutions' socialisation role and also the role of instructors as the directors of the process of education.
7. All educational fields or disciplines are not equally amenable to the employment of e-learning techniques. For instance scientific fields which include practicals cannot be properly studied through e-learning. Researchers have argued that e-learning is more appropriate in social science and humanities than fields such as medical science and pharmacy, where there is the need to develop practical skills.
8. 8. E-learning may also lead to congestion or heavy use of some websites. This may bring about unanticipated costs, both in time and money disadvantages (Klein & Ware, 2003; Hameed et al., 2008; Almosa & Almubarak, 2005; Arkorful & Abaidoo, 2014; Alhomod & Shafi, 2013).

Although there is considerable theoretical support for the utilisation of e-learning as a central means for developing education, a review of practical experience in implementing this paradigm in practice does indicate that there have been some notable challenges in successfully advancing this approach. Stepanyan, Littlejohn, and Margaryan (2013) argued that many e-learning initiatives fail primarily due to the fact that these projects “exhaust resources and degrade in their impact” (p. 91). Stepanyan et al. argued that the problems associated with e-learning programs have left many colleges and universities desperate for solutions to create sustainable programs that will improve outcomes, for both the institution and students, over the long-term. Rapid changes in information technology coupled with the

changing needs of learners continue to contribute to these difficulties, making it difficult for organisational leaders to respond rapidly to flexibly meet these demands (Stepanyan et al., 2013).

Stansfield, Connolly, and Cartelli (2009) further considered the failure of e-learning initiatives, noting that many programs have failed due to three specific factors. These include: overly ambitious plans; a lack of market research; and a lack of financial planning (Stansfield et al., 2009). These authors argued that a systemic review of the failure of e-learning programs indicates that planning issues have extensive implications for program success. In particular, Stansfield et al. reported that the lack of planning for e-learning often creates a situation in which educators are not provided with the training and support needed to successfully deliver student instruction. Collaboration, coordination, and communication for the development of e-learning are also limited, creating a situation in which many educators simply do not have the capabilities and resources needed to make e-learning successful (Stansfield et al., 2009).

Research examining the challenges associated with e-learning is based on a review of actual programs, therefore the challenges noted provide an important foundation for addressing the problems and creating a better system for e-learning. Cook (2009) considered these issues, arguing that efforts should be made to address the most pressing problems facing e-learning, while creating an environment in which e-learning is viewed as a complementary tool to traditional classroom instruction. According to Cook, both e-learning and traditional education have benefits and drawbacks creating a situation in which integration of the two models provides a viable foundation for collectively enhancing education. By working toward a system in which this approach to e-learning is adopted, institutions and educators

may be better able to cope with the challenges of e-learning and holistically create a better system of education.

It is evident that while e-learning is evolving rapidly, literature regarding the development and growth of e-learning does indicate that there are some challenges and limitations to this process. These limitations will invariably have implications for the ability of schools and countries to provide effective e-learning environments for students.

2.4 E-Learning Challenges

Challenges associated with the development and implementation of e-learning platforms; include technological concerns, faculty capabilities, and student knowledge and skills. Technological issues associated with the development of e-learning have been reviewed by Kisanga and Ireson (2015), who contended that the development of online platforms to deliver this type of instruction can be quite costly overall. Financial support from government agencies is often needed to build the physical infrastructure needed to provide e-learning (Kisanga & Ireson, 2015). In countries where this type of support is not available, challenges may arise (Kisanga & Ireson, 2015). These issues can impact the quality of e-learning and shape student attitudes toward the process (Islam, Beer, & Slack, 2015). If the technology needed for student success in e-learning is not available, this may negatively impact student willingness and ability to utilise these platforms for education (Kisanga & Ireson, 2015).

Faculty issues involved with e-learning have also been noted to have implications for the use of these platforms in higher education. Alodail (2016) asserted that faculty members providing online education are faced with the challenge of developing the IT skills needed to effectively deliver education in a computer-mediated environment. While IT skills are an important concern for ensuring that faculty is able to offer e-learning, Sisco, Woodcock, and

Eady (2015) took the argument one step further, noting that educators must develop e-learning literacy. According to these authors, e-learning literacy refers not only to the ability to use technology for instruction but also to the ability to adapt traditional classroom instruction, such that methods used in the classroom can promote student learning online. In order to make e-learning successful for students, faculty require a number of unique and specialised skills to deliver instruction via a computer-mediated environment.

Student barriers to e-learning have also been reported in the literature. In particular, Becker, Newton, and Sawang (2013) argued that many students lack some of the basic computer literacy skills needed to participate in e-learning environments. These issues, according to Becker and coworkers, can be difficult to address in practice, as efforts to build computer literacy require assessment of student needs before e-learning is initiated. Additionally, scholars have argued that students engaged in e-learning must have specific skills, including time management capabilities, in order to be successful in this learning environment (Rahim, Yusoff, & Latif, 2014). It may also be difficult for institutions of higher education to address students' personal skills before enrolling them in e-learning courses.

Moreover, Mee, (2012), Allan and Lawless (2004), Jackson and Fearon, (2013) and Islam, et al. (2015) found that challenges in e-Learning can be divided into five categories: learning styles and culture, pedagogical e-learning; technology; technical training; and time management challenges.

2.4.1 Learning Style and Cultural Challenges :

To achieve the best learning outcome it is desirable to have an understanding of students' learning styles (Sywelem, Al-Harbi, Fathema, & Witte, 2012). Online students' learning styles can be unclear; this has implications on how academics develop learning

material. Some students learn through interacting, some prefer learning through visual presentation, and some by listening to instructions and using written notes. This challenge has an implication for learning outcomes and poses a serious issue for academics to understand the learning styles of their students in an e-learning environment (Tait, Tait, Thornton, & Edwards, 2008).

Taylor (2002) described e-learning as exceptional for courses that require cognitive learning. However, for teachers dealing with cultural barriers, differences in student attitudes may hamper the e-learning environment. Academic staff that are better trained will bear the fruits of higher student learning. However, if the teaching staff are not trained in using the e-learning technology and do not have a strong grasp of the operation of the technology then student learning is likely to suffer. Teachers must understand and recognise the individual learning styles of many hundreds of students (how they learn and how they perceive) in the context of online education. It is important to convey and share information with students (Brozik & Zapalska, 2006).

According to Hannon and D'Netto (2007), because pedagogy and technology do not reflect the culture of the student, it reduces his or her learning outcomes and the cultural differences affect their ability to work with e-learning technologies. The outcomes are reduced because students of different languages respond differently to how things are organised in e-learning technologies and students of different cultures also have different abilities to work with e-learning technology. When a student has a preference for a particular learning style, it can become difficult to learn in other ways, which means academics must be aware of different styles and need to design learning materials that enable students to learn. This is the most important role of an academic in e-learning (Callaghan, Gardner, Horan, Scott, Shen, & Wang, 2008). Therefore understanding learning styles is a critical

consideration during course design and institutions should provide resources and training for academics to meet this challenge. However this is a time consuming and costly task, a great deal of time and effort is required and the courses' material and students' learning styles have to be assessed whenever a new student cohort joins.

2.4.2 Pedagogical E-learning Challenges

Pedagogy is concerned with enabling the best way to achieve learning (Zondiros, 2008). If pedagogy is not considered then the desired learning outcomes will not be achieved. Successful pedagogy requires the teacher to understand how students learn, then design and deliver course materials, and mentor students appropriately, so that knowledge and skills are passed on. In this way, e-learning will produce a return on investment (Morley, 2010). Pedagogy should be the cornerstone to any e-learning technology; without pedagogical principals learning will be hampered.

E-learning requires a different approach to pedagogy, especially in areas such as individual and group interaction and online assessment (Turvey, 2008). However such an approach is not alien to all. Distance education has been around for decades using postal services, TV, and telephone. As e-learning is currently widespread, academics who are not equipped technically to handle development of materials and delivering online modules are hampering progress, and they require extensive skill development (Loveless, 2011).

Having a well-designed course that is pedagogically focused, and academics who understand the different strategies of online learning along with an understanding of diversity, context, and group dynamics is not sufficient; these all require the institution management to be marketing the pedagogical benefits of online learning with practical examples that academics can relate to so they are encouraged to use e-learning technology (Jackson & Fearon, 2013).

2.4.3 Technological Challenges

Technological challenges refer to development issues such as the bugs, speed, errors, functions, and features of the e-learning platform not working correctly, or not working according to what the academics require. In reviewing e-learning literature, there are various criticisms of the quality of the e-learning systems currently being used. Issues have been raised that include: usability problems; bad performance; institutions being unable to customise according to their requirements; and occasional criticism for having a teacher centered system, rather than learner centered system (Chua & Dyson, 2004).

Institutions have a variety of applications and computer operating systems for various uses, such as the student registration system, and research support applications, such as NVIVO and SPSS (Farmer, 2004). All these applications have to be merged and linked within one e-learning environment to make it accessible and enable central support; however, this requires the merging and linking of various applications (Reeder, Macfadyen, Chase, & Roche, 2004). This creates increased network traffic to support the centralised infrastructure, thus it should be robust and have enough capacity and capability to handle student academic communication. This is a complex process, especially where old and new applications meet, and is a challenging process affecting academics who have to use the system (Nielsen, White, & Zhou, 2011).

Absence of technical errors, bugs and good speed of communications are critical if academics are to use the system and are critical to the success of the e-learning technology. If the system does not function correctly then the technology will not be used and negativity will arise in using e-learning technology, which has big ramifications for institutions, as they have invested hugely. Therefore the technology should be used effectively for a return on investment.

2.4.4 Technical Training Challenges

Training challenges refer to the training requirements that will enable academics to learn e-learning features and functions correctly and to use them effectively. Volery and Lord (2000) explained the three requirements needed for effective e-learning success as: technology; instructor characteristics; and student characteristics. Technology needs to improve; however, the instructor's characteristics and familiarity with technology are most important in terms of having a successful learning experience.

If the capabilities of students are, at best, intermediate then there needs to be organized training for the students. If sufficient amount of training is not implemented then the burden of training will fall on overburdened academics (Eynon, 2005). This is supported by Salmon (2000), who suggested that instructors do not have sufficient training to enable them to successfully and productively aid online learners. Jackson and Fearon (2013) argued that there are two types of training required for online teachers. First is in-depth training for those who spend the majority of their time teaching through e-learning technology, and the second is a shorter course for teachers who will use the technology in addition to face-to-face learning. Therefore providing adequate training would help academics do their job more effectively, whether this relates to managing online discussion forums, or identifying pedagogical needs amongst students (Allan and Lawless, 2004).

2.4.5 Time Management Challenges

Academics that use e-learning systems can face difficulties in managing their time. According to Reeder et al. (2004), some of the "cyber culture values" are characterized by speed, reach, and quick response. However in recommendations set out by Burd and Buchman (2004), the prerequisite to be an effective online instructor is that academics must visit the discussion page at least once a day to see if there is a posting by students.

Other researchers have stated that e-learning is 30% more time consuming for academics than traditional classroom teaching (Feldstein & Masson, 2006; Heinrich, Milne, & Moore, 2009), not just due to the increase in working hours, but also because academics' efforts to teach effectively increase by 14% (Tomei, 2006). Literature has pointed out that while the methods of learning have changed from the traditional, teacher and student roles remain the same, and e-learning allows a class to run 24 hours a day, and verbal conversations have been replaced with a permanent written discussion forum, which students can update any time of the day or night (Phipps & Merisotis, 2010). This means academics have to be working nights, weekends, and holidays, as students expect to have a reply immediately and "if things go wrong then they have a semi-permanent existence on the screen" (Strang, 2010)

The literature has shown heavy demands are placed on academics when e-learning is introduced. If academics are overworked and do not have sufficient time then student learning will suffer. This is especially true when academics are not being compensated for the extra work they are carrying out. This could lead to low academic morale and may jeopardise learning and damage institutions' image.

2.5 Global Issues in E-Learning

The discussion provided so far indicates that there are a number of factors which currently shape outcomes for e-learning. While these factors often have implications at the individual or institutional level, research suggests that there are additional variables influencing the development of e-learning at the national level as well. Topor and Dinu (2014) were able to demonstrate this point in their research, asserting that cultural differences are currently shaping the evolution of e-learning across the globe. Cultural factors stem from how individual nations view education, investments made in higher education, and preferences of students toward methods of education: i.e., traditional or online coursework

(Topor & Dinu, 2014). As a result of these issues e-learning is evolving differently across various regions of the globe.

Placing this information into the context of understanding e-learning development in New Zealand and Saudi Arabia, there is evidence which suggests that differences in the development of this method of education have resulted. In general, there are indications that New Zealand, government and institutional efforts to build e-learning platforms have been commensurate with efforts put forth in the US (Lim, Ripley, & O'Steen, 2009). Educators and students in the country typically hold positive views of e-learning, with efforts made by both groups to contribute to the improvement of e-learning tools (Stein, Shephard, & Harris, 2011; Gedera, 2014). While positive attitudes by students and educators toward e-learning are also expressed in Saudi Arabia, research indicates that investment in e-learning, as well as technological challenges, have prompted some level of disinterest in developing this foundation for education (AlMegren & Yassin, 2013; Alqurashi, 2011).

Synthesis of the literature indicates that while e-learning has become a global phenomenon there are differences in the development and evolution of e-learning in different regions of the globe. The process of globalisation and the need to educate students as part of a larger community suggests that regardless of where a student is educated, he or she will require uniform knowledge and skills to be competitive in a global labour market. Given that increasing numbers of students are seeking e-learning to fulfill their educational goals, it is evident that the differences that exist in e-learning platforms are indeed an issue of serious concern. Determining the challenges facing institutions of higher education when it comes to e-learning is thus imperative for ameliorating these issues and creating a foundation for optimal student learning.

Moreover, Al-Hunaiyyan et al. (2008) argued that language is a critical issue in global e-learning. Language is a cultural tool as well as a culture itself; it includes not only its most obvious meaning, but also the usage variations within a language that set one group apart from another. Language is one of the most important constraints on portability of educational software. Unless instructors and learners understand the language, the program has no value. It is not just a matter of substituting words. One has to be aware of the meaning, the inferences, and connotations.

Religion and politics are both sensitive issues that instructors and instructional designers who adopt global e-learning, should be mindful of. In Asia, religion, history, economics, class systems, and politics have a deep impact on how life and work issues are perceived and programmed. In addition, political relationships between countries play an important role in cooperation on the academic front. Some countries do not trade with others, and may refuse to buy computers or software made in certain countries based on political ideology (Selinger, 2004).

2.6 E-Learning Applications

In recent times, there have been advances in the development of social software technology, in particular in the field of education (Henry, 2000; Alowayr & Badii, 2014). Blended learning strategies can optimise the integration of multi-modal, multi-channel, and multi-source learning, which includes online and traditional learning; this helps learners develop and improve their learning autonomy and to self-manage to best suit their learning style, lifestyle, and work style. Such software applications are generally developed on web 2.0 tools, for example m-learning applications, Twitter, YouTube, slide share, Picasa, media wiki, etc. In the field of education, this software is used to help teachers monitor students' activities. In specific terms, e-learning is based not only on distributed learning, online

learning, virtual learning, and web based or networked learning, but also on testing and evaluating the best feedback, intervention, and the interaction of some platforms in e-learning environments between the instructor and learner (Attwell, 2006).

Learners require specific knowledge about the content that has been taught, along with assurance of its accuracy and authenticity. Consequently, the Learners Management System (LMS), which relies on web servers, was developed using application tools and other resources, such as a Monitoring and Analysis Tool for the E-learning Program (MATEP), to resolve both instructors' and learners concerns (Popescu & Cioiu, 2012). MATEP tools run over Web servers with log files where every activity of learners can be captured, and was designed to help instructors track their learners activities online (Mihaescu, 2006). MATEP tools are enriched with the necessary information sourced from academic and social demographic areas. MATEP is a web application that provides a platform on which the LMS and e-learning could be performed independently. It can provide information that is updated automatically, at a frequency desired by the administration. Further to this, a large number of higher education institutes utilise a similar form of e-learning, whether retrospective or to prepare students for future lessons, for example MOODLE and SAKAI. Both of these models are open source learning platforms which allow access to lessons, contact, document upload and further research, allowing communication and education to flow beyond just a classroom setting.

Another framework for the delivery of e-learning processes could be the virtual environment, which is closely linked to the e-learning process. Avatars are a system that works online for representation of the self in the virtual world, and are designed to increase interaction between instructors and students. Avatar users are able to create a personality that is visible to the virtual world and allows the users to use imaginary experiences in order to

transform the actual world in which they live. Avatars in the virtual environment are based on social networking and entertainment purposes and are now well established. The use of educational contexts in the Avatar system is in an early stage of the development process, along with the applications (Zorrilla & Álvarez, 2008; Alowayr & Badii, 2014).

Some of the applications of a system, such as the Avatar in a virtual framework, are early simulation games and activities, such as the Sim series, and other specialist uses, mainly in science and mathematics. There are researchers who are of the opinion that Avatars can be used for virtual discussion in online object-oriented environments (Martino, 2007; van den Brekel, 2008), claiming that such environments have the potential to enhance social interaction and support connectedness, particularly among those individuals who may have difficulty communicating on a face-to-face basis.

2.7 Critical Elements of E-Learning

In its most basic form, e-learning represents a modern day form of what was once called distance education (Clear, Haataja, Meyer, Suhonen, & Varden, 2001). Although e-learning has been criticised because it significantly differs from traditional face-to-face instruction there is evidence which suggests this approach can be highly effective for delivering quality instruction (Clear et al., 2001). However, experts assert that in order for distance education and e-learning to be effective there are a number of different elements which must be coordinated to enhance the learner experience (Clear et al., 2011). A number of different elements for the success of e-learning have been identified in the literature, therefore it is helpful to provide some insight into these issues.

2.7.1 Student Attitudes/Preferences

A review of what has been noted regarding student attitudes, preferences, and perceptions of e-learning suggests that the way in which students approach the process of e-learning can facilitate success in utilising this approach to education. Sek, Deng, and McKay (2014) illustrated this point by noting that in most e-learning courses students are “left to their own devices to muddle through their instructional materials” (p. 1). As a result, the preferences of the learner coupled with the supports provided in the online environment will shape the perceptions of the student and the development of capabilities for being successful in online courses (Sek et al., 2014). Bergstrand and Savage (2013), who surveyed students enrolled in 118 sociology courses, also found differences in student attitudes regarding education provided in an online environment. Specifically, these authors reported that students reported learning less in online courses and being treated with more respect in traditional classroom environments. Further, Bergstrand and Savage reported that students rated online courses less positively than traditional face-to-face classes.

Although the research provided here seems to suggest a linear relationship between student attitudes and perceptions of e-learning opportunities with respect to outcomes, Cole, Shelley, and Swartz (2014) contended that understanding student perceptions toward e-learning is more complex. In particular, Cole and authors conducted a three year study of student preferences toward online education, noting that there were specific elements of the practice which fostered satisfaction, and specific elements of the practice which fostered dissatisfaction. More precisely, convenience was noted to be a positive motivator for student engagement in e-learning, while a lack of face-to-face interaction was found to be problematic for many students. Giddings, Campbell, and Maclaren (2006) also noted the role of flexibility as a factor in improving student satisfaction with e-learning. These authors

asserted that the importance of effectively developing and implementing courses to meet the needs of students contributes to positive outcomes for students enrolled in online courses.

