Investigating Academic Staff Members' Perspectives Of The Effectiveness Of The Use Of E-learning Skills In Teaching In Saudi Arabia Universities

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Investigating Academic Staff Members' Perspectives Of The Effectiveness Of The Use Of E-learning Skills In Teaching In Saudi Arabia Universities

A thesis submitted to the Durham University in fulfilment of the requirements for the Degree of Doctor of Philosophy in Education.

BY

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DECLARATION

This thesis is as a result of my research and has not been submitted for any other degree in any other university.

ABSTRACT

Higher education institutions in many countries around the world are facing serious challenges from expansion, leading to a number of developments in the process of integrating information and communication technologies into university practices. E- learning is a revolutionary development that is fast becoming one of the most popular learning environments in the field of education in most universities globally, including in Saudi Arabia. In recent years, the Kingdom of Saudi Arabia (KSA) has witnessed an unprecedented growth in higher education as a result of the increasing pace of advances in technology and especially developments in the use of E-learning at University level. This research investigated male academic staff members' perspectives of the effectiveness of the use of e-learning skills in teaching at four Saudi universities. It also provides insight into faculty members' attitudes towards the use of E-learning in the teaching and learning process, and their visions of possible and preferred usage of ICT in education in the future. In order to answer these questions, the study used a mixed method design combining a quantitative research approach with academic staff members (questionnaires), and a qualitative approach research with administrative staff and policy makers (interviews). The analysis of 375 questionnaires by academic staff members was complemented with semi-structured interviews of administrative staffs and policy makers at university level, in order to validate the questionnaire results and to gain a deeper insight in supporting the interpretation of the data so as to understand the research problem. Validity and reliability of the questionnaire were checked and statistical treatments such as percentages, means, frequencies, standard deviation and analysis of variance (ANOVA) were conducted. The results indicated that academic staff members have positive attitudes towards the using of E-learning in their teaching and the educational process, with positive agreement in all three dimensions covered by the research. Significant variables within this positive rating included academic qualification and years of academy experience. This means that length of experience is important. Overall, the study shows the enthusiasm of academic staff members in terms of their motivation for the use of E-learning in their teaching, through their responses to the questionnaire. In addition, the study identifies several obstacles indicated by faculty members, which can be regarded as being at university level such as the absence of an institutional policy for e-learning. A number of other obstacles were identified, including such as a lack of integration of technical support, lack of support in instructional design for E-learning and lack of adequate training in the use of E-learning techniques. The study concludes with some recommendations, to find suitable and more effective solutions as well as suggestions for future research.

DEDICATION

This effort is dedicated to the soul of my dear father who has not seen the fruit of his support and effort.

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In the Name of Allah, the Most Gracious, the Most Merciful

Firstly, and most importantly my thankfulness to Allah Almighty for gratitude, guidance and protection, enabling me to complete my PhD study.

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Mishal Alshammari

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Introduction

Higher education institutions in many countries around the world are facing serious challenges, which have led to a number of developments in the integration of information and communication technologies into university practices. These applications come in diverse forms, with new infrastructure for IT equipment, systems, processing and support (hardware), the configuration of local information networks (local area networks), or specialised programs (software). This growing trend towards the use of technology among many educational institutions is characterized by the pursuit of ease of use and efficiency, low cost and availability, enhancing the quality of university education and increasing academic achievement. In addition, these measures seek to improve the efficiency and professionalism of faculty members and to facilitate intellectual and scientific communication between academics and researchers, as well as to optimise administrative tasks conducted within academic institutions.

1.1 Background to the Study

Success in the university level educational process relies on various factors: methods of teaching, annual plan, individuals' potential, social circumstances, the atmosphere surrounding students, the chosen teaching methodologies and the professionalism of educators, as well as their ability to utilise the most appropriate teaching methods. Thus, modern trends have increasingly focused on a renewed concept of the role of teaching staff, which relies on organizing the methodology and presenting it through technological methods that have moved away from more classical styles which emphasise lecture or other forms of direct education.

In order to achieve this aim, academic professionals must have a comprehensive knowledge of the available teaching methods. The educational process at university level or higher, whether public or private, represents the fundamental structure involved in creating a qualified citizen capable of dealing with modern technology and the changes occurring globally under the umbrella of the knowledge society. Development in the information age requires the use and understanding of modern techniques in various areas of life, the continuous upgrading of the future vision and the reconsidering of traditional methods in all fields. Furthermore, with globalisation pushing countries toward knowledge economies that are reliant upon modern techniques to use knowledge to improve their social welfare and utilise resources effectively, information and

communication technology has become an invaluable part of the toolkit of students and professionals alike. Therefore, these skills cannot be ignored in a world that considers competitive ability as a standard for development and prosperity(Bedah, 2007).

It is widely held that traditional educational methods have become insufficient to achieve the desired changes, solve difficult problems, or produce educated individuals who are capable of dealing with modern developments. In contrast, modern educational methods focus on the use of educational technology to contribute to developing student knowledge through the use of computer programs (Salem, 2004). E-learning aims to achieve multiple objectives, including: providing rich educational multisource environments to serve the education process; redefining the roles within the framework of the educational process; finding incentives and encourage communication between educational process systems such as homes, schools and the surrounding environments (Al Rashed, 2007). Despite the advantages offered by e-learning, this process is reliant upon the internet and therefore has certain associated limitations and vulnerabilities. University level academics face various challenges in the principle of working more with less potential. In order to avoid increasing the burden for academic staff, it is expected that a professional technological team would be available to support the use of modern techniques, which would be best done through a supervising organisation or a technical centre established for this purpose (Hamdy, 2003). Other issues that a university must consider in the transition of e-learning include the necessity of to preparing a clear policy to specify the needs, and identify the targets and final results expected from the addition of the internet to the education being provided. They must take into consideration the infrastructure of the university to carefully organize the project work process, bearing in mind factors including field management, by emphasizing the program, the calendar, student services, administrations and the curriculum, as well as considering the competency of technicians, workers, and teachers, and their ability to deal with modern technology (Langlois, 2003).

1.2 Context of the Research Problem

The increased use of information and communication technology in the educational process is a universal trend in modern higher education. At the same time, it has become an issue of concern for decision-makers in academic institutions, requiring consideration of the need to develop policies relating to those technologies, find the necessary material

support, prepare appropriate infrastructure, build compatible strategies, consider the needs of learners and the requirements of courses, and provide an environment of continuous training and technical support. With this approach and the great attention given to those technologies, as well as the work required to employ and benefit from them, we find that relatively few studies have been conducted into the actual use of these technologies, despite this remaining one of the most important challenges facing universities.

The same is true regarding the local situation, as studies of academic staff members' use of information and communication technology in the educational process in higher education institutions are still limited, which raises the question as to the most appropriate way to implement modern technology and e-learning in these institutions.

1.2.1 Statement of the Research Problem

The remarkable scientific and technological progress witnessed during the 20th century and the early 21st century has had a huge impact on the development of human life in most fields. This is especially true in higher education, where technology has changed the goals and methods of teaching and curriculum design. While it can be said that computers are probably the most important invention in this context, it is the creation of the internet which has increasingly led to the usage of this technology in the education field. This is heightened by the growing competition among educational institutions, which has resulted in a qualitative transition in the process of teaching and educating. Information technology represented in computers and the internet has yielded new approaches to teaching, such as e-learning. Since the basics of higher education public objectives in the Kingdom of Saudi Arabia rely on the adoption of modern globally accepted techniques, the concerns of the academic staff regarding e-learning have increased as it is seen as a new challenge faced by higher education institutions.

1.3 The Importance of the Research

The study is being conducted at a time when the trend among many academic institutions is to focus heavily on the use of information and communication technologies in the educational process. This research should provide a greater understanding of the process and the perceptions of those responsible for its use, and help to increase the level of productivity and improve outcomes. However, in practice

these techniques cannot be employed in a positive way without careful planning, including knowing the degree of actual use among faculty members and steps being taken to deal with problems that may hinder their use in a constructive manner. Therefore, in order to provide decision makers and relevant professional development for the performance of faculty members in universities in Saudi Arabia, this study aims to provide information on the following:

- To what extent e-learning is used in the educational process by academic staff members.
- Motives for the use of e-learning in teaching and in the educational process by academic staff members.
- Obstacles facing academic staff members in the use of information and communication technologies in the educational process.

This information will be invaluable in the formulation of policies related to the application of technology in the educational process. Through the application of these findings, the university will be better placed to achieve its plans to offer modern technical advantages to meet its educational goals, as well as to upgrade the technical and creative abilities of its academic staff members. It is hoped that this may contribute to the capacity of the university to communicate and build knowledge with international universities, ultimately providing a richer environment for students.

1.4 Research Objectives

The study aims to identify issues regarding the use of e-learning skills in the educational process by academic staff members in some Saudi universities. An investigation of their attitudes toward the use of e-learning, motivations for using it, and the obstacles they face has been closely examined to achieve the following aims:

- Provide detailed information about the perspectives of the participating academic staff members regarding the effectiveness of the use of e-learning skills in their teaching in Saudi Arabian universities, and investigate the current use of e-learning skills by academic staff members in their teaching practice.
- Determine the use of e-learning skills in the educational process by academic staff members in Saudi Arabian universities.

- Identify the relationship between variables such as job, academic qualifications, and years of academic experience, in the usage of e-learning by academic staff members in their teaching practice.
- Identify the motivations and incentives for academic staff members using e-learning skills in their teaching
- Determine obstacles and challenges facing academic staff members in the use of e-learning skills in their teaching practice.
- Provide recommendations for raising the level of IT utilization rates of academic staff members, and the perceived need for the development of e-learning skills.

1.5 Research Questions

This study has sought to obtain a deeper insight by means of an investigation into the use of e-learning in Saudi higher education institutions by academic staff members. The main research question is: What are (male) academic staff members' perspectives of the effectiveness of the use of e-learning skills in their teaching in some universities in the Kingdom of Saudi Arabia (KSA)? Based on this question, the research aims to answer the following sub-questions:

- What is the extent of the use of e-learning skills in teaching by academic staff members in some Saudi universities?
- Are there any statistically-significant differences in the use of e-learning skills by academic staff members in teaching in terms of the variable, academic qualification?
- Are there any statistically-significant differences in the use of e-learning skills by academic staff members in teaching in terms of the variable, years of experience?
- What were the motivations for academic staff members using e-learning in teaching?
- What were the obstacles to using e-learning skills from the perspectives of the academic staff members?

1.6 Significance of the Research

The study aims to sheds light on e-learning in Saudi Arabia, a significant contemporary trend in the educational and teaching process. This will help officers, planners and developers to focus on developing more effective plans for universities, preparing and training academic staff, specifying the material needs, and identifying the required educational software and infrastructure needed to effectively implement e-learning at university level.

1.7 Limitations of the study

Despite the strengths of this study, such as the sampling from four universities, and a methodology which included a mixed method approach to triangulate academic staff members' perceptions as expressed through the questionnaire, as well as interviews with expert policy makers at university level, the study has a number of limitations. These include the narrow geographical spread, the exclusion of students, and the fact that it was restricted to public universities and male academic staff members.

As the researcher only had permission to apply the study over three months, the sheer size of the country meant that it had to be restricted to three regions, with two universities in the north (Hail and Al-Jouf), one university in the east (Dammam) and one university in Riyadh, the country's capital (King Saud) (see Figure 2.1: Map of Saudi Arabia). However, despite the fact that it represented a narrow geographical spread, the researcher tried to cover as much of the area as possible in the application of the research.

The study sample included male academic staff members and expert policy makers at university level in government universities only. Students and private universities were excluded due to the limited period of time available for the research, as well the difficulties involved in gaining approval for extending the survey to a wider audience. In the implementation process, there was some delay in obtaining the required permission, particularly for cultural reasons, to conduct the semi-structured interviews.

There were a number of difficulties, caused by the infrastructure, which impeded the collection of the data. Saudi Arabia is a huge country and there were problems involved in travelling between the regions and universities to conduct the interviews and collect

the questionnaire. As a result the researcher had to distribute the questionnaire personally to guarantee obtaining sufficient responses.

In addition, there were some inconsistencies between the responses of academic staff members to the various research instruments addressing the dimensions, as shown by differences in questionnaire responses to the items of each dimension.

Despite having carefully applied the questionnaire to a pilot sample to check the clarity and accuracy of its drafting, unexpected answers and patterns were found in the second part of the questionnaire. It is assumed that this arose because of a misunderstanding of the format of some items in the questions. There may have been confusion in the exact understanding of the terms e-learning, distance learning, and blended learning.

1.8 Definitions used in the Study

For the purpose of the study, the following definitions are of particular importance:

Degree of usage: The extent to which the e-learning skills are used by academic staff members in teaching. This can be measured by a graduating scale prepared by the researcher.

Academic staff: this refers to lecturers who hold Masters' or PhD degrees in any field, teaching one or more course stipulated in a Saudi university for the academic year 2013. These staff might hold the following grades: Demonstrator, lecturer, assistant professor, associate professor, and professor.

E-learning skills: This focuses on presenting the curriculum in a technological form, such as using CDs, LAN or the internet. It also includes computer or web-based education, in addition to other electronic means of presenting a course.

Chapter 2: Literature Review

Introduction

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2.6 Literature Review - Related work

2.7 Summary

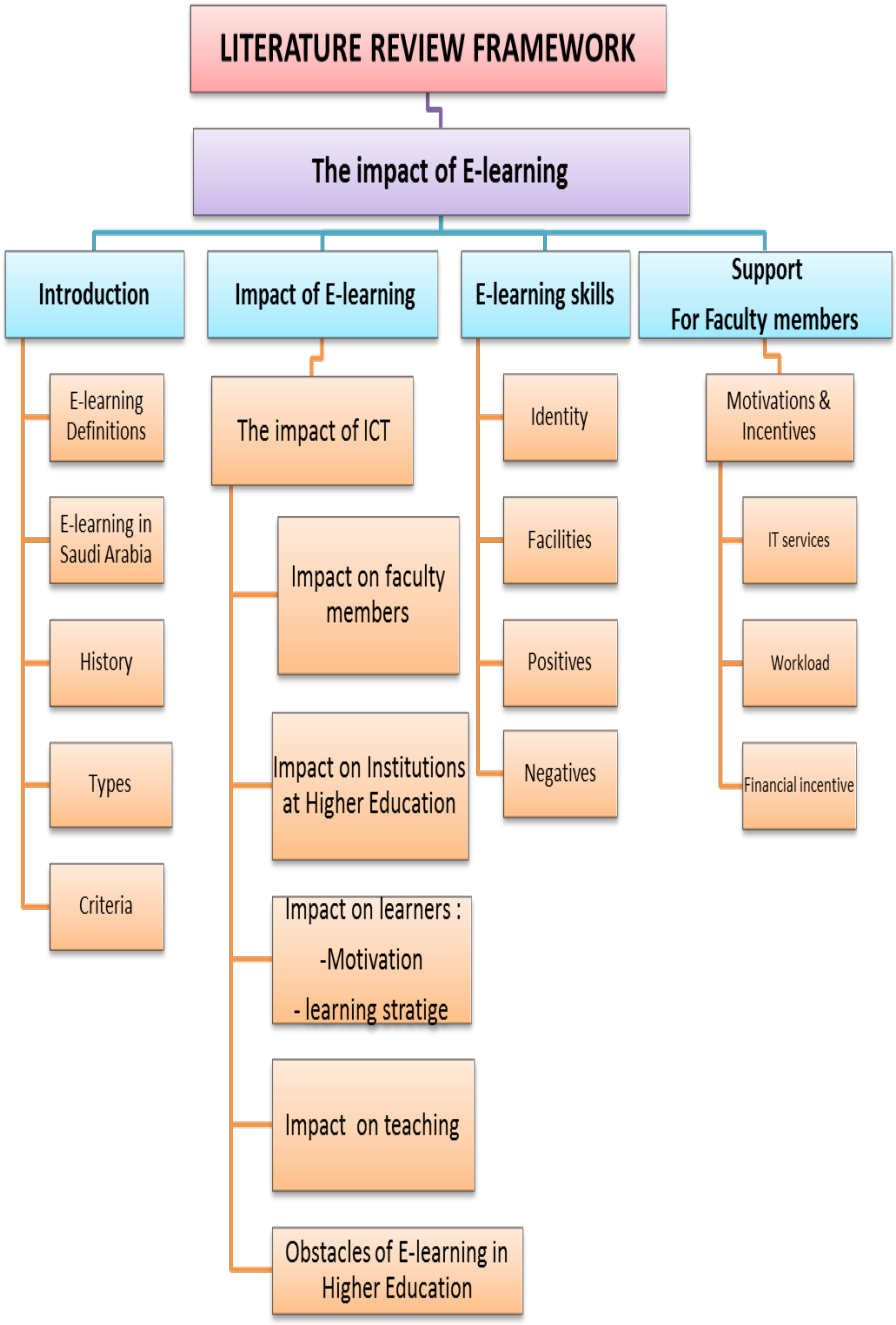
Introduction

Practical and theoretical progress in the field of information and communication technologies (ICT) is instrumental in the progress of a number of disciplines, as well as in the personal and social development of individuals. This is also true in the case of education, where ICT can play a key role in making learning accessible to students with particular personalities, as well as in improving the creativity of both students and teachers through the provision of diverse methods and teaching approaches. This can make the presentation of knowledge more interesting and attractive, with many aspects of the school curriculum being integrated into these systems. Perhaps the most important impact of the growing involvement of ICT in the educational process is as an attractive and advanced tool to encourage teacher diversity away from conventional methods of presentation, which will reflect positively on the educational environment, thereby stimulating learning. This chapter will provide an in-depth examination of the impact of ICT on teachers, learners and the learning environment as a whole.

The expansion in the presence, accessibility and content of the internet has resulted in a growing conversion to the use of e-learning with teaching practices in higher education. ICT offers many opportunities, such as lifelong learning and flexibility in education (Blin & Munro, 2008). The use of these e-learning technologies has helped to improve communication and the level of freedom with institutions' outside community, with the flexibility of e-learning enabling geographical and temporal barriers to be broken, as well as enabling users to deal with rapid changes in knowledge (Iris & Vikas, 2011).

2.1 The Literature Review - Framework

Figure 2.1: The Literature review framework



2.2 The Impact of E-Learning

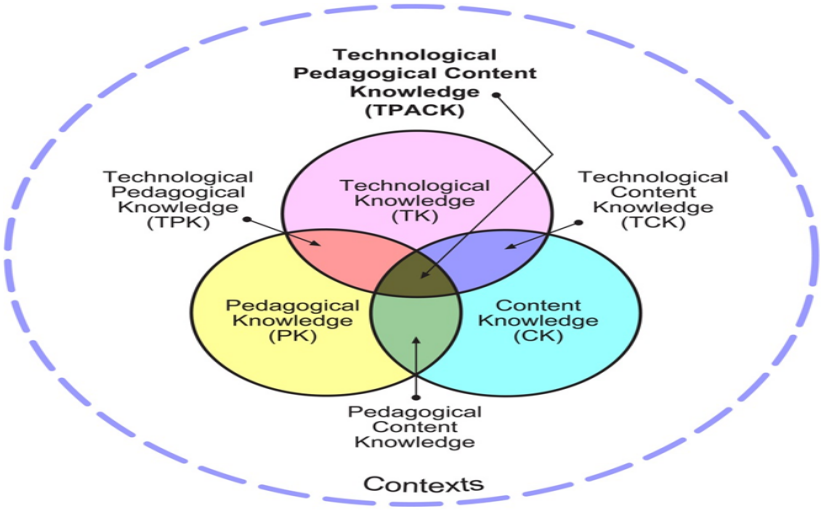
2.2.1 The impact of ICT on Academic Staff Members (teachers)

The diversity in the professional development of teachers and the provision of different ways of using information and communication technology is reflected in their increased confidence in their abilities to use modern technology to facilitate learning, which provides a stronger pedagogical motivation for teachers to integrate ICT into their classrooms (Ward & Parr, 2010). It has caused the teacher's role to evolve from one of indoctrination to providing innovation and creativity in the teaching process which encourages lifelong learning (Liaw, Huang, & Chen, 2007). However, the adoption of ICT competencies impacts upon future teachers through the approaches that are available, encouraging them to devise practical and creative applications for ICT (Nechita & Timofti, 2011). When teachers display greater confidence in their own ICT competency, they become more confident in using ICT in the classroom (Prestridge, 2012). The use of information and communications technology in higher education plays an important role in the development of the skills of academic staff members (Rienties, Brouwer, & Lygo-Baker, 2013). One study of an online teachers training program followed 73 academics from nine higher educational institutions. Data were gathered using the Technological Pedagogical Content Knowledge (TPACK) model and the Teacher Beliefs and Intentions questionnaire using a pre- and post-test design; the results indicate that TPACK skills increased substantially.

Time investment and belief in employability influenced training retention. Furthermore adoption of the appropriate technology and pedagogy approach determined content knowledge(Rienties et al., 2013).

The TPACK model from http://tpack.org.

Figure 2.2: The TPACK Model



2.2.2 The impact of ICT on Higher Education institutions

E-learning offers solutions for many important issues facing educational institutions such as support, funding and student numbers (Blin & Munro, 2008). In order to facilitate the exchange of ideas and information, many modern higher education science and technology institutions have recognized this urgent need to use ICT to facilitate communication (Li, Tan, & Teo, 2012).

2.2.3 The impact of ICT on the motivation of learners

A key feature of e-learning is its flexibility, with online education offering learners the choice of the most appropriate learning methods to suit their needs, which can have a very positive impact on learners' satisfaction (Sun, Tsai, Finger, Chen, & Yeh, 2008). The adoption of e-learning systems among university students through the training programming has proved to be effective, with the emergence of a number of important factors such as increased motivation, positive personal attitudes and a clear direction for the self-efficacy of the student (Paechter, Maier, & Macher, 2010) and (Liaw, 2008). Furthermore, ICT has become an integral part of the daily lives of students, so professionals must be competent with the effective use of this technology. Therefore, there are strong arguments that ICT is indispensable (Kisla, Arikan, & Sarsar, 2009). A study of the use of ICT among school students in Finland found surprisingly low usage,

with one reason for this being the lack of integration between ICT and the curricula in different areas (Hakkarainen et al., 2000). This was because the e-learning tools were confined to computers in a lab separate from the classroom and access to them was through special courses, under the control of a teacher with expertise in ICT, which was a major impediment to students preparing themselves for the knowledge society.

It is therefore necessary to integrate information and communications technology into studies of different knowledge fields, and provide computers inside classrooms, in order to facilitate meaningful and intensive use of ICT in a pedagogical sense (Hakkarainen et al., 2000). There is a recognized increasing demand for e-learning, and the wider adoption of information technology, especially amongst the younger generation, due to relatively low costs of implementation and broad applicability (Kim, Trimi, Park, & Rhee, 2012). Therefore, conclude that positive perception of technology through e-learning influences students' satisfaction with courses, and demonstrate how satisfaction with flexible learning can be described by using concepts that explain acceptance of technological change and innovation (Drennan, Kennedy, & Pisarski, 2005).

2.2.3.1 The impact of ICT on university students in terms of motivation and learning strategies

Considerable efforts are being made to promote the incorporation of ICT in Higher Education (HE), in conjunction with placing emphasis on the cognitive and motivational components underlying the learning process (Valentín et al., 2013). One study in this area analyzed two variables: (1) the relationship between different uses of ICT and learning in terms of outcomes and (2) the relationship between learning strategies and motivation and the use of ICT (*ibid*). The participants were 543 full-time first and second year undergraduate students of different subjects at the University of Salamanca. The mean age of participants was 20.36 years, and 66.9% of them were female. The following data acquisition instruments were used: (1) a questionnaire for the acquisition of Identification Data regarding the students' age, sex, educational status, etc. and (2) a Survey of European Universities Skills in ICT of Students and Staff (SEUSISS, 2003; Spanish version). The objective of the questionnaire was to collect information about the experience, skills, expectations and attitudes of students as regards the use of ICT. Three questions were incorporated, which aimed to estimate academic performance: performance (as reflected by number of student failures divided by the number of

subjects they had signed up for); expectations of performance (the belief that the use of ICT will improve performance in the subjects), and expectations of satisfaction (the belief that the use of ICT will increase the students' satisfaction with their subjects). The findings of the study were very useful in showing the impact of ICT use on university students in terms of the relationship between motivation and learning strategies.

The use of ICT is highly variable among college students, from barely used tools, such as programs to design multimedia educational materials, to frequently used tools such as browsers or chat tools. This kind of variability is reasonable considering that students are not usually involved in the design of multimedia educational materials, unless specifically as part of an assignment. However, chatting allows students to communicate quickly and cost-effectively with members of their social networks. The results of the present work provide a classification of the different uses of ICT and their double relationship; on one hand with learning strategies and motivation, and on the other with academic performance. The results of the factor analysis revealed four well differentiated uses of ICT: social use, linked to recreational communication among students, either in its synchronic mode (chats) or in its asynchronous mode (forums), including reading newspapers; technical use, related to the use of data management programs (databases and spreadsheets); web page design, and audiovisual programs; academic use, which describes the use of office programs related to academic tasks such as the elaboration and presentation of projects (word processors, slide presentations, *etc*.); and finally the EPU, which describes the use of the tools offered by an academic institution to provide students with virtual resources that will allow them to attain the competencies required in the subjects they study. These findings would enable the development of training programs that would be more in keeping with the real uses that university students make of ICT and at the same time permit an analysis to be made of the relationships with other training variables of interest.

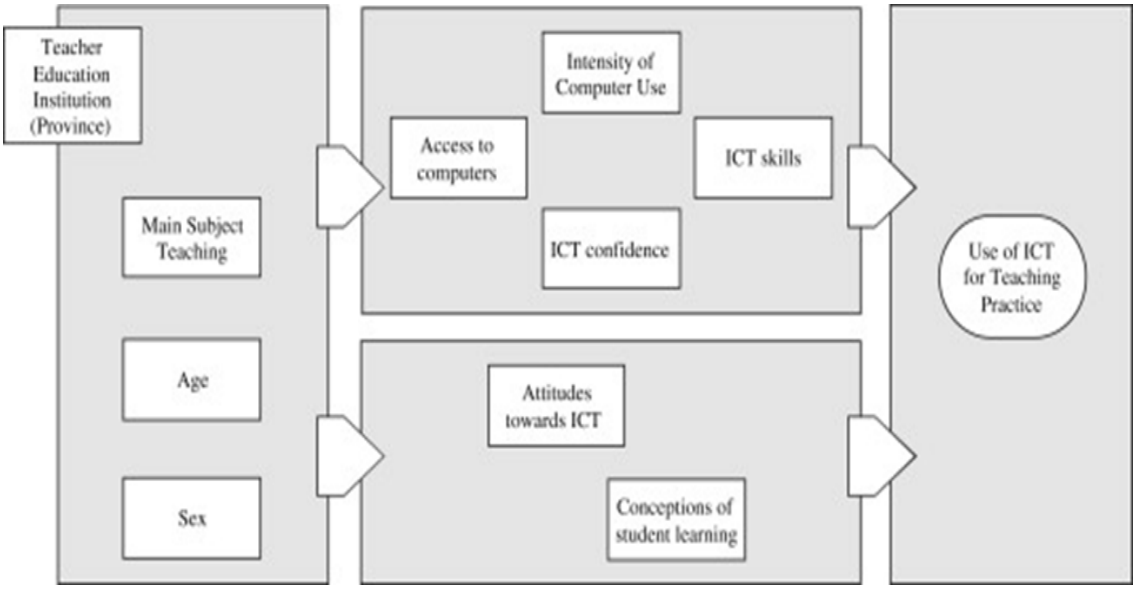
2.2.4 Impact of ICT on teaching

Information and communications technology plays a major role in modern education through its effect on the diversification of teaching methods, improving the abilities and skills of educators to give lessons greater relevance and impact (Ahmadi, Keshavarzi, & Foroutan, 2011). The positive attitudes of many students towards the use of computers and their past experiences with ICT will impact on teaching practices in the future (So *et*

al., 2012). It has even been argued that the increased stability in the education process is due to the use of information and communication technology(Otaghsara & Mohseni, 2012).

Peer and and Van Petegem (2011) developed a model to describe the nature of ICT in teaching practice. Non-manipulative factors are gender, age and teaching subject. Influencing first-order manipulative factors are access to ICT, intensity of use, confidence, and skills. Second-order or internal factors are perceived values of ICT and conceptions of student learning which give an indication of the additional influence of contextual factors at the level of the individual teacher and the educational institution (Peeraer & Van Petegem, 2011).

Figure 2.3: Model of influencing/constraining factors for the use of ICT for teaching practice.



Source: (Peeraer and Van Petegem, 2011).

2.3 Obstacles to the Use of ICT

There is a recognized lack of awareness among teachers and faculty members regarding the kinds of techniques available and how they can be used to support the delivery of the curriculum, or the obstacles preventing the effective use of ICT. Some observers have also commented on the inability of teachers to implement and use the existing resources they have available to them, in addition to their apparent lack of practice and training (Morris, 2010).

It is especially important to use an appropriate pedagogy when modelling the use of this technology in a classroom of pre-service teachers. Few lecturers learn to use technologies effectively or are supported in developing their skills professionally. Teacher educators should continue to learn and model new and appropriate technologies, and remain aware of when, how, and why technology is used to enhance teaching and learning. Instructional technologies can improve pre-service teacher training by providing access to more and better educational resources, offering multimedia simulations of good teaching practice, catalysing teacher-to trainee collaboration, and increasing productivity of non-instructional tasks. Teacher preparation can be enhanced by creating opportunities for teachers in training to see and experience the positive effects of technology on teaching and learning, potentially motivating them to participate in professional development programs because they see them as an opportunity to become a trainer/mentor for other teachers (Yalcin, Yalcin, Sagirli, Yalcin, & Koc, 2011).

A study conducted to develop a theoretical framework on e-learning adoption at university level looked at academic staff members' attitudes toward e-learning, as well as barriers and motivators, which yielded several results. The faculty members showed a moderately positive attitude towards e-learning, indicating that they were more than willing to adopt and use it. It also indicated that a comprehensive program of continuing professional development in e-learning should be a welcome strategy to attract the fence-sitters as willing adopters of e-learning in their courses. The study also revealed the positive effects of computer and email use on attitude, indicating the role of technology experience as a predictor of positive attitude, which is possible through organized training of faculty members and regular use of the technologies. Also, some respondents cited lack of training in e-learning, academic staff members' workloads, poor internet access and networking in the university, lack of technical support, and lack of time to develop e-courses as barriers (Panda & Mishra, 2007).

Instructional design is defined as "a systematic process that is employed to develop education and training programs in a consistent and reliable fashion" (Reiser & Dempsey, 2007). In addition, according to Merrill et al (1996) it may be thought of as a framework for developing modules or lessons that:

- Increases and enhances the possibility of learning
- Makes the acquisition of knowledge and skill more efficient, effective, and appealing
- Encourages the engagement of learners so that they learn faster and gain deeper levels

of understanding (Merrill, Drake, Lacy, Pratt, & Group, 1996).

Table 2.1: Illustrates studies on the impact of ICT on academic staff members and students.

Study Author / Year	Country of origin/ Country of study	Topic	Method	Respondents
Hakkarainen et al., (2000)	Finland	Students' skills and practices of using ICT	Self-report questionnaire/ Open-ended questions	515 students
Blin and Munro,(2008)	Dublin/Irela-nd	Why hasn't technology disrupted academics' teaching practices?	Survey /open and closed questions	143 academic staff
Ahmadi S, Keshavarzi A and Foroutan M.(2011)	Iran	The Application of ICT and its Relationship with Improvement in Teaching and Learning	Descriptive-survey study	Faculty members. 207 questionnaires 179 instructors and 28 professor-assistants
Ward L and Parr JM. (2010)	New Zealand	Revisiting and reframing use: Implications for the integration of ICT Teacher	Design a best case scenario by surveying teachers regarding computer use	149 teachers
Nechita and Timofti,(2011)	Romania	Increasing Independence versus Increasing Collaboration with ICT	Psycho-Pedagogical observation questions/interviews	46 students, aged 21 to 24.
Prestridge S. (2012)	Australia	The beliefs behind the teacher that influences their ICT practices	A mixed methods approach	200to250students and 48 teachers

2.4 Review of Related Literature

Zain *et al*. (2004) looked at the impact of information and communication technology (ICT) on management practices in Malaysian Smart Schools. They found that the effects were generally positive, including the enrichment of the ICT culture among students and teachers, created more efficient student and teacher administration, provided better accessibility to information and ultimately resulted in greater utilisation of school resources. Their analysis also revealed a number of challenges which were encountered by the schools. These included time constraints, higher administrative costs, negative

acceptance/support from some untrained staff, abuse of the ICT facilities and problems related to the imposed rigid procedural requirements (Zain, Atan, & Idrus, 2004).