The complexity of student attitudes toward online learning was also highlighted by Alhabahba, Ziden, Albdour, and Alsayyed (2012). Specifically, these authors found that attitudes of students engaged in online learning included a number of different factors. When students liked the interface and viewed online learning as an effective tool, attitudes and outcomes were positive overall; however, if the interface was viewed as difficult, negative attitudes and outcomes prevailed (Alhabahba et al., 2012). Students also demonstrated positive opinions if the content in e-learning courses was viewed as relevant and useful (Alhabahba et al., 2012). Attitudes toward e-learning among students attending college in Libya were further measured by Rhema and Miliszewska (2014). According to these authors, student attitudes are shaped by a number of factors, including past experiences with technology and web-based learning. These concerns prompt Rhema and Miliszewska to argue that student exposure to technology should be considered when developing e-learning initiatives, especially in countries such as Libya.

2.7.2 E-Learning Supports and Diffusion

Although student attitudes and preferences toward e-learning do have implications for the successful development and implementation of this approach to learning, the research reviewed does indicate that the supports provided to students in the online educational environment also play a significant role in shaping outcomes for student preferences, attitudes, and satisfaction (Giddings et al., 2010; Sek et al., 2006). Other scholars examining this issue have further noted the impact of this variable on results from online learning. For example, Driscoll, Jicha, Hunt, Tichavsky, and Thompson (2012) sought to examine differences in satisfaction and student performance in students completing online or face-to-

face sociology courses. The results of the investigation clearly indicated that there were no statistically significant differences in outcomes for the groups. This lead Driscoll and colleagues to argue that “when online courses are designed using pedagogically sound practices, they may provide equally effective learning environments” (p. 312).

The supports needed for e-learning development and student success have been conceptualised by Nichols (2008) as being directly related to e-learning diffusion. As noted by this author, e-learning diffusion refers to the process of “establishing technology-enhancing teaching and learning within an education institution” (p. 598). What this effectively suggests is that student success with e-learning stems from the ability of colleges and universities to include technology-based education throughout the curriculum. Lee, Hsieh, and Hsu (2011) further examined the role of technology diffusion in the context of e-learning, arguing that the integration of technology and the extent of technology use in the educational environment positively shapes attitudes and behaviors toward e-learning. Thus, the right environment for e-learning development is required in order to facilitate engagement in this learning paradigm.

2.7.3 Educator Characteristics

The insight provided here indicates that the critical elements involved in the development of e-learning include both student characteristics as well as the supports provided by the institution. A closer look at critical elements involved in e-learning success further indicates that the attributes and characteristics of the instructor also play an important role in shaping outcomes for e-learning success. Chang, Shen, and Liu (2014) considered the viewpoints of 106 instructors engaged in online education in 20 different universities operating in Taiwan. The results of this investigation indicated that most instructors viewed themselves as content experts and instructional designers with significant gaps in these roles

in practice (Chang et al., 2014). Educators face considerable difficulty when it comes to meeting the demands of e-learning, raising questions about the efficacy of these professionals in delivering effective online instruction (Chang et al., 2014).

Additional research undertaken by Nihuka and Voogt (2012) has further illustrated the challenges that educators face in delivering e-learning to students. Nihuka and Voogt argued that in addition to the fact that many instructors do not have the expertise and knowledge to educate students in this environment, the use of training to build online educational skills does not ensure that these professionals will be able to effectively deliver this type of instruction (Nihuka & Voogt, 2012). Clearly, there are current gaps in the knowledge of educators who are attempting to transition to e-learning platforms. Ensuring success in this process may require more than just simple training, as educators may require extensive and ongoing support to make this approach to education a viable choice for student success.

Further challenges to the use of e-learning platforms by instructors have been identified by Ferdousi and Levy (2010). In particular, these authors surveyed 119 adjunct professors to better understand barriers to e-learning as part of classroom instruction. Ferdousi and Levi found that resistance to change, the perceived value of e-learning, computer self-efficacy, and the general attitudes toward e-learning had significant implications for how e-learning was used in the classroom. Educators with a positive view of e-learning, who were comfortable with technology, were more likely to adopt e-learning in practice (Ferdousi & Levy, 2010). These issues have notable implications for improving e-learning from the standpoint of the institution of higher education. In order to improve outcomes for e-learning, educators should be assessed to identify barriers to adopting this technology before it is implemented.

2.8 E-Learning in New Zealand and Saudi Arabia

Synthesis of the literature regarding the development of success of e-learning indicates that student attitudes, as well as supports for e-learning (technology diffusion, pedagogy, structure, etc.) must be considered when evaluating learning outcomes. These issues are addressed in specific literature examining e-learning outcomes for students in New Zealand and Saudi Arabia. The scope and use of technology and student characteristics vary, therefore it is pertinent to examine outcomes for each country separately.

2.8.1 E-Learning in New Zealand

In a background paper regarding e-learning in tertiary education, the New Zealand Council for Educational Research reported that almost half of all college and university courses include some type of web-based instruction, with results suggesting that outcomes for e-learning and traditional classroom courses are similar in terms of student achievement. What this data effectively demonstrated is that e-learning and technology have a long history of use in the context of higher education in New Zealand. The diffusion of technology in this environment may have implications for the effectiveness of e-learning in New Zealand, providing the country with a clear advantage for offering this type of coursework.

These assertions have been supported to some extent in the current literature. Lim et al. (2009), for instance, considered the use and perceptions of e-learning, comparing universities in New Zealand to those in the United States. The authors found that similar perceptions and attitudes of e-learning had been adopted in both regions, suggesting that New Zealand's efforts to build e-learning are commensurate with those currently in place in North American institutions of higher education. Stein et al. (2011) further considered the issue of e-learning in New Zealand, noting that educators in the country hold positive attitudes toward

the practice and were actively engaged in developing technology as a platform for student success.

Individual case studies conducted regarding the scope and impact of e-learning in New Zealand have further indicated positive outcomes. In particular, Gedera (2014) examined student preferences for higher education in a New Zealand university. Although students did note the limitations of e-learning approaches, overall the students preferred online learning opportunities. This outcome indicated a high level of satisfaction with this approach to education, as well as high levels of student comfort with technology integrated into education (Gedera, 2014). Further support for positive outcomes associated with e-learning in New Zealand can be found in the work of Johnson et al. (2011) who examined the adoption of e-learning at the University of Waikato over a two year period. The results of this investigation indicated that technology diffusion in higher education and regular discussions regarding the use of technology in higher education have served as the basis for building student participation and satisfaction with e-learning, as well as the ability of educators to effectively utilise this approach in practice (Johnson et al., 2011). Thus, by exposing students to technology and building positive attitudes toward the practice it has been possible to create a positive environment for e-learning development in New Zealand's institutions of higher education (Marshall, 2010).

2.8.2 E-Learning in Saudi Arabia

Research regarding e-learning in Saudi Arabia has indicated that there are different outcomes than those reported in New Zealand. Elango, Gudep, and Selvam (2008) provided a broader perspective on e-learning in Middle Eastern countries, noting that in this region there are both strengths and weaknesses to e-learning overall. In particular, Elango and coworkers reported that while students continue to express interest in diverse aspects of e-

learning, quality issues related to the approach taken to implement e-learning activities have been identified. Based on the insight provided, e-learning is not as well-developed in the Middle East as it is in New Zealand. Challenges to e-learning development in Saudi Arabia were further examined by Alqurashi (2011), who noted issues relating to educator comfort with technology. Some educators find the adoption of technology for online learning “time consuming, leading to increased workload, and demanding high levels of technical support” (p. 107).

The scope and impact of the challenges facing Saudi Arabia, when it comes to the adoption of e-learning, were also highlighted in the context of data provided by AlMegren and Yassin (2013). Specifically, these authors reported that while governmental and nongovernmental organisations in the country continued to contribute to the expansion of e-learning and technology in higher education, challenges for the adoption of this technology and its use persist. This prompted AlMegren and Yassin to argue that the use of technology for online education “is relatively new compared with developed countries in Europe, North America and elsewhere” (p. 125). Clearly, more effort is needed to build a platform for developing e-learning in Saudi Arabia to facilitate participation of both students and educators in the process.

Even though the literature shows that e-learning is not as well-developed in Saudi Arabia as in other countries, studies examining student perceptions and attitudes toward a specific type of technology enhanced learning—m-learning or mobile-learning—do indicate that students have positive attitudes toward technology use in higher education (Chanchary & Islam, 2011). Most notably, this research indicated that student attitudes were welcoming, with many indicating that they enjoyed the flexibility of technology in education as well as the ability of technology to provide immediate access to materials and facilitate

communication. Arguably, student support for e-learning in Saudi Arabia is high; however elements related to technology diffusion and e-learning at the institutional level remain issues of concern for adopting this approach to education.

2.9 Summary

The studies examined in Chapter 2 have shown that there are an extensive variety of variables that can impact on the capacity of students to adequately learn using e-learning platforms and stages. Likewise, this study unmistakably shows that there are distinct contrasts between e-learning in New Zealand and Saudi Arabia. These distinctions give off an impression of being compared, to a limited extent, to contrasts in apparatuses accessible to students to participate in e-learning and also contrasts in the general attitudes of students toward e-learning. Despite the fact that the literature has given an essential comprehension of e-learning by and large, and e-learning in New Zealand and Saudi Arabia in particular, however there is a shortage of relative studies comparing e-learning results in both Saudi Arabia and New Zealand.

A comparison of e-learning literature in New Zealand and Saudi Arabia does indicate that there are some differences in the extent to which the approach has been developed. The literature review of e-learning in New Zealand suggests that technology adoption and diffusion in institutions of higher education has been undertaken for more than a decade, leading to higher rates of acceptance, adoption, and development of e-learning. In Saudi Arabia, student acceptance of technology in higher education appears to be present; however challenges with diffusion and the development of quality e-learning appear to be issues of concern. Given that e-learning has been demonstrated to be effective with high quality supports (Giddings et al., 2010; Sek, et al., 2006) it is evident that further development of e-learning at the institutional level in Saudi Arabia is needed. Until these supports are put in

place, students will continue to face difficulties in achieving desired learning outcomes for e-learning.

Chapter 3: Research Method

3.1 Introduction

The literature review completed in Chapter 2 indicates that there are a wide range of variables which can influence the ability of students to effectively learn and utilise e-learning platforms. The research also clearly indicates that there are notable differences between e-learning in New Zealand and Saudi Arabia. These differences appear to be due, in part, to differences in the e-learning tools available to students, as well as differences in the overall attitudes of students toward e-learning. Although the literature provides some basic understanding of e-learning, in general, as well as e-learning in New Zealand and Saudi Arabia, there is a dearth of comparative research examining e-learning outcomes in both Saudi Arabia and New Zealand.

With this in mind the current chapter provides the theoretical background for a research methodology focused on providing a comparative overview of e-learning in New Zealand and Saudi Arabia. The methodology proposed is a qualitative approach to inquiry which utilises semi-structured interviews to acquire data regarding e-learning outcomes for students in both countries. The advantages and disadvantages of the methodology are addressed, along with a discussion of how data will be collected and analysed.

3.2 Research Objectives

The objectives for this research include the exploration of critical variables that may impact outcomes for students when utilising e-learning platforms. These variables have been identified from the literature and include: general issues such as student attitudes toward e-learning (Rhema & Miliszewska, 2014); the ability to learn autonomously (Ribbe & Bezanilla, 2013); content quality (Yuvaraj, Ajitha, Nithya, & Geethanjali, 2015);

interaction with instructors (Morrison, Cegielski, & Rainer, 2012); acceptance of e-learning (Teo, Ruangrit, Khlaisang, Thammetar, & Sunphakitjumnong, 2014); and availability of needed technology infrastructure to engage in e-learning effectively (Altameem, 2013). The primary research question that arises from these variables is the following:

- Can university students in New Zealand and Saudi Arabia successfully learn from the use of e-learning platforms?

Answering the research question requires answering a number of sub-questions for the current research including the following:

- Are there differences in attitudes toward e-learning for students in Saudi Arabia and New Zealand?
- Are there differences regarding perception of autonomy, content quality, and interactions with instructors for students in Saudi Arabia and New Zealand?
- Are there differences in technology infrastructure (high speed intervention) or students in Saudi Arabia and New Zealand?
- Do university students in Saudi Arabia and New Zealand accept e-learning?

3.3 Overview of the Methodology

The methodology selected for use in this research is a qualitative phenomenological design. A general review of qualitative methodologies indicates that these approaches to research are often

...Recognizable via the use of methods that include, at least, in-depth interview and group-moderation techniques; researchers who offer expertise and knowledge to cover the procedures they use and the interpretations they derive; [and] a particular objective to answer ‘why?’ and ‘how?’ questions (Bailey, 2014, p. 169).

Isaacs (2014) argued that qualitative methodologies are particularly useful when research topics focus on human behavior or the needs or experiences of participants. The goal of this type of research is to expand understanding of a particular social phenomenon to build a complete and holistic picture of the issue under investigation (Isaacs, 2014). This type of insight and understanding often cannot be gleaned through the use of a quantitative approach.

What makes qualitative inquiry unique is the use of an inductive framework for examining a specific phenomenon (Power & Gendron, 2015). The inductive framework requires the researcher to collect data in order to formulate answers to a question (Power & Gendron, 2015). This process is different to quantitative research which focuses on a deductive approach in which a hypothesis is tested and validated through data collection. Based on this assessment, qualitative research embodies a framework in which data must be collected before questions can be answered and insight into the topic can be acquired. The topic for investigation in this research focuses on the experiences of students involved in e-learning to acquire a broader understanding of this process and how it differs in New Zealand and Saudi Arabia. Given the complexity of this topic, a qualitative methodology is suitable for use.

The specific qualitative methodology selected involves a phenomenological approach. Phenomenology was reviewed by Tuohy, Cooney, Dowling, Murphy, and Sixsmith (2013) who argued that phenomenology involves “a way of returning to and exploring the reality of life and living” (p. 18). Tuohy et al. go on to argue that the objective of phenomenology is to “describe things as they appear to the consciousness” (p. 18). Consciousness represents the medium between people and world and therefore always has meaning that can be brought to light through the process of research (Tuohy et al.,

2013). Phenomenological inquiry thus provides a foundation for understanding the lived experiences of those that are directly involved in a particular phenomenon (Tuohy et al., 2013). Given the focus of the current research, emphasis on lived experience is essential for understanding differences in e-learning for students in New Zealand and Saudi Arabia. (Tuohy et al., 2013).highlight how this is necessary because the social strains and expectations for students across set nations and cultures are very different. This social perspective spans from a general view of social constructs, liberties, focuses, and expectation of the youth, served through conventional means such as a public education system. Further to this, the additional financial support, strength of economy and funding. Layer this onto the individual perspectives of students, whether they are supporting others financially or have different learning styles, are lazy or hard working. All in all the combination of all these factors for an individual would direct both their choice of learning and method of learning.

(Tuohy et al., 2013). expand on how qualitative research provides this very intimate access, allowing a broader scope to understand the drivers which propel students to search for alternative means.

Ultimately research which lacks in identifying the key influences, only goes to associate an ideal make-up and upbringing of the lives of the students. This detaches the causes which result in the students perspectives, instead, attributing any adaptation or tailoring of a system or service such as e-learning to a more formal governing body, relegating any social or personal influences, and relying solely on assumption or narrow thinking.

However, going against a conventional, orthodox system, can itself be ingrained within personal and very intimate reasons. Qualitative research details the reality of those partaking in e-learning, the events, personal situations and mindsets which steer them

towards this system. Although this can be seen as more laborious, and a wider form of research and insights, it shines a light in why there is an uptake, support and success of alternative systems.

3.3.1 Advantages and Disadvantages

Although qualitative research appears to represent a viable approach for the current research topic it is important to note the advantages and disadvantages of the approach. Mukhopadhyay and Gupta (2014) considered the advantages of qualitative research, arguing that this approach to research typically addresses many of the weaknesses which are commonly seen in quantitative research. Reviewing the challenges associated with quantitative approaches, Mukhopadhyay and Gupta argued that quantitative research: often utilises only a few variables and is often context neutral; is focused on similarities and ignores differences; and ignores individual and collective biases which exist, including those from researchers and participants. Similarities are generally identified through trends, patterns and data which show commonalities, and in turn a general understanding of the data at hand can be gathered. Qualitative data has a habit of overlooking anomalies, unless the researcher is actively identifying things which are out of the ordinary. As Mukhopadhyay and Gupta highlight, this method overlooks the detail within an action, event or statement given, and in turn, attempts to group data based on set factors, which are controls set by the researcher. Any valuable data which can influence results, which falls outside of this remit is innocently dismissed or overlooked.

Mukhopadhyay and Gupta asserted that qualitative research provides a foundation for addressing all of these issues and facilitating a deeper understanding of the topic under investigation. Depending on the specific topic being investigated, a qualitative

methodology may simply provide a better foundation for exploration and understanding (Mukhopadhyay & Gupta, 2014).

Despite the overall advantages of utilising a qualitative methodology, research regarding qualitative approaches does indicate that there are some drawbacks to this approach. In particular, Ells (2011) acknowledged that the rigorousness of qualitative methods has been drawn into question as qualitative research is often viewed as subjective in terms of its data collection and analysis techniques. Validity and reliability, as well as the ability to transfer or generalise the findings of this type of research have raised questions regarding the quality of the findings and the conclusions drawn (Ells, 2011). Fortunately, various techniques for improving the rigor of qualitative studies have been introduced in recent years allowing researchers to address these critical issues, augmenting the reliability and validity of qualitative studies (Ells, 2011).

3.4 Sampling

The sample for this investigation was collected through the use of snowball sampling. This allowed access to students and individuals who have been involved with at some point, e learning within the learning infrastructures of the set population and nations. Therefore, their experiences, insights and understandings are valuable to the research as primary evidence. However, in order to avoid research bias, whether that's through friend recommendation or selection, as well as attain a representative sample a number of checks were included. This included background study of the individual, initial anonymity, a checklist of age, gender, occupation as well as their marital status. As these all could be indicators of their investment in the e-learning and their need for it to be successful, whether that is for personal or other reasons. From this information, a general variance was

chosen, in order to provide a varied, yet representative sample of those involved in e-learning.

Students attending university in Saudi Arabia, with a population of 28 million, and New Zealand with a population of 5 million, which were familiar to the researcher and were engaged in e-learning, were approached regarding voluntary participation in the research study. Each of the students was asked to refer two friends who potentially may have been willing to participate in the study. In total, eight students attending institutions of higher education in New Zealand and eight students attending institutions of higher education in Saudi Arabia consented to participate in the study.

The samples involved, deliberately, two very different nations. Saudi Arabia in itself is seen as a very conservative nation, very affluent and typically understood to have very high social expectations, so the youth are expected to be successful in well-respected job roles. These expectations range from social behavior and family conduct, to all the way through the educational system and conduct towards teachers. The cultural and religious beliefs influence social governance, and because of that, this feeds in to the conservative lifestyle of prospective e-learning students. Whether that is staying from mixed environments, to an emphasis on family responsibilities and support, again, having an insight into the reality of the situation, demonstrates how systems such as e-learning impact real lives in a raw sense.

In comparison to this, New Zealand was chosen due to its, economy, funding and liberal social stance. This results in students having a different perspective, being more free and able to make individual choices, with less concern for social views and expectations. Alongside this, support given by the government making the switch to e-learning more of a choice to explore alternatives, this demonstrates how e-learning facilitates differing student

needs, whether e-learning is the only opportunity to educate oneself, or whether it's done out of convenience and as an alternative. Although the social constructs and influences are different, qualitative research allowed documentation of each individual experience and reason. Within those, were very common traits, responsibilities and life events shared. The comparative study highlights commonalities and differences within the two nations.

Ultimately justifying how digital access provides a platform. There were a limited number of controls set to ensure some fundamental consistency, such as being open to men and women between the ages of 16-40, typically a time where e-learning and alternative education is pursued. They must have partaken with e-learning within the last 2 years, and finally employment, where the learning took them. Anything else, such as background, education, upbringing etc. would be collated through studies and qualitative research.

3.5 Data Collection Method

Data for the current research was collected via semi-structured interviews with students who had agreed to participate in the study. Interviews are one of the most commonly used methods for data collection in qualitative studies (Bailey, 2014). This approach to data collection can provide a rich understanding of participant experiences regarding the topic under investigation (Bailey, 2014). An interview schedule for data collection was developed by the researcher. The interview schedule was subject to peer-review before use in the study. Peer review was completed for wording and content of each of the questions to ensure that the questions would elicit an appropriate response. Each of the participants was contacted to schedule a time and place for the interview.

3.6 Data Analysis

Data analysis was undertaken through the use of open and axial coding. Open coding was conducted on a line-by-line basis to provide a thematic analysis of the topic discussed by the participants. Open codes were synthesised through axial coding, and focused on identifying unifying themes throughout the open codes. Axial codes for each of the interviews were compared within each group (Saudi Arabia and New Zealand). A general overview of pertinent themes for students in each country was derived. These overviews were used for comparative analysis to identify similarities and differences in e-learning experiences for students in Saudi Arabia and New Zealand.

3.7 Ethics

The research involved an interview, which did not pose any direct harm to participants. Further, informed consent from all participants was obtained prior to the interview to ensure that involvement in the study was voluntary. Participants were identified only by their initials to maintain confidentiality. All digital records for the study were kept in a password secured laptop, accessible only by the researcher. Physical copies of the interview transcripts and audio recordings were kept in a locked filing cabinet, accessible only by the researcher.

3.8 Summary

This chapter provides a basic review of the methodology employed in the current research. The chapter demonstrated the need for a qualitative methodology to address the topic and reviewed the specific sampling, data collection, and data analysis approaches employed. Techniques, including peer review of the interview schedule and member checking of the interview transcripts, should improve the credibility of the findings,

demonstrating rigor in fortifying the qualitative methodology and supporting the conclusions drawn from the study.

Chapter 4: Data Analysis and Findings

4.1 Introduction

This chapter presents the analysis and findings from the research interviews conducted with a sample of students from universities in New Zealand and Saudi Arabia to assess the focal research question postured for this examination. To what degree do post-secondary students in New Zealand and Saudi Arabia effectively gain from the utilisation of e-learning platforms? As noted in the previous chapter, semi-structured interviews with students at universities in Saudi Arabia and New Zealand were utilised.

Convenience and snowball sampling resulted in eight university students from New Zealand and Saudi Arabia being chosen to answer questions about their experiences with e-learning. Appendix A includes a copy of the interview questions that were used in this research.

To aid in answering the current study questions, the interviews were carefully analysed and coded. This chapter includes analysis and the findings of the research.

4.2 Respondent Demographics

This section includes information about the respondents' demographics, obtained from the first part of the interview. Interviews were conducted with a sixteen university students, eight from Saudi Arabia and eight from New Zealand. Table 1, below, illustrates the participants' demographic data. The participants were interviewed from two Saudi Arabian Universities, and two New Zealand Universities.

Table 1: Demographic Data of Participants

	Saudi Arabia (n = 8)	New Zealand (n = 8)
Gender		
Male	5 (63%)	4 (50%)
Female	3 (37%)	4 (50%)
Year in University		
Year 3	1 (13%)	2 (25%)
Year 2	2 (25%)	1 (13%)
Year 1	4 (50%)	3 (37%)
Foundation	1 (13%)	2 (25%)
Employment Status		
Employed Part-Time	2 (37%)	5(63%)
Not Employed	6 (63%)	3 (37%)

As shown above, gender distribution was slightly different between the two sample groups, with five (63%) male and three (37%) female Saudi Arabian participants, compared with four (50%) male and four (50%) females from New Zealand. The majority of the participants were in their first year at university, as follows: four (50%) from Saudi Arabia and three (37%) from New Zealand. Interestingly, most participants from Saudi Arabia (63%) were unemployed, whereas the majority of New Zealand participants (63%) were employed.

As is touched upon in this situation here, the economic situation of each country and how this directly affects the students. This ties in heavily with the concept of demeanour, where the social, economic, cultural and historical background of the participant has a huge influence in their mindset and perceptions going forward. As understood, “In the connection of e-learning student, demeanours toward the procedure will influence both their engagement and readiness to learn (Salyers, Carter, Carter, Myers, and Barrett, 2014). Here we have two very different countries. One is very conservative, reserved and controlled in its nature. The students follow a rigorous process, a full focus on traditional education learning, and

ultimately very high expectations. The ability to express themselves in other ways is limited, hence their choices are funneled into specific areas such as logistics or engineering, generally a skill set which is regarded highly. This recognition doesn't however link clearly with employability as visible by the participants. The students are almost part of the system instead of having influence over it. This has many restrictions, and in turn creates heavy dependence in the infrastructure in place, limiting the ability to change it.

On the other hand you have the demeanor which affects New Zealand, liberalism and also secularism, although this results in a sense of openness and complete flexibility. It can often result in lack of guidance, quick set up of infrastructure; however a short term investment and then an overarching reliance on the system created. Due to this students are more likely to voice opinions for change, as instead being part of the system; they in a sense opt in for personal benefit. This demeanor means that either students will actively engage to change systems for the better, or completely detach in order to enjoy their freedom. Both countries have their challenges in delivering education, and the cultural as well as societal set up also dictates how that education is received and treated.

4.3 Research Findings

This section introduces the data collected through the interviews, which were analysed using content analysis. A detailed explanation based on interview answers will also be provided. The questions focused on the extent to which university students in New Zealand and Saudi Arabia gain from the utilisation of e-learning platforms, as well as indicating differences in states of mind toward e-learning between students from each country.

Additionally, differences in regards to the ability to learn autonomously, content quality, and interactions with educators between students in Saudi Arabia and New Zealand

were explored, along with contrasts in technology infrastructure (rapid mediation), and finally, differences regarding the acceptance of e-learning.

After the interviews were conducted, I transcribed their answers and categorised them according to the study sub questions, as described in the following sections.

First sub question: What are the differences in attitudes toward e-learning between students in Saudi Arabia and New Zealand?

To answer this sub question, content analysis was used on answers to the following interview question:

1- What are your perceptions of e learning's positives and negatives?

Most of the students in Saudi Arabia indicated that they had a positive perception of e-learning because of the flexibility it provides. Students identified negatives impacts as lagging behind due to bad time management skills, and concern over having access to the basic tools needed for e-learning.

For example, Interviewee 4 stated, *"On the positive side, e-learning provides a flexible learning process that can be used when it is convenient and there are numerous learning resources, as compared to class learning. On the negative side, there is no elaboration of unclear areas and it is a lonely process, as there is not much interaction"*.

On the other hand, most of the respondents from New Zealand stated that their concerns stemmed from issues such as instructors losing their employment and the heightened ability for deception or cheating.

Moreover, the most outstanding difference in the data was with respect to the students' inclination for e-learning collaborations. Given that the availability of e-learning platforms might be more constrained in Saudi Arabia, as compared to New Zealand, it was amazing to

find that half of these students favoured e-learning; this could be due to students' personal inclinations and experiences, as opposed to a reaction to the general environment for e-learning. In particular, a few students noted poor personal interactions with educators, which made them cautious of this sort of connection. Thus, across no students in New Zealand might be as centered around fundamental issues identified with e-learning (access and aptitude) as students in Saudi Arabian.

For example, Interviewee 2 stated, "*e-learning has posed a negative threat to teachers since they fear they might lose their job once e-learning is embraced in all learning institutions. On the positive side, students have found it more convenient and it enables faster learning of technical classroom lessons*".

2- What are your perceptions of barriers facing e learning? Do you have any suggestions for the improvement of e learning?

Most of the students from Saudi Arabia viewed the barriers to e-learning as primarily associated with lack of a reliable Internet connection, lack of computer tools and, in addition, students' abilities to capably use the equipment. In New Zealand, the barriers were different, with the requirements for a prepared work force, the improvement of online platforms, and deceptive conduct noted. Students in Saudi Arabia were looking for changes in web capacity and access, new hardware, and workshops to upskill themselves. While workshops to upgrade student knowledge were also noted by New Zealand students, the requirement for government appropriations for e-learning and web limitations were noted. There were many differences in answers among students from both countries, for example, technical abilities and costs were noted as obstructions to self-governing learning in Saudi Arabia, whilst the

students from New Zealand did not note these issues. Students from New Zealand stated that e-learning encouraged their capacity to learn autonomously with a couple of barriers noted.

For example, Interviewee 1 (Saudi Arabia) stated, *"The barriers include the lack of adequate computers in most of the schools and low computer literacy levels. For the improvement of e-learning more computers should be introduced, Internet connection should be available to many people, and society should be educated concerning the use of computers"*.

Interviewee 1 (New Zealand) stated *"The only barrier is that sometimes the learning materials are not adequate, and can be improved by putting more reference materials online"*.

What could be observed from the differing identification of barriers and needed improvements was that New Zealand has passed through more advanced steps in e-learning as compared with Saudi Arabia.

3- In your opinion, how does e-learning compare with traditional learning?

Regarding student attitudes toward e-learning compared with traditional learning, most responses showed that there were a few contrasts between students in Saudi Arabia and New Zealand. While students in Saudi Arabia essentially noted that both strategies were comparative, a larger proportion of students from New Zealand indicated that they believed that e-learning was better since it offered more tools and flexibility, and was easier for student learning. This may be related to the assumption that e-learning in Saudi Arabia is not as developed as it is in New Zealand; in New Zealand, greater access to e-learning devices and platforms exist, so that students view e-learning as better than traditional education.

For example, Interview 5 (Saudi Arabia) stated, *"The most important comparison between the two methods of learning is that all of them require the presence of an*

instructor to facilitate the learning process. Moreover, both learning processes insist on providing comprehensive learning material to be used by the student, printed and none printed".

Interviewee 1 (New Zealand) stated "*Because of the comfort that comes with e-learning, it is easy to learn easily and it is better than traditional learning because one can learn at his own pace*".

4- What learning tools have you used in the e-learning program?

Students from Saudi Arabia reported continuous utilisation of general programs including Quick Time, Real Media, PowerPoint, administration programs, and You-Tube. Students from New Zealand reported using different learning programs, specific classroom tools, PowerPoint, articulate story line, and video instructional exercises, which indicates that the penetration of e-learning devices in New Zealand might be better in class than it is in Saudi Arabia.

For example, Interviewee 5 (Saudi Arabia) stated, "*I have used ANGEL as a course management tool and PowerPoint as a presentation tool*".

Interviewee 3 (New Zealand) stated "*I have made use of articulate learning software*".

Moreover, in defining the word attitude, previous research has indicated that this idea alludes to the convictions and attributions held by the individual (Eagly & Chaiken, 2007). These convictions and attitudes shape an individual perspectives on a particular issue, and likewise, how the individual acts (Eagly & Chaiken, 2007). To connect this concept to an e-learning student, attitudes towards the procedure (e-learning) will influence both engagement and readiness to learn (Salyers, Carter, Carter, Myers, & Barrett, 2014). Hence, understanding

the states of mind of understudies toward e-learning will have important ramifications for anticipating how students will utilise this technology in practice.

Figure 1, below, shows the differences in attitudes toward e-learning between sampled students in Saudi Arabia and New Zealand.

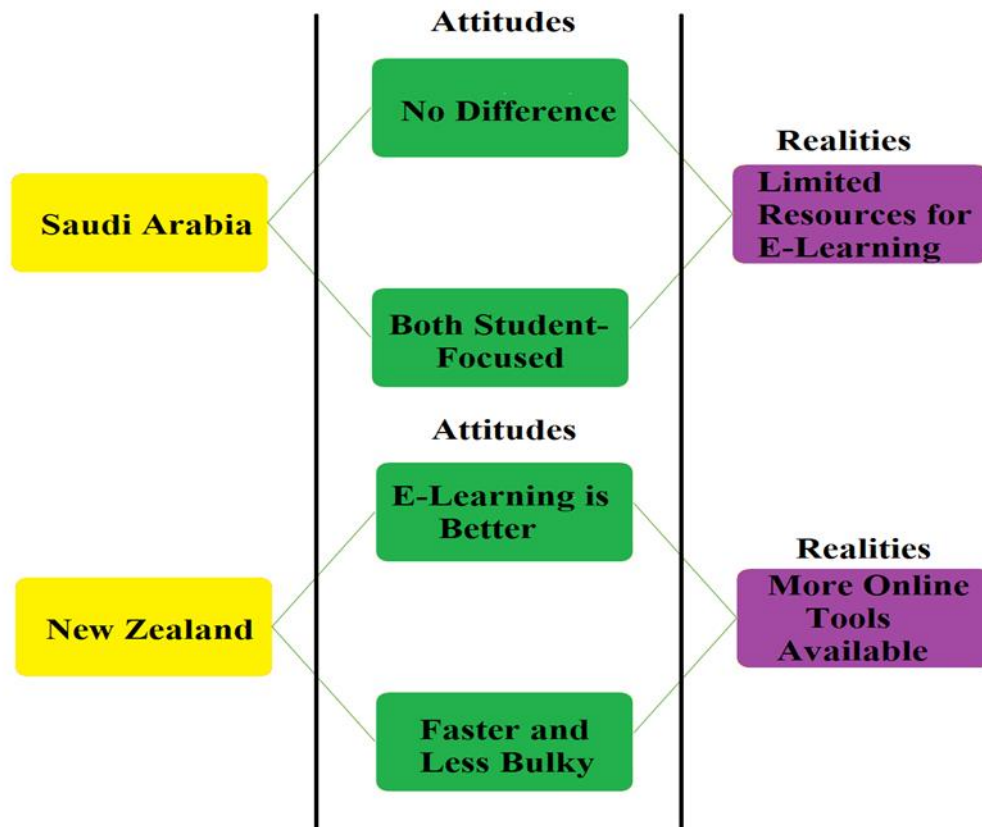


Figure 1: Comparison of Attitudes toward E-Learning

The second sub question: What are the differences in regards to impression of autonomy, content quality, and association with educators between students in Saudi Arabia and New Zealand?

To answer this sub question content analysis was used on the following interview question:

1. Please remark on how well you can learn without anyone else's input through e-learning, at whatever time, anywhere, and at any pace?

Students in both Saudi Arabia and New Zealand can learn independently within the e-learning environment. From the perspective of the participants, learning autonomously helps students to increase their knowledge, and enables them to have access to learning libraries at any time. E-learning instruments may not be as broad in Saudi Arabia as in New Zealand, and on the grounds that the country might absence of essential infrastructure (high-speed internet) and assets (computers and computer skills). What is interesting is that even though these differences exist students in both countries reported proceeded with utilization of e-learning and the desire for opportunities to enhance e-learning.

For example, Interview 7 (Saudi Arabia) stated, "*The process of e-learning by myself has been quite effective. I can access libraries and online academic chats at any time in any place in the country.*"

Interviewee 4 (New Zealand) stated, "*I can learn on my own thanks to the introduction of e-learning in the country. I now have access to countless books, online, very fast, and at any time of the day*".

- 2- What are your desires and needs of e-learning?

The greater part of the students data shows that students in both countries trusted that numerous students were capable advantageously get to education online and the desires for what's to come were than expenses would be diminished and more mentors would be accessible to help students. In both countries, students hoped that there would be extra online backing for utilising e-learning and that coordination of innovation into the procedure was seen as important. Add to that the training online desires made note of the way that solace and simplicity to get to the substance of learn. All things considered, students in both

countries gave an impression of being mindful of e-learning and its importance for their training.

For example, Interviewee 3 (Saudi Arabia) stated, "*I expect that e-learning will be used to increase technology awareness to all the students in Saudi Arabia. I also need the lecturers to be slow in teaching and help us slow learners to understand the effectiveness of e-learning.*"

Interviewee 2 (New Zealand) stated, "*I expect to grasp the technical aspects of my course more easily and be able to do my assessments at my convenience*".

In brief, students in Saudi Arabia reported less independence because of an absence of specialised aptitudes and expense. Further in New Zealand, students favoured personal correspondence for communication while in Saudi Arabia the responses were mixed. However, there were likenesses between perspectives on substance for students in both countries, and contrasts in perspectives with respect to preferred strategy for connection (online or face-to-face) and, the capacity to learn self-governing in the e-learning environment. .

The most outstanding distinction in the data concerned student inclinations for e-learning cooperation. Given that availability of e-learning might be more restricted in Saudi Arabia, it was amazing to find that half these students favoured e-learning communication. This due to the experiences of a few students who noted poor face-to-face interactions with teachers, which made them uncertain of this sort of connection despite the fact that connecting this reaction to the pervasion of e-learning is attractive, the inclinations of students in regards to communication might be more personal, instead of an after effect of the general environment for e-learning.

Figure 2, below, shows the sample differences regarding perception of autonomy, content quality, and interactions with instructors between students in Saudi Arabia and New Zealand.