Samari ,(2011) examined the effect of using information and communication technology on educational progress at the Astara branch of Peyam-e-Noor University, through the use of pre-test and post-test evaluations of two experimental and control groups. The statistical population consisted of the third term students of two consecutive years, and showed that those students taught using ICT had progressed much further than those who learned through traditional approaches. The study, with a robust experimental design, also showed that education using ICT had an effect upon self-regulation and made acquisition more active. Their results showed that students found ICT to be considerably more educationally stimulating than traditional methods, indicating that ICT is a potentially powerful tool for training and developing abilities, as well as creating a suitable and stimulating educational environment (Samari, 2011). The key challenge arising from this research is to identify how to ensure such benefits are achieved in other contexts which may differ in important respects.

Suduc, Bîzoi, Gorghiu, & Gorghiu, (2011) conducted a multinational educational project (Comenius) which examined the issue of computer use in the classroom in science education in Romania, Spain, Poland, Greece and Finland involving a total of 363 science teachers who attended the training course, “Virtual Instrumentation in Science Education”. The participants were teachers of mathematics (172), chemistry (64), physics (107), technology, biology, astronomy, electronics and primary school education, with some of the sample being involved in the teaching of more than one subject. The study found that computers were widely used in the classrooms, with all of the participating schools having internet access, although significant differences were found between the countries. The survey results presented in this paper, along with the study results obtained by Korte and Hüsing, show that a higher percentage of the science teachers from Finland have and use computers in their classrooms than those from Romania, Spain, Poland and Greece. The majority of European science teachers use computers for PowerPoint presentations, which still play a central role in the teaching process, possibly reflecting the continued emphasis on standard teaching approaches. Although the number of teachers who participated in the study was relatively small, preventing general conclusions from being drawn, the results provide an opportunity to draw some interesting observations.

A study into the attitudes of in-service teachers from kindergarten to high school towards ICT and its use in the classroom, suggests that participants were positive towards its use as a teaching tool (Sánchez, Marcos, & GuanLin, 2012). One hundred and seventy in-service teachers from kindergarten to high school participated in the ICT training courses offered. A 154-item survey (Cronbach = .89) was provided, with three main sections: (1) general information; (2) attitudes towards ICT and use of computer resources in the classroom; and (3) level of satisfaction from the training. In addition to this, 11 semi-structured interviews were conducted in order to gain a better understanding of the major motivations and beliefs of the teachers. They found that despite being highly positive, teachers rarely used these approaches in class. Secondly, there were no significant differences after instruction. The main conclusions of the study indicate that new ways of teacher training need to be developed for the use of ICT to be successful.

The progress of information and communication technologies is considered as one of the key factors of change in human society. The main impact of ICT in education can be seen in the improvement of the capabilities of instructors, changing the educational structure, creating opportunities for greater and more comprehensive learning, and ultimately enhancing educational quality and improving teaching skills. Thus, this study seeks to investigate the influence of technology involved in teaching and learning (Ahmadi et al., 2011). It is evident in both ICT theory and practice that many teachers acknowledge the potential of ICT as a knowledge construction tool through collaborative activity, as well as the relevance of ICT to society and future employability, and the possibility of its use in authentic problem-based approaches to teaching and learning (Prestridge, 2012). Given the pace of change, it is important to ensure that the adoption of ICT has a beneficial impact on learning.

Research has found that the integration of ICT can benefit students by giving them full access to materials and resources as well as enabling improved communication with their teachers. This access is extensive, overcoming limitations of time and space, and giving students the possibility to combine their studies with other tasks (Sánchez et al., 2012). Therefore, in the modern learning context, ICT is potentially of great significance to educational systems, providing another way of promoting the growth of knowledge and skills of learners, as well as encouraging and improving creativity, critical thinking and even improving their overall understanding of how to learn. This prominent role in education may be due to the adaptability of ICT and its capability to form relationships among students. However, ICT has fundamentally changed the tools and even the

policies and goals of education (Shahmir, Hamidi, & Bagherzadeh, 2011). The challenge of course, is in ensuring that the technology lives up to its potential.

A review was conducted to compare the fundamental educational performance of three of the most prominent institutions dealing with this field in the UK, Malaysia and the Arab World (Al Areeny, 2009). The study examined the British Open University, the Malaysian Open University and the Arab Open University respectively, taking into consideration the methods used for distance learning at these universities as well as the most important procedures used to compare them, in order to extract a proposed model applicable to distance learning in Saudi Arabia. This model was based on the most successful points of strength and professionalism within the three previously-mentioned institutions, that concentrated on distance learning on the one hand and on the financial, human and technical capabilities available in Saudi Arabia on the other that would encourage these institutions to consider the distance learning system in the Saudi higher education sector. The study concluded by indicating future expected challenges in this course.

In a study which looked at the basic skills required for the academic staff to successfully use e-learning techniques in Al-Balqa Applied University. Bedah (2007) relied upon a questionnaire that included the basic skills needed for its use. The questionnaire included 31 paragraphs in its final form and the results highlighted the fact that the degree of basic skills held by the academic staff in the use of e-learning techniques in Bulqaa Applied University ranked as average and there were no statistically significant differences that would relate to the academic degree factor.

A study was conducted to investigate the awareness of academic staff in Jordanian universities regarding the concept of e-learning, as well as the degree to which this technique is used in university level teaching. The study sample targeted 465 members of academic staff from both private and public universities in Jordan, who were found to be well aware of all the characteristics of e-learning. Statistically significant differences were found relating to the awareness level of the academic staff in public universities, and the gender factor was noted to be important (Al Khateeb, 2006).

Another study was conducted to evaluate the effectiveness of the e-learning administration program (Web CT) at the University of Western California (Jones & Jones, 2005). The questionnaire, which was given to 971 students and 44 lecturers, showed that both the Blackboard and Web CT programs were useful in learning. Many of the lecturers claimed that these systems enhanced the level of communication between

students as well as between students and teachers, and facilitated the overall learning process through the increased accessibility of additional resources related to the curricula through the web sites. One third (33%) of the teachers stressed that the greatest benefit they received was the mastering of the necessary computer skills.

Langstaff *et al.* (2004) looked at the use of e-learning techniques at Iowa University in order to identify the constraints and advantages of its usage. Their study sample consisted of two groups, one comprising 145 students and the other comprising 120 members of academic staff. The results of the study showed that the university has had a great deal of success in the adoption of e-learning techniques since they were officially accredited in 1996. The number of academic staff members who used this technique had risen sharply, including the usage of programs like Twist, Web CT and Blackboard, as well as other software specifically designed for the curriculum. The results also showed that one third of students take at least one course via the internet every semester. In addition, the results emphasized the desire of academic staff to develop the effectiveness of using e-learning techniques and merge them more comprehensively with other teaching methods (Langstaff, 2004).

Spodark (2003) investigated the nature of the difficulties encountered by academic staff at Hwanz Private University in the United States. A sample of 100 members of academic staff was involved, with the findings showing that few used technology in lecture halls. The most prominent uses of technology in education were found to be in word processing and e-mail, perhaps based upon the obstacles to the use of e-learning, which were a recognized lack of the clear conception by the university administration to achieve the use of technology, the absence of any decision by the higher educational leadership to support the use of e-learning techniques, the absence of properly equipped laboratories inside the university, the lack of financial and in-kind incentives for those who use e-learning in the classroom, and the hesitance of academic staff and the lack of actual participation in using technology despite training courses and workshops (Spodark, 2003).

At Texas University in the US, Gagne and Shepherd (2001) sought to measure the impact of e-learning techniques on accounting students. The study sample consisted of 41 male and female students who were divided into two groups: the first group then studied the accounting course using e-learning techniques, while the second one used more traditional learning techniques. No statistically significant difference was found in

the degree of learning between the two groups that could be attributed to the learning technique (Gagne & Shepherd, 2001).

Another study was conducted to examined the use of both internet and computer based teaching tools at Anadolu University in Turkey. A 61 part questionnaire was distributed to 305 faculty members to investigate their opinions on limits to using e-learning techniques in university level education. The study showed that the degree to which members of academic staff used the computing resources was very low, with word processing programs being the most commonly used tool. The most important factor in determining the use of technological resources was found to be the availability of the internet and computers (Odabasi, 2000).

A study was conducted into the perspectives of academic staff members and students enrolled on distance learning programs, in an attempt to evaluate the adequacy of using technology in teaching. Their study sample consisted of 76 academic staff members from Georgia University in the US, who expressed concerns about the lack of technical support, lack of equipment and sufficient educational programs and lack of administrative support given to academic staff regarding technological applications. At the top of the list was e-mail followed by word processing and PowerPoint, with computer video programs at the bottom (Daugherty and Funke, 1998).

These studies, conducted internationally, suggest that technology has the potential to support both effective change and improvement in teaching and learning in higher education. However, in order for these benefits to be achievable,

2.5 E-Learning in Saudi Arabia

E-learning is still in its infancy in Saudi Arabia. Currently the emphasis is on improving the use of information technology in curriculum and resource development and establishing electronic communities (Al-Asmari & Rabb Khan, 2014). A number of studies have been conducted in Saudi Arabia, and though research is still at an early stage the findings suggest a similar picture to the wider international studies. For example, Alfahad, (2012) conducted a study investigating the usefulness, efficiency and efficacy of information technology in higher education in the Kingdom of Saudi Arabia. The survey was distributed to 161 female students at the College of Education, King Saud University. The sample was made up of college students selected randomly from a pool of 400 female students who were attending different courses in different areas. The

results indicated that 61.5% of the participants used electronic devices in their course activities and 65.8% used IT for blogging. Interestingly, 72% of participants often shopped online and 88.6% of the students often used e-mail and instant messages. The most prominent results of the study are as follows: (i) Information technology in higher education in Saudi Arabian universities is important as it improves student access and can enhance the quality of teaching and learning; (ii) information technology can also assist universities to be innovative and responsive to the changing demands of students and the changing requirements of business and industry from higher education; (iii) the use of information technology has the potential to enhance the quality of university teaching and research; its use in university teaching and learning has changed traditional teaching roles with a new focus on teaching and learning teams and instructional designers; (iv) the use of information technology is of primary importance in education for two basic reasons; the first is that students will become familiar with information technology, which should be helpful for their future career prospects, and the second is that teaching standards could improve and may become more effective (Alfahad, 2012).

As another example, an investigation was conducted into the use of e-learning systems in two universities in the Kingdom of Saudi Arabia (Alkhalaf, Drew, AlGhamdi, & Alfarraj, 2012). A questionnaire was presented to 528 students at the universities (328 males and 200 females), to examine four main dimensions of ICT application: system quality, information quality, individual impact, and educational impact. The study focused on the individual impact of these measures, in the form of five key variables: (1) learning through the experience of using the e-learning system; (2) enhancement of user awareness of the requirements of educational processes; (3) increased productivity; (4) user satisfaction; and (5) positive attitude towards e-learning system functionality. The study indicated that the use of e-learning system generally has a positive impact on individuals, enhancing the ability of students to interpret information accurately and increasing their understanding and performance in activities in their department. ICT was also found to provide helpful basic information, to allow students to take important decisions effectively and accurately, which seemed to increase the overall productivity of the teaching and learning process. Finally, this research highlighted the IS Success/Impact model as being the most useful for measuring the impact of e-learning system on individuals by ensuring the alignment of outcome indicators with key goals for improvement.

A study similar to that of Al Khateeb (2006) in Jordan examined the use of ICT among staff at the King Fahed University for Petroleum and Minerals (Al Zahrany, 2005). In this research, a 45 part questionnaire was delivered to 314 members of academic staff in order to examine the available programs and software for the purpose of teaching, in addition to the difficulties preventing the use of technology in the classroom. The results revealed a variation in the relative importance of ICT to different subjects, along with a progression in the use of e-mail and the internet for teaching purposes.

Al Hafezy (2008) conducted a study into the use of e-learning at King Khalid Ben Abed Al Aziz University in Saudi Arabia, in order to better understand and define the attitudes of staff towards the use of these technological approaches and the obstacles to their use. The study sample of 239 members of academic staff found an average level of usage, with no statistically significant differences being identified in the degree of use depending on the particular academic field. There were different obstacles to the use of e-learning techniques by the academic staff at university level (Al Hafezy, 2008) which were similar to those found in .

A study by Alkhalaf *et al.* (2012) into e-learning systems in higher education institutions in KSA examined the attitudes and perceptions of faculty members at Qassim University and King Abdul-Aziz University. The study used a questionnaire consisting of 37 questions that looked at system quality, information quality, individual impact, and organisational impact; these measures were based on the IS Success/Impact Measurement Framework. The sample population comprised 30 male faculty members and only eight female participants. The e-learning system was found to have a positive organizational impact in both universities, particularly in terms of the following three areas: (i) it helped improve job performance; (ii) it assisted faculty members in thinking through problems; and (iii) it allowed educational organisations to provide better and newer products and services to users. A primary strategic objective for Qassim University is to raise the job performance of its staff through utilizing and using the new educational technologies within the educational process, and using the e-learning system provided by the university enables faculty members to do their jobs well. Therefore, faculty members are strongly urged to improve their skills in technologies such as e-learning in order to do their jobs better and to enhance their performance.

This study found that the most important factors influencing e-learning success in developing countries typically included an increasing level of technology awareness. It also involved a positive attitude towards e-learning based upon recognition of its role in

enhancing basic technology knowledge and skills, improving learning content, and motivating users to utilize e-learning systems in innovative ways, although recognition was given to the need for a high level of support from the university and specialist training in targeted areas. Six dimensions were found for implementing e-learning systems in developing countries, including the characteristics of learners and instructors, the overall quality of a given institution or service, the quality of infrastructure and systems, the course and information quality, and finally extrinsic motivation. Based on the results, the most important dimension for ICT experts was the characteristics of the learners, whereas infrastructure and system quality were found to be the most important dimensions from the perspective of the faculty. This study also revealed at least 20 critical factors for e-learning success in developing countries, from both the ICT expert and faculty perspectives. Future research should examine the study results and focus on different groups of stakeholders (such as learners or administrators), stakeholders in different contexts, and how the results might change over time (Bhuasiri, Xaymoungkhoun, Zo, Rho, & Ciganek, 2012). This list of 20 critical factors suggests that successful adoption of technology is complex and requires an integrated approach for it to be successful involving institutional and personal level challenges.

Overall the studies conducted in Saudi Arabia suggest that a number of the issues identified in international research are likely to apply, but that the specific culture and context will influence the details of any findings an implications.

2.6 Literature Review - Implications for the Research

As mentioned in the literature reviewed in this chapter, a number of studies have been conducted to understand and highlight the importance of the investigation of e-learning skills by academic staff members in the teaching and learning process. The relationship between these skills and the successful development of ICT in an educational context relates to both individual motivations and obstacles which are faced in the integration of e-learning in higher education institutions. The comparison of international studies and studies undertaken in Saudi Arabia suggest that many of the issues are likely to be similar. One important issue is the complexity of the definitions of e-learning in terms of how these relate to different features of e-learning.

Overall, the key implications from the review of the literature are that in order to fully

understand and appreciate the information collected from a questionnaire and interviews, these should be contextualised within the social and cultural context from which they have been obtained in terms of the specific design of the questionnaire and interview. To prepare for this, information about the Saudi Arabian context was summarized in terms of general information about the Saudi educational scene and situating the study socially and culturally so as to facilitate understanding of the greater context of activities. In addition, to identify information about the present situation in Saudi Arabia, accessing prior Saudi-based researches in the literature review suggests that many of the challenges are likely to be similar to those reported in the wider literature. This study will therefore seek to build on what is known currently and to bridge the gap in knowledge from the Saudi faculty members' perspective to add to research literature about use E- learning and ICT in the Arab world, as well as potentially identifying further issues that could be covered by future research.

The literature reviewed in this chapter shows that the impact of the introduction of ICT on faculty members in higher education relates to a number of features. Indeed, some universities are still reluctant to introduce such technology, due to a number of challenges and obstacles. The literature review identified a range of factors as obstacles facing academic staff members in implementing e-learning in higher education institutions. From previous studies identified in the literature review chapter, the obstacles can be divided into three broad categories. The first category is university-level obstacles (institutional sources), regarding the obstacles relating to issues at the institutional level. The second category is at the level of faculty members (individual sources) regarding the obstacles relating to individual issues. The third category of the obstacles is the relationship between these two categories (individual & institutional sources). There are a number of challenges facing the processes of successful implementation of e-learning in teaching in higher education institutions. These challenges relate to the institutional policies for e-learning (where present), the effective integration of teaching approaches with technology, the kinds of support in instructional design for e-learning, and availability and quality of training in the use of e-learning techniques.

2.7 Summary

This chapter has reviewed issues related to the investigation of the integration of e-learning and ICT including those associated with theories and constructs related to e-learning, faculty members perspective of effectiveness of use of e-learning in their teaching with motivations and the challenges facing the integration of e-learning and ICT in higher education institutions in Saudi Arabia.

In today's world developments in the global knowledge society, together with the ongoing development of information technology, mean that it is increasingly easy for individuals to gain quick and comprehensive access to information through a range of technological means. These changes mean that higher education providers are being forced to evolve in terms of the courses they offer. As an example of this, higher education in Saudi Arabia has undergone a remarkable paradigm shift in terms of its approach to learning, including the development of the infrastructure, with fully equipped buildings and new technical tools that must be accompanied by rapid parallel development in the employment of information and communication technology by its faculty members.

The literature review indicates that the adoption of technology has the potential to support improvement in teaching and learning in higher education, but that there are likely to be a number of barriers and challenges to overcome. One key area which emerged from the research is the importance of the role of academic staff members in the adoption and implementation process.

Therefore, this research focuses on the investigation of the use of e-learning skills in the teaching process by academic staff members, as well as the obstacles they face. This is reflected in an attempt to upgrade the skills of the teaching faculty and move away from traditional methods, by identifying and overcoming the problems they encounter, and equipping staff with the skills necessary to use these tools properly. This will enable them to keep up with modern techniques and improve the creative output of the students of future generations.

Chapter 3: Background of Study

Introduction

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3.7.3.1.1 Deanship of e-learning and distance learning at King Saud University

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3.8 The National Centre for e-Learning and Distance Learning

3.8.1 The role of the National Centre for E-learning and Distance Learning in supporting universities in Saudi Arabia

3.9 Summary

Introduction

This chapter aims to highlight the contextual background of the study. It provides an overview of the Kingdom of Saudi Arabia (KSA) in terms of location, geography, population, the economy and social and cultural conditions. It goes on to look at information and communications technology in the Kingdom. This is followed by a look at education in Saudi Arabia, including higher education, with the historical context being established, together with the key principles and political fundamentals and deanships of each of the universities where the study was applied. Finally, details of the National Centre for e-Learning and Distance Learning, its role in supporting academic staff members, and teaching methods at institutions in higher education in Saudi Arabia are discussed.

3.1 Location and Geography

Saudi Arabia was founded in 1926 and fully united in its current form in 1932. Located in the Arabian Peninsula, it occupies a strategic location in the northern hemisphere between the three continents of Asia, Africa and Europe. Thus, it has been occupied by diverse civilizations and is also a sacred site for many(Alothaimeen, 2005).

Saudi Arabia is spread over 2,150,000 square kilometres (830,000 square miles), occupying almost 80 percent of the Arabian Peninsula. Located in the southwest corner of Asia, the Kingdom is at the crossroads of Europe, Asia and Africa. It is surrounded by the Red Sea to the West, Yemen and Oman to the South, the Arabian Gulf and the United Arab Emirates and Qatar to the East, and Jordan, Iraq and Kuwait to the North. Saudi Arabia's Red Sea coastline stretches for about 1,760 kilometres (1,100 miles) while its Arabian Gulf coastline extends to roughly 560 kilometres (350 miles) (See Figure 1.1)

More than half the total area of the country is covered by desert. A narrow coastal plain runs down the western coast while a range of mountains runs parallel to the coastal plain along the Red Sea. Along the Arabian Gulf to the east is a low-lying region called Al-Hasa. The mountains in the west of the Kingdom are very rich in minerals with large deposits of limestone, gypsum and sand. The eastern region has the richest reservoirs of oil in the world (Ministry of Economy and Planning, 2014).

Figure 3.1: Map of Saudi Arabia.

3.2 Population

Recent estimates issued by the Central Department of Statistics indicate that the Kingdom's total population amounted to 23.98 million in 2007, recording an annual increase of 2.3 percent. Saudis accounted for 72.9 percent of the population, and non-Saudis 27.1 percent. The number of Saudis below 30 years of age represented 67.1 percent of the population (Ministry of Economy and Planning, 2014).

The total Saudi population over 15 years of age constituted 37.2 percent, while the total labour force working in the Kingdom during 2006 stood at 8.7 million, of which 4.0 million (or 46.1 percent of the total) were Saudis. Foreign labour accounted for 53.9 percent, or 4.7 million, of the total labour force. The number of workers in the government sector stood at 1.93 million and those in the private sector at 7.51 million. Saudis working in the private sector accounted for 39.8 percent, while foreign labour constituted 60.2 percent. In contrast, Saudi workers in the government sector represented

86.1 percent of the total workforce, whereas foreign labour represented 13.9 percent (Ministry of Economy and Planning, 2014).

3.3 Economy and Resources

Saudi Arabia is the largest free market economy in the Middle East and North Africa, holding a 25% share of the total Arab GDP. The Kingdom's geographic location provides easy access to export markets in Europe, Asia and Africa. It has a continuously expanding domestic market with an annual population growth of 3.5 percent, which provides a young consumer population with strong buying power (Ministry of Economy and Planning, 2014); (MEP, 2014).

Saudi Arabia has the biggest oil reserves in the world (25 percent). The Kingdom is endowed with other natural resources including a wide range of industrial raw materials and minerals such as bauxite, limestone, gypsum, phosphate and iron ore (Ministry of Economy and Planning, 2014).

The investment environment in the Kingdom reflects traditions of liberal, open market private enterprise policies and its new Foreign Investment Law allows 100 percent foreign ownership of projects and real estate. The Kingdom has an impressive record of political and economic stability and has a modern world-class infrastructure (Ministry of Economy and Planning, 2014).

3.4 Culture and Social Environment

Islam is the official religion of Saudi Arabia and underpins its constitution and laws (Ministry of Economy and Planning, 2010). Millions of Muslims from all over the world are asked to perform the Umra and Haj, Islamic pilgrimages which involve performing prayers in Makkah at least once in their lifetime. Arabic is the official language which is why the questionnaire in this study was in Arabic. However, English is used widely in business and international relations. The country is divided administratively, into thirteen provinces (Makkah, Almadinah, Arriyadh, AlBaha, Jazan, Asir, Najran, Asharqiyah, Alqassim, Al Hodod Ashamaliyah, Hail, Tabuk and Aljouf: (Abualieah, 2003)).The following figure (3.2) shows the locations of these provinces on the map:

Figure 3.2: Map of Saudi Arabia showing the thirteen provinces.

3.5 Information and Communications Technology in KSA.

The Saudi Arabian government offers many opportunities for the future regarding development in the ICT industry as a national priority and to this end it is moving ahead with digital economy developments. The strong ICT sector is growing year on year and there is significant interest from government and enterprises to utilise the most recent technological developments surrounding cloud computing and smart technologies. In particular, it is reducing red tape and streamlining business procedures, resulting in praise from the World Bank in 2013 which acknowledged Saudi Arabia's efforts in implementing business reforms such as electronic filing and new payment systems. The long-term vision of the government of Saudi Arabia is "the transformation into an information society and digital economy so as to increase productivity and provide communications and information technology (IT) services for all sectors of the society in all parts of the country and build a solid information industry that becomes a major source of income" (Ministry of Communication and Information Technology, 2006); (MCIT, 2006). Thus, Saudi Arabia, with 12 million Internet users, had the largest Internet user population in the Arab world by the end of 2012 (http://www.internetworldstats.com/me/sa.htm).

Table 3.1 shows the Internet Growth and Population Statistics in Saudi Arabia between the years 2000-2013.

Table 3.1: Internet Growth and Population Statistics.

YEAR	Users	Population	% Pop.	Usage Source
2000	200,000	21,624,422	0.9 %	ITU
2003	1,500,000	21,771,609	6.9 %	ITU
2005	2,540,000	23,595,634	10.8 %	C+I+A
2007	4,700,000	24,069,943	19.5 %	ITU
2009	7,761,800	28,686,633	27.1 %	ITU
2010	9,800,000	25,731,776	38.1 %	ITU
2012	13,000,000	26,534,504	49.0 %	IWS

Source*:* http://www.internetworldstats.com/me/sa.htm.

According to Mark Walker, Director of Insights and Vertical Industries, (IDC) Middle East, Africa, and Turkey, "Saudi Arabia's (IT) market is the largest in the Middle East and will remain so throughout the 2013-2017 forecast period" (source: http://www.itp.net/596406-saudi-it-marke). According to the latest forecast from International Data Corporation (IDC) expects IT spending in Saudi Arabia to increase at a compound annual growth rate (CAGR) of 8.9% over the five-year forecast period to reach $14.2bn in 2017. The government will be the fastest growing vertical during this period, with its (IT) investment expanding at a compound annual growth rate (CAGR) of 12.9% by 2017. The other two top-performing verticals in terms of growth over the forecast period will be education (12%) and oil and gas (11.9%). From a technology perspective, investment growth will be strongest in IT services and software (source: http://www.itp.net/596406-saudi-it-marke).

3.6 The National Information and Communications Technology Plan.

The Government of Saudi Arabia has realized the vital role of ICT in building an information-based society, characterized by the production, penetration and processing of information. The transformation of countries and their societies to an Information Society supports their advancement and progress, accelerates the rate of growth and development and boosts their economies. It also consolidates the continued success of

sustainable economic and social development programs. Hence the Kingdom has paid increased attention to rapidly growing and fast evolving sectors, one of which is Information and Communication Technology (ICT). Thus, a directive was introduced to formulate a National Communications and Information Technology Plan (NCITP) for the Kingdom and to implement it. In response to this directive, a comprehensive ICT plan for the Kingdom was prepared. The plan consists of a long-term vision for ICT in the Kingdom for the next twenty years plus a five-year plan that projects the long-term vision for the first five years (MOCIT, 2009).

The goal in the fourth year of the long-term plan for the National Telecommunications and Information Technology is to make optimum use of ICT in education and training at all levels. The five-year plan sets out to do so gradually through three specific objectives as shown in the table below:

Table 3.2: The Fourth goal of the "First Five Years Plan" of the National Plan for Communication and Information Technology in Saudi Arabia.

N	OBJECT	POLICIES	PROJECTS
1-	Recruitment communications and information technology in support of education and training and the adoption of e-learning	1- Create a national reference for e-learning.	-The establishment of the National Centre for e-Learning and Distance Learning.
		2- Curriculum development for the introduction of e-learning, and to increase the interactive digital content	-Recruitment communications and information technology to support teaching and learning.
2-	Preparation of all employees involved in the education of teachers, academic staff members, administrators and students to use Communications and Information Technology in Education.	1- Encouragement of students and staff of educational establishments to use the Communications and Information Technology.	-Introduction of computers and the Internet into the curriculum in education. -Training employees in Education in the use of communications and information technology.
		2- Adoption of the basics of communication and information technology in trade-offs in acceptance and promotion in	- Regulate the terms of appointment and acceptance and promotion

N	OBJECT	POLICIES	PROJECTS
		educational institutions	of teachers.
3-	Development of infrastructure in educational institutions	1- Raise e-readiness among all educational institutions	-Deployment of communication systems and information technology in educational institutions.
		2- Facilitate access to information and libraries	-Create a digital library.
		3-Provide the necessary funding to support projects in telecommunications and information technology in education and training	-Provide adequate budgets for projects in telecommunications and information technology in education and training.

Source: http://www.mcit.gov.sa/Ar/NationalPlan/Pages/Policy/Chapter4-3.a

3.7 Education in Saudi Arabia.

3.7.1 Historical Aspects

The emergence of the first education system in the Kingdom of Saudi Arabia and the establishment of the Directorate of Knowledge in 1344 served as the foundation stone of the education system for boys.

In 1346 AH, the decision was made to form the first Council of Knowledge with the aim of developing an education system that would oversee education in the Hijaz region. With the establishment of the Kingdom of Saudi Arabia the powers of the Directorate of Knowledge were extended to include the supervision of the affairs of education throughout the Kingdom as a whole. In 1371 AH the Ministry of Education was established during the reign of King Saud bin Abdul Aziz Al Saud; this was a development and extension of the Directorate of Knowledge and its function was to oversee the planning and public education of boys in three stages (Primary -Secondary - Higher). King Fahd was Saudi Arabia's first Education Minister. In 1380 AH, the General Presidency for Girls' Education was established during the reign of King Faisal bin Abdulaziz Al Saud. After the development of education, a royal decree was issued for the annexation of the General Presidency for Girls' Education to the Ministry of Education in 1423 AH. A year later, the name was changed to the Ministry of Education, and to this day it is still represented by the Minister of Education, His Royal Highness Prince Khalid bin Faisal bin Abdul Aziz Al Saud.

3.7.2 The Higher Education in the Kingdom of Saudi Arabia.

Higher education plays an influential role in the development of any country and, in the past decade, higher education in Saudi Arabia has witnessed a comprehensive developmental renaissance in all fields and at various levels. Since the Ministry of Higher Education in KSA was established on 05/08/1395 AH (1975 AD), it has encouraged this development by generously supporting the establishment of new universities and colleges with the provision of huge budgets. The number of universities in the Kingdom is now twenty-five public and nine private and there are thirty-four community colleges; these cater for scientific disciplines and applied sciences in various fields. The Ministry has adopted modern trends in scientific research and provides strategic planning for the future of higher education in KSA (website of Higher Education in Saudi Arabia, 2014).

The Ministry has also encouraged universities to focus on scientific research and one response by HE institutions has been to set up Research Excellence centres, of which there are currently fourteen in six universities. Not surprisingly, the emphasis of these initiatives in increasing the international research profile of Saudi universities has been primarily on the sciences. However, although in leading Saudi universities all academic staff (including, of course, university-based teacher educators) are expected to be research active, and are appraised accordingly, little information is available on how academics respond to these expectations (Borg & Alshumaimeri, 2012).

The Ministry of Higher Education was established in 1395H (1975G) to be responsible for supervising, planning and coordinating the Kingdom's requirements with regards to higher education, with the aim of preparing a national cadre specialized in administrative and scientific fields, to help achieve national development.

Higher education has developed considerably in most of the scientific fields. There are, now 25 high-capacity universities, geographically distributed in the Kingdom's regions. These universities are all linked to the Ministry of Higher Education, but enjoy a high level of independence in both administrative and academic scopes.

The progress of any nation depends enormously on the extent to which it manages to build and develop its human resources. Higher education represents one of the most important means of developing human resources, which in turn is considered a strategic

investment for any country. Through higher education programs a nation is able to fulfil its need for a knowledgeable and skilled labour force, which its national development requires. Higher education globally has witnessed many changes, transformations and challenges imposed by the technical and information developments of contemporary.

In Saudi Arabia, higher education has made remarkable progress both in quality and quantity. This progress has attracted the attention of those interested in higher education in various countries of the world. By supporting the efforts of universities and institutions of higher education programs to reach advanced levels, the Ministry has implemented a number of qualitative initiatives aimed at raising the quality of universities. This has taken the form of three major projects: The first is a project to develop the creativity and the excellence of faculty members; the second is to establish centres for research and scientific excellence in universities; the third is to contribute, together with universities, to the support of scientific societies. In order to continue the development of the Saudi system of higher education, the Ministry has initiated the preparation of a strategic plan for the future of higher education over the next twenty-five years, known as the Horizons Project (Higher Education in Saudi Arabia, Summary Report, 2008).

Table 3.3: KSA Public Universities and the dates when they where established in Saudi Arabia.