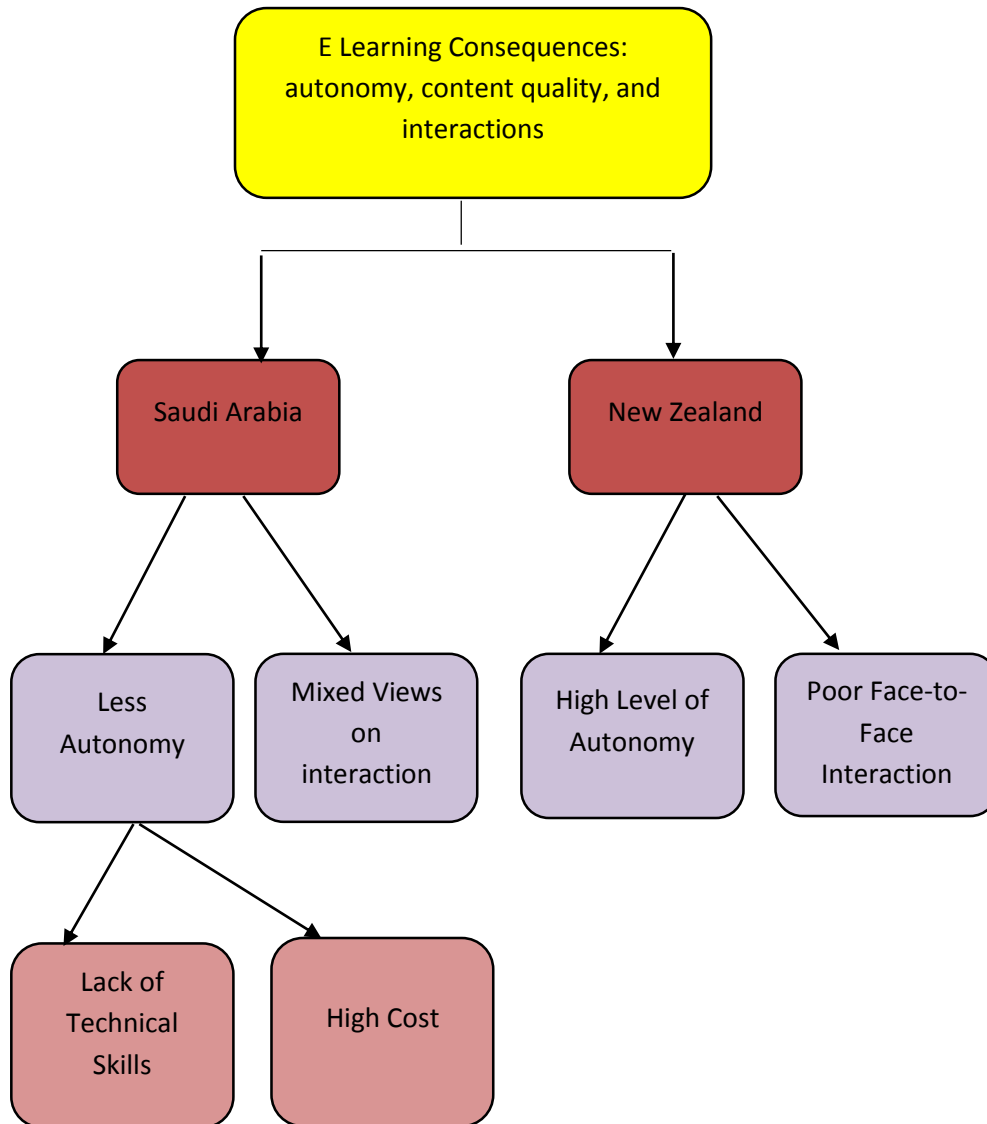


Figure 2: Autonomy, Content Quality, and Interactions

The third sub question: What are the differences in technological infrastructure (high-speed intervention) for students in Saudi Arabia and New Zealand?

To answer this sub question a content analysis was used on the following interview question:

- 1- Do you feel that the e-learning content was at a higher or lower level than the level in traditional learning, or just the same?

Regarding this issue there were similarities between views of the students in both countries, but differences in views regarding preferred method of interaction. Most students agreed that e-learning content was better than traditional learning, with more updated data given all the time. In both countries, students noticed that there were continual efforts to redesign and expand the measure of content online.

These responses indicate that e-learning has penetrated the culture and environment of learning in both countries.

For example, Interviewee 2 (Saudi Arabia) stated, "*The e-learning content is higher than the traditional learning due to the extensive resources and methods of interactions and learning that are provided online. The platform keeps on changing and is much better.*"

Interviewee 4 (New Zealand) stated "*I find e-learning to be at a higher level due to the introduction of video presentations, tutorials, and books that can be accessed by all the students in the country and around the world.*"

- 2- Are quizzes, tests, and examinations administered through e-learning programs?

Please explain how?

Students from both countries noted that tests existed online and could be taken at whatever time. In numerous examples, tests, examinations, and assignments were able to be submitted on line. Students in both nations additionally noted similarities in respect to correspondence and learning being quicker in the online environment. In both countries, students embraced e-learning.

For example, Interviewee 2 (Saudi Arabia) stated, *"Yes. Tesst and quizzes are administered through discussion tools; we post our tests for the professors to mark and then give back for discussion."*

Interviewee 1 (New Zealand) stated, *"Yes. We are tested by the use of online platforms set by our professors who ensure that our class work is graded through the analysis of these assignments."*

- 3-** Did you have access to a question bank on the site? Do you think it helped you with e-assessments?

Most of the students in Saudi Arabia reported that there was an extensive use of the question bank however most the New Zealand students did not use this online tool. It appears that this tool is not widely used in New Zealand, suggesting that this tool may be more rudimentary in nature and reflective of the underdevelopment of e-learning in Saudi Arabia.

For example, Interviewee 3 (Saudi Arabia) stated, *"Yes I do. The question bank has helped me to analyse the questions and responses that have been posted with regards to our course work and assignments."*

Interviewee 1 (New Zealand) stated, *"I have never accessed a question bank. I don't find them helpful."*

- 4-** How helpful was it to playback your lecture videos whenever you needed it?

Saudi Arabian students indicated that videos were helpful for playing back lectures and helped in positive way, while New Zealand students had mixed responses, with some of them see it as beneficial and others as useless.

For example, Interview 3 (Saudi Arabia) stated, *"Replaying lecture videos has been very helpful in revising questions that I encountered at the end of the course work. I*

can always replay it whenever I need to to seek clarification on an issue or topic of discussion".

Interviewee 7 (New Zealand) stated, *"It was not helpful at all. I find it very boring".*

- 5- Please describe your dealings with your lecturers and classmates on-line and face to face. Did you prefer a certain type of interaction, why? Do you think one or both types of interaction facilitate the e-learning process?

Results showed that student preferences for e-learning interactions might be more constrained in Saudi Arabia; it was amazing to find that half of these students favored e-learning collaborations. Despite the fact that connecting this reaction to the penetration of e-learning is attractive, the preferences of students in regards to cooperation might be more personal, for example, one student noted being timid while another reported having a negative experience with face-to-face communication. Understanding these issues is critical in light of the fact that this investigation proposes that the e-learning environment may not shape singular student reactions with regards to working in an online or face-to-face context. Students in New Zealand prefer online communication but with the existence of face to face interaction; moreover, students in New Zealand affirmed that e-learning encouraged their capacity to learn freely with few barriers noted.

For example, Interviewee 4 (Saudi Arabia) stated, *"I prefer face-to-face interactions, as it is more interactive than the e-learning. E-learning is limited to interaction."*

Interviewee 8 (New Zealand) stated, *"Online interaction is very good for me compared to face to face. Thus, it is my preference. To facilitate the e-learning process, online interaction should be adopted by all the students and lecturers."*

In brief, most respondents stated that infrastructure issues seemed, by all accounts, to be a huge issue of sympathy toward students going to university in Saudi Arabia. Taking into

account the gathered data, it is obvious that students in Saudi Arabia do not have all of the essential assets required for viable online direction. High-speed Internet and computer access are issues of concern. Furthermore, the technological literacy of the populace as a whole likewise seems to influence the general utilisation of e-learning. These issues might help provide suggestions for the further improvement of e-learning in Saudi Arabia, as these difficulties should be overcome.

The responses given by students in New Zealand were, to some degree, distinctive, with most reporting reliable access to high-speed Internet and few issues with computer literacy. Expense was an issue noted by New Zealand students as a huge concern that could restrict their capacity to use e-learning platforms; the same was true for Saudi students. Some of the students from Saudi Arabia who reported issues with access to computers and the Internet identified the need for tutors.

Figure 3, below, shows the sample differences in technology infrastructure (high-speed intervention) for students in Saudi Arabia and New Zealand.

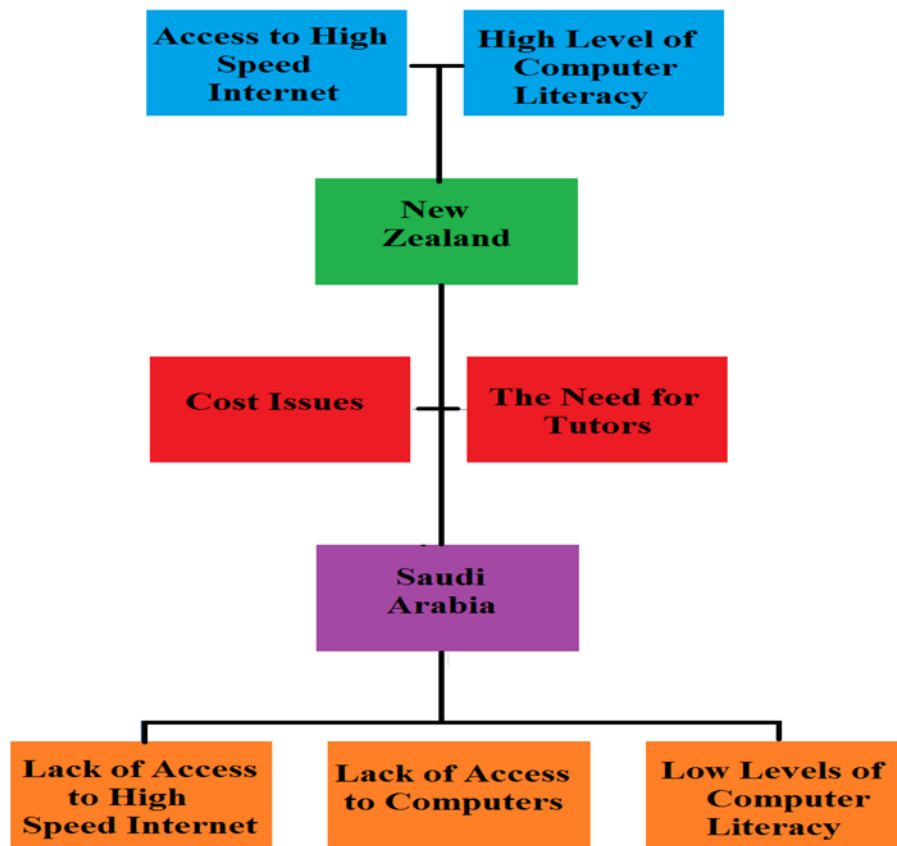


Figure 3: Infrastructure Differences

The fourth sub question: what are the differences regarding the acceptance of e-learning between students in Saudi Arabia and New Zealand?

To answer this sub question content analysis used on the following interview question:

1- How do you think e-learning facilitates speedy and effective learning?

Students in Saudi Arabia complained about slow Internet speeds, which may be the reason why some of them prefer face-to-face communication. Students from both countries noted differences in Internet connection: students in Saudi Arabia identified that the Internet was moderate in many places and excessively slow in others, while students in New Zealand reported that the Internet was regularly accessible at high speeds. In any case, students in Saudi Arabia additionally noted that administration was unreasonable, since e-learning

devices may not be as broadly available in Saudi Arabia and in light of the fact that the country might have an absence of the needed basics, such as high-speed Internet, computers, and computer skills. What this indicates is that e-learning has prompted student engagement yet keeps on commanding education to the point that students are willing to utilise accessible e-learning devices to overcome hindrances and put resources into figuring out how to utilise this technology as a major aspect of their education.

For example, Interviewee 1 (Saudi Arabia) stated, "*Yes. E-learning is faster than traditional learning but it is not as effective*".

Interviewee 7 (New Zealand stated), "*Effective learning is characterised by the range of online platforms available for discussion, books, journals, and tutor videos that students have access. It is fast as there is no need to travel.*"

2- Do you have any comments about fast Internet connectivity in your area?

In view of the data collected, it is apparent that students in Saudi Arabia do not have a portion of the essential assets required for viable online instruction. High speed Internet and computer access are issues of concern. Further, the reports given by students in New Zealand were diverse, with most reporting steady access to high-speed Internet and few issues with computer literacy. Expense was an issue of concern noted by New Zealand students. This issue was additionally noted by students in Saudi Arabia. In New Zealand, larger amounts of access to e-learning devices and assets exist, changing convictions of students such that they see e-learning as better than conventional education.

For example, Interviewee 8 (Saudi Arabia) stated, "*Yes. The fast Internet connectivity in our areas is good for e-learning*".

Interviewee 7 (New Zealand) stated, *"There is more than one learning platform and reference materials online, it is fast to search for materials online. With these, there is speedy learning"*.

3- Do you think e-learning is accepted by your peers? Please elaborate.

Most respondents in both countries asserted that e-learning was accepted and utilised. By and large, students in both countries trusted that the content for e-learning was better, with more data and frequently overhauled data provided all the time. Further, students in both countries noted the requirement for mentors so they could figure out how to accomplish more with e-learning. These issues indicate that e-learning has saturated the way of life and environment of learning in both countries. The most eminent issues seem to include essential needs to encourage e-learning that give off an impression of being more predominant in Saudi Arabia.

For example, Interviewee 7 (Saudi Arabia) stated, *"Yes, most of my peers have undated their support for this form of learning. They have cited many resources that they have been able to acquire through online groups and classrooms."*

Interviewee 8 (New Zealand) stated, *"E-learning has not been accepted with all my peers. Even though most of them have embraced this learning aspect, some of them are still reliant on change with the technology."*

In brief, the greater part of respondents expressed that slow Internet speeds may be the motivation behind why a few students in Saudi Arabia lean toward up close and personal correspondence. Students from both countries also noted differences in Internet speed. Students in Saudi Arabia asserted that the Internet was slow in most areas as well as costly. On the other hand, most respondents stated that both countries accepted and utilised e-learning.

Figure 4, below, shows the sample differences regarding the acceptance of e-learning between students in Saudi Arabia and New Zealand.

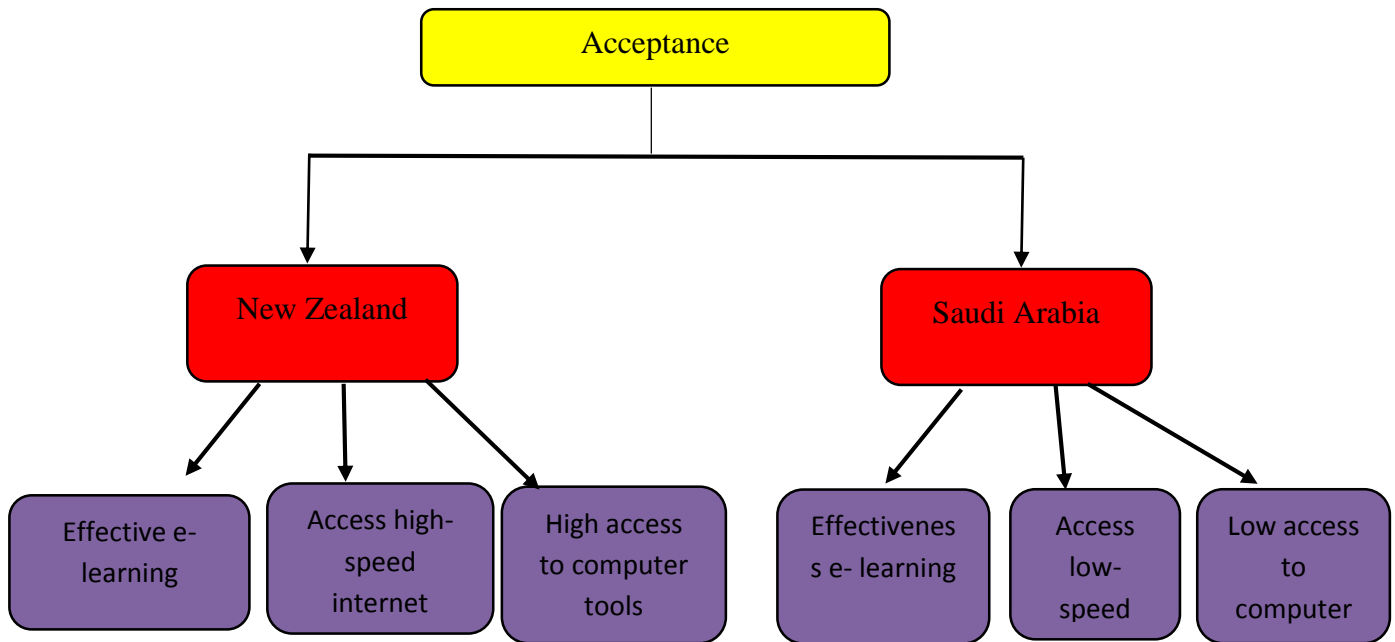


Figure 4: Acceptance of e-Learning

4.4 Summary

This chapter has presented the analysis of the data collected through interviews, analysed using content analysis, with explanations and brief discussion.

The results demonstrated that, students in both Saudi Arabia and New Zealand possess the capacity to gain from the utilisation of e-learning platforms. Be that as it may, what was uncovered was striking contrasts in learning. Students in Saudi Arabia use less e-learning devices than students in New Zealand. Further, students in Saudi Arabia seem to not have a portion of the essential equipment required for powerful e-learning (high-speed Internet access, computer access, and computer literacy). While issues identified with computer literacy were prominent among a few students in New Zealand, the extent of the

issue seems to be the requirement for mentors to demonstrate how to utilise e-learning instruments proficiently. In general, what was observed was that e-learning in New Zealand was at a more advanced stage than in Saudi Arabia, therefore Saudi students can potentially benefit from their experience and these differences can have notable implications for students in Saudi. Thus, further examination of these issues is crucial for understanding the eventual fate of e-learning in Saudi Arabia and New Zealand.

Chapter 5: Discussion and Analysis

5.1 Introduction

The central focus of this investigation was to answer the following research question: Can university students in New Zealand and Saudi Arabia successfully learn from the use of e-learning platforms? The data contained in Chapter 4 clearly indicates that students in both countries are indeed learning from e-learning platforms. Although it is evident that students in both countries have been able to leverage these learning platforms to build their education, there are notable differences in the way that e-learning is being utilised. Based on the data analysis, e-learning in Saudi Arabia is still in its infancy with students struggling to access some of the basic tools needed for e-learning.

This is not the case in New Zealand and this is reflected in the learning tools utilised and the ability of students to recognise that e-learning has broader implications, such as changes in education resulting in the loss of jobs for educators and unethical behavior/laziness on the part of some students, fostered by the online environment. Figure 5, on the following page, attempts to capture the different work in which e-learning occurs in each country. Although it is evident that both countries are making progress toward the use of e-learning it is also evident that the conditions for e-learning present in each county are notably different.

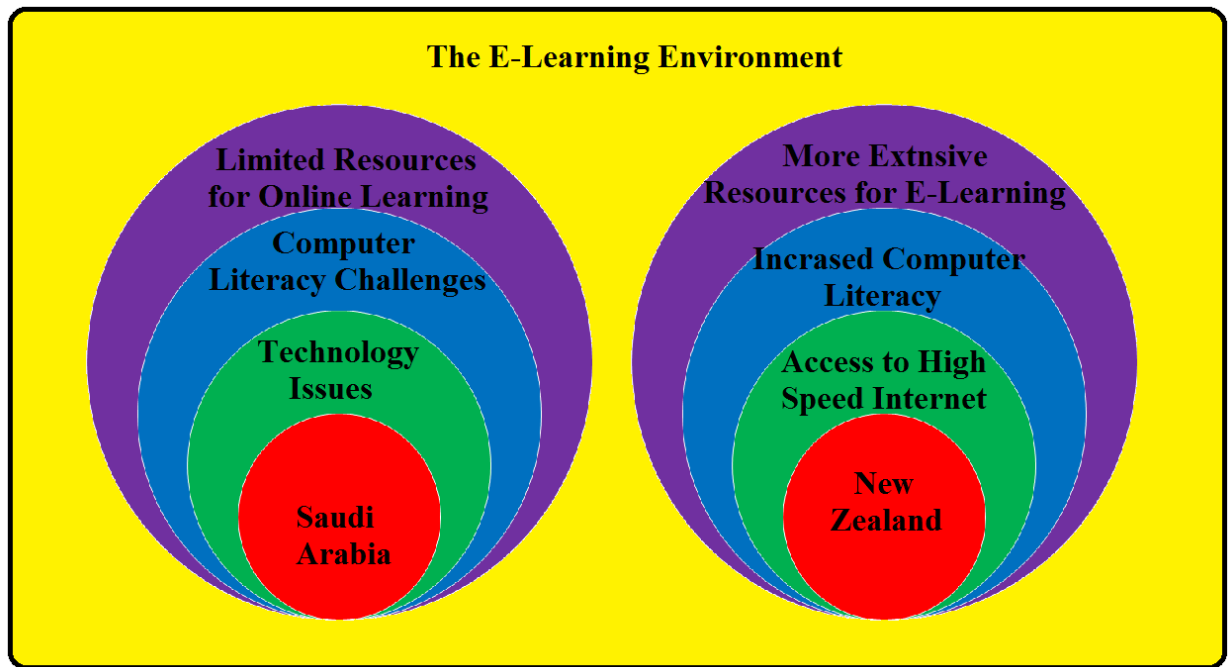


Figure 5: Two Different Worlds of E-Learning

Given that there are notable differences in e-learning detected from the data analysis, there is a clear impetus to review these issues. With this in mind the specific e-learning environment that exists in each country has been reviewed, along with the implications of these environments for the development of e-learning in the near future. This assessment is followed by recommendations for change in each country, based on input from students interviewed for this investigation. By analysing e-learning in each country it will be possible to demonstrate that even though success from e-learning is being achieved in both countries there are differences in terms of outcomes, implications, and recommendations for improving the process.

5.2 Saudi Arabia

Analysis. Data collected in this investigation regarding the challenges facing students in Saudi Arabia when it comes to e-learning appear to be commensurate with the literature

regarding this issue. For instance, Oyaid (2010) argued that technology was first introduced in secondary school classrooms in Saudi Arabia in 1991. Since this time, the Ministry of Education has not worked to develop programs and policies aimed at integrating technology as an integral component of education (Oyaid, 2010). As a result, challenges, such as computer literacy, remain a significant problem, as many high school graduates who enter the university environment do not have the requisite computer skills needed to widely apply technology in their education (Al-Fahad, 2010). AlMegren and Yassin (2013) contended that this issue was pervasive in society, as the Saudi government has not invested in the information and communication technology (ICT) needed for the future employment and education of its citizenry.

Scholars examining e-learning from the viewpoint of various stakeholders have further noted that there are extensive resource challenges in Saudi Arabia. For instance, Al-Shehri (2010) asserted that while it is evident that e-learning is an established component of higher education, educators assert that consistent barriers to e-learning exist, including a lack of resources and staff education to support the use of e-learning for all students. Further, Al-Asmari and Khan (2014) argued that Deans of institutions of higher education reported a persistent desire to enhance and expand e-learning in Saudi Arabia, however persistent challenges related to Internet accessibility and available hardware to deliver this type of instruction remained. Without basic tools and supports for promoting the use of e-learning, Al-Asmari and Kahn contended that institutions of higher education will continue to struggle to provide comprehensive e-learning supports for students. Finally, Iqbal, Iqbal, and Gursul (2012) noted that when it comes to e-learning programs in Saudi Arabia, the quality of these programs has been identified as a significant issue of concern, as the developed program is often limited due to problems with access to technology.

In the context of the data collected and analysed for this investigation, it is possible to understand how the issues noted in the literature are impacting students utilising e-learning. This is especially true with regard to the tools noted for use by students. Real Media, Quick Time and YouTube were among the most common e-learning tools used in Saudi Arabia. These tools are widely available through the World Wide Web and do not represent specialised learning tools or portals for the educational development of the student. Despite these issues, attitudes toward e-learning in Saudi Arabia remain generally favorable; a matter that is consistently repeated in the literature (Hussein, 2011). Although technology literacy and e-learning are viewed as pillars for the future of Saudi Arabia, it is evident that there are notable barriers in building the supports needed for effective, uniform, and advanced use of e-learning in practice (Al-Nuaim, 2012).

Implications. The implications of the current state of e-learning in Saudi Arabia have, to some extent, been noted in the literature. Iqbal et al. (2012) asserted that the future of the country might be imperiled as a result of the lack of technological development and the ability of workers to utilise technology in their careers. Alenezi, Karim, and Veloo (2010) further considered these issues, noting that when it comes to technological advancement, Saudi Arabia needs to invest more heavily in this area in order to remain competitive with other developed nations. While it is recognised that Saudi Arabia is still a developing nation, a more coordinated approach to technology development and e-learning are consistently noted as being essential to the success of the country in terms of international competitiveness (AlMegren & Yassin, 2013; Alsadhan, Alhomod, & Shafi, 2014).

What is evident from the data collected in this investigation is that students do not appear to be aware of the larger issues regarding the implications of e-learning. Although many are concerned about the lack of Internet and computer access, none of the respondents

expressed concern over the future of e-learning or their ability to compete in an international employment market that includes candidates from countries in which e-learning tools are more highly developed and technology is utilised more extensively (i.e., New Zealand). In many respects it seems reasonable to argue that many students in Saudi Arabia may be unaware of the potential use and extensiveness of e-learning tools. Alkhalaf, Nguyen, Nguyen, and Drew (2013) contended that students in Saudi Arabia typically express a high level of satisfaction with e-learning courses. What this suggests is that educators and students still have a considerable amount to learn when it comes to utilising e-learning and technology in education.

The true challenges that exist in this situation were illuminated by Altameem (2013) who asserted that the development and coordination of e-learning systems represents a significant undertaking for any country. However, when this process is juxtaposed against the backdrop of a developing nation, such as Saudi Arabia, Altameem argued that the challenge of building e-learning platforms becomes much more extensive. As observed by this author, “E-learning must be carefully actualized inside of a foundation and the usage needs to fuse the proper social, hierarchical and technological issues which ought to be perceived and went to with a specific end goal to encourage successful transformation” (p. 63). Students, educators, and administrators are all currently struggling to make e-learning a reality in an environment that is not fully developed to support this process.

Despite these challenges, the literature, as well as the findings from this study, do indicate that e-learning has become an established part of higher education (Hussein, 2011). E-learning is needed for student success following graduation and will therefore continue to be driver of change (Alraddadi, Alotaibi, & Alraddadi, 2011). However, because society is unprepared for this change, overall efforts to build technological infrastructure are not

leading change in Saudi Arabia. Rather, e-learning and the needs of students have become the focal point for evolution in technology and, eventually, cultural and social discourse. When viewed in this manner the true impact and profundity of e-learning in Saudi Arabia becomes more evident. E-learning is becoming a foundation for change rather than a part of change. This demonstrates a critical difference between e-learning in Saudi Arabia as compared with New Zealand and is a salient point for understanding the differences that exist in e-learning between these two countries.

Recommendations. Given that e-learning has become an integral part of education in Saudi Arabia it is evident that general efforts to develop technology in the country are needed. Al-Shehri (2010) illustrated this point by noting that the Kingdom of Saudi Arabia needs to promote a technology development plan to ensure that the infrastructure needed for accessing tools such as high-speed Internet are available in all areas. Further, Al-Shehri noted the importance of making technology affordable, such that all citizens in Saudi Arabia can work toward integrating technology into their daily lives. Oyaïd (2010) argued that while certain technologies have permeated most homes in Saudi Arabia many families still lack access to computers and the Internet. Thus, government investment in technology throughout Saudi Arabia will be essential to the continued growth and development of e-learning.

While the need for technological infrastructure to promote computer and Internet use, as well as basic computer literacy, is one step that Saudi Arabia can take toward improving e-learning overall, AlMegren and Yassin (2013) further argued that development is needed in the field of e-learning to expand the use of this educational approach in all areas of education. In an effort to address this issue, AlMegren and Yassin contended that the use of public commons—international, openly accessible resources for e-learning—should be acquired and utilised in an effort to improve outcomes for e-learning in Saudi Arabia.

Improving e-learning tools would expand options for students and increase technological competence. Having access to these tools will also ensure that students educated in e-learning platforms in Saudi Arabia develop skills that are commensurate with those acquired by students attending institutions of higher education in more developed nations. This will have long-term implications for the employment competitiveness of Saudi students following graduation.

5.3 New Zealand

Analysis. Examination of the data collected regarding student experiences with e-learning platforms in New Zealand further indicated that the insights acquired from this investigation are also commensurate with the literature on the topic. In particular, the data analysis indicated that students in New Zealand are able to utilise e-learning platforms successfully and enjoy the benefits of a wide range of learning software tools. Additionally, the data suggested that students are able to consistently access the tools needed for engaging in e-learning. Given this data, it is evident that e-learning has become an integral part of higher education. Sangra et al. (2012) argued that e-learning is widely supported in New Zealand as a foundation for twenty-first century student education.

The assessment of needs of learners in New Zealand, as presented in Chapter 4 (Figures 4, 5, 6, and 7), further represents a significant level of maturity in the e-learning system established in the country. This too has been noted in the literature. Specifically, Marshall (2010) noted a high degree of maturity in e-learning within New Zealand, asserting that a new direction for further development of e-learning is needed in the country. In addition, Stein et al. (2011) considered the views of tertiary educators in New Zealand with regard to e-learning tools. Differentiation and specialisation are noted as critical issues of concern for educators. This suggests that some of the basic supports needed for e-learning

have been developed and that higher level needs for educators must be met in order to further develop e-learning in the country. The level of maturity in e-learning that has been achieved in New Zealand has been further supported by Lim et al. (2009) who argued that there are considerable similarities between e-learning tools and platforms used in New Zealand and the United States. The US is noted as having the most advanced and sophisticated e-learning platforms in the international community (Lim et al., 2009).

The data collected regarding e-learning in New Zealand further indicates student concerns over issues such as teacher job loss and student cheating/unethical behavior. Although some consideration has been given to the potential for educators to become unemployed as a result of e-learning, this issue does not appear to be as prominent as that of cheating and unethical behavior among students (Quillen, 2012). Ravasco (2012) contended that the technology used in e-learning has served as the basis for the proliferation of cheating among university students. Foster and Syrdal (2009) and Jones (2011) further contended that cheating among students utilising e-learning platforms has become a significant concern, especially in the context of evaluating the quality of online learning programs. Clearly, the integration of e-learning has some drawbacks which need to be considered. Interestingly, students interviewed for this investigation did note the importance of tighter web restrictions and security in the development of e-learning as areas for improvement.

When compared with the state of e-learning in Saudi Arabia it becomes evident that there are notable differences in the two countries. While evidence provided in the literature and from data collected in this investigation clearly indicated that e-learning is a viable framework for use in both countries, it is evident that e-learning in New Zealand is currently more advanced than it is in Saudi Arabia. The degree of penetration and use of e-learning in New Zealand will clearly have implications for the future and the recommendations for

change and improvement that can be made in this country, as compared to those made for Saudi Arabia.

Implications. The implications for e-learning development in New Zealand have been considered in the literature. For example, Marshall (2010), in reviewing the maturity of e-learning in higher education, asserted that colleges and universities in New Zealand currently face some challenges when it comes to taking the next steps in e-learning development. According to this author, the needs of faculty and students are changing, requiring institutions of higher education to meet these changes in order to remain competitive. Similar issues were noted by Stein et al. (2011) with regard to the need for specialisation in e-learning. Efforts to change and evolve may prove difficult, according to Marshall, who argued that entrenched systems of e-learning may impede the continued improvement of this learning platform.

A broader foundation for understanding these issues was reported by MacKeogh and Fox (2009), who contended that national e-learning strategies may need to be adjusted and augmented to ensure that New Zealand continues to make progress in developing its online learning platforms. Russell (2009) argued that New Zealand, as well as other developed nations, appears to have some advantages for building e-learning as efforts have been made by the government to work cooperatively with other nations to build the supports needed for e-learning. Ossiannilsson and Landgren (2011) further noted New Zealand's participation in several international benchmarking projects for e-learning. These supports are commensurate with the public commons noted by AlMegren and Yassin (2013) for the development of e-learning in Saudi Arabia. New Zealand is already a part of this process, indicating that the country's e-learning platform will continue to grow and expand much like e-learning platforms in advanced countries such as the United States.

Efforts to continue to build e-learning must persist in New Zealand if the country is to continue to meet the needs of educators and students. Shin and Harman (2009) illustrated this point by noting that as e-learning becomes more embedded in the foundations of higher education in New Zealand, the expectations of students continues to increase. As a result, institutions of higher education will need to work harder to develop the e-learning tools needed to remain competitive, in regional, national, and international markets. Clearly, the expansion of e-learning has some downsides that New Zealand is now experiencing as a result of the maturity of this platform in the country. Thus, the hierarchies provided in Chapter 4 have notable relevance for fully explicating e-learning in New Zealand and differentiating it from e-learning in Saudi Arabia.

Recommendations. The recommendations for the future of e-learning in New Zealand are clearly different from those made for Saudi Arabia. In Saudi Arabia it was noted that e-learning is a driver of technological change in society in general. In New Zealand this is not the case. Technology in New Zealand appears to have moved from society to various industries including education. As a result, many students possess the skills needed to engage in e-learning and to demand more from e-learning platforms. With these issues in mind, technological supports from the government—with the exception of subsidised financial support for high speed Internet access—do not appear to be a foundation for building e-learning in New Zealand. Rather, building e-learning in this country requires efforts to address platform development at the institutional level.

Russell (2009) illustrated this point by noting the need for change and evolution within systems of higher education to build more advanced tools for e-learning. Specialisation and differentiation in e-learning are supported by Stein et al. (2011) as there is a growing awareness that e-learning has reached some level of maturity in the country

(Marshall, 2010). Given these issues, recommendations for e-learning developing in New Zealand should focus on efforts to advance platforms at the university level and for educators to continue to foster collaboration at the international level, such that advancements and innovations in e-learning can be easily and readily adopted in institutions of higher education operating in New Zealand.

5.4 Summary

Synthesis of all of the data provided in this investigation clearly indicates that e-learning platforms are being widely utilised in both Saudi Arabia and New Zealand. However, what is revealed through this research is that the development of technology in both countries has had a profound impact on the current state of e-learning. In Saudi Arabia, e-learning was adopted in education before information and communication technologies were embraced by the general public. As a result, some of the basic supports needed for e-learning—high speed Internet, universal computer access, and computer literacy—have not been available in certain areas. This has created a situation in which e-learning platform development in Saudi Arabia has followed an uneven path that does not ensure that all students will have similar experiences when accessing this platform.

The development of e-learning in New Zealand, on the other hand, appears to have followed a pathway similar to that of the US and other developed nations. Technology was developed as a part of social and cultural discourse proliferating into various industries including education. As a result of this development, Internet access is widely available in the country and most citizens, including students entering into higher education, have some level of computer literacy. Given this developmental history, the challenges and future for e-learning in New Zealand are very different to that in Saudi Arabia. Regardless of these

differing trajectories it does seem reasonable to argue that e-learning will remain an integral component of the educational landscape in both countries for years to come.

Clearly, e-learning has important benefits that outweigh the challenges, making it a viable platform for higher education development in any country. The cases of Saudi Arabia and New Zealand provide substantial insight into the implications of future of e-learning, demonstrating the importance of understanding the development of technology in society. Even though this was not the original focus of this research, the developmental trajectories of both countries are illuminated as being an integral and important foundation for understanding e-learning platforms in both countries. In the end, it is feasible to argue that students are able to successfully learn from the use of e-learning platforms in both countries. However, the extent of learning and the evolution of technology have had, and will continue to have, implications for what students learn, as well as for the quality of e-learning platforms.

Chapter 6: Conclusion

The data collected in this investigation has suggested that students in Saudi Arabia and New Zealand are able to successfully learn through the use of e-learning platforms. The most notable difference between e-learning in the two countries was the level of development of e-learning for students. The results regarding the development of e-learning in Saudi Arabia and New Zealand, are to some extent commensurate with the literature on the topic. For instance, literature regarding the development of e-learning in New Zealand has suggested a higher level of evolution, similar to that achieved in the US (Lim et al., 2009). As a result, student capabilities with regards to e-learning appear to be more advanced (Stein et al., 2011) with students having a broader perspective on the benefits and limitations of e-learning in practice (Gedera, 2014). This is reflective of the research, although that has been maturity achieved in the e-learning in New Zealand, this may actually create an unforeseeable counter-effect, reducing quality and entrenching an infrastructure which refuses to develop.

In Saudi Arabia, the literature regarding e-learning platforms indicates that this technology is still in its infancy (Elango et al., 2008). More pressing issues regarding the use of e-learning appear to be prevalent in Saudi Arabia with many students noting the lack of technology infrastructure needed to support e-learning in the country (AlMegren & Yassin, 2013). Educators in Saudi Arabia also continue to struggle to implement e-learning in practice, creating a challenging environment for students to fully utilise e-learning in all aspects of education (Alqurashi, 2011). The perception across the gathered data, by the Saudi Arabian students, is that e-learning needs to begin to play a wider role in mainstream education. Its infancy within the educational framework means that it is very much neglected system, due to this there is a lack of emphasis, which results in less support, and can ultimately act as a hindrance to students. The principle system needs more investment to

prove it as a valuable and a strong alternative candidate to learning. Maturing this process, like New Zealand, whilst remaining adaptable would fully utilize a host of technologies which are specialized and tailored to purpose, rather than being widely accessible, driving up the quality of education and recognition.

What the research data indicates is that New Zealand and Saudi Arabia are currently in different states of technology and e-learning evolution, and also facing issues in either implementing or maintaining the e-learning model. It is anticipated that Saudi Arabia will eventually be able to catch up with the progress made in New Zealand and other Western countries. This process appears inevitable given the number of students seeking e-learning as a foundation for higher education (Pamfilie et al., 2013).