University	Establish	Area/ City	Website
King Saud University	1957	Riyadh	www.ksu.edu.sa
Islamic University of Madinah	1961	Madinah	www.iu.edu.sa
King Abdulaziz University	1967	Jeddah	www.kau.edu.sa
Imam University	1974	Riyadh	www.imamu.edu.sa

University	Establish	Area/ City	Website
King Fahad University	1975	Dahran	www.kfupm.edu.sa
King Faisal University	1975	Hasa	www.kfu.edu.sa
Umm Al Qura University	1979	Makkah	www.uqu.edu.sa
King Khalid University	1998	Abha	www.kku.edu.sa
Taif University	2004	Taif	www.tu.edu.sa
Taibah University	2005	Madinah	www.iu.edu.sa
Qassim University	2005	Qassim	www.qu.edu.sa
Al-Jouf University	2005	Al-Jouf	www.ju.edu.sa
Jazan University	2005	Jazan	www.jasanu.edu.sa
University of King Saud for Health	2005	Riyadh	www.ksauhs.edu.sa
University of Hail	2006	Hail	www.nbu.edu.sa
Al-Baha University	2006	Al-Baha	www.bu.edu.sa

University	Establish	Area/ City	Website
Najran University	2006	Najran	www.nu.edu.sa
Tabuk University	2006	Tabuk	www.ut.edu.sa
Alhudod Alshamalia University	2007	Arar	www.nbu.edu.sa
Dammam University	2009	Dammam	www.ud.edu.sa
Salman Bin Abddulaziz University	2009	Al-Kharj	www.sau.edu.sa
Shaqra University	2009	Shaqra	www.su.edu.sa
Al-Majmah University	2009	Al-Majmah	www.mu.edu.sa
Jeddah University	2013	Jeddah	www.uj.edu.sa

3.7.3 Universities where the study was implemented

We will illustrate here in detail the four universities where the study was carried out. Time constraints, finances, and human resources for the research did not allow for a comprehensive survey of all the country's universities, so the researcher chose four: King Saud, Al-Dammam, al-Jouf and Hail Universities. These were chosen because they were the forerunners of the Kingdom's universities and King Saud was one of the first to use technology, introducing the internet early in 1992 (Alhajeri, 2005). They therefore provide a context where the use of technology is more established. Also a deanship of e-learning has been adopted in each of these universities to achieve and improve their methods of modern learning.

3.7.3.1 King Saud University

King Saud University was established in 1957 as the first university in the Kingdom of Saudi Arabia, beginning with only two colleges: Arts and Science. Since then the

number of colleges at the university has increased and has now reached 21: Arts, Science, Management Science, Food and Agricultural Sciences, Education, Engineering, Medicine, Dentistry, Applied Medical Sciences, Pharmacy, Computer and Information Sciences, Community Service, Nursing, Tourism and Antiquities, Science-Kharj, Community in Riyadh, the Community in Aflaj, Community in Harimlae, in addition to the Arabic Language Institute. These colleges are grouped under eleven deanships, one of which is the Deanship of e-Learning and Distance Learning (Ministry of Higher Education (MOHE, 2013).

The student body has rapidly increased, reaching 61,412 students and 6,321 academic staff members (Ministry of Higher Education Statistics Centre, 2013).

The progress of nations and civilizations has been strongly associated with knowledge and learning, and King Saud University, was established to make a clear difference in the advancement of the nation. KSU, therefore, has always been committed to the values of learning and excellence in research.

The university aims to provide a college education and graduate studies in various arts and sciences and areas of specialized knowledge as well as to encourage the advancement of scientific research and dissemination of knowledge. In addition, it provides a service to the community through the creation of an environment that encourages creativity in learning and makes optimum use of technology. It aims to become a leader in educational and technological innovation, scientific discovery and creativity (Ministry of Higher Education (MOHE), 2013).

3.7.3.1.1 Deanship of e-learning and distance learning at King Saud University

On 21/11/1428 H the Deanship of e-Learning and Distance Learning was established.

The deanship consists of three agencies:

1. Agency of Academic Affairs.

2. Agency of Technical and Technological Affairs.

3. Agency for development and quality.

Further, there are two Departments of Administrative Affairs and Learning and Technologies Systems, as well as a number of centres and units.

The deanship aims to achieve the following objectives:

- Spread the culture of e-learning.
- Ensure the quality of e-learning in the university colleges.
- Encourage the development of faculty members in the field of e-learning and its applications.
- Provide an electronic environment conducive to learning and supportive of performance.
- Strengthen community partnership in the field of e-learning.
- Cooperate with the university colleges to offer programs for distance learning.
- Provide manpower to contribute to the provision of services and e-learning programs.
- Contribute to building a knowledge-based economy through the products and the deanship of scientific contributions and projects

It seeks to enable faculty members and students to improve the quality of the learning process through investments in e-learning methods, thus allowing learners to choose the place and the time to learn and helping faculty members to provide education through information and communication technology. Management systems are aimed at education through projects implemented to facilitate the use of e-learning systems, services and systems integration with various universities and the administration seeks to develop and modernize these services to meet the needs of faculty members and students.

3.7.3.2 Dammam University

Royal Decree No A/18/1, dated 15/9/1430H, corresponding to 5/9/2009 separated KFU into two independent universities. The University of Dammam has a number of colleges in the Eastern Province: Dammam, Qateef, Dhahran, Jubail, Khafji, Noa'ryya, and Hafer Al-Baten.

The University of Dammam is a pioneering professional university, committed to

qualifying and graduating a national professional workforce. It is also a prime source of research that supports economic development and effectively contributes to the welfare of the Kingdom.

The University of Dammam is committed to:

- Delivering high-quality educational programs that produce skilled professionals aligned with the strategic workforce needs of the Kingdom.
- Creating a teaching and learning environment that inspires students towards leadership, high academic levels, quality, creativity, teamwork, life-long self-learning and a strong sense of professional responsibility.
- Sustaining an environment of ethical scientific research and discovery that enriches knowledge and creates opportunities for economic development and diversification.
- Qualifying graduates for the job market in order to make them effective partners in economic growth.
- Providing services in consulting, clinical care and professional development, as well as cultural and educational programs to meet the needs of the community (web site of Dammam University, 2014).

3.7.3.2.1 Deanship of e-learning and distance learning at Dammam University

The establishing the Deanship of e-Learning and Distance Learning in Dammam University has proved to be an essential step in coping with technological advancement in the field of education. The university management's goal in establishing this deanship was to make a quantum leap in higher education at Dammam University and upgrade it from a traditional university which employs traditional methods of teaching into a modern university that looks forward towards betterment and excellence in terms of teaching methods and employing technology in education and enjoying a high-quality level of achieving continuous development.

As a result of the increase in the number of students who finish high school and the high demand on universities, e-learning and distance learning will help to increase the enrolment capacity of the university. The deanship will take care of all the issues of e-

learning and distance learning in the university, ranging from providing e-learning resources, international e-learning systems, the required training, and managing and supervising the process of providing full technical and technological support for distance learning programs.

The Deanship of e-Learning and Distance Learning in Dammam University aims to improve the educational process at the university by establishing an integrated educational environment using technology in distance learning and learning management in a way that serves the university's strategic plan. This will strengthen the university's the modern teaching methods and develop academic staff members as well as, most importantly, the students' skills in using modern technology, and hence provide a new generation equipped with self-dependence, effective communication, cooperation, planning, and problem analysis towards a solid knowledge economy (Deanship E-learning and Distance Learning in Dammam University, 2014).

The objectives of the Deanship can be summed up as follows:

- To render the learning process more flexible and with less confinement as it is conducted with no constraints of time or place.
- To offer equal learning opportunities to everybody, achieve democracy in learning and meet the increasing social demands in that field.
- To find different learning resources which will help to minimize individual differences among learners and supply the educational institutions with useful tools and techniques.
- To establish new qualifications that will open up new areas of study to meet the needs of the new economy, known as the 'knowledge economy'. In the process, textbooks are to be reviewed to serve that purpose as well.
- To minimize learning costs and make learning accessible to individuals regardless of their backgrounds and to match their capacities accordingly.
- To contribute to elevating the educational and learning levels of students and teaching staff.
- To electronically facilitate the management of study materials, whether in preparing and editing it or in evaluating it.
- To create an e-learning environment that encourages students to enrol from all over the Kingdom.

- To raise more social awareness of the importance of e-learning and its role in improving the quality of education.
- To develop and promote high quality electronic courses.
- To provide suitable training and technical support in order to improve the performance of students and teaching staff alike.
- To increase the number of educational resources at the university.
- To minimize the cost of educational resources and improve the learning process simultaneously.
- To make available the resources and their supporting systems for both teachers and students at any time or place.
- To reinforce the teaching efficiency and quality of e-learning.
- To set plans and develop courses and training programs in cooperation with related departments to achieve the Deanship's goals.
- To maximize the effectiveness of communication between academic staff and students, between academic staff, and between students.
- To conduct research and develop systems related to e-learning at the university.
- To implement the international standards which apply to e-learning.

(Deanship of e-Learning and Distance Learning at Dammam University, 2014).

The deanship mainly targets three major categories, which are:

1- Students: this is the product the university provides to society and from it the university gains its reputation and position. The deanship will focus on this category whether they are inside the campus or outside the campus using distance learning.

2- Academic staff members: they are the producers and manufacturers who use their innovation and the tools the university provides them with the systems and technologies of e-learning to produce high quality educational materials which suit the reputation and scientific position of the university among students and society members.

3- Local society: through developing educational and awareness programs based on technology and providing training programs that achieve the message of the university

towards the local society in addition to providing the technical and administrative programs in this regard. In table 3.4 shows the three major categories targeted by the deanship at Dammam University.

Table 3.4: The Three major categories targeted by the Deanship of Dammam University.

First category	Second category	Third category
Academic staff members **Teachers** **Lecturers** **Assistant professors**	Students: Male students Female students Distance learning students	Society Adding the technological dimension to the programs
Training, developing subjects, teaching techniques, recording lectures, E-learning, developing the skills for using technology	E-training, interactive lectures, electronic subjects, recorded lectures, distance learning	E-publishing of some cultural materials and programs and supporting them with technology and making them always available through the website of the university. Giving consultations and training courses.

Some of the services provided by the Deanship of e-Learning and Distance Learning in Dammam University are:

1- Spreading the culture of e-learning and enhancing it in the university.

2- Working on achieving the objectives and tendencies of the university in e-learning and preparing the suitable evaluative programs to review and correct the works and activities of the deanship.

3- Holding and organizing specialized courses and workshops for teaching staff and students to achieve the message of the deanship.

4- Putting in place strategic plans to develop the activities of the deanship according to international standards.

5- Putting together executive plans and following up their implementation in

coordination with the concerned parties in the university (Deanship of E-learning and Distance Learning in Dammam University, 2014).

3.7.3.3 University of Hail

On 30 Rabi II, 1426H (7 June 2005), the University of Hail was officially established and initially consisted of five colleges: College of Medicine & Medical Sciences, College of Sciences, College of Engineering, College of Computer Science & Engineering, and Community College. The first students were admitted on 11 February 2006. After that, in 2007, two more colleges joined the university. These were Teachers College and Girls Education College which were originally under the auspices of the Ministry of Education. The university's enrolment has grown to more than 16,000 students (University of Hail, 2014).

3.7.3.3.1 Deanship of IT and e-learning at the University of Hail.

The deanship provides for the continuous electronic global standards of its beneficiaries. Hence the trend towards increasing and developing electronic trading services to beneficiaries that contribute to the development of all business-related areas of academic, administrative and e-learning (Deanship of IT and e-learning at University of Hail, 2014).

3.7.3.4 Al-Jouf University

On 1426 AH / 2005 Al-Jouf University was established to be a scientific beacon and an intellectual and cultural leader in the region, and one of the most important pillars of the modern renaissance in the Kingdom of Saudi Arabia (Al-Jouf University 2014).

Al-Jouf University aims to provide high quality academic programs for the preparation of distinctive bodies to meet the needs of the community. The university seeks to develop a nucleus for scientific research to develop and promote advancement of knowledge and participate in the service of the local society, to contribute to knowledge and progress with a commitment to the values and norms of academia (Al-Jouf University 2014).

Objectives of Al-Jouf University:

- To provide an appropriate scientific atmosphere for faculty members and university students.
- To build outstanding academic programs and develop a permanent basis in line with international standards and national requirements.
- To provide all the possibilities of human, material and organizational support necessary to the educational process for university students.
- To attract distinguished faculties in various disciplines and micro university to serve the educational process and to raise the level of the students.
- To raise the level of education and learning for university students to gain various skills through the adoption of appropriate educational policies.
- To adopt admission policies for students with specific standards commensurate with the possibilities and requirements of the university community and the surrounding environment.
- To ensure the application of standards, policies and properties, mechanisms and practices of quality and academic accreditation at the university.

3.7.3.4.1 Deanship of e-learning and distance learning at Al-Jouf University.

The deanship aims to achieve the following objectives:

- Provide technical equipment to allow multiple sources the opportunity to obtain information and analyze and discuss it interactively.
- Spread a culture of learning where students can obtain information autonomously.
- Connect modes of learning in an interactive system for the teacher, the learner, the educational institution, the home, the community and the environment.
- Support teachers in the process of creating e-courses.
- Allow for exchange of experiences through mass e-learning.
- Develop students' skills and their ability to interact through modern techniques.
- Provide the necessary infrastructure to support the educational process.
- Facilitate access to educational content to the learner.
- Create an electronic repository for electronic decisions (Deanship of e-Learning

and Distance Learning at Al-Jouf University, 2014)

E-learning is still in its infancy in Saudi Arabia. Currently the emphasis is on improving the use of information technology in curriculum and resource development and establishing electronic communities(Aldraiby, 2010).

3.8 The National Centre for e-Learning and Distance Learning:

The Kingdom included in its first specific targets the creation of a base for e-learning in the National Centre for e-Learning and Distance Education (www.elc.edu.sa) under the supervision of the Ministry of Higher Education, which offers services to higher education institutions, which include system bridges and Saudi Digital Library System Thesaurus for educational and other units (source: http://ideas.mcit.gov.sa).

In 2006 the Government of Saudi Arabia recommended the adoption of e-learning and its application in higher education. Therefore, the Ministry of Higher Education established the National e-Learning Centre. The National Centre for e-Learning and Distance Learning (NCeL) comes under the umbrella of the Ministry of Higher Education, as a leader, supervisor, and supporter of e-learning at higher education level. Its aspires to provide a melting pot of Saudi universities' experiences in the field of e-learning, and to pave the way for a promising future through honest competition and widened horizons. The NCeL was established for the empowerment of creative innovation, supporting the universities' role in the building of a 21st century Saudi society and a new generation of Saudi learners (MCIT, 2006).

The vision and mission of the NCeL is the establishment of a holistic educational system based on the best applications and techniques of e-learning, as well as the achievement of progress and excellence in both learning and teaching according to an integrated education system depending on the use of modern information and communications technology in the field of e-learning. It seeks to become a prominent think tank and a national reference for e-learning in Saudi Arabia.

The original values of the National Centre for e-Learning and Distance Learning is to work in accordance with the mission of the government and Islamic principles of tolerance and fairness, thus supporting the educational process in higher education

institutions at all stages and in all categories and segments without restrictions of time or place. The motive of these values is to uphold the Islamic principle that urges the acquisition of knowledge, science, proficiency, and social traditions that place science and scientists in a respected, high position of professionalism, diversity, and team spirit, with a concentration on meeting learners' needs. This involves a spirit of partnership and integration that enhances opportunities to upgrade education and learning systems, with respect to the reservation of intellectual, scientific, and moral rights (National Centre for e-Learning and Distance Learning, 2014).

The Ministry of Higher Education seeks to achieve its ambitious vision by means of its strategic plan, which covers the next 25 years. The Ministry is working to realize the integration of all relevant sectors in order to keep up with the latest technological developments. This begins with a desire to invest in the advancement of a new type of education based on the latest and best application of state-of-the-art technologies, and strengthening traditional education. This reality leads us to make the necessary transformation to an integrated system for the enrichment of the educational process, so as to become a prestigious "knowledge society" (National Centre for e-Learning and Distance Learning, 2014).

The NCeL was established for the achievement of several major objectives. The most notable are as follows:

- The promotion of e-learning and distance education applications in compliance with quality standards.
- Raising awareness of proper e-learning culture and understanding.
- Quality assurance of projects and programs for e-learning and distance education.
- Supporting research in the fields of e-learning and distance education.
- The creation of national quality standards for the design, production, and publication of e-learning practices.
- The provision of consultancies to other partners relevant to the NCeL's areas of specialization.
- The launch of national e-learning initiatives.

- Encouragement and coordination of distinguished projects in e-learning and distance education.
- The organization of meetings, conferences, and workshops that contribute to the development of e-learning and distance education.
- International cooperation with similar global organizations and bodies.

The government of Saudi Arabia agrees that the future of e-learning and distance education is an integrated part of the world's technological future. Therefore, we are heading towards the future with a firm commitment to our original values, while at the same time serving as a convoy for new technology (National Centre for e-Learning and Distance Learning, 2014).

The National Centre for e-Learning and Distance Learning also provides many services as follows:

1- Training Services

The National Centre offers more than 40 distinct training programs presented by a number of local and international experts with scientific and practical qualifications, to make the e-learning process more sophisticated and easier to use.

It considers training to be an investment in human resources, and therefore is committed to providing high quality training environments that include the latest technology and learning tools to promote education and training opportunities, and is prepared to design training programs that address their needs.

2- Digital Content Services

Digital Content is one of the NCeL's innovative and pioneering projects aimed at setting high standards relevant to the Digital product at all its stages to better enhance and develop e-learning courses.

The NCeL provides consultations and expertise to support universities in designing e-Content effectively.

The National Centre for e-Learning and Distance Learning aims to:

- Assist universities in approval of high quality e-content, based on scientific and global standards.
- Set up a national model for the development of e-content, in order to be a reference for those universities that desire to replicate it, to contribute to the development and publishing of e-content.
- Cooperate with universities in the preparation and qualification of potentials and abilities to enable universities to produce their own courses, by assisting in the formation and training of work teams.

3- Technical Services

The National Centre, with the development and IT team, seeks to keep up with the latest developments in e-learning and learning technologies. It is keen to provide the best technical services including a range of products and solutions that are appropriate for the learner's needs as follows:

Learning Management Systems (LMS) and e-Training:

The National Centre offers a range of learning management systems, which is the portal that combines the teacher or trainer with the student and allows them to interact with each other, at anytime and anywhere, according to their role in the educational process, taking advantage of the educational technical tools offered by the system.

The teacher manages student data, schedules courses and develops a teaching plan. The teacher also makes content available for students, and follows their performance. He/she can also carry out e-exams, save and process grades, etc.

The student receives the elements of the subject interactively and delivers his/her research and duties through the portal and can communicate with colleagues about the subject and share files with them, in addition to many other services.

Many learning systems have a learning content management system (LCMS), which is the environment in which they can manage special repositories in learning modules and use them in the development of educational materials. These systems feature high research capabilities that enable developers to search and quickly access text and media necessary for creating learning content.

The National Centre provides educational institutions with suitable systems and ICT solutions that serve their needs.

Saudi MAKNAZ for Learning Modules:

MAKNAZ is a digital repository system that stores data in digital file format. It can store a wide range of file types and multimedia files. MAKNAZ can also be used for the management of content in the implementation of e-learning.

Through MAKNAZ, the National Centre for e-Learning and Distance Learning helps Saudi higher education institutions to develop digital content, enrich the curriculum and facilitate learning to achieve excellence in the educational process as a whole. MAKNAZ also facilitates the process of development, saving, retrieving, re-using and sharing learning modules. It also supports the efforts of Saudi universities as a basis for building high quality and lower cost digital curricula.

In the future, MAKNAZ will help in determining scientific research findings in universities, which can be applied in the construction of educational content according to the latest international standards and applications.

MASAR for Instructional Design:

MASAR for instructional design is an authorship tool, which helps teachers and course designers to create and develop highly effective and productive e-courses and use the course content. It is a standard Scorm package for various learning management systems, enabling users to access the system (processor) through the internet, and dealing with the multimedia of e-learning content on the web supported with images, sound, movement,

video clips, written modules and exams. The total content also helps to select models of authored lessons and courses and packages to redistribute learning content.

The National Centre for e-Learning and Distance Learning, through MASAR for instructional design, directs all efforts being made for the establishment and development of e-courses, to support enriching scientific curricula in order to facilitate learning and to achieve excellence in the learning process.

4- Advisory Services

The National Centre for e-Learning and Distance Learning offers distinctive and comprehensive consultations on e-learning and distance education consultations. Constellation services are managed by local and international consultants.

JUSUR system for the management of E-learning

E-learning is a modern teaching method which employs modern communication mechanisms, supports the educational process and enriches and increases its quality. E-learning is more than just a collection of courses offered through websites. It includes the processes by which the learning process as a whole is managed, including logging on students, tracking their progress, recording data, and reporting on their performance. Learning Management System (LMS) is software designed to help manage all learning activities in educational institutions, including implementation, and evaluation.

3.8.1 The role of the National Centre for E-learning and Distance Learning in supporting universities in Saudi Arabia.

The vision and mission of the National Centre for e-Learning and Distance Learning proposes an integrated education system which depends on the use of modern information and communications technology in the field of e-learning. In accordance with the mission of the government and Islamic principles of tolerance and fairness, it supports the educational process in higher education institutions at all stages and in all categories and segments without restrictions of time or place. Thus, the mission will be

served by creating a virtual university in Saudi Arabia for the dissemination of science and knowledge. So this centre will be an essential element, employing all its capabilities to support the educational process in higher education institutions, to facilitate educational contiguity through the optimal use of information and communication technology, including promoting communication and interaction to enable learners to achieve their educational and practical goals.

3.9 2.7 Summary

In this chapter, an overview of the Kingdom was presented in terms of its location, geography, population and its economic, social and cultural conditions. As well as information and communications technology in KSA, the National Information and Communications Technology Plan was discussed.

Then, we looked at education in Saudi Arabia, including higher education, first by setting the historical context and then showing key principles and deanships of the universities where the study was implemented.

Finally, the National Centre for e-Learning and Distance Learning, and its role in support academic staff and teaching methods at institutions in higher education in Saudi Arabia were discussed, together with the many challenges facing e-learning in institutions of higher education in Saudi Arabia.

Chapter 4: E-LEARNING

Introduction:

There has been a rapid increase in the use of information and communication technologies (ICTs) as teaching and learning tools in education. Electronic learning (e-learning) is fast becoming one of the most popular learning environments in the field of education in most universities globally, including in Saudi Arabia. The use of e-learning is now gaining common and popular approval, due to the fact that, as well as reducing classroom time it also creates its own impact on the stakeholders. The use of E-learning in the realm of education is a paradigm shift from traditional practice, brought about by technological development, such as the Internet and digital programmer-enabled mobile apps.

Thus, efforts and experiments regarding e-learning are currently receiving a great deal of attention globally at this time. E-learning is a revolutionary development that cannot be ignored or rejected. In the process of teaching and learning, it has become an alternative method in the dissemination of education and training, both directly and indirectly. As an important development which has taken advantage of computer technologies and software, communications and information technology, it has overcome the obstacles of space, time and risk. It can be used effectively by experienced staff members in academic institutions as a modern teaching method, employing modern communication mechanisms, to support the educational process and enrich and improve the quality of the education provided, enriching both learning and the development of teaching (Hussein, 2011). Definitions of e-learning acknowledge the challenges posed by diverse learners and instructors. Indeed, e-learning extends traditional learning paradigms into new dynamic learning models through computer and Web technologies (Liaw et al., 2007).

Hence, the role of the teacher has changed over the years and the evolution of information and communication technology has added new burdens to teachers today, as it is imperative for them to deal with modern technology and employ multimedia in the teaching process to help their students to achieve educational outcomes. Despite the development of preparation methods for teachers, the interest in employing multimedia in university teaching is still modest. The process of preparation and development of programs and platforms for e-learning is considered the most important requirement of the application of e-learning, and it needs a great deal of effort from experts and specialists in its design and programming (Gharaibeh & Alsmadi, 2013).

This study recognises the significant role of academic staff members in their teaching at higher academic institutions and the diversity of the use of modern techniques in the field of information and communication technology. It is, undoubtedly, a cornerstone in the basic process of learning. Thus, while e-learning is important and substantial today, it also has a very promising future as a central part of the modern Information and Communication Technology society. This chapter discusses the definitions and the history of e-learning before going on to look at the different types as well as its advantages and disadvantages. Finally, the obstacles to the use of e-learning will be considered.

4.1 Definition of E-learning

E-learning has been defined in different ways. For instance, it has been described as "the use of new multimedia technologies and the Internet to improve the quality of learning by facilitating access to resources and services as well as remote exchanges and collaboration" (Holmes & Gardner, 2006). Also, Urdan and Weggen (2000, p. 11) focus on content delivery and define e-learning as 'the delivery of content via all electronic media, including the internet, intranets, extranets, satellite broadcast, audio/video tape, interactive TV, and CD-ROM'.

E-learning has the potential to impact positively on education. It provides great opportunities for both educators and learners to enrich their educational experiences (Holmes and Gardner, 2006) as a useful tool for enhancing the quality of teaching and learning. E-learning is an "innovative approach to education delivery via electronic forms of information that enhance the learner's knowledge, skills, or other performance" (Siritongthaworn, Krairit, Dimmitt, & Paul, 2006, p. p.139). Possibly the most familiar definition of e-learning within higher education institutions in the UK is that offered by the Higher Education and Funding Council for England (HEFCE) which describes e-learning as encompassing:

> *"Flexible learning as well as distance learning, and the use of ICT as a communications and delivery tool between individuals and groups, to support students and improve the management of learning".*
>
> (Higher Education Funding Council for England, 2005, p. 5).

A more formal definition of e- learning is "the delivery of a learning, training or education program by electronic means. E-learning involves the use of a computer or electronic device - in some way to provide training, educational or learning material" (Maneschijn, 2005, p. p. 1).

"E-learning is a general term covering many different learning approaches that have in common the use of information and communication technology" (Clarke, 2008,p.2). Other researchers define it as a method using modern Information and Communications Technology (ICT) and computers to deliver instruction, information, and learning content (Selim, 2007). According to Reime *et al* (2008) e-learning is a method to create, foster, deliver and facilitate learning, which integrates information technology and the learning process by using material delivered through the internet, anytime and anywhere (Reime, Harris, Aksnes, & Mikkelsen, 2008).

The emergence of information and communication technologies and their influence on teaching and learning has brought about significant changes in the academic environment in the Kingdom of Saudi Arabia (KSA). The new learning trend has made it mandatory to equip teachers in educational institutions with the necessary skills to cope with new challenges (Al-Asmari, 2014).

> *"E-Learning can be viewed as an innovative approach for delivering well-designed, learner-centered, interactive, and facilitated learning environments to anyone, anyplace, anytime by utilizing the attributes and resources of various digital technologies along with other forms of learning materials suited for open, flexible, and distributed learning environments"* (Khan, 2005, p. p.3).

Therefore, from e-learning definitions, it acknowledges challenges posed by diverse of learners and academic staff members. Indeed, through using computer and Web technologies e-learning extends of traditional learning paradigms into new dynamic learning models.

Since 2002, when e-learning was first introduced in KSA, it has gained recognition and interest among academic institutions, academic staff members and students, though at a relatively slow pace (Al-Asmari, 2014) he new learning trend has made it mandatory to equip faculty members in educational institutions, both public and private, with the necessary technical skills to cope with the new challenges (ELC, 2010).

The growing importance of information and instructional technologies (ICTs) and their influence on teaching and learning has brought about significant changes in the academic environment in the Kingdom of Saudi Arabia (KSA).

E-learning is defined in many ways because it involves many new technologies for learning. Some of these definitions are complex or lengthy and may disagree regarding the nature of e-learning. In this research we use the definition that covers all aspects of e-learning and is the clearest one. E-learning is a method that uses the modern technology of communication, such as computers, networks, all types of multimedia and internet doors. Whether for distance learning or in the classroom the use of technology is important to convey information to learners in a short time, at a low cost, with the least effort and the greatest benefit, to manage and control the process of education, and evaluate the performance of learners.

4.2 A brief history of E-learning

This section attempts to describe the history and development of e-learning, highlighting the generations and stages of e-learning and the interactive potential of contemporary ICT applications.

Although, the term e-learning is relatively new, the concept of using technology and communication infrastructure to enable new forms of e-learning is well established. E-learning has its roots in postal correspondence courses, starting with Sir Isaac Pitman's shorthand courses in the 1840s. These courses constituted the first attempt to use communication infrastructure to extend training beyond the sound of the human voice.

Postal correspondence courses introduced many of the concepts at the core of e-learning: allowing students to pace their own learning; making learning possible without face-to-face contact and enabling large numbers of students to be taught independently on separate schedules. In fact, it comes as no surprise that one of the earliest forms of successful e-learning was the correspondence course via email.

The first use of computers in teaching was a collaboration between Stanford University and IBM in the late 1950s. Although the effectiveness of using mainframe computers to administer drill-and-practice exercises to elementary school children proved questionable, the potential was clearly visible. From such crude experiments grew the

PLATO system, with its more sophisticated evaluation and branching, which was used to deliver over 40 million hours of instruction on a variety of sophisticated subjects from the mid-1960s through to the mid-1980s. The arrival of the PC eliminated the requirement for an expensive mainframe computer and accompanying terminals. It also added the possibility of advanced graphics, animation, voice and other media. The development of CD-ROM storage simplified the task of housing and distributing substantial courses.

The development of the World Wide Web in the 1990s added new technologies. Hypertext mark-up language (HTML) provided an easy standardised way to construct computer display, and the internet supplied the means of distributing training broadly from a central, easily-updated source. Email, newsgroup, and other collaboration media all showed that e-learning need not involve the lonely, slow-paced effort of postal correspondence courses 160 years earlier (Horton, 2001.).

The birth of e-learning, based on human cooperation in knowledge work and innovation, can be traced back to the advancement of network communication in the 1960s. In the twenty first century came the introduction of 'new attitudes towards eLearning and the emergence of new pedagogical models, technological affordances, and mindsets' (Harasim 2006:94). These innovations initiated an unparalleled prospect whereby communication and collaboration could take place unrestricted by time and geographical location. This became instrumental to a socio-economic, and particularly 'educational paradigmatic shift'(Harasim, 2006, p. p. 94).

However, taking into consideration that e-learning is an extension or form of distance learning, its roots can be traced to the early years of the nineteenth century, when courses were submitted by correspondence (Cavanaugh, 2004). Study stated that there were three generations of distance learning: the first generation, distinguished by the use of correspondence and the absence of direct interaction between learner and instructor; the second generation, distinguished by the use of multimedia and content specifically designed for distance learning; the third generation, distinguished by the use of the internet and the introduction of two way interaction between learners and instructors and amongst the learners themselves (Kaufman, 1989).

Therefore, as mentioned above, the most recent of these generations has substantial (ICT) features. This has been accompanied by an increase in users and an increase in the

learner's control over their learning and the opportunities available for dialogue and the promotion of thinking skills. E-learning is still a new concept for many people, especially in Saudi Arabia, and attitudes towards its adoption have not been fully studied.

4.3 Advantages and disadvantages of E-learning

E-learning is attractive to learners due to its multifaceted flexibility (Schoech, 2000). E-learning refers to different learning styles and can be facilitated through mixed activities. Learners have the option to select study materials that meet their specific level of knowledge and interest and self-paced learning modules allow learners to study at their own pace, rather than having to work faster to keep up with more advanced students or being held back to wait for struggling learners. Course materials can be reviewed as frequently as desired to enhance learners' own understanding (Berke & Wiseman, 2004). The benefits of e-learning include the following (Cantoni, Cellario, & Porta, 2004):

- Less expensive to deliver and self-paced (usually, e-learning courses can be taken when they are required).
- Can be completed more quickly (learners can skip material they already know)
- Provides consistent content (whereas in traditional learning different teachers may teach different material on the same subject).
- Can be undertaken from anywhere and at any time (e-learners can take training sessions when they want).
- Can be updated easily and quickly (online e-learning sessions are especially easy to keep up to date because the updated materials are simply uploaded to a server).
- Can lead to increased retention and a stronger grasp of the subject (because of the many elements that are combined in e-learning to reinforce the message, such as video, audio, quizzes, interaction, etc.).
- Can be easily managed for large groups of students.
- Can improve retention by varying the types of content (images, sounds and text)
- Creates interaction that engages the attention (games, quizzes, etc.),
- Provides immediate feedback and encourages interaction with other e-learners and e-instructors (chat rooms, discussion boards, instant messaging and e-mail all offer effective interaction for e-learners).