Even though significant differences in e-learning were noted in both the literature and the findings of this research, students in both countries reported a high level of satisfaction with e-learning given specific issues related to convenience and flexibility. Research regarding e-learning in general supports these benefits as being essential for building student interest and satisfaction with e-learning (Stepanyan et al., 2013; Chanchary & Islam, 2011). The findings from the research also highlight common drawbacks of e-learning in practice. Technology changes and the ability of the organisation to adapt (Stansfield et al., 2009), the integration of e-learning with traditional classroom learning (Cook, 2009), and challenges with technology reliability (Stepanyan et al., 2013) are all issues of concern that impact user satisfaction with e-learning platforms. Further to this, questions raised on e-learning about the level of flexibility, the quality assurance and also supervision provided for students on these platforms. In a mature model such as New Zealand it seems lack of technological development has enabled pockets of students to unethically exploit the system in their favour.

Here, as is visible, heavy dependence on an infrastructure actually restricts change and adaptability, and in doing so, this impacts the quality of learning. Ultimately, this is a factor which leads to student dissatisfaction and also perception in the quality of e-learning. The emphasis on independence actually plants the idea of distrust, combined with a stationery system, this results in even a mature model being relegated out of mainstream learning methods. This is because it eventually fails to adapt to faculty and student developments and needs.

Despite the challenges that exist, there is ample evidence which suggests that the use of e-learning will only continue to grow in the coming years (Charbonneau-Gowdy & Cechova, 2009). The perception of both sets of students is very positive towards the idea of e-learning, and supportive, yet cynical in its application, which is ultimately what is restricting its inclusion across educational systems.

For this reason it is imperative that government and private institutions of higher education work together to address the identified challenges with e-learning platforms. Saudi Arabia has not reached the level of e-learning development achieved in New Zealand and other Western nations, therefore leaders in e-learning working in this country could benefit from a review of e-learning system development in more advanced economies. New Zealand may benefit from consultation with American colleges and universities to create a more effective platform that allows for the optimisation of e-learning.

The results of this investigation not only support the existing literature regarding e-learning in Saudi Arabia and New Zealand but also highlight common trends (positive student attitudes) and the need for different supports for the development of e-learning in each country. Although Saudi Arabia and New Zealand face different challenges in building their e-learning platforms there is ample support for both countries to create effective online

learning environments for students. As progress is made in both countries it will be imperative to monitor change and its implications for student learning and the evolution of online education in general. Clearly, there is an impetus to share information and data to help augment e-learning on a global basis.

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Appendix:

Appendix A: Auckland University of Technology Ethics Subcommittee (AUTEC) approval.



22 June 2015

Shoba Tegginmath

Faculty of Design and Creative Technologies

Dear Shoba

Re Ethics Application: **15/213 Does E-Learning help users to learn? A comparative study of e-learning in Saudi Arabia and New Zealand.**

Thank you for providing evidence as requested, which satisfies the points raised by the Auckland University of Technology Ethics Subcommittee (AUTEC).

Your ethics application has been approved for three years until 22 June 2018.

As part of the ethics approval process, you are required to submit the following to AUTECH:

- A brief annual progress report using form EA2, which is available online through <http://www.aut.ac.nz/researchethics>. When necessary this form may also be used to request an extension of the approval at least one month prior to its expiry on 22 June 2018;
- A brief report on the status of the project using form EA3, which is available online through <http://www.aut.ac.nz/researchethics>. This report is to be submitted either when the approval expires on 22 June 2018 or on completion of the project.

It is a condition of approval that AUTECH is notified of any adverse events or if the research does not commence. AUTECH approval needs to be sought for any alteration to the research, including any alteration of or addition to any documents that are provided to participants. You are responsible for ensuring that research undertaken under this approval occurs within the parameters outlined in the approved application.

AUTECH grants ethical approval only. If you require management approval from an institution or organisation for your research, then you will need to obtain this. If your research is undertaken within a jurisdiction outside New Zealand, you will need to make the arrangements necessary to meet the legal and ethical requirements that apply there.

To enable us to provide you with efficient service, please use the application number and study title in all correspondence with us. If you have any enquiries about this application, or anything else, please do contact us at ethics@aut.ac.nz.

All the very best with your research,



Kate O'Connor
Executive Secretary
Auckland University of Technology Ethics Committee

Cc: Hussain Alqahtani hmf2020@gmail.com; Krassie Petrova

Appendix B: Participant Information Sheet

Participant Information Sheet



Date Information Sheet Produced:

dd mmmm yyyy

Project Title

“Does e-learning help users to learn: A comparative study of e-learning in Saudi Arabia and New Zealand”

An Invitation

My name is Hussain Alqahtani, I am currently completing my MCIS (Master of Computer and Information Sciences) research thesis at Auckland University of Technology (AUT). I would like to invite you to participate in my research by taking part in a one-to-one interview to share your experiences in e-learning. Your participation in this research is entirely voluntary and you may withdraw at any time prior to completion of the data collection, without any adverse consequences.

What is the purpose of this research?

In this study, I will analyse some of the benefits and drawbacks that e-learning opportunities offer and what people from Saudi Arabia and New Zealand say about them. I will analyse the information you (and others) provide to determine what users

from these countries believe works well in eLearning and what they believe needs upgrading or changing. Like all things, e-learning can also be improved and in order to accomplish this in both Saudi Arabia and New Zealand, we will need to know what people who are using these services feel about these learning opportunities and what they want to be changed today. This information will also allow online education organizations, to develop new ways of offering courses or opportunities that will benefit the community of Saudi Arabia and New Zealand.

How was I identified and why am I being invited to participate in this research?

You are being invited to participate in this study as you are a student at a University. If you have experience with e-learning courses, I invite you to share your experience of e-learning with me.

What will happen in this research?

Upon agreeing to participate in this research, we will find a mutually convenient time for an interview which will take place in the library of your College/University. If you have not signed a consent form prior to this interview, it will be given to you to sign before start of interview. The interview session is expected to last for 25-35 minutes. In the interview, I will ask some questions on eLearning and take notes of your responses. The interview will be recorded also to help me to ensure that I note your responses correctly. The outcomes of the analysis will form part of my thesis.

What are the discomforts and risks?

There are no anticipated discomforts or risks. However, if you find a question you not comfortable with, you do not have to answer it.

How will these discomforts and risks be alleviated?

You can skip any questions that you would prefer not to answer.

What are the benefits?

This research provides an opportunity for participants to share their experiences of using e-learning in their respective countries. You will be sharing your opinion of advantages and challenges with the view to improve future service delivery, which may benefit you personally in future eLearning courses you enrol in.

The researcher, after analysis, hopes to be able to with vital information on e-learning in order to prescribe adequate

Following analysis of the information collected by the researcher, the wider community will benefit from the issues and best practice identified which it is hoped will influence future improvements in service delivery.

How will my privacy be protected?

Strict privacy measures will be taken to ensure personal details of respondents are kept confidential. Personal contact details (phone numbers, emails), answers and recommendations will not be disclosed; this will be known only to the researcher and research supervisors. The original interview records and personal information will be destroyed on completion of the analysis. Consent forms will be stored in secure storage for a period of 6 years after completing this study and destroyed once the storage period expired.

What opportunity do I have to consider this invitation?

Your participation is entirely voluntary. If you are not able to make the decision immediately, you can still inform me of your decision to participate (by email or phone) within 3 weeks of receiving the invitation.

How do I agree to participate in this research?

You agree to participate in this research by signing the consent form. You have the option to withdraw at any point after this before the completion of the study.

Will I receive feedback on the results of this research?

Yes, a link to the thesis will be sent to you if you would like to receive this information and wish to provide an email address.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, **Shoba Tegginmath**, shoba.tegginmath@aut.ac.nz, 006499219999 ext 5829

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTECH, Kate O'Connor, ethics@aut.ac.nz, 921 9999 ext 6038.

Whom do I contact for further information about this research?

Researcher Contact Details:

Hussain Alqahtani,
MCIS student, School of Computing and Mathematical Sciences,
Auckland University of Technology
Phone: 00642102223338
Email: dmf8244@aut.ac.nz

Project Supervisors Contact Details:

Krassie Petrova

Senior Lecturer, School of Computing and Mathematical Sciences,
Auckland University of Technology

Email: Krassie.petrova@aut.ac.nz

Shoba Tegginmath,

Senior Lecturer, School of Computing and Mathematical Sciences,
Auckland University of Technology

Email: shoba.tegginmath@aut.ac.nz

Approved by the Auckland University of Technology Ethics Committee on *type the date final ethics approval was granted*, AUTEK Reference number *type the reference number*.

Appendix C: Participant Consent Form

Consent Form



Project title:

“Does e-learning help users to learn: A comparative study of e-learning in Saudi Arabia and New Zealand”

Project Supervisor: Shoba Tegginmath

Researcher: Hussain Alqahtani

- ☐ I have read and understood the information provided about this research project in the Information Sheet dated dd mmmm yyyy.
- ☐ I have had an opportunity to ask questions and to have them answered.
- ☐ I understand that notes will be taken during the interviews and that they will also be audio-taped and transcribed.
- ☐ I understand that I may withdraw myself or any information that I have provided for this project at any time prior to completion of data collection, without being disadvantaged in any way.
- ☐ If I withdraw, I understand that all relevant information including tapes and transcripts, or parts thereof, will be destroyed.
- ☐ I agree to take part in this research.
- ☐ I wish to receive a copy of the report from the research (please tick one): Yes ☐ No ☐

Participant 'signature:

Participant's name:

Participant's email address:

.....
.....
Date:

Approved by the Auckland University of Technology Ethics Committee on 22 June 2015

AUTEC Reference number 15/213

Note: The Participant should retain a copy of this form.

Appendix D: Participant Interview Questionnaire

Questions (A) General questions

- 5- What are your perceptions of e-learning's positives and negatives?
- 6- What are your perceptions of barriers facing e-learning? Do you have any suggestions for the improvement of e-learning?
- 7- In your opinion how does e-learning compare with traditional learning?
- 8- What learning tools have you used in the e-learning program?

Questions (B) the ability to learn autonomously in e-learning:

- 1- Please comment on how well you are able to learn by yourself through e- learning at anytime, anywhere and at any pace?
- 2- What are your expectations and needs of e-learning?

Questions (C) learner- content & assessments- interaction in e-learning

- 1- Do you feel that the e-learning content was at a higher or lower level than the level in traditional learning, or just the same?
- 2- Are quizzes, tests, and examinations administered through e-learning program? Please explain how?
- 3- Did you have access to a question bank on the site? Do you think it helped you with e-assessments?
- 4- How helpful was it to playback your lecture videos whenever you needed it?

Questions (D) Learners' ability to effectively interact with instructors and colleagues via e-learning platform

- 1- Please describe your dealings with your lecturers and class mates on-line and face to face. Did you prefer a certain type of interaction, why? Do you think one or both type of interaction facilitates the e-learning process?

Questions (E) Common Problems of E-learning

- 4- How do you think e-learning facilitates speedy and effective learning?
- 5- Yes. E-learning is fast than the traditional learning but it is not much effective. Do you have any comments about fast internet connectivity in your area?
- 6- Do you think e-learning is accepted by your peers? Please elaborate.

Appendix E: Answering Interview Questions

Answering Interview Questions

SAUDI ARABIA

Interview 1

Questions (A) General questions

1- What are your perceptions of e-learning's positives and negatives?

- The positive impact e-learning is that it has flexible hours and the student is exposed to a wide range of learning resources. The negative includes the ability of a student to lag behind due to bad time management skills.

2- What are your perceptions of barriers facing e-learning? Do you have any suggestions for the improvement of e-learning?

- The barriers include the lack of adequate computers in most of the schools and low computer literacy levels. For the improvement of e-learning more computers should be introduced, internet connection should be available to many people, and the society should be educated concerning the use of computers.

3- In your opinion how does e-learning compare with traditional learning?

- Both methods of learning can be entertaining and require a lot of work. Besides, both methods result in the achievement of good results for the students.

4- What learning tools have you used in the e-learning program?

- Blackboard as a Learning Management System and the Smart Classroom Automation.

Questions (B) the ability to learn autonomously in e-learning:

- 1- Please comment on how well you are able to learn by yourself through e- learning at anytime, anywhere and at any pace?
 - E-learning has been good for me. I have been able to learn many things by myself due and this has helped me increase my knowledge of what I should learn in class.
- 2- What are your expectations and needs of e-learning?
 - I expect e-learning to be available to everybody. All the Saudi students should have the capacity of interacting and sharing ideas online. I also need more learning resource to be available in our e-learning portal.

Questions (C) learner- content & assessments- interaction in e-learning

- 1- Do you feel that the e-learning content was at a higher or lower level than the level in traditional learning, or just the same?
 - I find the content of e-learning to be similar to that of the traditional learning. The same books accessed in online libraries are available in the physical libraries.
- 2- Are quizzes, tests, and examinations administered through e-learning program?
Please explain how?

- Tests are done in e-learning the questions are posted in online platforms that are categorized as group work or individual work. The portal is created by the professor for the student to post their assignments or tests.

3- Did you have access to a question bank on the site? Do you think it helped you with e-assessments?

- I never had an opportunity to access the question bank on the site so I have no idea if it helps or not.

4- How helpful was it to playback your lecture videos whenever you needed it?

- Very helpful. Playing back lecture videos has helped me grasps more concepts that I could not grasp in class. Now, I have what I needed.

Questions (D) Learners' ability to effectively interact with instructors and colleagues via e-learning platform

1- Please describe your dealings with your lecturers and class mates on-line and face to face. Did you prefer a certain type of interaction, why? Do you think one or both type of interaction facilitates the e-learning process?

- My interactions with the class mates and lecturers are more effective face to face than online. I prefer to meet my professors sometimes because I find face to face interaction effective for me. Both modes of interaction are good for facilitating e-learning. We cannot rely on one form of communication.

Questions (E) Common Problems of E-learning

1- How do you think e-learning facilitates speedy and effective learning?

- Yes. E-learning is fast than the traditional learning but it is not much effective.

2- Do you have any comments about fast internet connectivity in your area?

- Most of the regions in Saudi Arabia have slow internet connection thereby preventive effective use of the e-learning facilities.
- 3- Do you think e-learning is accepted by your peers? Please elaborate.
- Yes. Most of my peers have embraced e-learning and have increased their interactions in online classrooms and use of online libraries.

Interview 2

Questions (A) General questions

- 1- What are your perceptions of e-learning's positives and negatives?
- E-learning has lower cost and results in low environmental impacts to students. Students have the ability of saving money for other uses and contribute without the interaction of the physical environment. However, e-learning is not flexible and is too reliant on the use of technology.
- 2- What are your perceptions of barriers facing e-learning? Do you have any suggestions for the improvement of e-learning?
- The barriers facing e-learning include technology phobia, right technology selection, and untrained personnel. All this problems can be solved through proper sensitization and training.
- 3- In your opinion how does e-learning compare with traditional learning?
- All this programs help to meet the high education needs of the students in Saudi Arabia. Both methods provide students with platforms for learning and gaining new knowledge.
- 4- What learning tools have you used in the e-learning program?

- The tools that I have used include course management tools and presentation tools.

Questions (B) the ability to learn autonomously in e-learning:

1- Please comment on how well you are able to learn by yourself through e- learning at anytime, anywhere and at any pace?

- My ability to learn through e-learning has been hampered with my limited computer skills. Due to this, I can only learn properly when some of my friends who are much experienced are near me.

2- What are your expectations and needs of e-learning?

- I expect that e-learning will expose me to a variety of books and educational resources that I may not have access to. Besides, I also need to be able to study at the comfort of my room in campus and at home.

Questions (C) learner- content & assessments- interaction in e-learning

1- Do you feel that the e-learning content was at a higher or lower level than the level in traditional learning, or just the same?

- The e-learning content is higher than the traditional learning due to the extensive resources and methods of interactions and learning that are provided online. The platform keeps on changing and is far much better.

2- Are quizzes, tests and examinations administered through e-learning program?

Please explain how?

- Yes. Test and quizzes are administered through discussion tools we post our tests for the professors to mark and then give back for discussion.

3- Did you have access to a question bank on the site? Do you think it helped you with e-assessments?

- Yes I did. The question bank is very helpful and it has facilitated my e-assessment. I will also use it in the future.

4- How helpful was it to playback your lecture videos whenever you needed it?

- Replaying lecture video has been very helpful in revising questions that I encountered at the end of the course work. I can always replay it whenever I need to seek clarification on an issue or topic of discussion.

Questions (D) Learners' ability to effectively interact with instructors and colleagues via e-learning platform

1- Please describe your dealings with your lecturers and class mates on-line and face to face. Did you prefer a certain type of interaction, why? Do you think one or both type of interaction facilitates the e-learning process?

- There is a big difference between face to face interactions and online interactions. As a shy person, I prefer to hide behind my computer and use the online platform to communicate more with my teachers and classmates. The e-learning process can only be effective using online communication.

Questions (E) Common Problems of E-learning

1- How do you think e-learning facilitates speedy and effective learning?

- Effective learning is facilitated due to the availability of extensive resources online. Speedy learning is influenced by the fact that there are no holidays in e-learning.

2- Do you have any comments about fast internet connectivity in your area?

- The internet connection in my area is relative. However, the speed should be boosted.

3- Do you think e-learning is accepted by your peers? Please elaborate

- Only seventy percent of my peers have embraced e-learning. Some prefer the traditional methods of learning and interactions with the lecturers and other students.

Interview 3

Questions (A) General questions

- 1- What are your perceptions of e-learning's positives and negatives?
 - E-learning is the best approach of impacting knowledge to individuals by use of technology. E-learning has created a non-interactive physical environment. Many students prefer to use technology than the traditional method of interactions.
- 2- What are your perceptions of barriers facing e-learning? Do you have any suggestions for the improvement of e-learning?
 - The barrier to e-learning is that it is not suitable to all type of learners and instructors. Most of them lack the basic computer skills. These individuals should be more exposed to the internet and the use of computers.
- 3- In your opinion how does e-learning compare with traditional learning?
 - Both means of learning facilitate the sharing of information and knowledge. Besides, all of them require the use of instructors to guide the students.
- 4- What learning tools have you used in the e-learning program?
 - The tools that I have used include instruction design tools, community tools and communication tools.

Questions (B) the ability to learn autonomously in e-learning:

- 1- Please comment on how well you are able to learn by yourself through e- learning at anytime, anywhere and at any pace?

- I have not been able to learn through e-learning. I still need guidance in using some of the tools and accessing online libraries. My pace is very slow.

2- What are your expectations and needs of e-learning?

- I expect that e-learning will be used to increase technology awareness to all the students in Saudi Arabia. I also need the lecturers to be slow in teaching and help us slow learners to understand the effectiveness of e-learning.

Questions (C) learner- content & assessments- interaction in e-learning

1- Do you feel that the e-learning content was at a higher or lower level than the level in traditional learning, or just the same?

- I feel that the content is the same in all the methods of learning. I see no difference in the quality of education delivered by both methods.

2- Are quizzes, tests and examinations administered through e-learning program?

Please explain how?

- Examinations are administered in the e-learning program. Students are allocated time for which they have to complete their test before the interface disappears.

3- Did you have access to a question bank on the site? Do you think it helped you with e-assessments?

- Yes I do. The question bank has helped me to analyze the questions and responses that have been posted with regards to our course work and assignments.

4- How helpful was it to playback your lecture videos whenever you needed it?

It was very helpful as it broadened my knowledge base.