On the other hand, the disadvantages and risks of e-learning may include the following:

- May cost more to develop
- Requires new skills from content producers
- Has yet to clearly demonstrate a return on investment
- Related technology may be intimidating, confusing or simply frustrating
- Lacks the informal social interaction and face-to-face contact of traditional classroom training
- Enabling technology might also be costly, especially in case of advanced visually-rich
- E-learning requires more responsibility and self-discipline for the learner to keep up with a more free and unconstrained learning process and schedule (Cantoni, Cellario, & Porta, 2004).

Table 4.1: Advantages of E-learning.

N	Advantages	Reference
1.	**Individualisation:** aims to prioritise the needs of the individual learner rather than those of the instructors, or the educational institution, which is a feature of any well-designed learning environment.	(Klein & Ware, 2003).
2.	**Designing:** the design stage e-learning can take into account individual differences and learners' preferences. For instance, some learners may prefer to focus on particular content or work through additional support materials while others may be ready to complete the whole course.	(Akkoyunlu & Soylu, 2006)
3.	**Flexibility:** in terms of time and place, each student chooses what suits him or her	(Al-Musa & Al-Mobark, 2005).
4.	**Accessible:** E-learning can enhance the efficiency of access to knowledge and qualifications due to the availability of large amounts of information, and access to specific expertise from online instructors. This can be difficult to offer in smaller institutions or where there is a low population density in a particular region or country.	(Sanderson, 2002)

N	Advantages	Reference
5.	**Effectiveness:** E-learning can reduce cost and time. It is cost-effective for students as they do not need to travel, and efficient in terms of time. It can also be cost-effective for an institution, reducing the need for physical classrooms and increasing the potential catchment area.	(Al-Musa & Al-Mobark, 2005).
6.	**Interaction:** It encourages interaction through discussion forums by eliminating the barriers that might hinder participation such as fear of talking to others in a physical setting.	(Hameed et al., 2008).

Table 4.2: Disadvantages of E-learning.

N	Disadvantages	Reference
1.	**Isolation:** In e-learning the learner might suffer from isolation and the lack of direct social interaction, which is sometimes found with distance learning; therefore the learner must have relatively strong motivation and skills with regard to time management to mitigate this effect.	(Hameed, Badii, & Cullen, 2008).
2.	**Process:** E-learning might be less effective than face-to-face learning in terms of aspects of the learning process such as clarification and explanation, as these may be easier in face-to-face encounters.	(Al-Musa & Al-Mobark, 2005).
3.	**Communication:** E-learning might have a negative impact on the development of the communication skills of learners. A learner might acquire excellent academic knowledge, but not have the skills to communicate this knowledge to others.	(Akkoyunlu & Soylu, 2006); (Klein & Ware, 2003).
4.	**Support:** E-learning may lack the support provided by non-verbal clues provided or by observing the interactions of others.	(Al-Musa & Al-Mobark, 2005).

4.4 The Benefits of E-learning

The main benefits of e-learning are that the learners have considerable freedom of place, pace and time. They are potentially free to study wherever they wish. E-learning allows the student the choice of how fast or slow to learn (Clark, 2008). Adoption of e-learning uses network technologies to create, foster, deliver, and facilitate learning, anytime and anywhere. The benefits of e-learning have been discussed in many articles (e.g. Bouhnik and Marcus, 2006; Liaw *et al*., 2007; Raab *et al*., 2002 and Shotsberger, 2000).

According to a survey conducted by Bouhnik and Marcus (2006), university students who participated in distance-learning courses cited the following advantages:

• Freedom to decide when each online lesson will be studied.

• Lack of dependence on the time constraints of the lecturer.

• Freedom to express thoughts and ask questions, without limitations.

• Satisfaction of learners: The e-learning context is conducive to the teacher providing satisfactory responses to his or her students' queries

• The manner in which the content is presented makes it convenient to review lessons previously learned

• The accessibility to, and availability of, the course's subject matter, as well as related materials which the student may explore through his own choice, contribute to self-learning and the student's development of independent ideas (Bouhnik & Marcus, 2006). The perceived the benefits of e-learning listed above can roughly be categorized as follows:

1. Flexibility of the material and the time

2. Accessibility to the material

3. Visibility of the multimedia

4. Availability of the data

Furthermore, Capper (2001) lists the e-learning benefits as:

• Any time: A participant can access the learning program at any time that is convenient.

• Any place: The participants do not have to meet.

• Asynchronous interaction: Interactions can be more succinct and discussion can stay

more on-track.

• Group collaboration: Electronic messaging creates new opportunities for groups to work together by creating shared electronic conversations and discussions.

• New educational approaches: Many new options and learning strategies become economically feasible through online courses. Online courses also can provide unique opportunities for teachers and learners to share innovations in their own works with the immediate support of electronic groups (Capper, 2001).

More than anything else (34.8% in this research), flexibility is what makes e-learning programs attractive to learners (Schoech, 2000).
Therefore, to summarize the foregoing list, researchers suggest that the potential benefits are greater than those of traditional learning if e-learning is used and applied in appropriate ways.

Nevertheless, according to Higgins (2008), there are some doubts arising from the points above and before we leave the benefits of e-learning it is useful to list these:

- Availability (any time any place) is only for those who have the proper technology and proper place without disturbance or interruption,
- The use of multimedia requires a sufficient bandwidth and this is easier and less expensive to provide in a classroom setting,
- The capacity to accommodate individual styles of learning depends on how the program is developed, updating is sometimes overwhelming and costly, just as it is to update paper information, e-learning depends on many elements including the number of learners and content.
- The program and the novelty effect may be more expensive and difficult to maintain than in classroom-based programs.

4.5 Types of E-learning

E-learning is sometimes classified as synchronous or asynchronous. Both terms refer to "the extent to which a course is bound by place and/or time. Synchronous simply means that two or more events occur at the same time, while asynchronous means that two or more events occur not at the same time. For example, when you attend live training –

like a class or workshop - the event is synchronous, because the event and the learning occur simultaneously, or at the same time. Asynchronous learning occurs when you take an online course in which you complete events at different times, and when communication occurs via time-delayed email or in discussion list postings (Assareh and Hosseini Bidokht, 2011).

The most significant advantage of using e-learning for the majority of people is that they can continually improve skills and acquire new ones by engaging in lifelong learning. E-learning, defined as learning and teaching online through network technologies, is arguably one of the most powerful responses to the growing need for education (Zhang *et al*., 2004). The following section will address different types of e-learning.

4.5.1 Synchronous E-learning

Hrastinski (2008) discusses the usefulness of asynchronous versus synchronous e-learning. Synchronous e-learning, commonly supported by media such as video conferencing and chat, has the potential to support e-learners in the development of learning communities (Hrastinski, 2008).

Synchronous sessions allow e-learners to feel like participants rather than feeling isolated: Isolation can be overcome by more continued contact, particularly synchronously, and by becoming aware of themselves as members of a community rather than as isolated individuals communicating with the computer.

4.5.2 Asynchronous E-learning

Asynchronous e-learning, commonly facilitated by media such as e-mail and discussion boards, supports work relations among learners and with teachers, even when participants cannot be online at the same time. This flexibility is a key component of e-learning. Many people prefer to take online courses because of their asynchronous nature, combining education with work, family, and other commitments, to give them more options to choose an appropriate time for learning. Asynchronous e-learning makes it possible for learners to log on to an e-learning environment at any time and download documents or send messages to teachers or peers. Students may spend more time refining their contributions, which are generally considered more thoughtful compared to synchronous communication (Hrastinski, 2008). Thus, the difference between asynchronous and synchronous e-learning is often a matter of degree.

Consequently, instead of trying to determine the best medium, the e-learning community

needs an understanding of when, why, and how to use different types of e-learning. When, why, and how to use different types of e-learning (Hrastinski, 2008).

Table 4.3: When, why and how to use different types of E-learning.

	Asynchronous E-Learning	**Synchronous E-Learning**
When?	■ Reflecting on complex issues. ■ When synchronous meetings cannot be scheduled because of work, family, and other commitments	■ Discussing less complex issues. ■ Getting acquainted. ■ Planning tasks.
Why?	■ Students have more time to reflect because the sender does not expect an immediate answer.	■ Students become more committed and motivated because a quick response is expected.
How?	■ Use asynchronous means such as e-mail, discussion boards, and blogs.	■ Use synchronous means such as video conferencing, instant messaging and chat, and complement with face-to-face meetings.
Examples	-Students expected to reflect individually on course topics may be asked to maintain a blog. - Students expected to share reflections regarding course topics and critically assess their peers' ideas may be asked to participate in online discussions on a discussion board.	-Students expected to work in groups may be advised to use instant messaging as support for getting to know each other, exchanging ideas, and planning tasks. -A teacher who wants to present concepts from the literature in a simplified way might give an online lecture by videoconferencing.

In addition, Hyder *et al*., (2007) define synchronous learning as live, real-time (and usually scheduled), facilitated instruction and learning-oriented interaction. It has emphasised learning-oriented interaction in order to differentiate synchronous learning

from lectures, product demonstrations, and other knowledge dispersal activities. Synchronous e-learning is synchronous learning that takes place through electronic means. Synchronous learning is distinguished from self-paced asynchronous learning which students access intermittently on demand(Hyder, 2007).

Table 4.4: Synchronous e-Learning VS Asynchronous e-Learning.

Types of E-learning	***Distinctive features***	***Examples***
Synchronous e-Learning	• *Real-time* • *Live* • *Usually scheduled and time-specific (but can be impromptu)* • *Collective and often collaborative* • *Simultaneous virtual presence (with other learners and facilitators or instructors)* • *Concurrent learning with others*	• *Instant messaging* • *Online chat* • *Live Webcasting* • *Audio conferencing* • *Video conferencing* • *Web conferencing*
Asynchronous e-Learning	• *Intermittent access or interaction* • *Self-paced* • *Individual, or intermittently collaborative* • *Independent learning* • *Usually available any time* • *Recorded or pre-produced*	• *E-mail* • *Threaded discussion* • *Boards* • *Web-based training* • *Podcasting* • *DVD* • *Computer-based training*

Source: Hyder et al., (2007).

4.6 Cognitive and Personal Dimensions of E-Learning

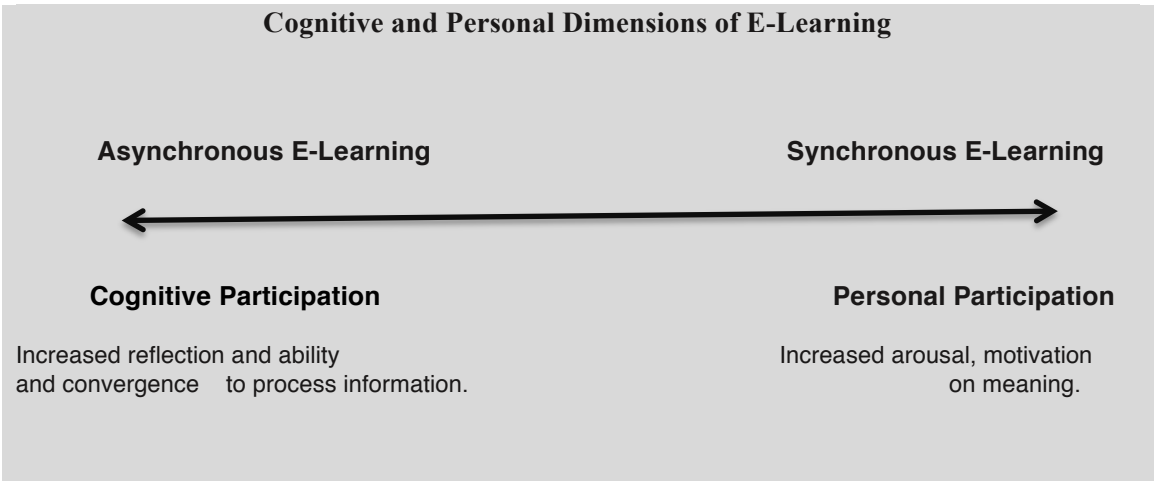
When comparing synchronous and asynchronous communication in relation to depth of receiver's reaction we find the following:

Synchronous e-learning "increases arousal and motivation", by monitoring the receiver's reaction to a message and making the receiver feel more committed and motivated to

read it, while asynchronous e-learning "increases the ability to process information"; however, the receiver has more time to comprehend the message, since the sender does not expect an immediate answer (Hrastinski, 2008, p. 54).

Hrastinski (2008:54) suggests that "synchronous e-learning better supports personal participation according of describe a more arousing type of participation appropriate for less complex information exchanges, including the planning of tasks and social support", whereas asynchronous e-learning better supports cognitive participation and is described as a more reflective type of participation appropriate for discussions of complex issues. In the figure 4.5 shows concepts of personal participation and cognitive participation to describe the dimensions of learning supported by asynchronous and synchronous e-learning (Hrastinski, 2008).

Figure 4.1: Cognitive and Personal Dimensions of E-learning.



4.7 Impact of ICT in Education

Practical and theoretical progress in the field of information and communication technologies (ICT) is instrumental in the progress of a number of disciplines, as well as in the personal and social development of individuals. This is also true in the case of education, where ICT can play a key role in making learning accessible to students with particular personalities, as well as in improving the creativity of both students and teachers through the provision of diverse methods and teaching approaches. This can make the presentation of knowledge more interesting and more attractive, with many aspects of the school curriculum being integrated into these systems. Perhaps the most important impact of the growing involvement of ICT in the educational process is as an attractive and advanced tool to encourage teacher diversity away from conventional methods of presentation, which will reflect positively on the educational environment, thereby stimulating learning. This chapter will provide an in-depth examination of the impact of ICT on teachers, learners and the learning environment as a whole.

The expansion in the presence, accessibility and content of the Internet has resulted in a growing conversion to the use of e-learning with teaching practices in higher education. Information and communications technology (ICT) promises the creation of many opportunities, such as lifelong learning and flexibility in education (Blin and Munro, 2008). The use of these e-learning technologies has helped to improve communication and the level of freedom with institutions outside community, with the flexibility of e-learning enabling geographical and temporal barriers to be broken, as well as enabling users to deal with rapid changes in knowledge (Iris and Vikas, 2011; Ageel, 2012).

It is widely held that ICT has the potential to improve the quality of learning and teaching in contemporary schools. Studies have shown that since technology has permeated every aspect of life, in homes and offices alike, one of the primary roles of modern education is to provide ICT and ICT usage skills (Ageel, 2012).

ICT increasingly pervades various aspects of our daily lives like work, business, teaching, learning, leisure and health, and as such every individual in a society should become technology competent (Gulbahar & Guven, 2008). This realization has motivated governments and learning institutions to initiate programs that integrate ICT into the curriculum through the use of educational software and interactive classroom

technologies. E-learning is learning through and being supported by the use of information technology. It therefore assumes that the user is able to exploit technology. Most education and training providers will offer a technology helpline so that if the student is studying at home or at a distance they can gain assistance. However, helplines assume the user has sufficient understanding of the technology to follow their instructions (Clark, 2008).

According to Clarke (2008) computers are powerful aids to learning and can help by providing:

- Ways to organise and store notes, references and materials (e. g. folders, files and databases);
- Tools to present work (e.g. word-processing, presentation graphics, charts and graphs);
- Tools to analyse data (e.g. spreadsheets);
- Tools to help create content (e.g. blogs and wikis);
- Equipment to capture evidence (e.g. digital cameras and scanners);
- Access to the enormous library of information that the World Wide Web represents.

4.8 The Teacher's Role in ICT

The significant role played by information and communication technology has had a considerable impact on various aspects of our modern life, including field teaching and learning (education). Accordingly, the ICT era had made the inevitability of change and development of teacher's roles imperative making the role of the teacher quite different from that which was carried out in the past. In addition to enhancing teaching and learning, the integration of ICT can assist in delivering the curriculum by increasing enjoyment in lessons and making learning more attractive, which increases attention and motivation. It has surpassed the teacher's role with its impact on the use of information and communication technology in the twenty-first century in terms of knowledge transfer and lifelong learning for pedagogical innovation and institutional transformation (Paechter et al., 2010). Moreover, as an expansion of the use of ICT as a strategic partner in the education process for the teaching and learning process, the use of ICT in higher

education plays an important role in the development of the skills of faculty members (Rienties *et al.*, 2013).

Teachers play a fundamental role in the education system and as future scenarios suggest a major change in the future of education and increased ICT usage, these will inevitably affect their role and their status in the system. Previous research on ICT provides some valuable insights. Various factors such as increased self-efficiency, enhanced self-confidence, pedagogical innovation, personal attitudes and perceptions have emerged from the literature as inputs into the decision whether or not to integrate technology into one's teaching. However, when they are classified into two categories, internal and external factors, trends emerge that make them more understandable.

The role of technology is hard to predict in the short-term, without beginning to consider the future beyond the current horizons. Undoubtedly, technology will become a part of the world that future learners inhabit and therefore a part too of the pedagogical architecture through which they learn. However, it is essential that learning to learn becomes a key feature of the future of education (Higgins, 2009).

4.8.1 Internal Factors

The are many common internal factors that influence a faculty member's decision to integrate ICT into their teaching, including enhanced self-confidence (Ward and Parr, 2010; Prestridge, 2012 and Peeraer and Van Petegem, 2011); increased self-efficiency (Valentín *et al*., 2013); enhanced positive personal attitudes (Bhuasiri *et al*., 2012); pedagogical innovation (Paechter et al., 2010)&((Liaw, 2008) (Kane, Sandretto, & Heath, 2002). through the assessment of available research assert that "teachers' personal beliefs, perceptions, attitudes, and orientations are correlated with (their) teaching practices" (Kane et al., 2002, p. p.182). Thus beliefs influence the decision whether or not to integrate technology and the viewpoint the faculty member has towards various teaching practices and methods. Grasha and Hicks (2000, p.3) found that teaching styles are based on "needs, emotions, motives, beliefs, and attitudes of the teacher and these teaching practices, when used positively, are the force behind student success."(Grasha & Yangarber-Hicks, 2000, p. p.3).

In addition, diversity in the professional development of teachers and the provision of different ways of using ICT is reflected in increasing teacher confidence in their abilities

to use modern technology to facilitate learning, which provides a stronger pedagogical motivation for teachers to integrate ICT into their classrooms (Ward and Parr, 2010). However, the adoption of ICT competencies impacts upon future teachers through the approaches that are available, encouraging them to devise practical and creative applications for ICT (Nechita and Timofti, 2011). As teachers display greater confidence in their own ICT competency, many have become more confident in using ICT in the classroom (Prestridge, 2012). Rovai and Childress (2002) state the significance of a having teacher training courses which build self-efficacy and expand their knowledge of computers would minimise the anxiety they feel towards integrating technology into actual classroom situations, as such apprehension or anxiety is related to psychological factors which can be helped with the right instruction(Rovai & Childress, 2002).

In addition, the positive attitudes of many students towards the use of computers and their past experiences with ICT is important as it will impact on teaching practices in the future (So, Choi, Lim, & Xiong, 2012).

Hence, the role of the teacher towards their students in the era of the evolution of information and communication technology has added new burdens for teachers today and it has become essential for them to keep pace with modern technology and apply multimedia in the teaching process to help students achieve educational outcomes (Vaughan, 2007).

Therefore, through the acquisition of additional skills by the teacher, such as skills of e-content and multimedia production and its implementation, is reflected in the improvement of student achievement of knowledge and expertise. Moreover this knowledge and its application can be helpful in the attitudes of working life (Gharaibeh, 2012). Further, the role of the teacher has changed from that of expert to that of facilitator, manager and collaborator in the learning process. In addition, ICT is expected to play a major role in changing the traditional classroom, with the role of the student also changing as they are taught to learn independently(Al-Hadlag, 1998);Muir-Herzig, 2004; (Wasserman & Millgram, 2005).

Faculty members in Saudi Arabia, like their counterparts in other studies (Higgins and Moseley 2001), believe there are 'clear implications for professional development generally for teachers and with ICT in particular'. These include the promised benefits of

ICT to their profession that they will no longer have to disseminate information in the form of lectures and textbooks (Higgins & Moseley, 2001) .

Even though, information and communications technology is more available for faculty members now than ever before, many of them are still resistant to integrating technology into their teaching at classrooms.

Watson (2001) states two rationales for ICT use. The first is to provide students with the necessary knowledge and skills needed in the outside world; the second is to give students more confidence in utilising ICT to perform everyday applications, to enrich and extend learning (Watson, 2001). Al-Saif (2007) adds other rationales:

- Social rationale: as a result of widespread use of ICT in all aspects of life, ICT competence has become essential, especially in the workforce. Therefore, ICT competency is on some occasions an indicator of the social standing of individuals.
- Motivation rationale: a well-designed ready-made software motivates its users to create and invent new uses with the features it offers and that opens up new horizons to develop and improve their skills.
- Informatics rationale: besides the importance of manufacturing the component parts of ICT, it is equally important to prepare highly-qualified human resources capable of software engineering. That is the core of technological development on which developing countries are concentrating, as it will have a positive impact on their economies.
- Special needs rationale: the requests of special educational needs students, including the gifted and talented, will be met by either artificial intelligence software or software which is designed based on constructivist educational methods to provide scaffolds and tools to enhance students' learning (Al Saif, 2007).

Therefore, based on the literature, internal factors are important motivating factors in faculty members' use of the technology. If attention is paid to faculty members' beliefs, competencies various factors such as increased self-efficiency, enhanced self-confidence, pedagogical innovation, personal attitudes and perceptions towards ICTs, there is a stronger possibility that they will integrate technology successfully into their

teaching in classrooms. However, the internal variables discussed above are only the part of issue. Below we will discuss the issues surrounding faculty members.

4.8.2 External Factors

The external factors include faculty demographics, specifically age, computers provided, support, funding, teaching methods, training and institutional support. However, demographics such as age and gender may be primary factors that determine whether faculty members use technology (Cooper, 2006, p. p.331). Peeraer and Van Petegem (2011) developed a model to describe the nature of ICT in teaching practice. Non-manipulative factors are gender, age and subject taught. Influencing first-order manipulative factors are access to ICT, intensity of use, confidence, and skills. ICT offers solutions to many important issues facing educational institutions, such as support, funding and student numbers (Blin and Munro, 2008).

The role of the teacher and its impact on the use of information and communication technology in the twenty-first century, has evolved from the transfer of knowledge and lifelong learning to the level of pedagogical innovation and institutional support and transformation (Paechter et al., 2010) (Liaw, 2008). State that at university level, faculty members who are in the middle of their careers can either be "allies or stubborn opponents as their institutions adjust to competitive pressures, revise programs to meet the needs of increasingly diverse students, and integrate new education; technologies" (Peluchette & Rust, 2005, p.201).

Faculty members need to receive continuous and ongoing support in terms of technology use and its integration into teaching as well as training. The management should encourage teachers' use of ICT through support and communication (Ensminger, Surry, Porter, & Wright, 2004). Information and communications technology plays a major role in modern education through its effect on the diversification of teaching methods and improving the abilities and skills of educators to give lessons greater relevance and impact (Ahmadi *et al*., 2011). Another external factor is that it is necessary to integrate information and communications technology into studies of different knowledge fields and provide computers inside classrooms in order to facilitate meaningful and intensive use of ICT in a pedagogical sense (Hakkarainen et al., 2000).

Finally, institutional support is a very significant issue facing many higher education institutions globally. It encompasses a wide range of topics including faculty development, ease of access for faculty members who wish to use technology, policies and procedures and support for technological issues. Osika (2006) argues that successful technology programs require support from the entire institution. There are significant differences between a traditional and an e-learning tutor. Table 4.5 compares the traditional and e-learning roles. E-learning is often presented as learner-centred while traditional education and training is seen as tutor-centred.

Table 4.5: Comparison of tutor roles.

Compares the traditional and e-learning roles. Source: Clarke (2008,p.22-23).

Activity	Traditional	e-Learning
Lecture	The tutor is the presenter of information and decides what to communicate, the sequence of information and the speed of delivery.	Information is often presented as learning material so the tutor's role is to facilitate and assist the learner to understand. The learner chooses the pace, content and sequence of learning. Tutors will react to learners' requests although some will offer proactive help based on their experience.
Individual assignments	The norm in many forms of traditional teaching is for the tutor to set individual assignments. They an important part of the assessment process.	Individual assignments are employed for similar purposes as in traditional methods. They are also used to assist learners to self-assess and are often designed centrally rather than by the individual tutor.
Group assignments	These are relatively rare in many forms of traditional learning. Group assignments are frequently used and devised by tutors within courses to explore ideas rather than as assessments. Tutors will facilitate the groups.	E-Learning also uses group assignments which serve a similar purpose to traditional courses. One of the main differences is that assignments are more often used for assessment in e-learning and are sometimes designed centrally rather than by the tutor. Co-operative and collaborative learning approaches are employed in e-learning.
Feedback	Feedback uses a mixture of methods but verbal face-to-face is frequently the dominant one.	Feedback again employs a range of methods but written feedback is often important where learning is taking place at a distance from the tutor.
Assessment	The tutor is often also the examiner, sometimes devising the assessment and marking the answers.	E-Learning often contains many tests or assessments for the student to undertake and which the software marks. These are intended to help learners to self-assess.
Support	Formal support is often provided face-to-face by a variety of people including tutors, mentors and	Support is probably more important in that the risk of isolation is greater if you are studying at a distance. The tutor and other formal support

	other support staff. Peers, friends and family sometimes offer informal support.	workers may be less visible due to the distance and their role is more facilitation than direct delivery of learning. Peer support is important in e-learning and often the course will be structured to encourage it.
Speed of response to individual and group questions	Normally this is determined by when the question is raised. In a lecture the answer can be given immediately but, in a large group, individuals may be discouraged from asking questions. Individual issues may depend on a logistical arrangement to fix an appointment. There will often be a delay in meeting.	E-Mail culture tends to assume a quick response and even a short delay maybe seen negatively by the sender. Many courses have a standard for responding to messages (e.g. 48 hours). Replies to group queries allow everyone to see the answer and this provides a permanent record

4.9 Training

Due to the rapid changes and technological developments in recent years in many fields of our life, including social and technological developments, it has become essential to gain knowledge and experience. This has meant that the management of any institution, whether educational, social or other, requires ever-greater proficiency in managing and developing staff's skills.

The acquisition of these skills depends on training, which is the main tool employed by institutions and organisations in order to develop their employees' ability to cope with the constantly-evolving challenges which must be faced in various aspects of contemporary life (Alsohamey, 2002). Training has become one of the most prominent operations in institutions and organisations and there are numerous methods to keep abreast of developments.

Training has become a fundamental pillar carried out, in this era of globalisation and technology, by specialists to increase the capacities of workers to be more productive and effective (Alkhateeb R. and Alkhateeb A, 2001). A review of the literature indicates that there are several definitions of training. Al-Khatib and Al-Khatib (2001) define training as "a behavioural process which aims to change and develop the capacity of individuals and improve their competence".

However, it is important to take into account teachers' beliefs and practices in supporting change. Issues for the training and support of teachers using ICT in their teaching are discussed (Higgins and Moseley, 2001).

Christensen (2002) reports that training which offers several stages of adoption to minimise the anxiety they feel towards technology anxiety may be beneficial to faculty members. It is through these adoption stages that teachers increase their confidence and competency levels while integrating technology into coursework(Christensen, 2002).

4.10 Obstacles to E-learning

Considering the rapid growth of technology and population, it seems inevitable that e-education is going to become the main agent for education. In this study, the terms "obstacle" and "barrier" are used interchangeably. This section attempts to outline a classification of barriers to e-learning and suggests appropriate solutions. There are many factors that act as obstacles to faculty members' use of ICT, thus affecting their motivation to practise teaching with it. These barriers can be divided into two categories, internal and external, to make them more understandable.

Rogers (2000) defines internal barriers as those related to teachers' attitudes and perceptions towards ICT in addition to their competency with ICT, whereas external barriers are related to the availability and accessibility of hardware and software, technical support, management support, and continuous training programmes. However, there are some barriers that may be classified as both internal and external, for instance, lack of time (Rogers, 2000).

External barriers involving the use of ICT by teachers include insufficient access to hardware and software, lack of time to prepare lessons with ICT, and inadequate technical and managerial support. According to Muir-Herzig (2004), among the major barriers to integrating ICT are lack of teacher time, limited access, lack of rationale for ICT use, lack of teacher training and managerial support, need for teacher training, and the lack of expertise(Muir-Herzig, 2004). In several studies teachers said that a major barrier to their ICT use is 'lack of time' (Franklin, Turner, Kariuki, & Duran, 2001).

There are many kinds of barrier: 1) Learners: which has subdivisions such as financial problems, motivation, assessment of their progress, isolation from peers, inadequate skills and experience in distance learning, affection and social domain. 2) Teachers: which has subdivisions such as lack of adequate knowledge about the e-teaching environment, difficulty in assessing different domain progress. 3) Curriculum; ambiguity, quality, resource, teaching process, evaluation. 4) School: organisational and

structural factors. Overcoming these groups of barriers needs more cooperation between curriculum developers, teachers, students' parents, social authorities, technological specialists, and also the preparation of virtual and actual interaction between academic staff members and society.

Regarding internal obstacles, Scrimshaw (2004) offers four possible explanations for teachers not using ICT:

- Teachers view ICT as being incompatible with their wider educational beliefs.
- Obstacles associated with personal characteristics of teachers, such as lack of computer skills.
- Social obstacles, such as lack of support from colleagues.
- Obstacles in schools, such as lack of technical support (Scrimshaw, 2004).

Pelgrum (2001) conducted a study focussing on the perceptions of educational practitioners (at the lower secondary level) regarding obstacles that seriously impede the realisation of the schools' ICT-related goals. The results are from a worldwide survey among national representative samples of schools from 26 countries. The main focus in this article was on obstacles that educational practitioners perceive as major impediments to realising their school-based ICT objectives. Among the top ten obstacles were material as well as non-material conditions. The major obstacles were: lack of computers and lack of knowledge among teachers (Pelgrum, 2001).

Jones (2004) wrote a report on the results of Becta's online survey of 170 educational practitioners regarding their perceived barriers to the use of ICT. The report outlined a number of barriers to the uptake of ICT that were grouped into teacher level barriers and school level barriers. The teacher level barriers were related to teachers' (1) personal deficiencies, such as lack of confidence and lack of competence (due to lack of time for training, lack of pedagogical training, lack of skills training, and lack of ICT focus in initial teacher training); (2) resistance to change and negative attitudes; (3) anxiety; (4) inequalities, such as age and gender differences; and (5) lack of perceptions of benefits of ICT use. School level barriers were identified as: (1) lack of time scheduled by schools for teachers to use ICT, (2) lack of access to resources (due to lack of hardware, poor organisation of resources, poor quality of hardware, inappropriate hardware, lack of teachers' personal access to ICT resources); (3) technical problems (fear of things going wrong, lack of technical support); and (4) impact of public examinations. The Becta

study indicated that there were interrelationships between each of the identified barriers to ICT use. For example, teachers' confidence was directly affected by other barriers such as personal access to ICT, availability of technical support, and the amount of training. In general, although the above studies used different terms such as material/nonmaterial obstacles, and teacher/school level internal/external barriers, the main obstacles or barriers to ICT use appear to be common across countries, and the obstacles or barriers are inter-related (A. Jones, 2004).

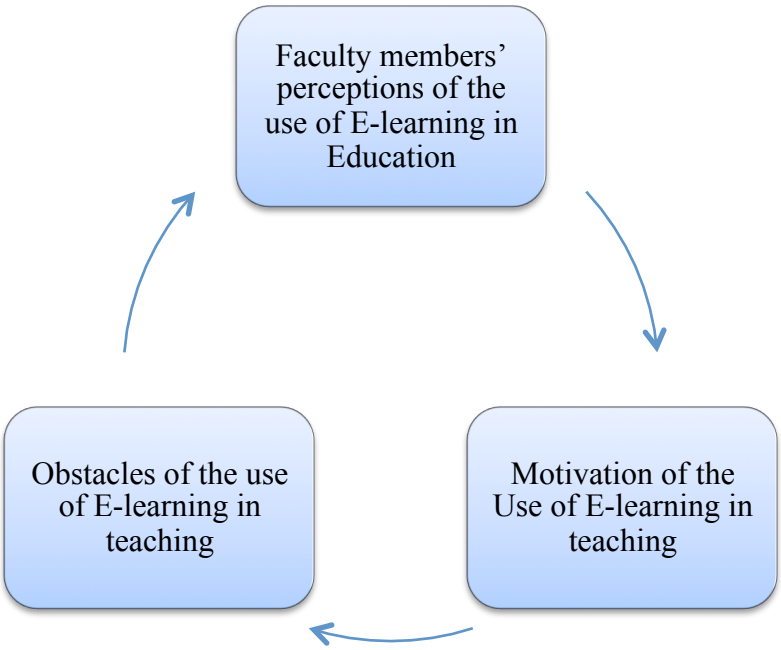
Gulbahar and Guven (2008) conducted a study of the integration of ICT in the nation's schools through a Turkish government investment project. After conducting a survey of 326 teachers, the researcher found that "although teachers are willing to use ICT resources and are aware of the existing potential" the adoption of ICT in their teaching has largely been hindered by a "lack of in-service training opportunities".

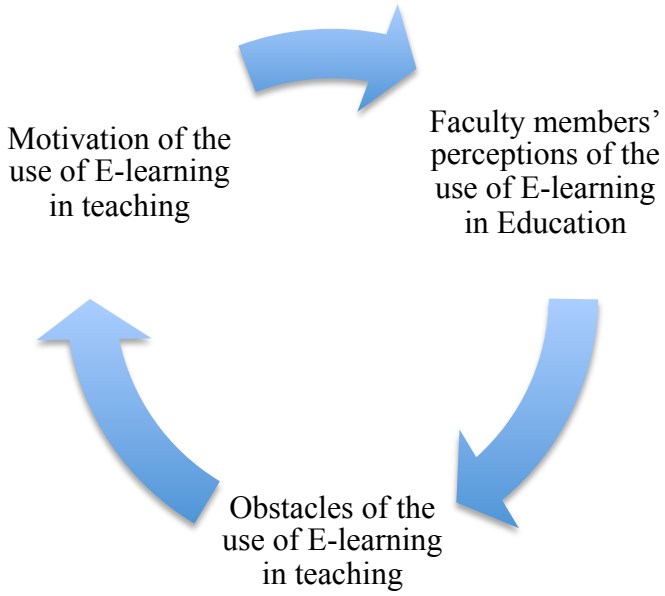
There is a recognised lack of awareness among teachers and faculty members of the kinds of techniques available and how they can be used to support the delivery of the curriculum, or overcome the obstacles preventing the effective use of ICT. Some observers have also commented on the inability of teachers to implement and use the existing resources they have available to them as well as them not saving time and effort due to insufficient training (Morris, 2010).

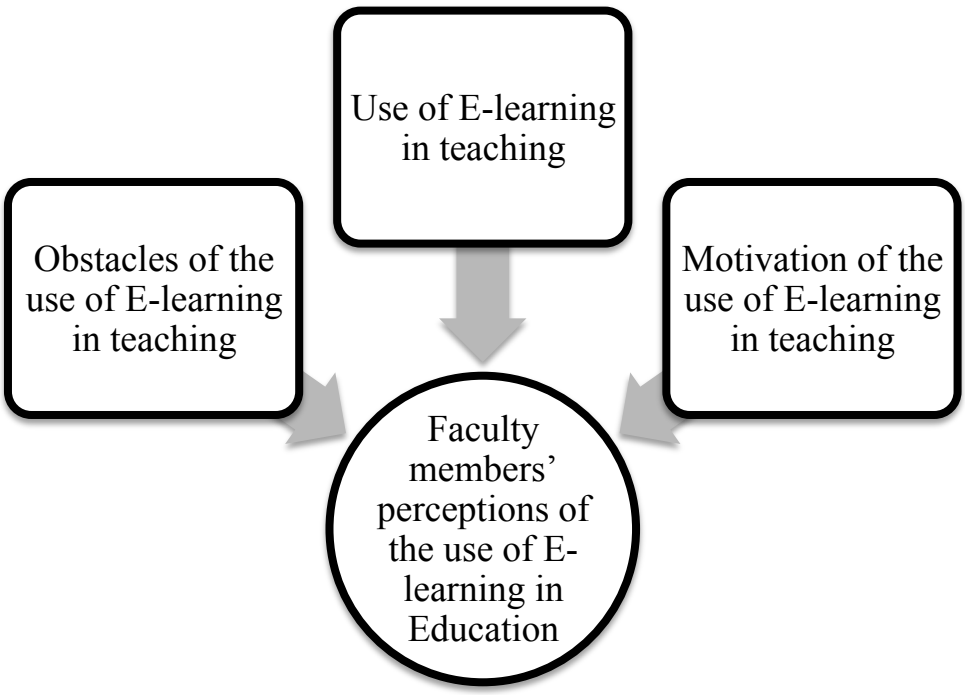
It is especially important to use the correct pedagogy when modelling the use of this technology in a classroom of pre-service teachers. Not enough lecturers learn to use technologies properly; they must learn to use the lessons and subjects effectively. Teacher educators should continue to learn and model new and appropriate technologies, and be aware of when, how, and why technology is used to enhance teaching and learning. Instructional technologies can improve pre-service teacher training by providing access to more and better educational resources, offering multimedia simulations of good teaching practice, catalyzing teacher-to-trainee collaboration, and increasing productivity of non-instructional tasks. Teacher preparation can be enhanced by creating opportunities for teachers in training to see and experience the positive effects of technology on teaching and learning, potentially motivating them to participate in professional development programs because they see them as an opportunity to become a trainer/mentor for other teachers (Yalcin *et al*., 2011).

Therefore, the ability to recognise the barriers and obstacles to using ICT is extremely important and its implementation may not be achieved without overcoming the barriers that arise as a result of the implementation process.

Figure 4.2: The three main themes of the research.







4.11 Summary

This chapter has reviewed the information era in which E-learning is increasingly being recognized as an important tool in the field of education in most universities globally. Research evidence seems to indicate the increased use of information and communication technologies (ICTs) as teaching and learning tools in education. This is the foundation upon which this research is based. It began by discussing the definitions of e-learning and offered a brief description of the history of e-learning, followed by its advantages and disadvantages. Types of E-learning are classified as synchronous or asynchronous and the effect of the two types, as well as the main benefits of E-learning were indicated. In addition, an in-depth examination was provided of the impact of ICT on teachers, learners and the learning environment as a whole, and the change in teachers' roles was highlighted, according to both internal and external factors relating to training staff in order to develop their skills. Finally, factors that act as obstacles to faculty members' use of ICT and thus affect their motivation to practise teaching with it are examined.

The next chapter focuses on the research methodology used in the field work of this study.

Chapter 5: RESEARCH METHODOLOGY

Introduction

The purpose of this chapter is to describe and justify the methodology and research design of this study by highlighting the methodology used in the study, and the methods employed in collecting the primary and secondary data. In addition, the research methods and instruments are explained to show how the data needed to explain the purposes and prediction were collected and used, and their associated research methodologies.

5.1 Research Paradigm and Approach

The research followed a naturalistic inquiry procedure and it took place within an interpretive research paradigm. This approach was utilised in the study because its purpose is to explore, understand, and explain the causes of the current situation (Bryman, 2001). In addition, its aim is to look at multiple social interactions, "for virtually all instances of socio-behavioral inquiry, the naturalistic paradigm is the paradigm of choice"(Lincoln & Guba, 1985, p. 260).

A naturalistic inquiry is simply an inquiry conducted in natural settings, using natural methods, in natural ways by people who have a natural interest in what they are studying. A naturalistic researcher truly believes that "the social world can only be understood from the point of view of the individuals who are part of the ongoing action being investigated" (Cohen, Manion, & Morrison 2000, p. 19). Situations should therefore be examined through the eyes of participants rather than of the researcher (Creswell 2003b). The researcher focuses on the contextual understanding of the historical and cultural settings of the participants (Bryman 2001). Since "events and behaviour evolve over time and are richly affected by context, they are situated activities" (Cohen, Manion & Morrison 2000, p. 22).

Additionally, the study aimed to explore ways of enhancing the effectiveness of using e-learning skills within teaching and learning environments by male faculty members in some Saudi universities.

Many researchers, such as Lincoln and Guba (1985), Robson (1993), and Creswell (2003b), have listed a range of characteristics of a naturalistic inquiry and set procedures to conduct this type of research, thereby creating a highly interdependent and coherent description to assist in undertaking a well-established rigorous research method. This

study is no different from other studies that have employed such an approach and its characteristics comprise: conducting the research in a natural setting, collecting information from people as the main source of data, employing qualitative methods, and grounding the theory in the data through constantly comparing emerging patterns and interpreting them.

5.2 The Nature of Research and Reseach Philosophy

Positivism is the 'traditional' hypothetico-deductivist view of reality as being objectively 'out there', something that is taken from sensory experience and then investigated rationally. This position involves constructing supposedly value-free laws to explain phenomena through deductive reasoning (from general to specific), ideally by following strict rules and procedures (Oliver et al., 2006).

> Key aspects of the hypothetico-deductivist are an epistemology that asserts that knowledge consists of the truth testing of statements through a set of agreed rules of discursive procedure (Scollon, 2003, p.75).

However, it is important to consider how different philosophical positions would interpret the kind of data generated by particular empirical methods. Hence, we should differentiate between ‘methodology’ and ‘methods’. Methods are the techniques used to collect and analyse data and include interviews, questionnaires, and observation. Methodology determines whether the implementation of particular methods is successful or credible.

The significant issue facing institutions worldwide is the need to understand the nature of the requirement for staff development, given the impact of the Internet in general and web 2.0 in particular. Most innovative efforts in higher education today are the product of individual faculty members working alone, with the use of innovative approaches and materials restricted to individual courses (Mason, 2008).

Since the ground- breaking work of Kuhn (1962), approaches to methodology in research have been seen to reside in 'paradigms' and communities of scholars. A paradigm is a way of looking at or researching phenomena, a world view, a view of what counts as accepted or correct scientific knowledge or way of working, an 'accepted model or pattern' (Kuhn, 1962, p.23).

In addition, a paradigm definition "is a way of looking at the world. It's composed of certain philosophical assumptions that guide and direct thinking and action." (Mertens, 2009, p.7).

However, there are many different thoughts and assumptions about the nature of social science in terms of learning paradigms, and we will focus on the most appropriate and applicable to the study, in order that we can meet a set of assumptions, as identified by Burrell and Morgan (1979), which are of an epistemological kind. These concern the very bases of knowledge - its nature and forms, how it can be acquired and how it can be communicated to other human beings. How one aligns oneself in this particular debate profoundly affects how one will go about uncovering knowledge of social behaviour.

Therefore, "the epistemological assumptions in these instances determine extreme positions on the issues of whether knowledge is something which can be acquired on the one hand, or is something which has to be personally experienced on the other" (Burrell & Morgan, 1979, p. 6).

The view that knowledge is solid, objective and tangible demands that researchers adopt the role of an observer, together with an allegiance to the methods of natural science; to see knowledge as personal, subjective and unique, however, imposes on researchers an involvement with their subjects and a rejection of the way of the natural scientist. To subscribe to the former is to be positivist, and the latter, anti-positivist or post-positivist (Oliver et al., 2006).

This study used the positivist approach because its goal was to achieve its aims through the investigation of the views of faculty members regarding the use of e-learning in teaching. This was carried out using quantitative study by adopting a questionnaire for the data collection.

According to Agger, "methodology can't solve intellectual problems but are simply ways of making arguments for what we already know or suspect to be true" (L. Cohen, Manion, & Morrison, 2007, p. 24).

The methodology and the design of this research were based on the aims of the research and the research questions. The purpose of this study was to investigate academic staff members' perspectives of the effectiveness of the use of e-learning skills in teaching at

some Saudi universities. In particular, the research questions underpinning the study were:

- What is the extent of the use of e-learning skills in teaching by academic staff members in some Saudi universities?
- Are there any statistically-significant differences in the use of e-learning skills by academic staff members in teaching in terms of the variable, academic qualification?
- Are there any statistically-significant differences in the use of e-learning skills by academic staff members in teaching in terms of the variable, years of experience?
- What were the motivations for academic staff members using e-learning in teaching?
- What were the obstacles to using e-learning skills from the perspectives of the academic staff members?

This chapter investigates the methodology used in the study and the methods employed in collecting data. The main aim of this study has been to investigate the effectiveness of the existing teaching methods systems (TMS) at some Saudi Universities.

Research methodologies are often confused with research methods, so before outlining the research methodologies, the distinction between the two terms should be made (Agger, 2008, p. p.77). Research methods are defined as "techniques and procedures used in the process of data gathering"(Cohen et al., 2007, p. 47). They can involve a specific instrument, such as questionnaire, interview, or observation(Grix, 2010).

Research methodologies, according to Newby (2010,p. 57), are "how the toolkit of research methods is brought together to crack an individual and specific research problem"(Bryman, 2004, p. 451). In this context, research methods can be considered as part of the research methodology, and can be used as a basis "for inference and interpretation, for explanation and prediction" (Cohen *et al.* 2007, p.47), whereas research methodologies can be seen as the justification for research decisions. Specifically, research methodologies regulate the choice, decision, and way in which methods are used (Creswell, 2003).

Gass and Mackey (2007) and Gay and Airasian (2008) discuss the use of both quantitative and qualitative data collection, and indicate that the vast majority of data collection is carried out through the questionnaire, followed by interviews and

observations; examples of qualitative methods are used to obtain a more in-depth understanding and clarify ideas(Newby, 2010, p. p.51).

In this chapter the research process is explained in terms of methodology used in this study and the way the research was designed is described. In addition, the research method and instruments are explained showing how data needed for explanation purposes and prediction were collected and used.

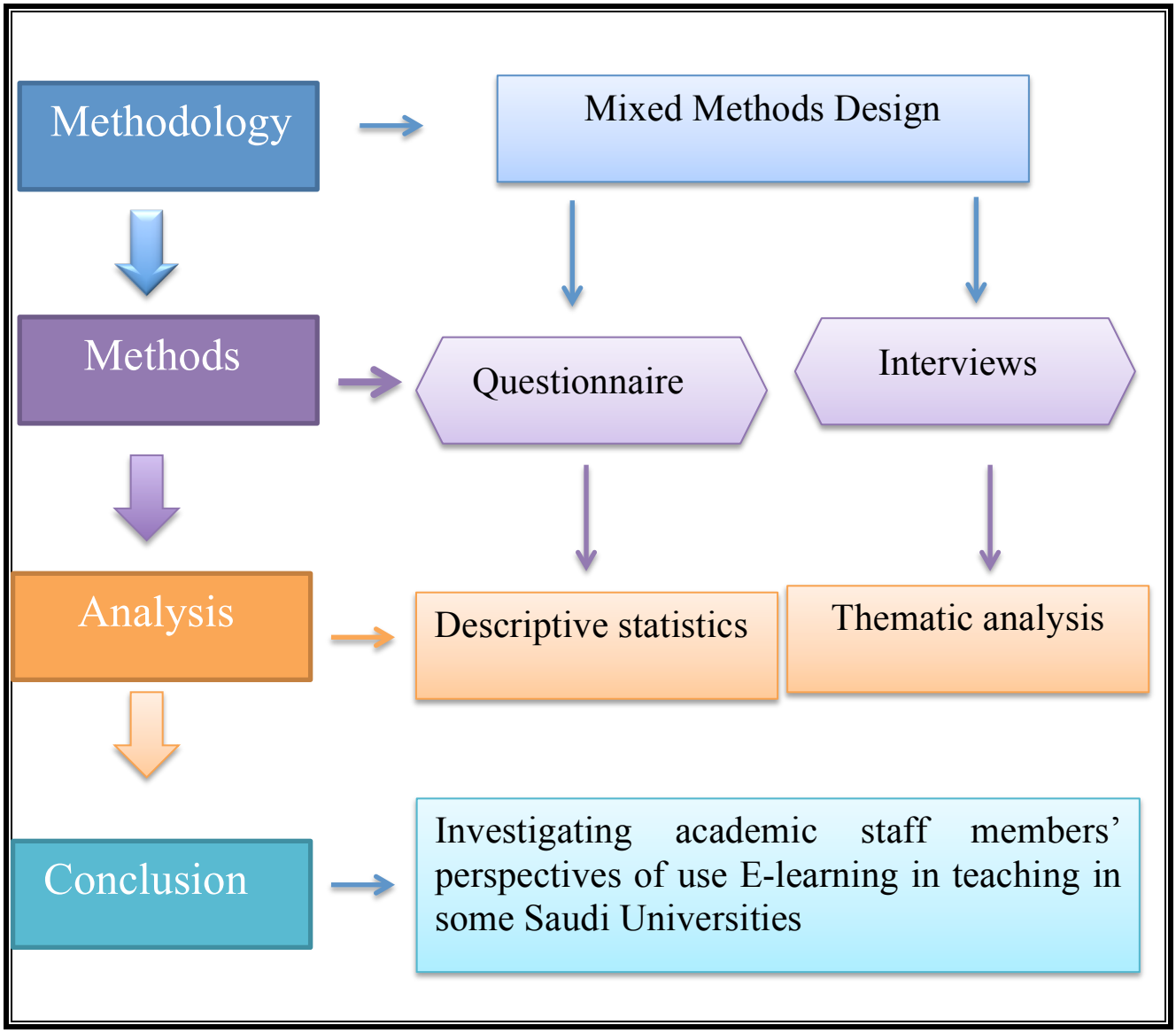
Cohen *et al.* (2007,p.47) mention that approach includes investigation of methods for data collection in the research methodology "inferences and interpretation, for explanation and prediction". Case studies, allow the researcher to explore a program, an event, an activity, a process, or one or more individuals in depth. Case(s) are bound by time and activity, and researchers collect detailed information using a variety of data collection procedures over a sustained period of time (Gass & Mackey, 2007). This study has used use the survey approach. A survey is described by Cohen *et al.* (2004, p.265) as the collection of information derived from such means as "one or more of the following data-gathering techniques: structured or semi structured interviews, self-completion or postal questionnaires and attitude scales". This study has used descriptive statistics to describe the reality of the use of e-learning in teaching by academic staff members, from which the researcher hopes to develop teaching methods in order to improve the educational process and curriculum design in some Saudi Arabian Universities to keep pace with technological and cognitive development in this area. Accordingly, a survey based on a questionnaire and semi-structured interviews were used in this study, to obtain the desired information quantitatively and qualitatively regarding the investigation of the use of e-learning skills in teaching by academic staff members. In brief, mixed methods were used to collect and analyse the data for this research. The primary study tool quantified both flexibility and interactivity by means of the academic staff's perceptions of their opportunities through investigating the effectiveness of the use of e-learning in teaching and quality achieved by it. This part of the research was carried out using a questionnaire that was capable of recording qualitative as well as quantitative perceptions. Hence, within this tool, the methodology was mixed. The solely qualitative tool was the semi-structured interview which targeted academic staff members and administrative staff who are involved in e-learning initiatives in selected Saudi universities. Open-ended questions enabled the respondents to discuss their perceptions of the use of e-learning skills in their teaching, the positives

and negatives of e-learning, barriers to its use and requirements for implementing it, as well as any suggestions they might have.

In order to obtain sound answers to the study questions, it is useful to use two kinds of approach, namely quantitative and qualitative methods. This can be done by using the questionnaire as a main instrument for collecting data, followed by interviewing a sample of participants from the original research sample. The reason for this is to collect a large amount of data and understand some of the issues in more detail with a more nuanced approach.

As indicated previously, this study aimed to describe the reality of the use of e-learning in teaching by academic staff members, and approaches practised by a sample of academic staff members in some KSA universities. The research also assessed suggestions from academic staff members for the development of teaching methods in order to make it more effective by improving teaching methods and the use of information and communication technology developed in the higher education curricula in the Kingdom of Saudi Arabia. This was achieved by answering the study questions. Figure 5.1 below shows the link between the research elements of this study.

Figure 5.1: Link between the research elements for this study



In addition, in the following sections quantitative and qualitative research methods are discussed in general, before highlighting the differences and similarities of the two methods.

5.3 Quantitative and Qualitative Methods

This section aims to describe the quantitative and qualitative methods as defined in the literature and their relation to this study.

5.3.1 Quantitative Research

A quantitative approach is one in which the investigator primarily uses post positivist claims to develop knowledge (i.e. cause and effect thinking, reduction to specific variables and hypotheses and questions, use of measurement and observation, and the test of theories). The researcher employs strategies of inquiry such as experiments and surveys, and collects data on predetermined instruments that yield statistical data (L. Cohen, Manion, & Morrison, 2004, p. p.209). The quantitative methods defines as "research that measures variables in a quantifiable way"(Creswell, 2013). The quantitative method depends on the accuracy and rigour of the numerical data and is typically more focused on experimentation and the disclosure of the cause or the result of phenomena and its validity (Bryman, 2004).

One of the most prominent conclusions in the design of quantitative methodology is based on numerical data which aims to test the strength of the relationship between the independent and dependent variables (Arksey, 1999; Abdulsamad, 2007).

Furthermore, quantitative research is more typically associated with the positivism worldview, while qualitative research comes more from constructivism (Creswell, 2009; Tashakkori & Teddlie, 1998). Research methods are concerned with the procedures, techniques, or tools a researcher uses for data collection and analysis (Cohen, Manion & Morrison, 2007; Mackenzie & Knipe, 2006). So, research methods can include a specific instrument, such as questionnaire, interview, or observation (Bryman, 2004).

According to Newby (2010) research methodologies are "how the toolkit of research methods is brought together to crack an individual and specific research problem" (p. 51). In this sense, research methods can be seen as part of research methodology, and can be used as a basis "for inference and interpretation, for explanation and prediction" (Cohen *et al.*, 2007, p. 47). While research methodologies can be seen as the justification for research decisions, which provides reasons and explanations for the particular decisions or methods used from the beginning to the conclusion of the investigation (Mertens, 2009, 2014). Thus, quantitative research allows researchers to "explore

specific issues in which they are interested" (Clough & Nutbrown, 2002). Also, the results of quantitative research typically have quantification tendencies on 'how many', or reveal the patterns of the investigated data.

5.3.2 Qualitative Research

A qualitative approach is one in which the inquirer often makes knowledge claims based primarily on constructivist perspectives (i.e., the multiple meanings of individual experiences, socially and historically constructed meanings, with the intent of developing a theory or pattern) or advocacy/participatory perspectives (i.e., political, issue-oriented, collaborative. or change oriented) or both. It also uses strategies of inquiry such as narratives, phenomenologies, ethnographies, grounded theory studies, or case studies. The researcher collects open-ended data with the primary intent of developing themes from it (Bryman, 2004, p. p.451). William (2009, p.67) defines the qualitative method as "an effective method that occurs in natural settings that allows researcher to develop a level of detail from being involved in the actual experience". Rayan (2006) indicates that interviews and observations are often used to collect data in qualitative research(William, 2009, p. p.67). Qualitative research allows researchers to "gain access to the perspectives of the people they are studying" (Bryman, 2004, p. 451), and the results of qualitative research typically have the tendency to give us some indication as to 'why' and 'how' things occur.

One of the most striking features of qualitative research is that by seeking to understand the perspectives of the people who are being studied the researcher is able to take advantage of participants' perspectives from their own point of view. In this way the researcher can gather the subjective meanings and perspectives participants ascribe to the situation under investigation, and thus make sense of or interpret the meanings from their views. Therefore, in this case, the researcher, rather than narrowing meanings into a few categories or ideas, can gather multiple views (Creswell, 2009).

5.4 Mixed Method Design of the Study

The combination of two methods in the designing and sampling procedures and collecting and analysing the data has perspicuous advantages in achieving a deep, comprehensive understanding of the problems of a study, as it invests in the strengths of the quantitative and qualitative methods and offsets the weakness of each method (Tashakkori & Teddlie, 1998; Onwuegbuzie & Leech, 2004). Creswell (2008, p.62) defines mixed method designs as "procedures for collecting, analysing, and mixing both quantitative and qualitative data in a single study"(Rayan, 2006). Creswell et al, (2007) describe it as follows: "Mixed methods research is a design for collecting, analysing and mixing both qualitative and quantitative data in a study in order to understand a research problem"(Creswell, 2008, p. 62)and(Creswell, 2013).

The research methodologies underlying the philosophical orientation of pragmatism are mixed methods (Creswell, Hanson, Plano, & Morales, 2007). Researchers use mixed methods in an attempt to draw on the strengths and minimise the weaknesses of quantitative and qualitative research (Tashakkori & Teddlie, 1998). Also, combine them in a way that offers the best opportunities for answering research questions (Creswell, 2009). Bryman (2004) indicates that it is possible to achieve more accurate and broader findings by combining quantitative and qualitative approaches to obtain different points of view.

Denscombe (2008, p. 272) suggests that mixed method research can: (a) increase the accuracy of data; (b) provide a more complete picture of the phenomenon under study than would be yielded by a single approach, thereby overcoming the weaknesses and biases of single approach; (c) enable the researcher to develop the analysis and the original data; (d) aid sampling (he gives the example of using a questionnaire for the purpose of interview)(Johnson & Onwuegbuzie, 2004).

Indeed, state that "strong mixed methods start with a strong mixed methods research question", and they suggest that such a question could ask "what and how" or "what and why"(Denscombe, 2008, p. 272). Importantly, the two methods can be integrated into many studies, to enhance their strengths and mitigate their weaknesses. As defined by

Creswell (2008, p.62), mixed method designs are "procedures for collecting, analysing, and mixing both quantitative and qualitative data in a single study"

Furthermore, using various approaches to collect data reduces a researcher's bias which could arise through using a single data collection instrument and offers extensive information about a study's problem (Tashakkori and Creswell, 2007, p. p.207). However, mixed method designs provide researchers with flexibility for gathering, analysing data and reporting their findings(Patton, 2002).

A mixed method design with triangulation involves complementary mixed method, mixing method for development purposes, mixed method with initiation, and mixed method with expansion. Triangulation means having a kind of agreement or rather correspondence of the results from different methods. Complementarity, means elaborating the results of one method whilst considering the results of other methods. Development means making use of the results gained from one study as key points for other further studies. Initiation means detecting any paradox or contradictions in the results.

It was deemed appropriate to combine both methods for this research, with the quantitative element based on the data gathered from the questionnaire, and the qualitative element coming from the interpretation of the data gathered in the interviews. This approach enabled the researcher to gain a deeper insight and to interpret the data more thoroughly than would have been possible through statistical analysis alone. It helped to describe and explain the reality of the use of e-learning in teaching by academic staff members and approaches practised by a sample of academic staff members in some KSA universities. The researcher also assessed suggestions from academic staff members for the development of teaching methods to make it more effective by improving teaching methods and using information and communication technology to record their ideas and to develop teaching methods and higher education curricula in the Kingdom of Saudi Arabia. This was achieved by answering the research questions cited at the beginning of this chapter.

5.5 Research Methods and Instruments

This section highlights the research methods and instruments of the study: the questionnaire and interviews. Issues of validity and reliability are discussed. In addition, the pilot study, population and the sample, with its characteristics, are explained.
This research involved an investigation into the effectiveness and staff members' perceptions regarding the implementation and certain issues related to the usage of e-learning in their teaching at some Universities in KSA. The most suitable way to explore and understand them was to utilise data collection tools usually associated with mixed methods research approaches, in the form of a questionnaire and interviews, in order to obtain a wider picture of the current situation and to generalise the findings of the questionnaire used in this study. Combining a questionnaire with interviews does not mean combining qualitative and quantitative paradigms in this study, it rather means integration at "a superficial level" within a single paradigm (Bryman 2001) and giving the study more breadth.

Cohen *et al.* (2004) explain that the selection of study tools is determined according to research methodology and by taking into consideration all previous discussions about methodology. In light of the foregoing discussions, the questionnaire and interviews were selected as the most appropriate instruments for information-gathering for this study.

A number of significant factors need to be taken into account when selecting the most suitable research instruments. According to Rea and Parker (2014) the presence of many factors, such as time, cost and size of the population, in addition to the aims of the research, the questions that need to be answered and the kind of data needed, have to be considered by the researcher in the selection of instruments(Onwuegbuzie & Leech, 2004).

In order to gain a better understanding of the research methods it would be useful to provide a description of the data collection procedures. The study comprised two phases: the first phase of the study was carried out by conducting a questionnaire with male faculty staff members at some universities in KSA. The aim of the questionnaire was to elicit information about their current usage of E-learning in their teaching practice, as

well as their motivations and any obstacles they faced in its usage. Each questionnaire covered three dimensions: usage, motivations and obstacles of e-learning skills in teaching, involving a total of 46 items. The questionnaire was distributed among faculty members who were randomly selected for this purpose.

The second phase of the study was carried out by conducting semi-structured interviews with academic staff members, staff experts and male policy makers. Interviews with policy makers in the field aimed to elicit information about their current usage of e-learning in the teaching at the level of institution of higher education level in their teaching practice and its relation to e-learning policy.

The purpose of the second phase was to give the researcher in-depth insight into usage of e-learning by faculty members in their teaching, issues in implementation of applied modern technology approaches at university level, and awareness of issues related to current usage of e-learning in their classrooms, and ascertain what could be achieved or indeed what they would like to achieve. The second phase of the study helped in gathering a larger number of responses to emergent themes, which would result in generalizable results.

5.5.1 Questionnaires

Questionnaires are a useful, widely-used instrument for collecting survey information, providing structured, often numerical data, and are comparatively straightforward to analyse (Rea & Parker, 2014);(Wilson and Mclean, 1994; Cohen *et al.*, 2011). They allow researchers to survey a population of subjects with the aim of "establishing a broad picture of their experiences or views" and allow them to "seek to create generalizations from its data" (Clough & Nutbrown, 2002, p. 118).

According to Johnson and Christensen (2008), one of the most important characteristics of the questionnaire is that it is able to provide both quantitative and qualitative information about the participants' knowledge and experience on the subject area or topic in question (Johnson and Christensen, 2008). Gass and Mackey (2007:148) refer to questionnaires as: "written instruments that present all participants with the same series of questions or statements, which the participants then react to either by providing

written answers, supplying Likert-style judgments or selecting options from a series of statements." A Likert scale (named after its deviser, Rensis Likert, in 1932) provides a range of responses to a given question or statement (Wilson, 1994). The five-point Likert-scale was used to provide options for each question for the respondents to express their preference in terms of how strongly they agree or disagree with statements.
The points on the five-point scale were labelled as 'strongly agree', 'agree', 'neither agree nor disagree', 'disagree', and 'strongly disagree' (Cohen *et al.*, 2011). In addition, the respondents were given space at the end of each question to provide additional comments.

The type of questions used in a questionnaire varies according to the type of information required to test the research hypotheses. In this case, the questions were mostly multiple choice in order to cover all the relevant data.

5.5.1.1 Construction of the Questionnaire

Before constructing the questionnaire, the researcher reviewed the literature, which emphasises the importance of dimensions. The questionnaire was constructed to focus on the following three dimensions: the extent to which e-learning is used (see Table 5.1), motives for the use of e-learning in teaching (see Table 5.2) and obstacles to the use of e-learning (see Table 5.3) As this questionnaire was to be completed by non-native English language speakers, the questions had to be constructed so as to avoid any complexity or ambiguity. The questionnaire was then piloted and the researcher adapted certain questions based on the feedback. Table 5.4 shows the three dimensions and the research papers which identified their importance.

Table 5.1: References for questionnaire items usage dimensions, the first dimension: the extent to which E-learning is used

N	Items	References
1-	E-learning can enhance self-confidence to facilitate learning.	Ward & Parr (2010); Prestridge, (2012) and Peeraer & Van Petegem (2011).
2-	The use of e-learning can increase educational innovation.	(Louis Cohen, Manion, & Morrison, 2011)& Ward and Parr (2010), (Liaw, 2008)
3-	E-learning encourages creativity in the application of information and communication technology	Nechita & Timofti (2011)
4-	E-learning helps in the development of technical skills in the field of computers.	Rienties *et al.* (2013).
5-	E-learning contributes to the development and promotion of the skilled direction of knowledge content.	Rienties *et al.* (2013).
6-	E-learning can be difficult and frustrating to use.	Morris (2010).
7-	E-learning supports the use of the blended learning model to improve teaching skills and quality of education.	Morris (2010).
8-	E-learning helps diversity in modern teaching methods.	Ahmadi *et al.* (2011)
9-	E-learning encourages placing greater importance and influence on lessons.	Ahmadi *et al.*. (2011) and So *et al.* (2012)
10-	E-learning motivates students in their educational practices.	So *et al.*. (2012) and Alkhalaf *et al.* (2012).
11-	E-learning gives more stability and satisfaction in the educational process.	(Paechter et al., 2010)
12-	E-learning can engage learners more effectively than other forms of learning.	Ahmadi *et al.* (2011)
13-	E-learning saves time and effort for both teachers and students.	(Otaghsara & Mohseni, 2012)
14-	E-learning facilitates and improves communication between teachers and their students.	(Otaghsara & Mohseni, 2012) and Valentín *et al.* (2013).
15-	E-learning increases the efficiency of faculty members.	Valentín *et al.* (2013).
16-	E-learning increases efficiency by motivating learners.	(Liaw, 2008) (Liaw, 2008)

Table 5.2: References for questionnaire items for the second dimension: motivations for the use of e-learning in teaching.