Questions (D) Learners' ability to effectively interact with instructors and colleagues via e-learning platform

1- Please describe your dealings with your lecturers and classmates on-line and face to face. Did you prefer a certain type of interaction, why? Do you think one or both type of interaction facilitates the e-learning process?

- Face to face interactions is still the most preferred mode. Since I have limited computer skills, I prefer face to face to online communication. However, e-learning process can only be improved by the use of online communication.

Questions (E) Common Problems of E-learning

1- How do you think e-learning facilitates speedy and effective learning?

- It is cost effective and meets the schedule of the learner

2- Do you have any comments about fast internet connectivity in your area?

Internet access remains a hindrance in my area and it should be improved.

3- Do you think e-learning is accepted by your peers? Please elaborate.

- Yes. They find it to be a very entertaining, fast, and reliable form of learning compared to the traditional method of learning.

Interview 4

Questions (A) General questions

1- What are your perceptions of e-learning's positives and negatives?

- On the positive side, e-learning provides a flexible learning process at one's convenient time and there are numerous learning resources as compared to

class learning. On the negative side, there is no elaboration of unclear areas and it is a lonely process as there is no much interaction.

2- What are your perceptions of barriers facing e-learning? Do you have any suggestions for the improvement of e-learning?

➤ Limited internet access in some areas. Internet should be made accessible and free in all areas to improve e-learning.

3- In your opinion, how does e-learning compare with traditional learning?

➤ E-learning is much better because it is much convenient, cheaper and saves time as compared to the traditional learning method.

4- What learning tools have you used in the e-learning program?

➤ I have been able to use e-learning books, journals, and you-tube tutorials.

Questions (B) the ability to learn autonomously in e-learning:

1- Please comment on how well you are able to learn by yourself through e- learning at anytime, anywhere and at any pace?

➤ I can manage learning on my own because I can get all the resources I need online. The only challenge that can arise is insufficient internet.

2- What are your expectations and needs of e-learning?

➤ To have an effective e-learning I need an online tutor to me through, consistent internet, laptop, and electricity.

Questions (C) learner- content & assessments- interaction in e-learning

1- Do you feel that the e-learning content was at a higher or lower level than the level in traditional learning, or just the same?

- The content has greatly improved due to the introduction of e-learning books, video presentations, and software's that check on grammar and plagiarism.

2- Are quizzes, tests, and examinations administered through e-learning program?

Please explain how?

- Yes, they are administered through the program. This has been enabled by giving out timed examinations.

3- Did you have access to a question bank on the site? Do you think it helped you with e-assessments?

- Yes, I have. I do use the Yahoo question bank that has enabled me find solutions to my problems.

4- How helpful was it to playback your lecture videos whenever you needed it?

- It was of great importance because I was able to replay areas that I never understood to have a clearer understanding.

Questions (D) Learners' ability to effectively interact with instructors and colleagues via e-learning platform

1- Please describe your dealings with your lecturers and class mates on-line and face to face. Did you prefer a certain type of interaction, why? Do you think one or both type of interaction facilitates the e-learning process?

- I prefer face to face interactions as it is more interactive than the e-learning. E-learning is limited to interaction.

Questions (E) Common Problems of E-learning

1- How do you think e-learning facilitates speedy and effective learning?

- It is effective and facilitates for speedy learning because one is able to learn at his or her convenient time and is able to learn more as there is no time wasted moving from one class to another or from home to school.
- 2- Do you have any comments about fast internet connectivity in your area?
- Yes, there is no free access to internet connectivity in my area, one has to purchase, and that is costly.
- 3- Do you think e-learning is accepted by your peers? Please elaborate.
- Yes, they prefer e-learning because of its convenience cost and time saving as most of my peers are working and doing part time classes.

Interview 5

Questions (A) General questions

- 1- What are your perceptions of e-learning's positives and negatives?
- E-learning gives the students a chance to learn when they are located in any area around the world. They do not have to move to a specific physical location. Lack of physical interaction in e-learning leads to increased isolation and can affect the relationships of students psychologically.
- 2- What are your perceptions of barriers facing e-learning? Do you have any suggestions for the improvement of e-learning?
- Most of the Saudi students have limited knowledge of e-learning tools and how to effectively maximize this method of learning. In addition, there is limited equipment to be used in e-learning. Improvement can be done by procuring new equipment and training the students and teachers on the tools and methods of maximizing e-learning.
- 3- In your opinion, how does e-learning compare with traditional learning?

- The most importance comparison between the two methods of learning is that all of them require the presence of an instructor to facilitate the learning process. Moreover, both learning process insist on providing comprehensive learning material to be used by the student, printed and none printed.

4- What learning tools have you used in the e-learning program?

- I have used **ANGEL as a course management tool and PowerPoint as a presentation tool.**

Questions (B) the ability to learn autonomously in e-learning:

1- Please comment on how well you are able to learn by yourself through e- learning at anytime, anywhere and at any pace?

- I have been able to access online libraries and participate in online group discussions and classes easily just through my computer. It has been an interesting way of learning by myself.

2- What are your expectations and needs of e-learning?

- The cost if setting up e-learning equipment in the schools should be reduced. I am also expecting fast internet to be installed in all the universities in Saudi Arabia to increase the presence of e-learning in the country.

Questions (C) learner- content & assessments- interaction in e-learning

1- Do you feel that the e-learning content was at a higher or lower level than the level in traditional learning, or just the same?

- Yes. The content in e-learning is more than what I used to get in traditional methods of learning.

2- Are quizzes, tests, and examinations administered through e-learning program?

Please explain how?

- Yes. Our professor posts the assignments on the online portal and sets a deadline for which the assignment should be completed and submitted. Failure to submit the assignment on time results in the student scoring a zero.

3- Did you have access to a question bank on the site? Do you think it helped you with e-assessments?

- Yes. The question bank has helped me to see the answers and questions posted by other students, which I use for facilitating my personal studies.

4- How helpful was it to playback your lecture videos whenever you needed it?

- Listening to lecture videos is very helpful. I was able to take down notes at my pace and use them for studying and answering revisions questions.

Questions (D) Learners' ability to effectively interact with instructors and colleagues via e-learning platform

1- Please describe your dealings with your lecturers and class mates on-line and face to face. Did you prefer a certain type of interaction, why? Do you think one or both type of interaction facilitates the e-learning process?

- I have encountered not much difference in dealing with my professors and classmates both online and offline. I think both communication methods will facilitate e-learning process.

Questions (E) Common Problems of E-learning

1- How do you think e-learning facilitates speedy and effective learning?

- E-learning increases the educational resources that a student is exposed. Furthermore, students can interact with both their lecturers and student at

any geographical location in the world making the learning process effective.

2- Do you have any comments about fast internet connectivity in your area?

- The connectivity at our area is fair, I cannot complain much because it serves my needs.

3- Do you think e-learning is accepted by your peers? Please elaborate.

- Most of my peers have accepted e-learning. They are members of most of our online discussion groups and have subscribed to online libraries.

Interview 6

Questions (A) General questions

1- What are your perceptions of e-learning's positives and negatives?

- E-learning has resulted in interconnectivity and sharing of information and knowledge globally. It is fast and easy way of connecting with other scholars across the globe. However, e-learning cannot be used by student's physical or visual impairments.

2- What are your perceptions of barriers facing e-learning? Do you have any suggestions for the improvement of e-learning?

- Technological mediocrity by most of our lecturers and fellow student pose a challenge to the success of e-learning. Workshops should be held across the country to sensitize all the student and lecturers of effective means of e-learning.

3- In your opinion, how does e-learning compare with traditional learning?

- No, it does not. E-learning is completely different from the traditional learning.

4- What learning tools have you used in the e-learning program?

- I have used **Quick Time, Real Media, and Flash as video streaming tools to watch lectures posted on the web. I have also used ME online discussion tool.**

Questions (B) the ability to learn autonomously in e-learning:

1- Please comment on how well you are able to learn by yourself through e- learning at anytime, anywhere and at any pace?

- I have a good grasp of the internet and use of e-learning tools. As such, I have had a good learning process by myself. It is indeed a fast pace that has increased my knowledge of the course work.

2- What are your expectations and needs of e-learning?

- My excitement is that e-learning will completely revolutionize the learning process for not only Saudi Arabian students like me but also other students in the world. More learning resources should be available in online groups, chat rooms, and classes.

Questions (C) learner- content & assessments- interaction in e-learning

1- Do you feel that the e-learning content was at a higher or lower level than the level in traditional learning, or just the same?

- I find the content in e-learning more appealing than that in the traditional methods of learning. It is actually comprehensive to learn online than offline.

2- Are quizzes, tests, and examinations administered through e-learning program?

Please explain how?

- Yes. Test and quizzing tools are used for administering assignments, examinations, and quizzes by our lecturers and instructors.

3- Did you have access to a question bank on the site? Do you think it helped you with e-assessments?

- I never accessed a question bank because I did not look for any in our website. I do not know if it is helpful.

4- How helpful was it to playback your lecture videos whenever you needed it?

- I do not see the fuss around the use of lecture videos by other students. I find them redundant and I would rather use the notes that I had already noted down and refer to other books and journals.

Questions (D) Learners' ability to effectively interact with instructors and colleagues via e-learning platform

1- Please describe your dealings with your lecturers and class mates on-line and face to face. Did you prefer a certain type of interaction, why? Do you think one or both type of interaction facilitates the e-learning process?

- My dealing with lecturers and class mates has been good. Thus, I do not prefer any means of interaction but would rather use all of them. All the interactions are effective for the e-learning process.

Questions (E) Common Problems of E-learning

1- How do you think e-learning facilitates speedy and effective learning?

- I am not sure about this entirely but I think the ability of people to communicate when they are anywhere in the globe is good for learning.

2- Do you have any comments about fast internet connectivity in your area?

- I live in the city so the internet connection is just fine. I like it here.

3- Do you think e-learning is accepted by your peers? Please elaborate.

- Most of my peers have embraced the e-learning concept well. Most of them have shifted from the traditional method of learning to endorse e-learning fully.

Interview 7

Questions (A) General questions

1- What are your perceptions of e-learning's positives and negatives?

- E-learning is an important part of learning because it provides variety of information and eliminates the physical barrier to information. The negative part of e-learning is that all the participants have to be computer literate and have access to computers.

2- What are your perceptions of barriers facing e-learning? Do you have any suggestions for the improvement of e-learning?

- The barriers to e-learning are the limited access of computers and internet to other parts of the country. The stakeholders should ensure that this equipment is provided to the other areas of the country.

3- In your opinion, how does e-learning compare with traditional learning?

- Both traditional and e-learning process are learner oriented in that the focus is on the quality of education given to the learner.

4- What learning tools have you used in the e-learning program?

I have used tools such as Unipart, swissprot, and ncbi database.

Questions (B) the ability to learn autonomously in e-learning:

1- Please comment on how well you are able to learn by yourself through e- learning at anytime, anywhere and at any pace?

- The process of e-learning by myself has been quite effective. I can access libraries and online academic chats at any time in any place in the country.

2- What are your expectations and needs of e-learning?

- The e-learning tools should be improved so that they can be more user friendly than what they are currently.

Questions (C) learner- content & assessments- interaction in e-learning

1- Do you feel that the e-learning content was at a higher or lower level than the level in traditional learning, or just the same?

- The e-learning content is at a higher level compared to the other forms of learning due to the frequent updates of the academic libraries that contain the books, articles, and journals used by students.

2- Are quizzes, tests, and examinations administered through e-learning program?

Please explain how?

- Biotechnology exams are administered by the lecturers who set a time period and use examination tools to ensure the all the student have access to their own webpage during the examination.

3- Did you have access to a question bank on the site? Do you think it helped you with e-assessments?

- I am not sure because I have never checked.

4- How helpful was it to playback your lecture videos whenever you needed it?

- It helped though not much because I already had the notes written and I had already grasped the concept prior and during the lecture.

Questions (D) Learners' ability to effectively interact with instructors and colleagues via e-learning platform

1- Please describe your dealings with your lecturers and class mates on-line and face to face. Did you prefer a certain type of interaction, why? Do you think one or both type of interaction facilitates the e-learning process?

- I had a bad interaction with the lectures in the face to face interaction compared to the online interaction. I therefore, prefer the use of online communication any time to face to face interactions. E-learning can only be improved by the use of online interaction and communication.

Questions (E) Common Problems of E-learning

1- How do you think e-learning facilitates speedy and effective learning?

- E-learning facilitates speedy learning due to the prompt feedback that students get during inquiries. Furthermore, effective learning is influenced by the ability of the student to interact with a wide range of their peers and have real; time updates of learning materials.

2- Do you have any comments about fast internet connectivity in your area?

- There is fast internet connectivity at my area due to the proximity with the town and the cable lines around the city. Thus increases my ability to chat and video conference online with my classmates for effective group discussions.

3- Do you think e-learning is accepted by your peers? Please elaborate.

- Yes, most of my peers have undated their support for this form of learning. They have cited many resources that they have been able to acquire through online groups and classrooms.

Interview 8

Questions (A) General questions

1- What are your perceptions of e-learning's positives and negatives?

- E-learning is efficient, fast, flexible, increases the level of learning retention for the students and learning institutions. However, this form of learning is only relevant to the technologically endowed individuals as it requires technical skills for one to participate in e-learning.

2- What are your perceptions of barriers facing e-learning? Do you have any suggestions for the improvement of e-learning?

- The barriers include the lack of the right technology selection used by teachers, technology phobia, and limited knowledge on the different aspects of e-learning. We should attend seminars and other gatherings to be more exposed to this technologically improved concept of learning.

3- In your opinion, how does e-learning compare with traditional learning?

- E-learning is not similar to traditional learning in any way. They have distinctive characteristics.

4- What learning tools have you used in the e-learning program?

- I have used **Real Media, Video Conferencing, and Sync OWL as video and online tutorial tools respectively.**

Questions (B) the ability to learn autonomously in e-learning:

1- Please comment on how well you are able to learn by yourself through e- learning at anytime, anywhere and at any pace?

- E-learning has facilitated my ability of learning in my own at home, school, and other places. I'm able to access online resources and study on at my own

pace. The freedom created by this form of learning has enable me have an effective learning environment.

2- What are your expectations and needs of e-learning?

- I expect that in the next five years, e-learning will have penetrated all the learning institutions and regions across the Kingdom. I also need our university to have an extensive Pool of learning material available in the database.

Questions (C) learner- content & assessments- interaction in e-learning

1- Do you feel that the e-learning content was at a higher or lower level than the level in traditional learning, or just the same?

- I'm not sure but I think the level for content for the two learning methods is the same.

2- Are quizzes, tests, and examinations administered through e-learning program?

Please explain how?

- The e-learning programs facilitate the administration of quizzes by using online testing tools like raining Coordinator and USE-Lab.

3- Did you have access to a question bank on the site? Do you think it helped you with e-assessments?

- Yes I did. It did not help me as the question and series of answers had not detailed explanations to what I needed for my study.

4- How helpful was it to playback your lecture videos whenever you needed it?

- Not that helpful. It did not add any more insights to what I already knew.

Questions (D) Learners' ability to effectively interact with instructors and colleagues via e-learning platform

1- Please describe your dealings with your lecturers and class mates on-line and face to face. Did you prefer a certain type of interaction, why? Do you think one or both type of interaction facilitates the e-learning process?

- The face to face interaction between the lecturer and my classmates are better than the online interaction due to the physical contact created.
- However, only online interaction can facilitate the e-learning process.

Questions (E) Common Problems of E-learning

1- How do you think e-learning facilitates speedy and effective learning?

- The ability of e-learning to facilitate prompt responses and real time chats make it speedy to chat. The effectiveness of the e-learning is seen in the variety of educational source accessed online and the variety of discussions between students.

2- Do you have any comments about fast internet connectivity in your area?

- Yes. The fast internet connectivity in our areas is good for e-learning.

3- Do you think e-learning is accepted by your peers? Please elaborate.

- Not really. Most of my peers prefer the traditional method of learning. They cannot find any importance to e-learning.

NEWZEALAND

Interview 1

Questions (A) General questions

1- What are your perceptions of e-learning's positives and negatives?

- E-learning is such a good learning platform. It is good because it enables one to learn from their comfortable environments and it is cost friendly as one does not need to pay for fares to a specific lecture hall or school. However, it bars human interaction and has a negative effect to the psychological of the students.

2- What are your perceptions of barriers facing e-learning? Do you have any suggestions for the improvement of e-learning?

- The only barrier is that sometimes the learning materials are not adequate, and can be improved by putting more reference materials online.

3- In your opinion, how does e-learning compare with traditional learning?

- Because of the comfort that comes with e-learning, it is easy to learn easily it is better than the traditional learning because one learns with his own pace.

4- What learning tools have you used in the e-learning program?

- I have used internet tools and word based processors like Ms PowerPoint for presentations.

Questions (B) the ability to learn autonomously in e-learning:

3- Please comment on how well you are able to learn by yourself through e- learning at anytime, anywhere and at any pace?

- It is easy when you are an e-learner as it does not interfere with your own schedule and you can learn at whatever time you want.

4- What are your expectations and needs of e-learning?

- I hope that the e-learning program can provide more learning materials online and maybe come up with a platform where the learners can discuss their issues.

Questions (C) learner- content & assessments- interaction in e-learning

1- Do you feel that the e-learning content was at a higher or lower level than the level in traditional learning, or just the same?

- Compared to the traditional learning, e learning is slightly at a lower level when it comes to reference materials but it is better off with the understanding of content.

2- Are quizzes, tests, and examinations administered through e-learning program?

Please explain how?

- Yes. We are tested by the use of online platforms set by our professors who ensure that our class work is graded through the analysis of these assignments.

3- Did you have access to a question bank on the site? Do you think it helped you with e-assessments?

- I don't have access to a question bank but most of the time as I receive questions from my classmates and even teachers when I request for them.

4- How helpful was it to playback your lecture videos whenever you needed it?

- It was important especially when I needed to understand a point. It is helpful in reinforcement of content

Questions (D) Learners' ability to effectively interact with instructors and colleagues via e-learning platform

1- Please describe your dealings with your lecturers and class mates on-line and face to face. Did you prefer a certain type of interaction, why? Do you think one or both type of interaction facilitates the e-learning process?

- It is easier to interact with my lectures and classmates online compared to when we are face to face, as it is discrete. I prefer the online interaction however, the face to face interaction is also important at some point in facilitating the e-learning process.

Questions (E) Common Problems of E-learning

1- How do you think e-learning facilitates speedy and effective learning?

- There is more than one learning platform and reference materials online, it is fast to search for materials online. With these there is speedy learning

2- Do you have any comments about fast internet connectivity in your area?

- In my area and e-learning process, internet is a major problem, as much as it is slow, it is also expensive.

3- Do you think e-learning is accepted by your peers? Please elaborate

- Some of them have accepted the e-learning platform however; most of them are for the traditional learning methods.

Interview 2

Questions (A) General questions

1- What are your perceptions of e-learning's positives and negatives?

- E-learning has posed a negative threat to the teachers since they fear they might lose their job once e-learning is embraced in all learning institutions. On the positive side, students have found it more convenient and enable faster learning of technical classroom lessons.