N	Items	References
1-	E-learning encourages students to interact with lessons and improves their performance.	Nechita & Timofti (2011), Ward & Parr (2010) and Prestridge (2012).
2-	E-learning increases enthusiasm for the educational process.	(Paechter et al., 2010)
3-	E-learning helps to attract students to courses.	So *et al.* (2012)
4-	E-learning enhances positive personal attitudes.	Bhuasiri *et al.* (2012).
5-	E-learning increases student satisfaction.	(Liaw, 2008), Sun *et al.* (2008) and Alkhalaf *et al.* (2012).
6-	E-learning improves self-efficacy of the student.	Peeraer J & Van Petegem P. (2011).
7-	E-learning documents the student relationship positively with the educational curriculum.	Morris (2010).
8-	E-learning increases the motivation of students to learn.	(Otaghsara & Mohseni, 2012)Valentín *et al.* (2013) and Samari & Atashak (2011)
9-	E-learning enables learners to choose the educational methods most suitable for them and their needs.	Sun *et al.* (2008)
10-	The use of e-learning provides solutions to some important issues, such as increasing numbers of students.	Blin and Munro (2008)
11-	E-learning helps to facilitate communication between educational institutions through ideas and information.	Li (2012).
12-	E-learning is flexible in its role in the educational process.	Sun *et al.* (2008)
13-	E-learning increases the quality of teaching and learning because it integrates all teaching methods into one form.	Sun *et al.* (2008)

Table 5.3: References for questionnaire items for the third dimension: obstacles to the use of e-learning.

N	Items	References
1-	Lack of sufficient awareness regarding the direction of e-learning causes frustration and avoidance of it by students.	Morris (2010)
2-	Lack of adequate training in the use of e-learning techniques.	Yalcin *et al.* (2011) and Morris (2010)
3-	Lack of encouragement from department heads.	Yalcin *et al.* (2011) & Morris (2010)
4-	Increased teaching load.	Yalcin *et al.* (2011).
5-	Increased burden of non-teaching administrative tasks.	Rienties *et al.* (2013)
6-	Weakness of university network regarding access to university services.	Morris (2010)
7-	Lack of sufficient financial support.	Zein *et al.* (2004)
8-	Lack of adequate computers for e-learning exercises.	Yalcin *et al.* (2011) & Zein *et al.* (2004)
9-	Lack of computerized educational programs.	Ahmadi *et al.* (2011) and So *et al.* (2012)
10-	Lack of individual integration of students with the technology.	Valentin *et al.* (2013) and Hakkarainen *et al.* (2000)
11-	No integration between e-learning and the school curriculum.	Hakkarainen *et al.* (2000)
12-	Lack of support for e-learning in instructional design.	Morris (2010).
13-	The absence of an institutional policy for e-learning.	Yalcin *et al.* (2011)
14-	Lack of technical support at the University of Technology.	Zein *et al.* (2004)
15-	Lack of time to develop e-courses.	Valentín *et al.* (2013)
16-	Concern about the quality of e-courses.	(Liaw, 2008)
17-	Lack of confidence about the use of technology.	Yalcin *et al.* (2011)

Table 5.4: Studies highlighting the importance of the three dimensions.

N	Dimension	Studies Highlighting the Importance of the Dimensions
1-	**The extent to which e-learning is used.**	Ward and Parr (2010); Prestridge (2012); Peeraer, J & Van Petegem (2011); Nechita and Timofti, (2011); Rienties *et al.* (2013); Morris (2010); Ahmadi *et al.* (2011); So *et al.* (2012); Alkhalaf *et al.* (2012); (Liaw, 2008); Law *et al.* (2010); Valentín *et al.* (2013).
2-	**Motives for the use of e-learning in teaching.**	Nechita & Timofti (2011); Ward & Parr (2010); Prestridge (2012); Law *et al.* (2010); So *et al.* (2012); Bhuasiri *et al.* (2012); (Otaghsara & Mohseni, 2012); Sun *et al.* (2008); Alkhalaf *et al.* (2012); Peeraer & Van Petegem (2011); Morris (2010); Valentín *et al.* (2013); Samari and Atashak (2011); Sun *et al.* (2008); Blin and Munro (2008); Li (2012); Sun *et al.* (2008).
3-	**Obstacles to the use of e-learning.**	Morris (2010); Yalcin *et al.* (2011); Rienties *et al.* (2013); Morris (2010); Zein *et al.*, (2004); Ahmadi *et al.* (2011); So *et al.* (2012); Valentin *et al.* (2013); Hakkarainen *et al.* (2000)

In the context of this research, e-learning describes the use of e-learning skills by academic staff members of the university faculty to facilitate the transfer of educational content to learners using available interactive information and communication technology. It can also describe synchronous or asynchronous learner interaction with the active content and the completion of learning at a time and place determined by choice, circumstances and abilities.

The comprehensive questionnaire was designed in three parts, which aimed to cover a wide range of issues. The first part contains background data on the individuals in the study samples, demographic variables which help to test the hypotheses of the research such as: specialization, age, academic qualifications, years of experience, years at the academy, academic position, training courses in the field of e-learning, technical skills in the IT field and experience in the field of e-learning. The second part contains 13

statements to show the frequency of use of a computer to communicate with students, e-mail to communicate with students and the use of e-learning tools in teaching practised by the academic staff members. It also contains 10 statements regarding the extent of the use of e-learning tools.

The third part contains three dimensions through 46 statements designed to describe the following aspects of e-learning skills used in teaching, using ordinal scales:

· The extent to which e-learning is used (16 statements);

· Motives for the use of e-learning in teaching (13 statements);

· Obstacles to the use of e-learning (17 statements).

5.5.1.2 Translation of the Questionnaire

The questionnaire was designed in English and then translated into Arabic followed by a back translation by a third party to make sure of its accuracy by comparing it with the original. It was then read by five other native Arabic speakers in order to receive their comments on the possibility of any ambiguous wording. For further reliability, two competent translators from the translation department in King Saud and Aljouf universities were also consulted. The following sub-section explains validity and reliability issues regarding the construction of the questionnaire.

5.5.1.3 Piloting the Questionnaire

Data was collected through the use of quantitative instruments such as questionnaires that were developed to ensure the data's validity and reliability, and applied to a sample that was representative of the population. Following its collection, the data was then processed quantitatively, leading to statistical results which, when analysed, could be generalized to the whole population with a certain degree of confidence.

According to Ary *et al.* (2010), pre-testing a data collection instrument can lead to discovering unexpected defects which allows the researcher to make the required adjustments before applying it on a large scale. Moreover, piloting the instruments allows a researcher to estimate the time that is needed to complete the questionnaire and

the interview. Additionally, a pilot study is an important source of participants' feedback about the research topic (Otaghsara & Mohseni, 2012).

The questionnaire was piloted with due care and attention to ensure reasonable validity. Before starting to pilot the questionnaire it was necessary to obtain approval from the Research Ethics and Data Protection Sub-committee of Durham University.

In this context it would be useful to clarify some of the functions of the work of the pilot questionnaire. For example, a pilot has several functions, principally to increase the reliability, validity, and practicability of the questionnaire (Oppenheim, 1992; Morrison, 1993; Wilson and McLean, 1994 p.47):

-To check the clarity of questionnaire items, instruction and layout;
-To gain feedback on the validity of the questionnaire items, the operationalization of constructs and the purpose of the research;
-To eliminate ambiguities or difficulties in wording;
-To check readability levels for the target audience;
-To gain feedback on the type of question and its format;
-To gain feedback on response categories for closed question and multiple choice items, and for the appropriateness of specific questions or stems of questions.
The questionnaire was completed by ten Saudi colleagues studying for Masters and PhDs in the UK, as they have experience in this field. They were also asked their personal experience on moral issues relevant to Saudi culture in particular. Also, three academic staff members in Saudi universities contributed to the questionnaire. The feedback they provided was valuable.

5.6 Validity and Reliability of the Questionnnaire

In this study issues related to validity and reliability were thoroughly considered in both phases of the study: questionnaires and interviews.

5.6.1 The Validity of the Questionnaire.

There are many methods of testing the validity and reliability of a questionnaire. Validity is a significant aspect of the questionnaire, and reliability is a subset of validity.

Fraenkel & Wallen (2008:153) define validity as "the appropriateness, meaningfulness and usefulness of the specific inferences researchers make based on the data they collect". Validity means that the questionnaire is comprehensive and handles the issue investigated fairly (Gass & Mackey, 2007). Thereafter, the external validity of the questionnaire can be achieved through considering the views of academics as to its content and structure (Crowl, 1996; Gay & Airasian 2003; Gass & Mackey, 2007; Cohen *et al.* 2000; Bryman, 2008).

The questionnaire's content validity and and achieved validity were established as follows. Firstly, review the literature identified the main issues and items related to the research questions. This synthesis informed both the overall focus and the detail of specific items.

Secondly, a draft of the study questionnaire was piloted on 10 faculty members. Their, remarks were addressed and taken into account when revising and producing the final copy.

Thirdly, the questionnaire was reviewed with the academic supervisor, who is an expert in this field and whose comments informed the design and revisions. Face and content validity was improved by sending the survey questionnaire to a number of experts in the field of ICT, specialists in measurement, evaluation, teaching methods, curricula, and educational psychology who were able to enrich the questionnaire and gave valuable comments and additions, where necessary, a total of fifteen of faculty members. Their suggested amendments were then implemented.

Fourthly, the final draft of the questionnaire was designed in English and then translated into Arabic followed by a back translation by a third party to make sure of its accuracy by comparing it with the original. It was then read by five other native Arabic speakers in order to receive their comments on the possibility of any ambiguous wording. The scale in its final form is composed of 46 items.

5.6.2 The Reliability of the Questionnaire

Hammersley defines reliability as "the degree of consistency with which instances are assigned to the same category by different observers or by the same observer on different

occasions" (1992, p.67).

The internal consistency was determined through the calculation of the correlation of each item with the axis to which it belonged and correlation among axes, the researcher used Cronbach's Alpha coefficient. The results of the reliability of the questionnaire will be shown in Chapter 5.

5.7 Interviews

Cohen *et al.* (2007) define the research interview as "a two-person conversation initiated by the interviewer for the specific purpose of obtaining research-relevant information, and focused by him on content specified by research objectives of systematic description, prediction, or explanation" (p. 351). The interview defines as "a verbal interaction where a researcher tries to elicit information, beliefs or opinions from another person"(Johnson & Christensen, 2008). The interview research method is often used to obtain detailed information (Cohen *et al.*, 2007). Thus, interviews can provide rich, in-depth qualitative data(Denscombe, 1998). Thus, the main purpose and importance of using an interview is to obtain detailed in-depth information in order to enrich the research and clarify ambiguities about the problem under investigation.

Semi-structured interviews are often the sole data source for a qualitative research and are usually scheduled in advance at a designated time and location outside of everyday events. They are generally organised around a set of predetermined open-ended questions, with other questions emerging from the dialogue between interviewer and interviewee(s). Semi-structured in-depth interviews are the most widely used interviewing format for qualitative research and can occur either with an individual or in groups. Most commonly they are only conducted once for an individual or group and take between 30 minutes to several hours to complete (O'Leary, 2010).

This study employed interviews to acquire in-depth and contextual information and to support and explain the findings that emerged via the questionnaire. This was based on mixed methods research methodology principles, which combine quantitative and qualitative data collection instruments. The interviews targeted policy makers and administrative staff involved in e-learning initiatives in Four Saudi universities, to investigate the effectiveness of the use of e-learning in teaching. Therefore, a total of

sixteen interviews were conducted participants were from four government universities in Saudi Arabia, which eight with policy makers two of each university and the same number with administrative staff. For the interviews questions, see Appendix 2.

A semi-structured interview was used to allow the interviewer to cover the research agenda, and at the same time, to provide greater opportunities and make it more comfortable for interviewees to talk about what is essential, of interest, or important to them (Creswell, 2012).

5.8 Ethical Considerations

Ethical issues related to the study were carefully considered and the researcher complied with the standards advised by Durham University with regard to reliability, credibility and consistency.

In addition, the researcher had to take steps to assure people of his intentions in carrying out the research. Before the empirical work commenced, the researcher clearly informed the participating universities, policy makers and participants about the aims and purposes of the research, and their permission was sought for the researcher to gain access to the academic staff members in the universities. Also, the researcher gave detailed information and full explanations to those wanting to know more about the nature of the study.

In addition, the researcher made every effort to ensure the data collection process went smoothly.

The academic staff members were informed about the aims and purposes of the research in two ways: firstly, verbally from the researcher and, secondly, in written form in the covering letter accompanying the questionnaire and invitation to potential interviewees to participate in the interviewing process.

The letter's contents assured academic staff members that their identity would be withheld, sought their approval for recording the interviews, explained their right to withdraw from the research at any time, and reminded them of the importance of answering questions honestly to ensure the research's validity. The researcher and all

others involved in the research complied with Durham University's ethical permission requirements, and assured all research participants that data elicited from them would be treated in the strictest confidence and any information gathered would be used for research purposes only.

Permission for the study was sought from Durham University's Ethics Committee. The research proposal contained full details of the research methods and emphasised the researcher's awareness of the need to carefully consider ethical issues in relation to the study. His stated endeavour to comply with the standards advised by the University led to the study being approved by the Ethical Committee (see Appendix 4, a copy of Durham University's Ethical Committee approval).

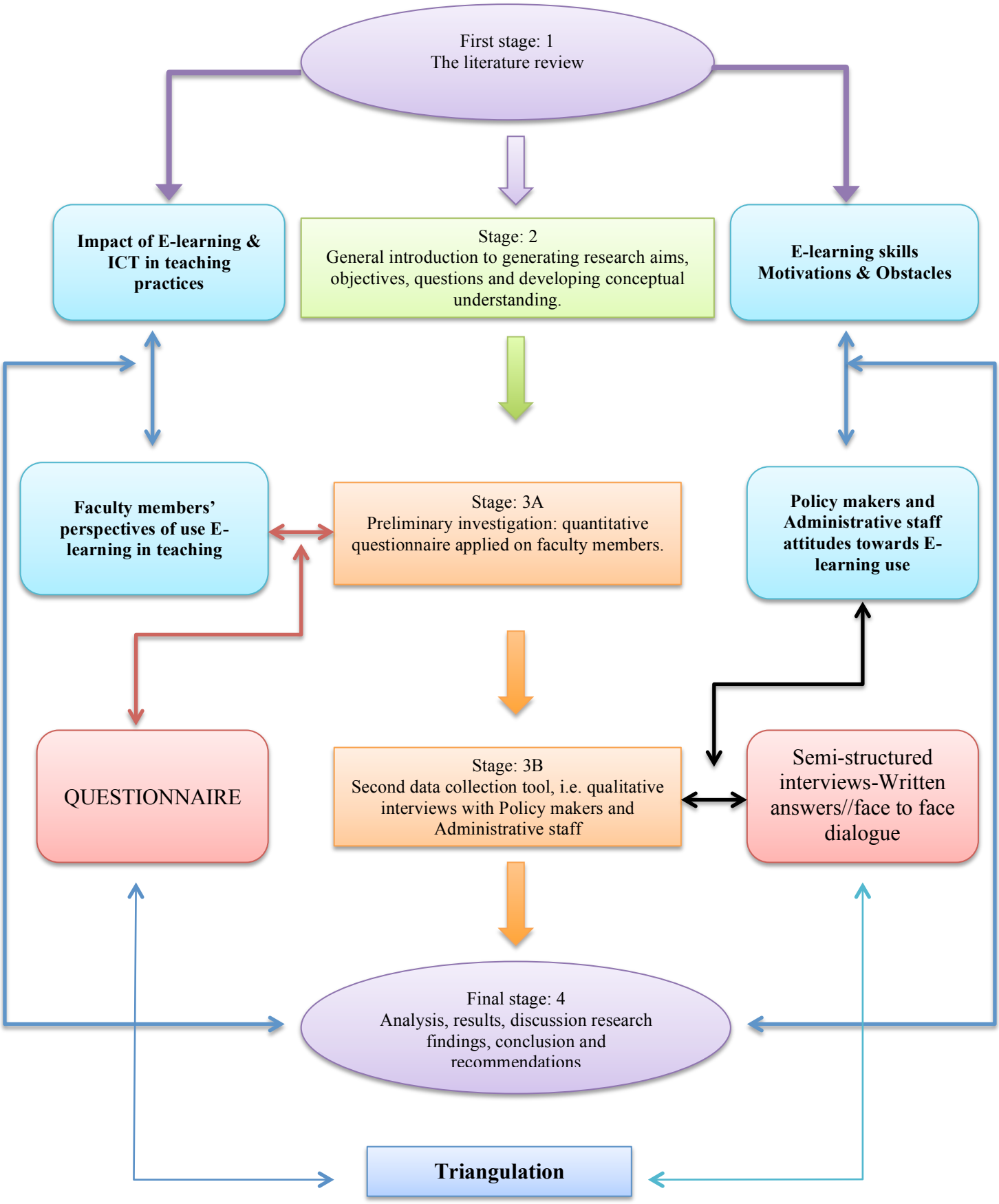
In addition, the permission of the Saudi Cultural Bureau in London was also sought to gain access to universities, which received letters to apply the study in order to facilitate the task of the researcher and obtain cooperation in the application of the study.

5.9 Summary

In this chapter the research methods adopted in the study have been discussed in order to describe and facilitate the understanding of the reality of e-learning used in teaching by academic staff members and approaches practised by a sample of academic staff members in some KSA universities. The research also assesses suggestions from academic staff members for the development of teaching methods to make them more effective, and the use of information and communication technology to record their ideas in order to develop teaching methods and the higher education curricula in the Kingdom of Saudi Arabia.

Data analysis methods have also been explained and presented an account of the study's methods, design, and rationale as well as presented a detailed account of how the research methods design. Figure 5.2 presents the detailed of research design.

Figure 5.2 Summary of Research Design



The literature on quantitative and qualitative research has been reviewed, as has mixed methods research. The instruments used in collecting data have also been discussed; these include the questionnaire - how it was designed and how it was applied - and the interview method and how it was used. Table 5.5 shows the summary of the research questions, data sources, and analysis.

Q. What are (male) academic staff members' perspectives of the effectiveness of the use of e-learning skills in their teaching in some universities in the Kingdom of Saudi Arabia (KSA)?

Table 5.5 shows the summary of the research questions, data sources, and analysis.

Question	Data source	Analysis
What is the extent of the use of e-learning skills in teaching by academic staff members in some Saudi universities?	Questionnaire Semi-structured interview	Descriptive statistics – means and standard deviations Qualitative analysis for triangulation
Are there any statistically-significant differences in the use of e-learning skills by academic staff members in teaching in terms of the variable, academic qualification?	Questionnaire	One-way ANOVA and f-test with η^2 for extent of difference
Are there any statistically-significant differences in the use of e-learning skills by academic staff members in teaching in terms of the variable, years of experience?	Questionnaire	One-way ANOVA and f-test with η^2
What were the motivations for academic staff members using e-learning in teaching?	Questionnaire Semi-structured interview	ANOVA and f-test Qualitative analysis for triangulation
What were the obstacles to using e-learning skills from the perspectives of the academic staff members?	Questionnaire Semi-structured interview	Descriptive statistics – means and standard deviations ANOVA for significance of differences between obstacles Qualitative analysis for triangulation

The next chapter embarks on the analysis of data derived from questionnaire with academic staff members. It also presents the findings derived from the data generated by the interviews with administrative staff and policy makers on the university level.

Chapter 6: Data Analysis

A: Quantitative Results and Data Analysis from the Questionnaire

Introduction

6.1 Statistical Analysis Procedures Used

6.0.2 Research Questions

6.3 Population and Sample

6.3.1 Population

6.3.2 Sample

6.4 Demographic Analysis of Faculty Members' Background Characteristics

6.4.1 Distribution of Participants According to Department

6.4.2 Distribution of Participants According to Age

6.4.3 Distribution of Participants According to Academic Qualification.

6.4.4 Distribution of Participants According to Years of Academy Experience

6.4.5 Distribution of Participants According to Academic Position

6.4.6 Training Courses in the Field of e-Learning

6.4.7 Technical Skills in the Field of use of Computers

6.4.8 Faculty Members' Experience in the Field of e- Learning

6.4.9 Faculty Members' Use of Computers to Communicate with Students

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6.8.4.1 Descriptive statistics of mean, standard deviation, and standard error of mean for the academic qualification scale according to the motivations dimension

6.8.4.2 ANOVA for academic qualification in terms of motivations using faculty members in teaching

6.8.4.3 Descriptive statistics of mean, standard deviation, and standard error of mean of motivation dimension according to years of experience

6.8.4.4 ANOVA for years of experience in terms of faculty members' motivations of use e-learning in teaching

6.8.5.2 Classifications of obstacles to using e-learning skills from the perspective of the academic staff members

6.8.5.3 Significant difference among perceived obstacles to e-learning in terms of academic qualifications, using one-way ANOVA

6.8.5.4 Significant difference among perceived obstacles to e-learning in terms of years of experience using one-way ANOVA.

Introduction:

This study aims to investigate academic staff members' perspectives of the effectiveness of the use of e-learning skills in teaching at some Saudi universities. The questionnaire is used as the main instrument for the research, and validated by interviews. Both aspects were specifically designed to gather the data for the research. Data from the questionnaire were analysed using the Statistical Package for Social Sciences (SPSS v20), with the statistics results supported by interviews, which target academic staff members, administrative staff and policy makers who are involved in e-learning initiatives in selected Saudi universities. A number of factors were taken into consideration such as demographic issues to determine whether there were any statistically significant differences in the effectiveness of the use of e-learning skills in teaching in some universities, and e-learning provision that could affect respondents' perceptions of the effectiveness of their teaching. It was deemed appropriate to combine quantitative and qualitative methods for this research, with the quantitative element based on the data gathered from the questionnaire, and the qualitative element coming from the interpretation of the data gathered in the interviews. This mixed-method approach will enable the researcher to gain a deeper insight and to interpret the data more thoroughly than would have been possible through statistical analysis alone. It will help to describe and explain the reality of the use of e-learning in teaching by academic staff members, and approaches practised by a sample of academic staff members in a number of KSA universities. The research will also assess suggestions from academic staff members for the development of teaching methods to improve teaching to render them more effective, and will use information and communication technology to record their ideas and to develop teaching methods and higher education curricula in the Kingdom of Saudi Arabia.

The comprehensive questionnaire was designed in three parts, which aim to cover a wide range of issues. The first part contains background data on the individuals in the study samples such as: specialization, age, academic qualifications, years of experience, years at the academy, academic position, training courses attended in the field of e-learning, technical skills in the IT field and experience in the field of e-learning. The first part covers demographic variables, which help to test the hypotheses of the research. The second part contains 13 statements to show the frequency of use of a computer by staff

to communicate with students via e-mail, and their use of e-learning tools in teaching. It also contains 10 statements regarding the extent of the use of e-learning tools.

The third part contains three dimensions through 46 statements designed to describe the following aspects of e-learning skills used in teaching, using ordinal scales:

· The extent to which e-learning is used (16 statements).

· Motives for the use of e-learning in teaching (13 statements).

·Obstacles to the use of e-learning (17 statements).

6.1 Statistical Analysis Procedures Used

Before starting this chapter, types of and reasons for statistical analysis used for the charts, as well as a summary, are offered in tabulated form (Figure 6.1) to show the statistical procedures for methodology and instruments for the present study.

A descriptive analysis of the data obtained from the questionnaire questions was carried out using statistical treatments as follows:

Descriptive Statistics: One-way ANOVA were conducted to distribute the data and to display certain summary statistics, such as average, percentages, means, frequencies, standard deviation and analysis of variance.

Frequencies: To display simple counts and percentage for categorical or ordinal data.

Inferential Statistics (One-way ANOVA): To establish if there are any statistically significant differences between questionnaires at the first dimension using e-learning, to answer the statistical question as follows:

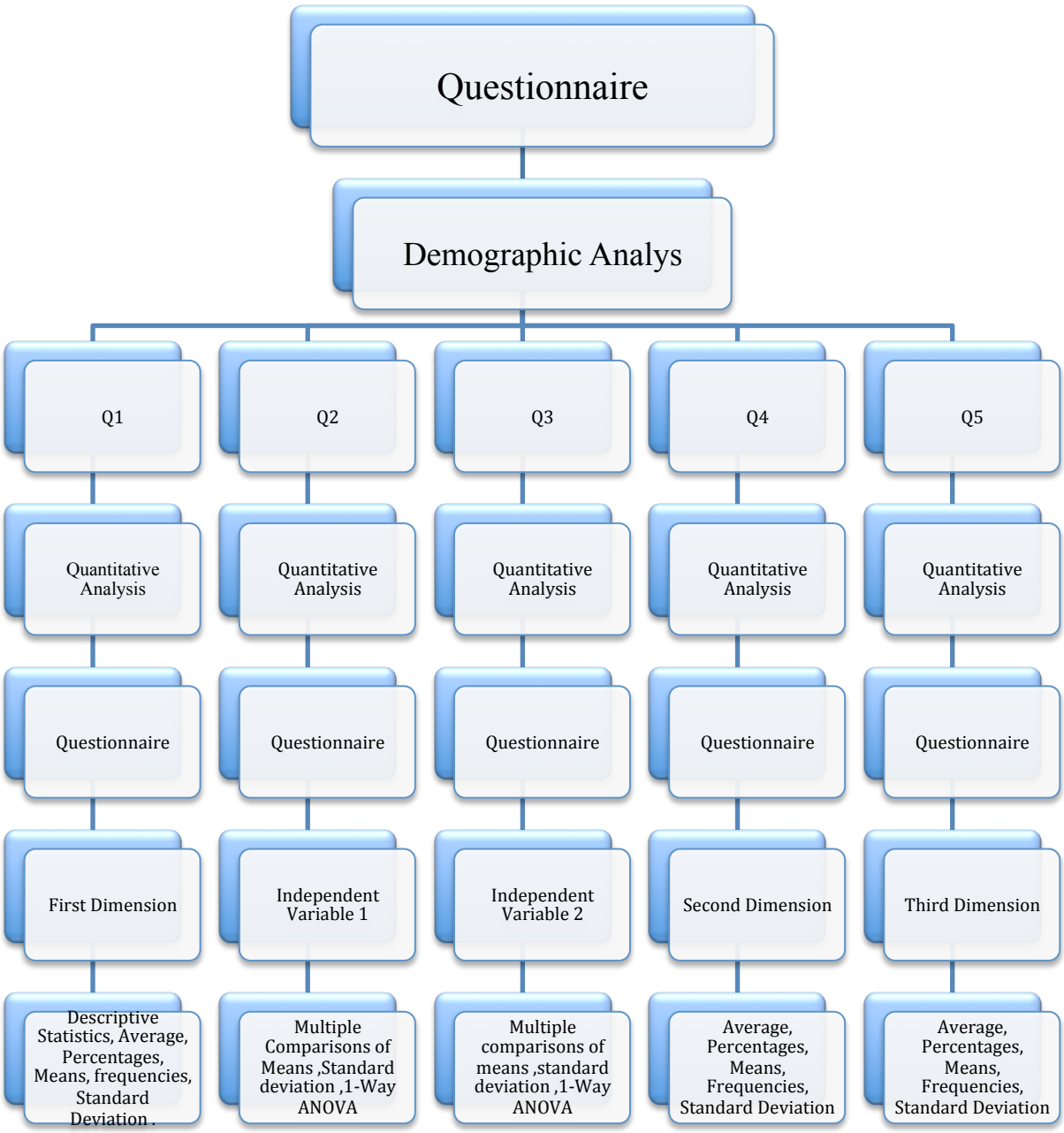
Q. What was the extent of the use of e-learning skills in teaching by academic staff towards effective implementation of e-learning in some Saudi universities in terms of academic qualifications and years of academy experience?

Validity: To study the validity of the questionnaire Spearman coefficient of correlation between each item and its dimension score were calculated.

Reliability: To study the reliability Cronbach's alpha is calculated for all questionnaire dimensions and the results are presented.

Correlation: To establish if there is any correlation between items and total score for each dimension of the three dimensions in the study, Spearman's rho of coefficient is used.

Figure 6.1: Statistical Analysis Procedures Used.



6.0.2 Research Questions

The purpose of this study is to investigate academic staff members' perspectives of the effectiveness of the use of e-learning skills in teaching at some Saudi universities. In particular, the research questions underpinning the study are:

1. What is the extent of the use of e-learning skills in teaching by academic staff in some Saudi universities?

2. Are there any statistically significant differences in the use of academic staff members' e-learning skills in teaching in terms of the variable: academic qualification?

3. Are there any statistically significant differences in the use of academic staff members' e-learning skills in teaching in terms of the variable: years of academy experience?

4. What are the motivations for academic staff members using e-learning in teaching?

5. What are the obstacles to using e-learning skills from the perspective of the academic staff members?

6.3 Population and Sample

6.3.1 Population.

In this study the targeted population consists of faculty members (professors, associate professors, assistant professors, demonstrators and lecturers) of Saudi Arabian public universities. The study population consists of academic staff members in only four universities. These were chosen by the researcher according to certain criteria such as the geographical distribution in Saudi Arabia, the existence of deanships for e-learning to support faculty members through guidance, and the activation of e-learning programs implemented by the Ministry of Higher Education in Saudi Arabia which will reflect positively on the role of developing the skills of faculty members through their teaching methods. The population range in this study was too wide, therefore, a sample population was taken from male academic staff members of Saudi Arabian universities,

after which the findings will be generalised to this population. As the target population is so large, the researcher has chosen four public universities based on a purposive sampling method to determine the study population. The population in this study were university academic staff members in the Kingdom of Saudi Arabia, and the accessible population were academic staff members of King Saud, Al-Dammam, Hail, and Al-Jouf Universities, all of whom supplied the figures that appear in the following (Table 6.1and Table 6.2).

Table 6.1: KSU, ADU, HU, AJU Academic Staff Members with Academic Qualifications 2012 / 2013.

N	University	Nationality	Ph.D		Master		Bachelor		Total		Total
1.	King Saud University KSU		Male	Female	Male	Female	Male	Female	Male	Female	
		Saudi	1162	286	247	569	1022	1059	2431	1914	
		Non-Saudi	812	269	128	27	34	3	974	299	5618
		Total	1974	555	375	596	1056	1062	5618		
2.	Al-Dammam University DU	Saudi	191	250	76	228	213	604	480	1082	
		Non-Saudi	469	465	86	72	16	22	571	559	2692
		Total	660	715	162	300	229	626	2692		
3.	Hail University HU	Saudi	62	11	121	64	1	0	184	75	
		Non-Saudi	282	199	196	162	28	5	506	366	
		Total	344	210	317	226	29	5	1131		1131
4.	Al-Jouf University JU	Saudi	23	8	70	43	162	159	255	210	
		Non-Saudi	219	53	124	82	9	7	352	142	956
		Total	242	61	194	125	171	166	956		
TOTAL											10397

Source: Ministry of Higher Education-Statistics Centre in Saudi Arabia (2012-2013).

Table 6.2: The Distribution of Academic Staff Members According to Department.

N	University	Department	Ph.D	Master	Bachelor	Total
1.	**King Saud University**	**Gender**	**Male**	**Male**	**Male**	
		Education	179	46	73	**298**
		Science	301	52	67	**420**
	KSU	**Total**				**718**
2.	**Al-Dammam**	**Education**	72	43	43	**158**
	University	**Science**	25	4	0	**29**
	ADU	**Total**	97	47	43	**187**
3.	**Hail University**	**Education**	55	32	2	**89**
		Science	70	33	0	**103**
	HU	**Total**	125	65	2	**192**
4.	**Al-Jouf University**	**Education**	23	70	162	**255**
		Science	57	16	39	**112**
	AJU	**Total**	**80**	**86**	**201**	**367**
TOTAL						1464

Source: Ministry of Higher Education-Statistics Centre in Saudi Arabia (2012-2013).

Note. KSU = King Saud University; ADU = Al-Dammam University; HU = Hail University; and AJU = Al-Jouf University.

Table 6.3 The Distribution Population of Academic Staff Members.

N	University	Nationality	Ph.D	Master	Bachelor	Total
1.	King Saud University KSU	Gender	Male	Male	Male	3405
		Saudi	1162	247	1022	
		Non-Saudi	812	128	34	
		Total	1974	375	1056	
2.	Al-Dammam University ADU	Saudi	191	76	213	1051
		Non-Saudi	469	86	16	
		Total	660	162	229	
3.	Hail University HU	Saudi	62	121	1	690
		Non-Saudi	282	196	28	
		Total	344	317	29	
4.	Al-Jouf University AJU	Saudi	23	70	162	607
		Non-Saudi	219	124	9	
		Total	242	194	171	
TOTAL						5753

Source: Ministry of Higher Education - Statistics Centre in Saudi Arabia (2012-2013)

6.3.2 Sample

Bryman (2004:334) argues that, in purposive sampling "the researcher samples on the basis of wanting to interview people who are relevant to the research questions."

The purposive sampling technique is a type of non-probability sampling that is most effective when one needs to study a certain cultural domain which contains knowledgeable experts. Purposive sampling may also be used with both qualitative and quantitative research techniques (DiCicco‐Bloom & Crabtree, 2006).

Thus, purposive sampling is used for two reasons: first, it allows the researcher to satisfy the very significant point which is choosing the right study population; and second it helps the researcher to choose the right sample to participate in the study (Tongco, 2007).

Therefore, the aim of the researcher in using this method is to determine the principles of the respondents in the sample selected which gives the information required in accordance with the standards that have been developed in research, to develop and provide specific information.

The sample was selected according to several criteria of suitability taken into consideration by the researcher as follows:

1. Discussion with experts of academic staff members in some Saudi universities who were known to the researcher.

2. Each of the universities in the study had a Deanship of e-Learning to support faculty members in terms of technology, by advising and counselling them, supporting and developing teaching programs and implementing modern teaching methods.

3. Universities were selected according to geographical distribution; for example, Al-Jouf University in the north, the University of Hail in the north-west, King Saud University in the centre, and the University of Dammam in the Eastern Province. The researcher aimed, in this way, to cover almost all regions of the Kingdom of Saudi Arabia by taking a sample from each region.

4. Good reputation of the university among others in the same region;

5. Expansion of the colleges and students;

6. Activation of e-learning programs.

Random sampling was the best way to obtain a representative sample of the population (Gay *et al*., 2008). This allowed the researcher to make inferences about faculty members from two departments of four universities (KSU, ALDM, HU and ALJU). Table (6.4) shows the distribution of academic staff members according to department.

Table 6.4 The Distribution of Academic Staff Members According to Department.

University	Department	
	Education	Science
King Saud University	298	420
Al -Dammam University	158	29
Hail University	89	103
Al -Jouf University	255	112
Total	800	664
	1464	

Source: Ministry of Higher Education-Statistics Centre in Saudi Arabia (2012-2013)

The population consisted of male faculty members from four universities (KSU, ALDM, HU and ALJU). A simple random sampling technique was employed so that all members of the faculties had an equal and independent chance of being selected(Robson, 2002)and (Gay *et al*., 2008). A simple random sample "is the most rigorous form of a probability sample" (Creswell 2008, p. 153).

Table 6.5: Distribution of Study Sample.

Participating university	Study Sample	Percent of Study Sample
King Saud University	117	31.2 %
Al Dammam University	78	20.8%
Hail University	82	21.86 %
Al Jouf University	98	26.14 %
Total	375	100 %

A total of 732 academic staff members (50% of the population) were randomly selected from this population at KSU, ALDM, HU and ALJU universities for voluntary participation in the study. Of these, 410 (56%) faculty members responded to the survey, although the researcher discarded 35 questionnaires that were incomplete with major parts of the survey missing. Table 6.5 demonstrates the distribution of the study sample. Consequently, the responses of 375 (52%) academic staff members were considered. (Table 6.6) illustrates the percentage of questionnaires suitable for use

Table 6.6: The Percentage of Questionnaires Suitable for Use.

Universities	Sample 50%	Returned Questionnaire	%Returned Questionnaires	Questionnaires suitable for analysis	%Unspoiled returns
1464	**732**	**410**	**56 %**	**375**	**52 %**

In order to show more details about sample, table 6.7 illustrates Distribution of Faculty Members according to Academic Qualifications.

Table 6.7: Distribution of Faculty Members According to Academic Qualifications

N	University	Nationality	Ph.D		Master		Bachelor		Total		Total
1	King Saud University KSU		Male	Female	Male	Female	Male	Female	Male	Female	
		Saudi	1162	286	247	569	1022	1059	2431	1914	
		Non-Saudi	812	269	128	27	34	3	974	299	5618
		Total	1974	555	375	596	1056	1062	5618		
2	Al-Dammam University DU	Saudi	191	250	76	228	213	604	480	1082	
		Non-Saudi	469	465	86	72	16	22	571	559	2692
		Total	660	715	162	300	229	626	2692		
3	Hail University HU	Saudi	62	11	121	64	1	0	184	75	
		Non-Saudi	282	199	196	162	28	5	506	366	
		Total	344	210	317	226	29	5	1131		1131
4	Al-Jouf University JU	Saudi	23	8	70	43	162	159	255	210	
		Non-Saudi	219	53	124	82	9	7	352	142	956
		Total	242	61	194	125	171	166	956		
	TOTAL										

Source: Ministry of Higher Education Centre of Statistics (2012-2013)

6.4 Demographic Analysis of Faculty Members' Background Characteristics

This section describes the first part of the questionnaire which provides the demographic details of the respondents including: department; age; academic qualifications; years of

experience; position, training courses in e-learning; technical computer skills; and experience in e-learning.

Participants also communicate with students via email and teach with the use of e-learning tools.

6.4.1 Distribution of Participants According to Department

A total of 375 faculty members took part in this survey. Table 6.8 demonstrates the distribution of the study sample according to department. Of these, 162 (43%) were from the Education Department, and 213 (57%) from the Department of Science.

Table 6.8: Distribution of Faculty Members according to Department

Department		Frequency	Percent
Valid	Education	162	43.2
	Science	213	56.8
	Total	**375**	**100.0**

6.4.2 Distribution of Participants According to Age

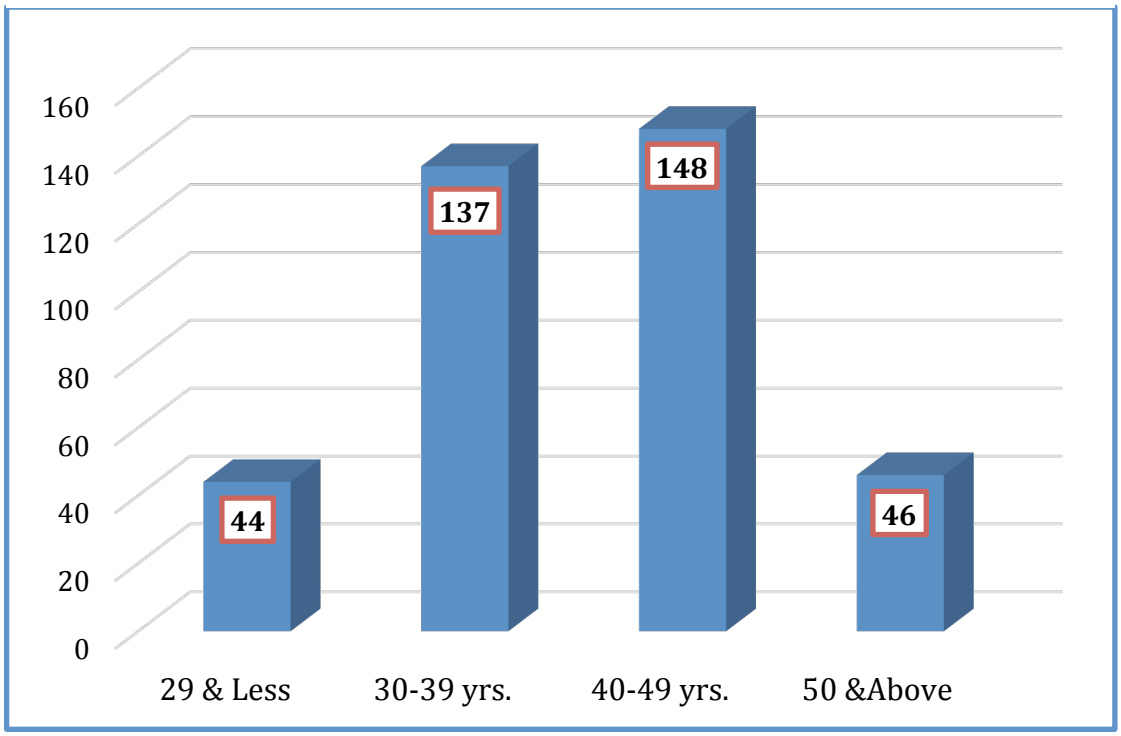
The second factor identified by the literature as significant to e-learning was age. The sample for this research was screened for this factor with results shown in the following table and figures.

It is clear from Table 6.9 and figure 6.2 below that 148 respondents (39.5%) were between 40 and 49 years, 137 (36.5%) were between 30 and 39 years, 46 respondents (12.3%) were 50 years and above, while only 44 respondents (11.7%) were aged 29 years or less.

Table 6.9: Distribution of faculty members according to Age

Age		Frequency	Percent
Valid	29 & Less	44	11.7
	30-39	137	36.5
	40-49	148	39.5
	50 &Above	46	12.3
	Total	**375**	**100.0**

Table 6.2: Respondents' Academic Staff Members by Age.



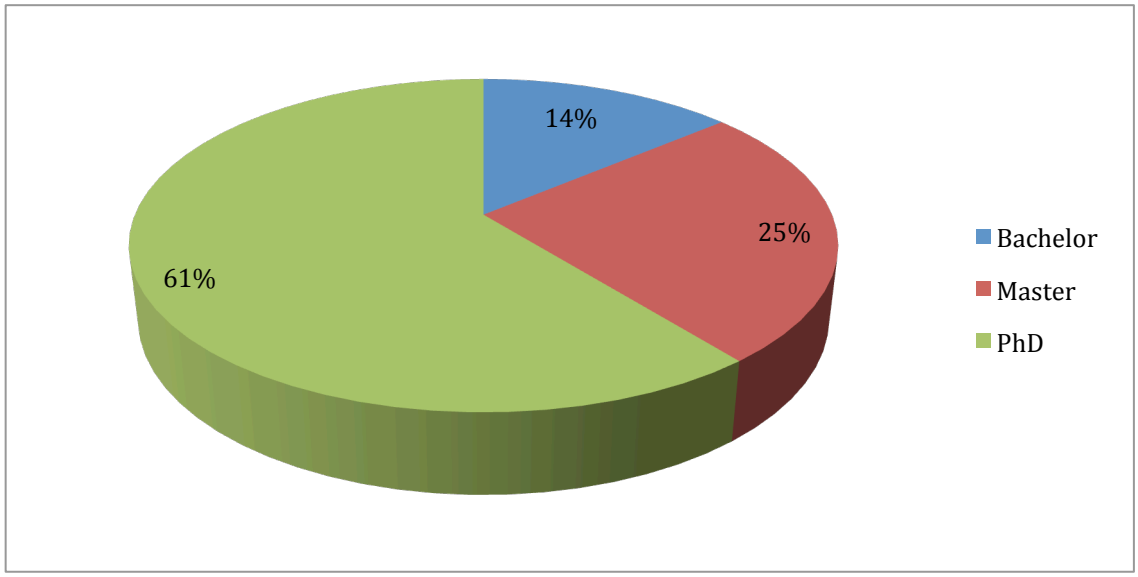
6.4.3 Distribution of Participants According to Academic Qualification.

Table 6.10 illustrates the distribution of study population according to academic qualifications. The largest number of participants were holders of Ph.D. degrees, who numbered 228 (61%) followed by 95 (25%) with Master's degrees, and 52 (14%) with Bachelor's degrees. Figure 5.3 below shows this in more detail.

Table 6.10 Distribution of Faculty Members according to Academic Qualifications.

Qualification		Frequency	Percent
Valid	Bachelor	52	14
	Master	95	25
	PhD	228	61
	Total	**375**	**100.0**

Figure 6.3: Respondents' faculty members according to Academic Qualifications.



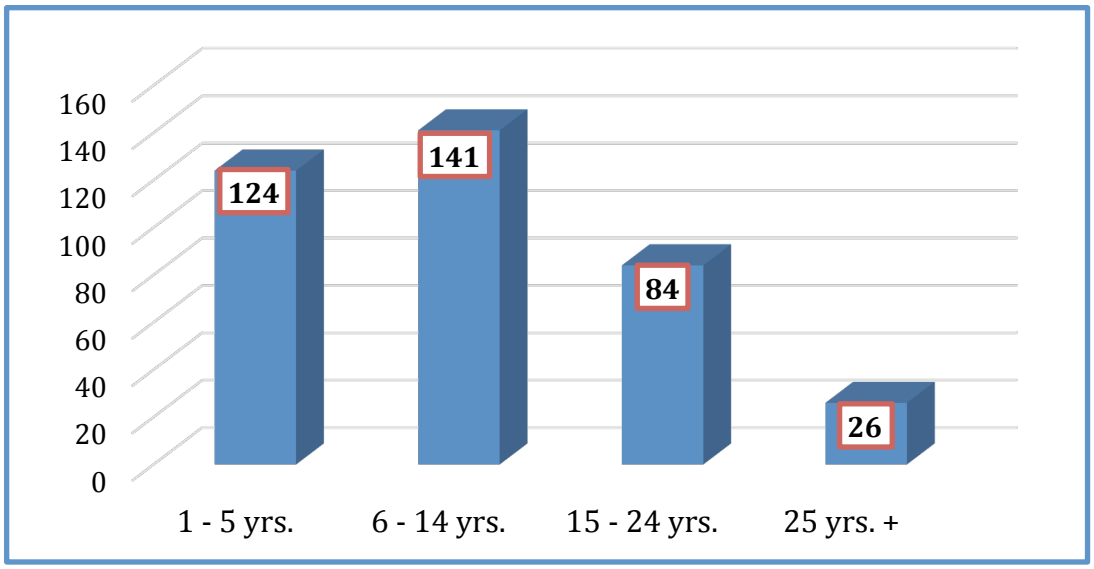
6.4.4 Distribution of Participants According to Years of Academy Experience

Table 6.11 and Figure 6.3 show the distribution of participating faculty members according to years of experience. It can be seen that 141 respondents (37.6%) had between six and 14 years of experience, followed by 124 (33.1%) with between one and five years, 84 (22.4%) with between 15 and 24 years, and only 26 respondents (6.9%) with 25 years' experience or more.

Table 6.11: Distribution of Faculty Members according to Years of Academy Experience.

Years of Academy Experience		Frequency	Percent
Valid	1-5	124	33.1
	6-14	141	37.6
	15-24	84	22.4
	25+	26	6.9
	Total	**375**	**100.0**

Figure 6.4: Distribution faculty members according to years of academy experience.



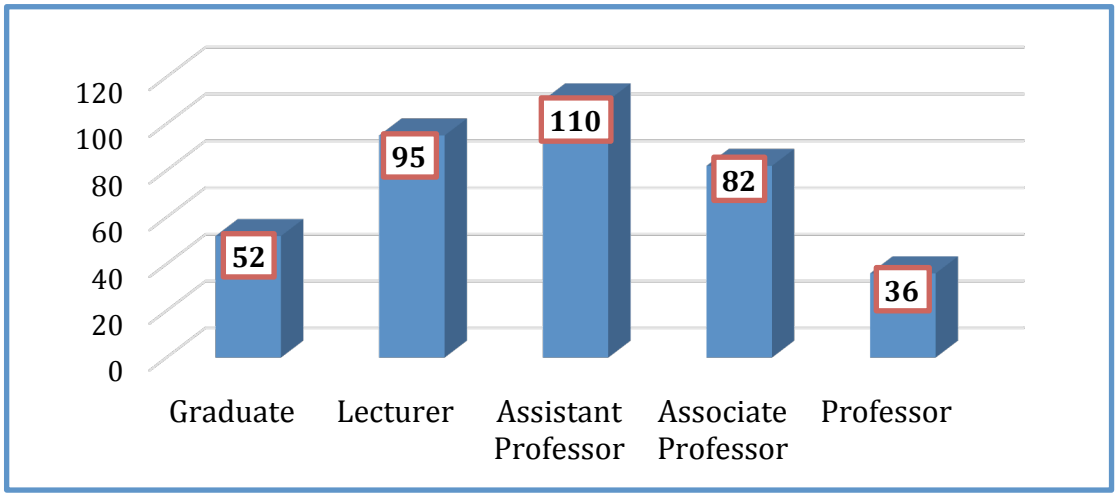
6.4.5 Distribution of Participants According to Academic Position.

Table 6.12 represents the distribution of respondents according to their academic positions. Here we found nearly one third of participants, a total of 110 (29.3%), were assistant professors, followed by 95 respondents (25.3%) who were lecturers and 82 (21.9%) associate professors, 52 (13.9%) demonstrators, with only 36 (9.6%) professors. The results are also presented in Figure 6.5.

Table 6.12 Distribution according to Academic Position

Position		Frequency	Percent
Valid	Demonstrator	52	13.9
	Lecturer	95	25.3
	Assistant Professor	110	29.3
	Associate Professor	82	21.9
	Professor	36	9.6
	Total	**375**	**100.0**

Figure 6.5: Respondents' according to Academic Position.



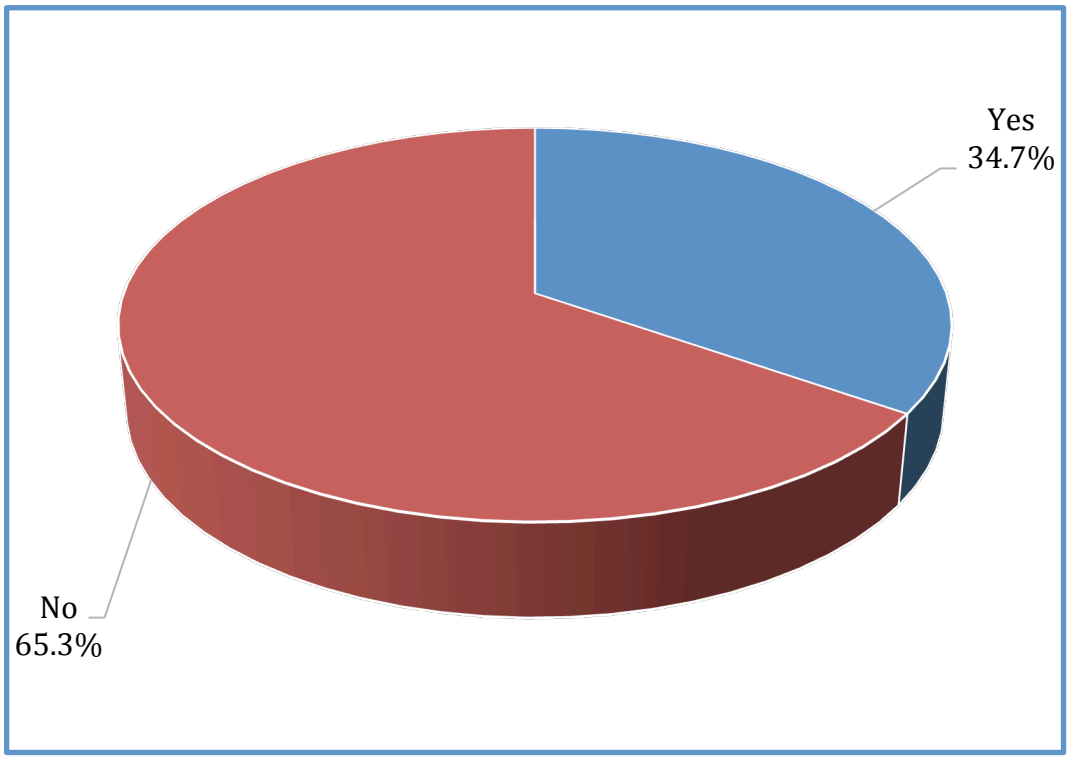
6.4.6 Training Courses in the Field of E-learning.

Table 5.13 and Figure 5.6, below, both represent the distribution of respondents having attended training courses in the field of e-learning. We found 245 respondents (65%) had not attended such courses, while 130 (35%) had.

Table 6.13: Distribution according to Attendance in Training Courses in the Field of e-Learning

Answer		Frequency	Percent
Valid	Yes	130	34.7
	No	245	65.3
	Total	375	100.0

Figure 6.6: Attending Training Course in the Field of E-learning.



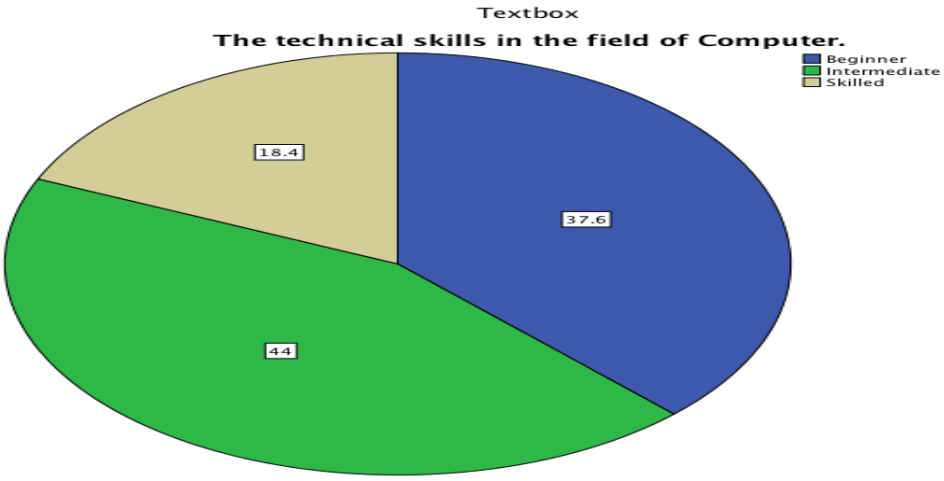
6.4.7 Technical Skills in the Field of use of Computers.

The distribution of respondents according to technical skills in the field of use of computers is represented in Table 6.14 and Figure 6.7. These show that 141 respondents (37.6%) reported that they were at beginner level in computing, while 165 (44%) were at intermediate level, while 69 respondents (18.4%) said they were at advanced level.

Table 6.14: Distribution according to Technical Skills in the Field of Computers.

Level of Skills		Frequency	Percent
Valid	**Beginner**	**141**	**37.6**
	Intermediate	165	44.0
	Skilled /Advanced	69	18.4
	Total	375	100.0

Figure 6.7: The Technical Skills in the filed of Computer.



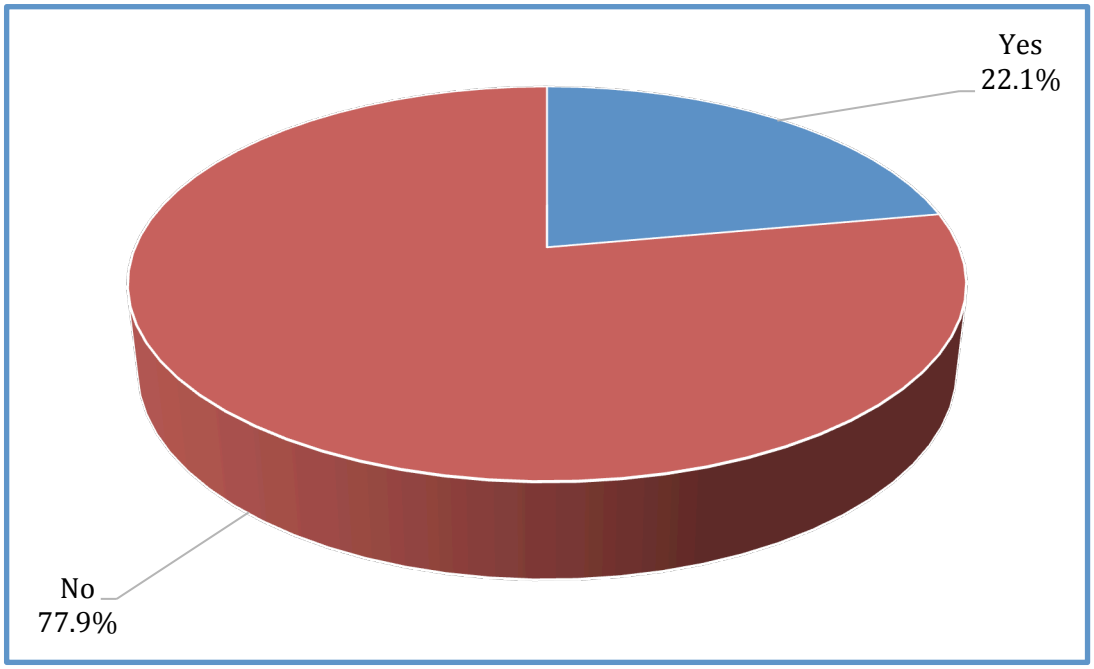
6.4.8 Faculty Members' Experience in the Field of e- Learning.

The results regarding respondents' experience in the field of E-learning are shown below in Table 6.15 and Figure 6.8. These show that the majority of respondents (292 respondents representing 77.9%) reported that they did not have experience in the field of e-learning, while only 83 (22.1%) said they had experience.

Table 6.15: Distribution According to Experience in the Field of e-Learning.

Answer		Frequency	Percent
Valid	Yes	83	22.1
	No	292	77.9
	Total	375	100.0

Figure 6.8: Experience in the Field of E-learning.



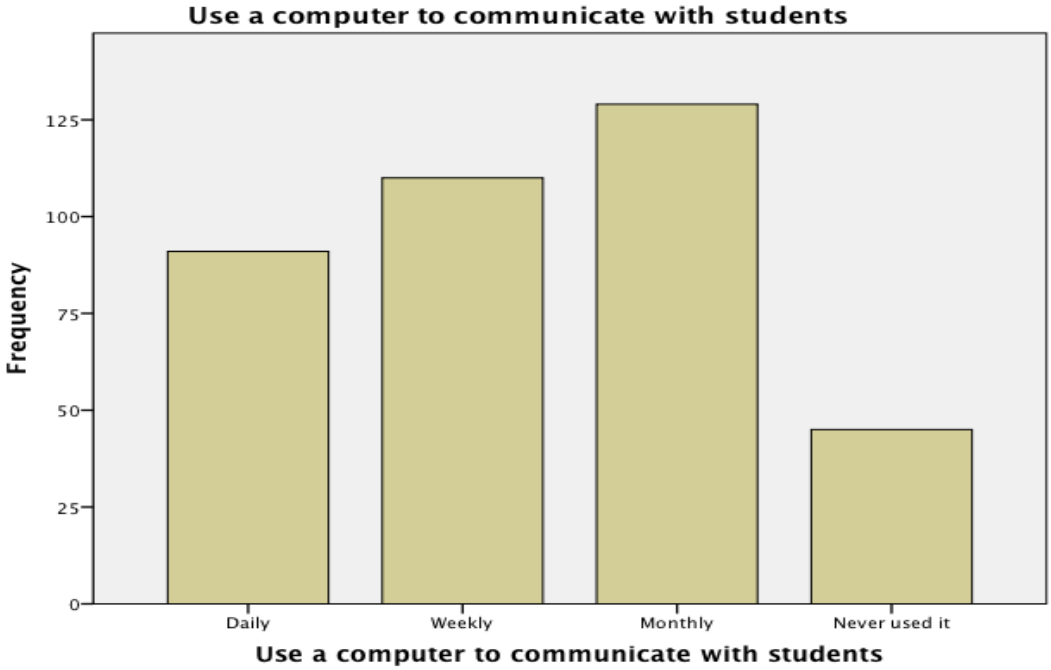
6.4.9 Faculty Members' Use of Computers to Communicate with Students.

Table 6.16 and Figure 6.9 illustrate respondents' use of computers to communicate with students. The highest number (129 respondents, representing 34.4%) did so monthly, while the lowest number (45, representing 12%) never used computers to communicate with students. Table 5.16 also shows no great difference between the number who use computers daily (91 respondents representing 24.3%) and weekly (110 respondents representing 29.3%).

Table 6.16: Faculty Members' Use of Computers to Communicate with Students

Use		Frequency	Percent
Valid	Daily	91	24.3
	Weekly	110	29.3
	Monthly	129	34.4
	Never used it	45	12.0
	Total	375	100.0

Figure 6.9: Faculty members' Use of Computers to Communicate with Students.



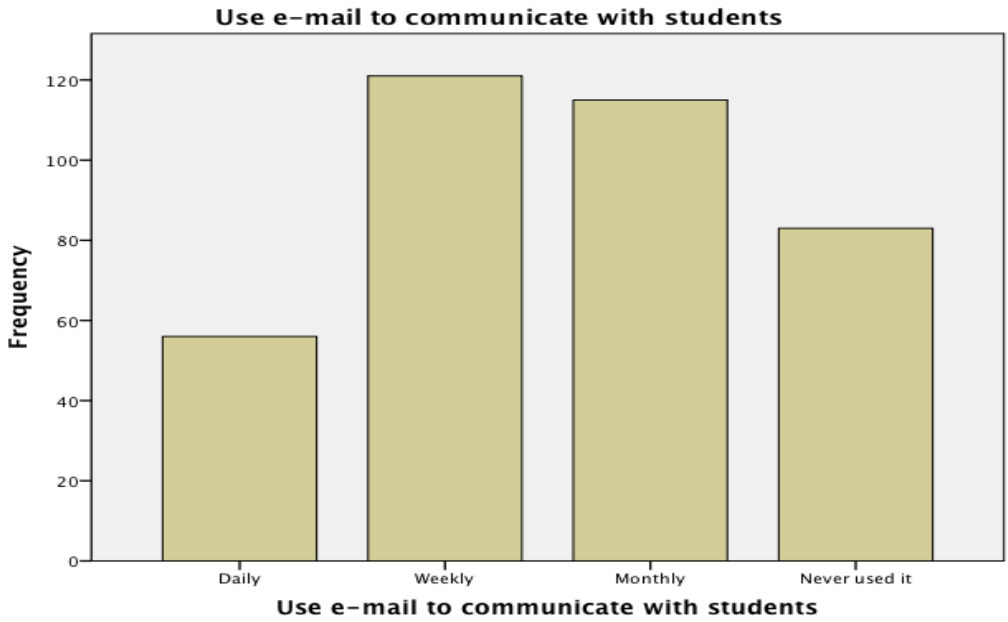
6.4.10 Faculty Members' Use of e-Mail to Communicate with Students.

Table 6.17 and Figure 6.10 show the participants' responses regarding their use of e-mail to communicate with students. They clearly show that a high number (121 respondents representing 32.3%) use e-mail weekly, followed by 115 participants (30.7%) who use it monthly, and 83 (22.1%) who never use it. The fewest faculty members (56, representing 14.9%) use it daily.

Table 6.17: Faculty Members' Use of e-Mail to Communicate with Students.

Uses		Frequency	Percent
Valid	Daily	56	14.9
	Weekly	121	32.3
	Monthly	115	30.7
	Never used it	83	22.1
	Total	375	100.0

Figure 6.10: Faculty Members' Use of e-Mail to communicate withe Students.



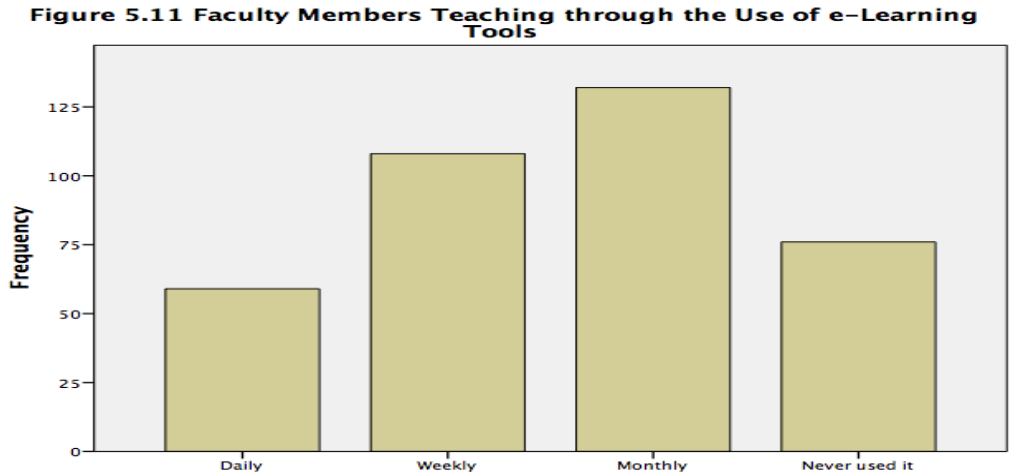
6.4.11 Faculty Members Teaching through the Use of e-Learning Tools.