2- What are your perceptions of barriers facing e-learning? Do you have any suggestions for the improvement of e-learning?

- Financial barrier is the main barrier towards accessing e-learning. The initial cost of setting up the both software and hardware component are high.

3- In your opinion how does e-learning compare with traditional learning?

- There is a significant different in the two forms of learning. The traditional form of learning is more bulky and might take students repetitive lessons to understand a concept. E-learning works on the click of the button and does not require softcopy.

4- What learning tools have you used in the e-learning program?

- Adapt Learning and Articulate Storyline

Questions (B) the ability to learn autonomously in e-learning:

1- Please comment on how well you are able to learn by yourself through e- learning at anytime, anywhere and at any pace?

- Having a secure connection and connection will enable me undertake e-learning anytime and anywhere.

2- What are your expectations and needs of e-learning?

- I expect to grasp the technical aspects of my course more easily and be able to do my assessment at my convenience.

Questions (C) learner- content & assessments- interaction in e-learning

1- Do you feel that the e-learning content was at a higher or lower level than the level in traditional learning, or just the same?

- E-learning is a higher level than the traditional methods of learning.

2- Are quizzes, tests, and examinations administered through e-learning program?

Please explain how?

- Quizzes, examination and tests can be administered through e-learning where the student is given multiple choice questions and given a timeline to finish all or individual questions.

3- Did you have access to a question bank on the site? Do you think it helped you with e-assessments?

- Yes, I did have access to the questions and they were of great help in understanding e-learning more better.

4- How helpful was it to playback your lecture videos whenever you needed it?

- This helped reconfirm and ascertain the some of the difficult part of the lessons that could not be understood at first.

Questions (D) Learners' ability to effectively interact with instructors and colleagues via e-learning platform

1- Please describe your dealings with your lecturers and class mates on-line and face to face. Did you prefer a certain type of interaction, why? Do you think one or both type of interaction facilitates the e-learning process?

- I have interacted with my classmates both face to face and through online platform. In this case, the face to face communication posed to be the best in discussions and airing out our arguments. Face to face communication allowed each member to understand each other better

Questions (E) Common Problems of E-learning

1- How do you think e-learning facilitates speedy and effective learning?

- E-learning reduces the travel and classroom construction costs. It allows the learner and the teacher to learn at their convenient time.

2- Do you have any comments about fast internet connectivity in your area?

- Availability of a fast internet connection in my area will ease communication and help cut cost that might be used in other means of communication.

3- Do you think e-learning is accepted by your peers? Please elaborate.

- E-learning has been embraced significantly by my peers. As compared to the physical learning class where they have shown high probability of absenteeism, majority has preferred e-learning environment. However, the cost of internet connection is still high.

Interview 3

Questions (A) General questions

1- What are your perceptions of e-learning's positives and negatives?

- E-learning has made most of the lecturers fear for their job. Furthermore, it has undermined the students who have limited skills in using the new forms of technology. However, I have noted that it is a fast method of learning than the normal learning.

2- What are your perceptions of barriers facing e-learning? Do you have any suggestions for the improvement of e-learning?

- Money is one of the main barriers to e-learning. Setting oneself up to e-learning is expensive and complex compared to the traditional method of learning. The government's subsidization on the hardware and software should be initiated.

3- In your opinion, how does e-learning compare with traditional learning?

- Compared with the traditional form of learning, e-learning is not bulky and students can just take at a click of a button. Traditional learning is more bulky.

4- What learning tools have you used in the e-learning program?

- I have made used of articulate learning software.

Questions (B) the ability to learn autonomously in e-learning:

1. Please comment on how well you are able to learn by yourself through e- learning at anytime, anywhere and at any pace?

- I'm able to learn by myself due to the fast internet connection and the secure connection provided by e-learning portals.

2. What are your expectations and needs of e-learning?

- My expectations are that I will have an easy time understanding the complex courses and units through the extensive resources that e-learning will provide.

Questions (C) learner- content & assessments- interaction in e-learning

1- Do you feel that the e-learning content was at a higher or lower level than the level in traditional learning, or just the same?

- Yes, the content in e-learning is extensive and is at a higher level.

2- Are quizzes, tests, and examinations administered through e-learning program?

Please explain how?

- Yes, they are administered. Multiple questions are posted in the e-learning portal where students are given a timeline for completion.

3- Did you have access to a question bank on the site? Do you think it helped you with e-assessments?

➤ Yes I did. The questions bank was very helpful in my learning process.

4- How helpful was it to playback your lecture videos whenever you needed it?

➤ It was very helpful. I had the opportunity to ascertain the facts that that I had missed during the actual online class.

Questions (D) Learners' ability to effectively interact with instructors and colleagues via e-learning platform

1- Please describe your dealings with your lecturers and class mates on-line and face to face. Did you prefer a certain type of interaction, why? Do you think one or both type of interaction facilitates the e-learning process?

➤ When compare to e-learning, face to face was a better means of interaction due to the best means provided for discussions. Both interactions facilitate the process of e-learning.

Questions (E) Common Problems of E-learning

1- How do you think e-learning facilitates speedy and effective learning?

➤ Speedy learning is characterized by the no need to travel to classrooms and effective learning is characterized by the ability of student to learn when they are located anywhere in the world.

2- Do you have any comments about fast internet connectivity in your area?

➤ Fast internet connectivity in the area as helped me video conference easily with my friends and has fast access to online journals and databases.

3- Do you think e-learning is accepted by your peers? Please elaborate.

- My peers like e-learning. They can now learn at the comfort of their home at not fear the geographical distance they have to travel during traditional methods of learning.

Interview 4

Questions (A) General questions

1- What are your perceptions of e-learning's positives and negatives?

- E-learning is good because it is flexible, convenient, and has numerous resources provided to the students. It is not good in the sense that elaboration is unclear for many students and it hinders physical interaction.

2- What are your perceptions of barriers facing e-learning? Do you have any suggestions for the improvement of e-learning?

- Barriers include limited internet access to the remote areas. Internet should be made accessible in all areas and the speed should be boosted.

3- In your opinion, how does e-learning compare with traditional learning?

- E-learning is better in the sense that it is cheaper, convenient, and does not take much of a student's time compared to the traditional method of learning.

4- What learning tools have you used in the e-learning program?

- The tools that I have used include video tutorials, and e-books and journals.

Questions (B) the ability to learn autonomously in e-learning:

1- Please comment on how well you are able to learn by yourself through e- learning at anytime, anywhere and at any pace?

- I can learn on my own thanks to the introduction of e-learning in the country. I now have access to countless of books online very fast and at any time of the day.

2- What are your expectations and needs of e-learning?

- I expect that online tutors will be increased to guide the students in the day to day surfing and learning on the web.

Questions (C) learner- content & assessments- interaction in e-learning

1- Do you feel that the e-learning content was at a higher or lower level than the level in traditional learning, or just the same?

- I find e-learning to be at a higher level due to the introductions of video presentations, tutorials, and books that can be accessed by all the students in the country and around the world.

2- Are quizzes, tests, and examinations administered through e-learning program?

Please explain how?

- Tests are administered I this programs through the posting on our online class forum by our lecturers.

3- Did you have access to a question bank on the site? Do you think it helped you with e-assessments?

- No, I didn't so I have no idea if it helps or not.

4- How helpful was it to playback your lecture videos whenever you needed it?

- It did not make a difference as most of the statements were still unclear to me.

Questions (D) Learners' ability to effectively interact with instructors and colleagues via e-learning platform

1- Please describe your dealings with your lecturers and class mates on-line and face to face. Did you prefer a certain type of interaction, why? Do you think one or both type of interaction facilitates the e-learning process?

➤ Face to face interactions is the best way of communication.

Personally, I find online communication that effective for communication and discussions. Both interactions will facilitate the e-learning process.

Questions (E) Common Problems of E-learning

1- How do you think e-learning facilitates speedy and effective learning?

➤ Students are able to learn at their own convenience and they do not need to move from one place to another to attend lectures.

2- Do you have any comments about fast internet connectivity in your area?

➤ Even though the internet is fast, the cost is very high for most of the residents.

3- Do you think e-learning is accepted by your peers? Please elaborate.

➤ It is accepted by some and hated by others. I think it is an average score when I compare those who like it with the ones who dislike it.

Interview 5

Questions (A) General questions

1- What are your perceptions of e-learning's positives and negatives?

- E-learning enables many students to learn fast and it has flexible hours.

However, e-learning has increased academic dishonesty, plagiarism, and cheating among students.

- 2- What are your perceptions of barriers facing e-learning? Do you have any suggestions for the improvement of e-learning?

- The major barrier to e-learning is the inadequate equipment and trained personnel to facilitate the process. More equipment should be bought and tutors should be trained.

- 3- In your opinion, how does e-learning compare with traditional learning?

- E-learning is easy than the other form of learning due to its flexibility and students learning at their own pace.

- 4- What learning tools have you used in the e-learning program?

- I mostly use online libraries, databases, and watch video tutorials.

Questions (B) the ability to learn autonomously in e-learning:

- 1- Please comment on how well you are able to learn by yourself through e- learning at anytime, anywhere and at any pace?

- Learning by myself has not been that fruitful due to my limited capability of using the complex e-learning tools. The god thing is that I can access libraries when I'm even at home.

- 2- What are your expectations and needs of e-learning?

- I only hope that e-learning will be made secure and students will be protected from hackers and online fraudsters.

Questions (C) learner- content & assessments- interaction in e-learning

1- Do you feel that the e-learning content was at a higher or lower level than the level in traditional learning, or just the same?

- There is a balance between the two methods of learning. E-learning may be superior in one area but inferior in another, same as the traditional methods of learning.

2- Are quizzes, tests, and examinations administered through e-learning program?

Please explain how?

- Yes, they are administered. Quizzes are sent to our emails whereas tests are posted on the online class platforms.

3- Did you have access to a question bank on the site? Do you think it helped you with e-assessments?

- No I don't. I only get questions from my friends then we discuss.

4- How helpful was it to playback your lecture videos whenever you needed it?

- It has been helpful to clarify difficult points and content that I could not comprehend in class.

Questions (D) Learners' ability to effectively interact with instructors and colleagues via e-learning platform

1- Please describe your dealings with your lecturers and class mates on-line and face to face. Did you prefer a certain type of interaction, why? Do you think one or both type of interaction facilitates the e-learning process?

- Online interactions are easier online than offline. I prefer online interaction and I think it is the best way to facilitate the e-learning process.

Questions (E) Common Problems of E-learning

1- How do you think e-learning facilitates speedy and effective learning?

- E-learning provides numerous platforms for learning and discussing course work. The access to the online libraries and lectures is also fast.
- 2- Do you have any comments about fast internet connectivity in your area?
- Internet is slow and expensive in my areas. I dislike the situation here.
- 3- Do you think e-learning is accepted by your peers? Please elaborate
- My peers like e-learning just like me. We have set up online discussion groups and continue to set up online classrooms and chat rooms for discussing course work and class content.

Interview 6

Questions (A) General questions

- 5- What are your perceptions of e-learning's positives and negatives?
- E learning is an important part of learning because through e learning learners can get information in one stock. E-learning eliminates the physical barrier to information. The negative part of e learning is that individuals have to be computer literate and have computer access.
- 6- What are your perceptions of barriers facing e-learning? Do you have any suggestions for the improvement of e-learning?
- E-learning barrier is access to computer and internet .The computers and internet are not available in some parts of the country.
- 7- In your opinion, how does e-learning compare with traditional learning?
- Both form of learning are mostly learner oriented such that the learner as to put first in order for the success.
- 8- What learning tools have you used in the e-learning program?
- I used tools such as ncbi, genbank, embl.

Questions (B) the ability to learn autonomously in e-learning:

5- Please comment on how well you are able to learn by yourself through e- learning at anytime, anywhere and at any pace?

➤ I'm able to learn well by myself through e-learning.

6- What are your expectations and needs of e-learning?

➤ The tools need to improve to be more users friendly and more tools should be developed in order to improve the process of e-learning.

Questions (C) learner- content & assessments- interaction in e-learning

5- Do you feel that the e-learning content was at a higher or lower level than the level in traditional learning, or just the same?

➤ The content of e-learning is at a higher level because the e-learning content is updated constantly.

6- Are quizzes, tests, and examinations administered through e-learning program?

Please explain how?

➤ Examinations are administered through e-learning and involves retrieving sequences from databases and finding the gene expression using sequencing tools e.g. clausal

7- Did you have access to a question bank on the site? Do you think it helped you with e-assessments?

➤ At no time did I have access to questions banks.

8- How helpful was it to playback your lecture videos whenever you needed it?

➤ Playing back lecture videos helped me understand what had been previously taught by the lecturers.

Questions (D) Learners' ability to effectively interact with instructors and colleagues via e-learning platform

2- Please describe your dealings with your lecturers and class mates on-line and face to face. Did you prefer a certain type of interaction, why? Do you think one or both type of interaction facilitates the e-learning process?

- Both interactions facilitate the e learning process. I prefer the use of online interaction to face to face interaction.

Questions (E) Common Problems of E-learning

4- How do you think e-learning facilitates speedy and effective learning?

- Speed is facilitated in terms of instant feedback. Communication is effective in terms of the fact that it is recorded in real time and actual information is used for reference.

5- Do you have any comments about fast internet connectivity in your area?

- Fast internet connectivity is the greatest pillar of e-learning in our area.

6- Do you think e-learning is accepted by your peers? Please elaborate.

- Yes, e-learning is currently used by almost 80% of educated youth in the today world.

Interview 7

Questions (A) General questions

1- What are your perceptions of e-learning's positives and negatives?

- E-learning is flexible and has many resources to refer to despite its ability to foster lay students with bad skills of managing time and organizing their work.

2- What are your perceptions of barriers facing e-learning? Do you have any suggestions for the improvement of e-learning?

- The barriers include technological mediocrity, lack of enough equipment, poor internet services, cost, and lack of adequate online tutors. Funds should be pumped into this section to improve on all these barriers.

3- In your opinion, how does e-learning compare with traditional learning?

- Both learning methods require a lot of work and commitment by the student and the professors. However, e-learning is harder to comprehend in terms of using the complex equipment compared to the traditional ways of learning.

4- What learning tools have you used in the e-learning program?

- I have used PowerPoint presentation, video conferencing, journals, and online databases.

Questions (B) the ability to learn autonomously in e-learning:

1- Please comment on how well you are able to learn by yourself through e-learning at anytime, anywhere and at any pace?

- I have difficulty in learning by myself sometimes. I need to have a tutor during complex solutions of some class problems. I can't learn on myself entirely.

2- What are your expectations and needs of e-learning?

- I expect a comprehensive learning process that will advance my knowledge in my class work and my interaction with other students around the country.

Questions (C) learner- content & assessments- interaction in e-learning

1- Do you feel that the e-learning content was at a higher or lower level than the level in traditional learning, or just the same?

- The content is the same for all the methods of learning. I do not think that one surpasses the other in terms of content.

2- Are quizzes, tests, and examinations administered through e-learning program?

Please explain how?

- Yes. They are administered online by using quizzing tools available in our online classrooms.

3- Did you have access to a question bank on the site? Do you think it helped you with e-assessments?

- I have never accessed a question bank. I don't find them helpful.

4- How helpful was it to playback your lecture videos whenever you needed it?

- It was not helpful at all. I find it very boring.

Questions (D) Learners' ability to effectively interact with instructors and colleagues via e-learning platform

1- Please describe your dealings with your lecturers and class mates on-line and face to face. Did you prefer a certain type of interaction, why? Do you think one or both type of interaction facilitates the e-learning process?

- Face to face interaction is good with my classmates but not my lecturers. I prefer the use of online communication with my lecturers and see that improvement in e-learning is dependent only on online interactions.

Questions (E) Common Problems of E-learning

1- How do you think e-learning facilitates speedy and effective learning?

- Effective learning is characterized by the range of online platforms available for discussion, books, journals, and tutor videos that students have access. It is fast as there is no need to travel.

2- Do you have any comments about fast internet connectivity in your area?

➤ The internet is slow in our area and it should be improved.

3- Do you think e-learning is accepted by your peers? Please elaborate.

➤ E-learning has not been accepted with all my peers. Even though most of them have embrace this learning accept, some of them are still reliant to change with the technology.

Interview 8

Questions (A) General questions

1- What are your perceptions of e-learning's positives and negatives?

➤ Through e-learning, students can balance between work and study time. In addition, they can interact with their peers easily online. However, e-learning has promoted laziness in some students who prefer to copy content on the web.

2- What are your perceptions of barriers facing e-learning? Do you have any suggestions for the improvement of e-learning?

➤ The barriers are that the online infrastructure has not been set up well to accommodate and at the same time prevent students from engaging in unethical activities on the web like plagiarism and dishonesty. Web restrictions should be set up to ensure that students only focus on content that is important to their education.

3- In your opinion how does e-learning compare with traditional learning?

- Both methods focus on increasing the knowledge of the students through intensive learning and expose to academic resources.

4- What learning tools have you used in the e-learning program?

- I have used web management tool, mathematical tools for calculation, and organizing tools to set up an updated calendar and schedule.

Questions (B) the ability to learn autonomously in e-learning:

1- Please comment on how well you are able to learn by yourself through e- learning at anytime, anywhere and at any pace?

- Learning by myself has been improved since the advent of e-learning. The pace is very good for me.

2- What are your expectations and needs of e-learning?

- I expect more tutors to be involved in e-learning to help students who have difficulties in adapting to this new technologies and learning tools.

Questions (C) learner- content & assessments- interaction in e-learning

1- Do you feel that the e-learning content was at a higher or lower level than the level in traditional learning, or just the same?

- The academic content is higher in e-learning than in traditional learning.

2- Are quizzes, tests, and examinations administered through e-learning program?

Please explain how?

- Yes. Whereas quizzes are sent to our emails, examinations are posted in the class portal where every student is expected to log in before the time is set, after which the student should have completed all the examination questions.

3- Did you have access to a question bank on the site? Do you think it helped you with e-assessments?

➤ Yes. Question banks are very helpful and have helped me in my studies.

4- How helpful was it to playback your lecture videos whenever you needed it?

➤ It is not very helpful. It is redundant content.

Questions (D) Learners' ability to effectively interact with instructors and colleagues via e-learning platform

1- Please describe your dealings with your lecturers and class mates on-line and face to face. Did you prefer a certain type of interaction, why? Do you think one or both type of interaction facilitates the e-learning process?

➤ Online interaction is very good for me compared to face to face. Thus, it is my preference. To facilitate the e-learning process, online interaction should be adopted by all the students and lecturers.

Questions (E) Common Problems of E-learning

1- How do you think e-learning facilitates speedy and effective learning?

➤ E-learning can be conducted at any place around the world and it is fast in terms of information retrieval and interaction with my lectures and classmates.

2- Do you have any comments about fast internet connectivity in your area?

➤ There internet is very fast and convenient in our area.

3- Do you think e-learning is accepted by your peers? Please elaborate.

- Yes. Over 90% of the country's students use online portals, databases, and chat rooms to inquire for new academic content.