Table 6.18 and Figure 6.11, below, indicate the frequency of faculty members' use of e-learning tools in teaching their students. They show that the lowest number (59, representing 15.7%) use e-learning tools daily. On the other hand, the highest number was 132 (35.2%) who used e-learning tools monthly in their teaching. A further 108 participants (28.8%) reported that they use e-learning weekly, while 76 (20.3%) stated that they never use e-learning tools in their teaching.

Table 6.18: Faculty Members Teaching through the Use of e-Learning Tools

Use		Frequency	Percent
Valid	Daily	59	15.7
	Weekly	108	28.8
	Monthly	132	35.2
	Never used it	76	20.3
	Total	**375**	**100.0**

Figure 6.11: Faculty Members Teaching through the Use of E-learning Tools



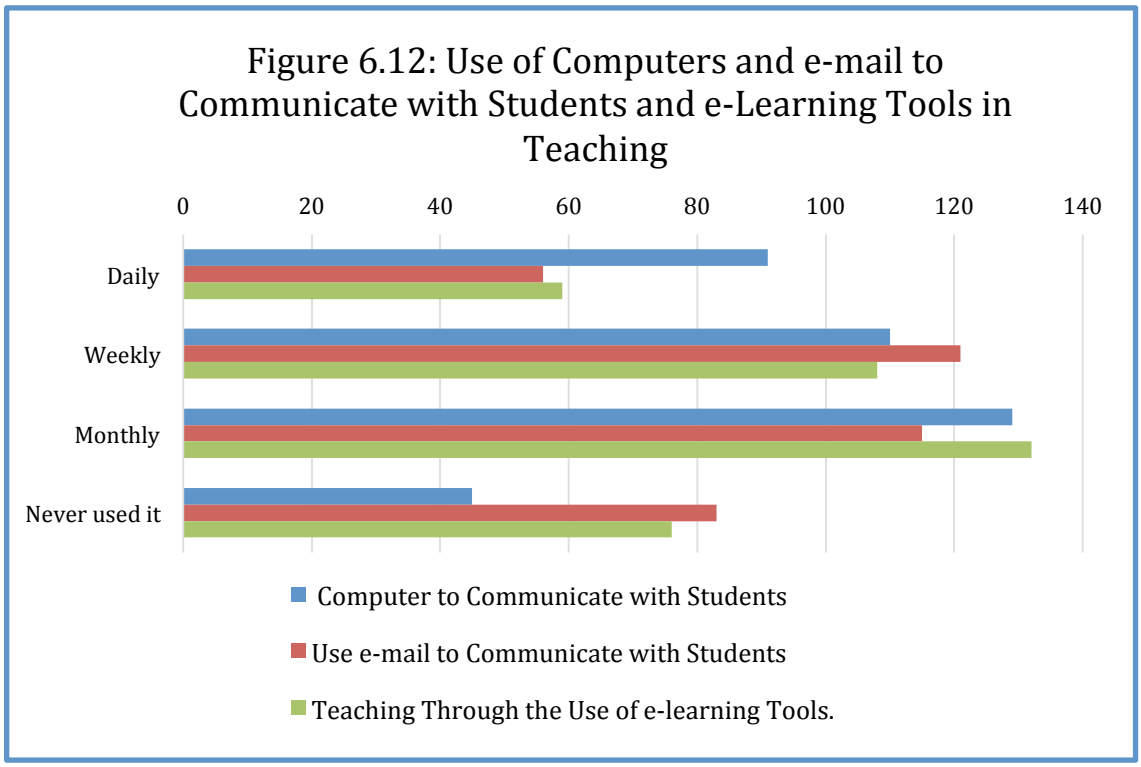
6.4.12 Faculty Members' use of Computers, e-Mail to Communicate with Students, and Teaching through the Use of e-Learning Tools.

Table (6.19) below presents the results regarding frequencies and percentages of respondents' use of computers or e-mail to communicate with students, and their use of e-learning tools in teaching. It was found that 91 participants (24.3%) used computers daily to communicate with students, 56 (14.9%) communicated via email daily, and 59 (15.7%) of respondents use e-learning tools daily in teaching their students. It was also found that 110 respondents (29.3%) used computers to communicate with their students weekly, 121 (32.3%) used email to communicate with their students weekly, and 108 (28.8%) use e-learning tools weekly in teaching their students. The table also shows 129 respondents (34.4%) communicate via computer monthly, 115 (30.7%) communicate via email monthly, and 132 (35.2%) use e-learning tools monthly in teaching their students. Finally, it is shown that 45 faculty members (12%) never use computers to communicate with their students, 83 (22.1%) never use email to communicate with their students, and 76 (20.1%) and never use e-learning tools in teaching their students. Figure (6.12) represents the distribution of respondents against their answers.

Table 6.19: Frequencies and Percentages for the Use of Computers, e-Mail by Faculty Members to Communicate with Students, and Teaching through the Use of e-Learning Tools.

Uses Frequency	Computer to Communicate with Students		Use e-mail to Communicate with Students		Teaching Through the Use of e-Learning Tools	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Daily	91	24.3	56	14.9	59	15.7
Weekly	110	29.3	121	32.3	108	28.8
Monthly	129	34.4	115	30.7	132	35.2
Never	45	12.0	83	22.1	76	20.3
Total	**375**	**100.0**	**375**	**100.0**	**375**	**100.0**

Figure 6.12: Use of Computers and e-Mail to communicate with Students and e-Learning Tools in Teaching.



6.4.13 Faculty Members' Use of e-Learning Tools in Teaching.

Table 6.20, below, shows the results of frequency of use of e-learning tools by respondents. It was found that e-mail is the most often used tool with a weighted average of 4.61 out of 5.00, second is the World Wide Web with a weighted average of 4.49, and third is the smart board with a weighted average of 4.42. The least used tools are interactive video, chat, and Video Conference with weighted averages of 2.98, 2.94, and 2.68 respectively.

Table 6.20: e-Learning Tools used by Faculty Members Ranked in Descending Order According to the Weighted Average of Frequency of Use.

Rank	Tools	Always	Often	Sometimes	Rarely	Never	W. Average
1	E-mail.	133	78	91	61	12	4.61
		35.5	20.8	24.3	16.3	3.2	

Rank	Tools	Always	Often	Sometimes	Rarely	Never	W. Average
2	World wide web.	101	123	58	83	10	4.49
		26.9	32.8	15.5	22.1	2.7	
3	Smart Board.	99	78	80	99	82	4.42
		26.4	20.8	21.3	9.6	21.9	
4	Social Networks.	98	82	56	60	79	3.95
		26.1	21.9	14.9	16.0	21.1	
5	Mailing list.	66	84	75	70	80	3.70
		17.6	22.4	20.0	18.7	21.3	
6	CD.	51	80	100	65	79	3.61
		13.6	21.3	26.7	17.3	21.1	
7	Discussion Groups.	55	65	85	77	93	3.46
		14.7	17.3	22.7	20.5	24.8	
8	Interactive video.	41	51	71	60	152	2.98
		10.9	13.6	18.9	16.0	40.5	
9	Chat.	42	50	65	58	160	2.94
		11.2	13.3	17.3	15.5	42.7	
10	Video Conference.	34	32	61	75	173	2.68
		9.1	8.5	16.3	20.0	46.1	

Table 6.21 presents faculty members' views regarding the current situation of use of e-learning tools in their teaching at some Saudi universities. The results show that approximately one third of faculty members numbers (133) always use e-mail as a tool to contact their students (mean=3.69 and SD=1.201), second highest ranking is the World Wide Web with 123 faculty members replying that they often use it (mean = 3.59 and SD=1.201), and third was Smart Boards with equal figures in many cases for those who always use them and those who rarely use them (99 for each one, with mean=3.20 and SD=1.483), and Social Networks (mean=3.16 and SD=1.499) while the rarely used tools are mail listing, CD, and discussion groups (mean= 2.96, 2.89 , 2.76 and SD= 1.404 , 1.381 ,1.381) respectively. In addition, the interactive video, chat, and video conference were reported as never used by 152, 160, 173 faculty members respectively (mean=2.38, 2.35, 2.14 and SD=1.407, 1.423, 1.328 respectively).

Table 6.21 Faculty Members' Responses Concerning Perceived Use of e-Learning Tools in Teaching at Some Saudi Universities.

Rank	Tools	Always	Often	Sometimes	Rarely	Never	Mean	SD
1	**E-mail.**	133	78	91	61	12	3.69	1.201
		35.5	20.8	24.3	16.3	3.2		
2	**World wide web.**	101	123	58	83	10	3.59	1.177
		26.9	32.8	15.5	22.1	2.7		
3	**Smart Board.**	99	78	80	99	82	3.20	1.483
		26.4	20.8	21.3	9.6	21.9		
4	**Social Networks.**	98	82	56	60	79	3.16	1.499
		26.1	21.9	14.9	16.0	21.1		
5	**Mailing list.**	66	84	75	70	80	2.96	1.404
		17.6	22.4	20.0	18.7	21.3		

Rank	Tools	Always	Often	Sometimes	Rarely	Never	Mean	SD
6	**CD.**	51	80	100	65	79	2.89	1.329
		13.6	21.3	26.7	17.3	21.1		
7	**Discussion Groups.**	55	65	85	77	93	2.76	1.381
		14.7	17.3	22.7	20.5	24.8		
8	**Interactive video.**	41	51	71	60	152	2.38	1.407
		10.9	13.6	18.9	16.0	40.5		
9	**Chat.**	42	50	65	58	160	2.35	1.423
		11.2	13.3	17.3	15.5	42.7		
10	**Video Conference**	34	32	61	75	173	2.14	1.328
		9.1	8.5	16.3	20.0	46.1		

6.5: The Validity and Reliability of the Questionnaire

6.5.1Validity

To study the validity of questionnaire Spearman coefficient of correlation between each item and its dimension score were calculated. Also, for reliability the Cronbach's alpha is calculated for all questionnaire dimensions and the results are presented as follows:

Table 6.22 shows the Spearman coefficient of correlation between each item and the total score of the dimension of the extent of the use of E-learning. It appears that the values of correlation coefficient for all items lies between positive (0.414 to 0.708) or below moderate level and high with 1% level of significance, which means that all items contribute positively in the total score of dimension.

Table 6.22: Correlation between Item and Total Score of Dimension Extent of the Use of e-Learning Using Spearman's of Coefficient.

Item no	Spearman ρ	Sig.	Item no	Spearman ρ	Sig.
1	.606	.000	9	.633	.000
2	.419	.000	10	.708	.000
3	.672	.000	11	.648	.000
4	.469	.000	12	.589	.000
5	.532	.000	13	.476	.000
6	.414	.000	14	.517	.000
7	.554	.000	15	.654	.000
8	.572	.000	16	.707	.000

Table 6.23 presents the results of the correlation between each item and the total score of the dimension of motivation for using e-learning in teaching. The Spearman coefficient of correlations are between positive (0.459 to 0.839) below moderate and high, which means that all the items positively affect the total score of this dimension.

Table 6.23: Correlation between Item and Total Score of Dimension of Motivations for Using e-Learning in Teaching, Using Spearman's rho of Coefficient.

Item no	Spearman ρ	Sig.	Item no	Spearman ρ	Sig.
1	.704	.000	8	.806	.000

Item no	Spearman ρ	Sig.	Item no	Spearman ρ	Sig.
2	.706	.000	9	.788	.000
3	.733	.000	10	.459	.000
4	.839	.000	11	.682	.000
5	.795	.000	12	.610	.000
6	.786	.000	13	.704	.000
7	.655	.000			

To study the internal validity of the obstacles to the use of e-learning, the Spearman's rho of correlation coefficient is calculated. The results presented in Table (6.24) below show that all correlations are significant at level 1% and lie between (0.388 to 0.729) or between below moderate and high correlation, which indicates that the dimension has acceptable validation.

Table 6.24: Correlation between Items and Total Score of Dimension of Obstacles to the Use of e-Learning, Using Spearman's rho of Correlation Coefficient.

Item no	Spearman ρ	Sig.	Item no	Spearman ρ	Sig.
1	.550	.000	10	.631	.000
2	.388	.000	11	.608	.000
3	.529	.000	12	.528	.000
4	.607	.000	13	.602	.000

Item no	Spearman ρ	Sig.	Item no	Spearman ρ	Sig.
5	.558	.000	14	.633	.000
6	.729	.000	15	.513	.000
7	.630	.000	16	.545	.000
8	.599	.000	17	.604	.000
9	.660	.000			

Table 6.25 shows the coefficient of correlations between each dimension and the total score of all items in the questionnaire, the values of the three coefficients of correlation lies between positive (0.670 to 0.827) or between above moderate to high relationship and all of them are significant at level 1%. Thus, we can conclude that the three dimensions made a positive significant contribution to the total score of the scale.

Table 6.25: The Relation between Total Score of All Items in the Three Dimensions and the Score of Each Dimension Using Pearson's Coefficient of Correlation.

Dimension	Pearson's coefficient of correlation	Sig.
The extent of use of e-learning	0.781	0.000
Motives for the use of e-learning in teaching	0.827	0.000
Obstacles to the use of e-learning	0.670	0.000

6.5.2 Reliability.

In order to determine the reliabilities of the factors and to assess their internal consistency, we used Cronbach's alpha. All the factors have high values of Cronbach's alpha as can be seen in Table (6.26) which represents the values of Cronbach's alpha of internal consistency for the three dimensions. The results show that the alpha coefficient for the three dimensions is between 0.864 and 0.914 which implies that the dimensions are very reliable. Moreover, the result shows that the alpha coefficient for all dimensions together is 0.911, which is close to one. Since Cronbach's alpha evaluates how well the items of a factor measure a single unidimensional latent construct, we conclude that the questionnaire is reliable and construct valid, and can measure the phenomena with acceptable reliability and validity.

Table 6.26: The Reliability of Dimensions Using Cronbach's Alpha.

Dimension	No. of items	Cronbach's alpha
The extent of use of e-learning	16	0.864
Motives for the use of e-learning in teaching	13	0.914
Obstacles to the use of e-learning	17	0.867
All Dimensions	**46**	**0.911**

6.6 The Scale of the Questionnaire

The dimensions of the questionnaire items are shown according to a 5-point Likert scale ranging from strongly disagree on one end to strongly agree on the other, with neutral in the middle, ranging from (5) for strongly agree to (1) for strongly disagree. To assess the attitudes of faculties regarding each item, the standard interval of weighted average for item responses was conducted by calculating the length of interval (length = (5-1)/5= 0.80), thus the weighted average interval is as shown in Table (6.27).

Table 6.27: Standard Interval for Judging Weighted Average of Respondents' Attitudes Concerning Each Item and Dimension.

Weighted average (Standard) interval	Attitude	APP
4.21 to 5.00	Strongly Agree	(SA)
3.41 to 4.20	Agree	(A)
2.61 to 3.40	Neutral	(N)
1.81 to 2.60	Disagree	(D)
1.00 to 1.80	Strongly disagree	(SD)

6.7 Correlation Variables

6.7.1 The Significant and Non-significant Difference between Variables

The results showed that there are no statistically significant differences between academic staff members response attributed to *Academic Qualification* in two dimensions D2 (the motivations for academic staff members to use e-learning in their teaching) and D3 (the obstacles to academic staff members using e-learning in their teaching). On the other hand, there are statistically significant differences attributed to Academic Qualification for those who are holders of Ph.D. Degrees in the dimension D1 of (attitudes academic staff members' towards the use of e-learning in their teaching) between academic staff members. Furthermore, the results show that there are no statistically significant differences between academic staff members' responses attributed to years of academy experience in terms of dimension D3 of (the obstacles to academic staff members using e-learning in their teaching). Furthermore, there are statistically significant differences between academic staff members in two of the three dimensions, D1 and D2 which show a statistically-significant difference between academic staff members who had between 15-24 years' experience. Therefore, e-learning has been shown to reflect positive attitudes towards learning experience in the perception of the male academic staff members consulted for this study. Before going on to present and discuss the answer to the questions of this study, the significant and non-significant differences between variables are summarized in Table 6.28.

Table 6.28: Statistically significant and non-significant difference between of variables

Factor	D1: Attitudes towards the Use of e-Learning in Teaching.	D2: Motivations to Use e-Learning in Teaching	D3: Obstacles to Using e-Learning in Teaching
Academic Qualification	Statistically significant difference in favour of those who are holders of Ph.D. Degrees	Non-significant difference	Non-significant difference
Years of Academy Experience	Statistically significant difference in favour of those with between (15-24) years' experience.	Statistical significant difference in favour of those with between (15-24) years' experience.	Non-significant difference

The First Dimension: Investigation into the Extent of Usage of e-Learning in Teaching by Male Faculty Members in Some Saudi Universities.

6.8 Descriptive Analysis of Investigation into the use of E-learning in Teaching

To study the attitudes of faculty members in Saudi Arabian universities towards the extent of the use of e-learning, the weighted average and standard deviation (SD) of responses for each item and for the dimension were calculated. The items were then rearranged in descending order according to the weighted results of the research questions.

6.8.1 First Question: What was the extent of the use of e-learning skills by academic staff in some Saudi universities?

Table 6.29 illustrates the results of respondents' attitudes towards the extent of the use of e-learning. The weighted average of total score of dimension (M=4.18, SD=0.909) shows that the faculties agree regarding the positive effects of the use of e-learning in the students' learning and academic progress. Thus, to study this dimension in more depth we discuss the results of the first and last five items according to their order in Table 6.29 as follows:

The first item on Table 6.29 with weighted average, mean of 4.52 highlights the strong agreement of faculties that e-learning facilitates and improves communication between academic staff members and their students. The second item with weighted average of 4.35 shows that the faculties strongly agree that e-learning helps in the development of technical skills in the field of computers. Moreover, the third item also shows strong agreement with weighted average of 4.34 that e-learning enhances self-confidence thereby facilitating learning. The result of the fourth item shows that the faculties strongly agreed, with an average of 4.30, that e-learning helps to provide diversity in modern teaching methods. The fifth item also shows strong agreement that e-learning increases the efficiency of faculty members, with an average of 4.29.

At the bottom of Table 6.29, the twelfth item shows that the respondents agree, with an average of 4.17, that e-learning motivates students in their educational practices. In addition, the respondent agree, with an average of 4.15, on the thirteenth item that e-learning encourages students to give greater importance and influence to their lessons. Moreover, the respondents were in agreement regarding the fourteenth item with an average of 4.10 that e-learning helps to use the blended learning model to improve teaching skills and effectiveness of the quality of education. Furthermore, the respondents agreed regarding the fifteenth item with an average of 4.03 that the use of e-learning offers improvement in educational innovation. Additionally, respondents were neutral about the sixteenth item, with an average of 3.20, that there is difficulty in dealing with e-learning and therefore it is frustrating to use.

Table 6.29: Attitudes of Faculty Members in Saudi Arabia Universities towards the Use of e-Learning in teaching with Items Ranked According Mean and SD.

Item Rank	Item	**Mean**	**SD**	Attitude
1	E-learning facilitates and improves communication between academic staff members and their students.	4.52	0.720	Strongly Agree
2	E-learning helps in the development of technical skills in the field of computers.	4.35	0.832	Strongly Agree
3	E-learning can enhance self-confidence to facilitate learning	4.34	0.745	Strongly Agree
4	E-learning helps diversity in modern teaching methods.	4.30	0.932	Strongly Agree
5	E-learning increases the efficiency of academic staff members in teaching.	4.29	0.873	Strongly Agree
6	E-learning encourages innovation and creativity in the application of information and communication technology	4.28	0.853	Strongly Agree
7	E-learning is characterized by efficiency through increased motivation for learning by learners.	4.28	0.871	Strongly Agree
8	E-learning saves time and effort for both academic staff members and students.	4.25	0.966	Strongly Agree
9	E-learning contributes to the development and promotion of skilled direction of knowledge content.	4.21	0.882	Strongly Agree

Item Rank	Item	**Mean**	**SD**	Attitude
10	E-learning gives more stability and satisfaction in the educational process.	4.19	0.884	Agree
11	E-learning can engage the learners more than other forms of learning.	4.18	0.915	Agree
12	E-learning motivates students towards their educational practices	4.17	0.939	Agree
13	E-learning encourages giving greater importance and influence to the lessons.	4.15	0.955	Agree
14	E-learning helps to use blended learning model to improve the teaching skills and effectiveness of the quality of education.	4.10	0.858	Agree
15	E-learning encourages educational innovation.	4.03	1.014	Agree
16	There are difficulties in dealing with e-learning and therefore frustrating to use.	3.20	1.298	Neutral
Dimension Total Score		**4.18**	**0.909**	**Agree**

6.8.2 Second Question: Are there any statistically significant differences in the use of academic staff members' e-learning skills in teaching in terms of the variable: Academic Qualification?

To test the significant differences, means of respondents' use of e-learning according to academic qualification groups were analysed. The researcher also used the One-way ANOVA and F-test, and the results are shown in Table 6.30 and Table 6.31.

The results in Table 6.30 show the average scores of staff members' e-learning skills according to their academic qualification, which reveals differences among the means; in order to test the significance of difference between means, F-test was conducted. The F value of ($F_{2,372} = 7.531, p - value\ .001 < 0.05$) shows statistical significant difference between the means at .05% level of significance. Thus, academic staff members' qualifications significantly affect their skills in e-learning. Moreover, the value of eta square is ($\eta^2 = 0.04$) so according to Cohen the effect of academic qualification on faculty members' skills in e-learning is small.

Table 6.30: Significance Testing of the Effect of Academic Qualifications on Faculty Members' e-Learning Skills, Using One-way ANOVA.

Academic qualification	Mean	Source of Variation	Sum of Squares	df	Mean Square
Bachelor	63.08	Between Groups	1031.059	2	515.529
Master	66.29	Within Groups	25466.019	372	68.457
PhD	67.92	Total	26497.077	374	
Total	66.84				
F	**7.531**	**Sig.**	**0.001**	**η^2**	**0.040**

6.8.2.1 Descriptive statistics of mean, standard deviation, and standard error of mean for the academic qualification scale according to the usage dimension

Table 6.31 illustrates the descriptive statistics of mean, standard error of mean and number of participants in terms of the academic qualification scale in relation to the usage dimension by academic staff members in their teaching. The results which present the largest average value are those with 'PhD', with average values of 67.92, followed by those with 'Master' degrees, with an average value of 66.29 and the lowest average value was for those with 'Bachelor' degrees, with an average value of 63.08.

As with the three scales under academic qualification for dimension of usage, the standard error of the mean is higher for three scales of academic qualifications. The highest and lowest standard errors of the mean for academic staff members in terms of academic qualification are 1.337 for those with Bachelor degree, .810 for those with Master degree and .535 for those with PhDs, respectively. Also standard deviations of largest to lowest are 9.644 for those with Bachelor degree, 8.090 for PhD and 7.899 for holders of Master's degrees.

Table 6.31: Descriptive Statistics of Mean, Standard Deviation, and Standard Error of Mean for the Academic Qualification Scale According to Usage Dimension.

	N	Mean	Std. Deviation	Std. Error
Bachelor	52	63.08	9.644	1.337
Master	95	66.29	7.899	.810
PhD	228	67.92	8.090	.535
Total	375	66.84	8.41711	.434

Furthermore, the results of multiple comparison in Table 6.32 shows a significant difference between the averages of groups with a Bachelor degree and those who hold a Philosophy Doctorate, in favour of the latter.

Table 6.32: Multiple Comparisons of Means for Staff e-Learning Skills by Academic Qualification, Using Scheffe Test.

Academic qualification		**Mean Difference**	**Std. Error**	**Sig.**
Bachelor	Master	-3.218	1.427	.080
	PhD	-4.844**	1.272	.001

6.8.3 Third Question: Are there any statistically significant differences in the use of academic staff members' e-learning skills in teaching in terms of the variable: Years of Academy Experience?

To study the attitudes of faculties in Saudi Arabian universities towards the extent of the use of e-learning, the weighted average and standard deviation (SD) of responses for

each item and for the dimension were calculated, then the items were placed in descending order according to the weighted average values and smallest standard deviation as in Table 5.24. In order to test the significance of differences in the scores regarding the use of academic staff members' e-learning skills in teaching in terms of the variable: years of academy experience, the One-Way ANOVA and F-test were performed, and the results are shown in Table 6.33, and Table 6.34.

Table 6.33 shows the results of the average scores of faculty members' use of e-learning skills according to their years of experience. There are obvious differences among these means, and to test the significance of differences, One-Way ANOVA and F-test were conducted. The F value ($F_{3,371} = 9.689, P - \text{value } 0.00 < 0.05$) shows that there is statistical significant difference between the means at .05% level of significance. Thus, the years of experience of staff members in the field of e-learning significantly affects their skills in e-learning. Moreover, the value of eta square ($\eta^2 = 0.073$) according to Cohen conveys moderate effect regarding years of experience on use of staff members' skills in e-learning.

Table 6.33: Significance Testing for the effect of Years of Academy Experience on Staff Members' e-Learning Skills, Using One-way ANOVA.

Years of academy experience	**Mean**	**Source of Variation**	**Sum of Squares**	**df**	**Mean Square**
1-5	64.72	Between Groups	1925.101	3	641.700
6-14	66.06	Within Groups	24571.977	371	66.232
15-24	70.45	Total	26497.077	374	
25+	69.50				
Total	66.84				
F	**9.689**	**Sig.**	**0.000**	η^2	**0.073**

Table 6.34: One-way ANOVA for the effect of Years of Academy Experience on Academic Staff Members' e-Learning Skills.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1925.101	3	641.700	9.689	.000
Within Groups	24571.977	371	66.232		
Total	26497.077	374			

6.8.3.1 Descriptive statistics of mean, standard deviation, and standard error of mean of Usage dimension according to years of experience

Table 6.35 shows the descriptive statistics of mean, standard deviation, and standard error of mean of Usage dimension according to years of experience.

The results show that the largest average value was for participants with between 15-24 years of experience, (N=84, Mean=70.45, and SD=5.834), the second largest average value was for faculty members with 25 or more years' experience (N=26, Mean=69.50 and SD=5.494). The lowest average value was for those with between 6 and 14 Years of experience (N=141, Mean=66.06, and SD=8.807), followed by those with between one and five years' experience, (numbers of faculty members=124, with Mean=64.72, and SD=9.077) respectively.

In terms of years of experience for the dimension of usage, the highest and lowest standard errors of the mean for faculty members in terms of years of experience are 1.077 for faculty members in the 25 years' experience and above, .815 for those in the group with one to five years' experience, .742 for those with 6-14 years of experience, and, .637for those with 15-24 years' experience.

Table 6.35 Descriptive Statistics of Mean, Standard Deviation, and Standard Error of Mean for the Academic Qualification Scale Usage dimension according to years of experience.

	N	Mean	Std. Deviation	Std. Error
1-5	124	64.72	9.077	.815
6-14	141	66.06	8.807	.742
15-24	84	70.45	5.834	.637
25+	26	69.50	5.494	1.077
Total	375	66.84	8.41711	.43466

In addition, the results of multiple comparisons in Table 6.36 show that there is significant difference between the means of groups (1 – 5) and (15 – 24), in favour of groups (15 – 24). On the other hand, there is significant difference between the groups (6 – 14) and (15 – 24) for the benefit of group (15 – 24).

Table 6.36: Multiple Comparisons of Means for Staff's e-Learning Skills by Years of Academy Experience, using Scheffe test.

Years of experience		**Mean Difference**	**Std. Error**	**Sig.**
1-5	6-14	-1.339	1.002	.618
	15-24	-5.735**	1.150	.000
	25+	-4.782	1.755	.061
6-14	1-5	1.339	1.002	.618
	15-24	-4.396**	1.122	.002
	25+	-3.443	1.737	.271

*. The mean difference is significant at the 0.05 level

Table 6.36: Multiple Comparisons of Means for Staff's e-Learning Skills by Years of Academy Experience, using Scheffe test.

(I) Years of Experience Academy	(J) Years of Experience Academy	Mean Difference (I-J)	Std. Error	Sig.
1-5	6-14	-1.33900	1.00193	.618
	15-24	-5.73464*	1.15004	.000
	25+	-4.78226	1.75542	.061
6-14	1-5	1.33900	1.00193	.618
	15-24	-4.39564*	1.12170	.002
	25+	-3.44326	1.73698	.271
15-24	1-5	5.73464*	1.15004	.000
	6-14	4.39564*	1.12170	.002
	25+	.95238	1.82643	.965
25+	1-5	4.78226	1.75542	.061
	6-14	3.44326	1.73698	.271
	15-24	-.95238	1.82643	.965

*. The mean difference is significant at the 0.05 level.

<u>The Second Dimension</u> the Motivations for Academic Staff Members' Use of e-Learning in Teaching by Male Faculty Members in Some Saudi Universities.

6.8.4 Fourth Question: What were the Motivations for Academic Staff Members' Use of e-Learning in Teaching?

To study the attitudes of staff members in Saudi Arabian universities towards the use of e-learning in teaching, the weighted average and standard deviation (SD) of responses for each item were calculated, then the items were listed in descending order according to the weighted average and smallest standard deviation values as in Table 6.37.

Table 6.37 shows the respondents' attitudes towards motivation to use e-learning in teaching, and the weighted average of the total score of this dimension (M=4.17, SD=0.882) conveys that the faculty members agree that motivation positively affects the use of e-learning in teaching. Thus, to study this dimension in more depth we discuss the results of the first and last five items according to their order in Table 6.37 as follows:

The first item on Table 6.37 has a weighted average of 4.31 and reveals that faculties strongly agree that the use of **"e-learning provides solutions to some important issues, such as increasing the number of students"**. In addition, the result of the second item

shows strong agreement with a weighted average of 4.29 that **"e-learning provides more motivation and excitement in the educational process"**. The results of the third item show that the participants strongly agree with a weighted average of 4.26 that **"e-learning encourages students to interact with lessons and improves their performance"**. Moreover, the results of the fourth item show that the faculty members strongly agree with an average of 4.25 that **"e-learning helps facilitate communication through ideas and information between educational institutions"**. Accordingly, regarding the fifth item the respondents strongly agree, with an average of 4.23, that **"e-learning is flexible in the educational process".**

The ninth item, with an average of 4.13, shows agreement among faculty members that e-learning increases students' motivation to learn. Moreover, the tenth item shows that

respondents agree, with an average of 4.11, that e-learning fosters a positive relationship between the student and the educational curriculum. In addition, respondents are in agreement concerning the eleventh item, with an average of 4.10 that e-learning develops students' sense of self-worth. Additionally, participants agree, with an average of 4.03, regarding the twelfth item, that e-learning gives the students more satisfaction. In addition, the respondents agreed regarding the thirteenth item, with an average of 3.98, that e-learning enhances positive personal attitudes.

Table 6.37 shows us more details of mean and std. deviation, with descriptive statistics of faculty members in some Saudi universities towards the motivations for the use of e-learning, with items ranked according to descending mean and std. deviation.

Table 6.37: Attitudes of Faculty Members in Saudi Arabia Universities towards the Motivation for the Use of e-Learning in Teaching, with Items Ranked According to Weighted Average and SD.

Item Rank	Item	Mean	SD	Attitude
1	E-learning provides solutions to some of the important issues, such as increasing the number of students.	4.31	0.832	Strongly Agree
2	E-learning provides more motivation and enthusiasm in the educational process	4.29	0.795	Strongly Agree
3	E-learning encourages students to interact with lessons and enhances their performance	4.26	0.874	Strongly Agree
4	E-learning helps facilitate communication through ideas and information between educational institutions.	4.25	0.824	Strongly Agree
5	E-learning is flexible in the educational process.	4.23	0.915	Strongly Agree

Item Rank	Item	Mean	SD	Attitude
6	E-learning increases the quality of teaching and learning because it integrates all the teaching methods.	4.22	0.907	Strongly Agree
7	E-learning facilitates learners' choices of the most suitable educational methods for them and their needs.	4.19	0.804	Agree
8	E-learning helps to attract students to courses.	4.15	0.879	Agree
9	E-learning increases the motivation of students to learn.	4.13	0.889	Agree
10	E-learning fosters a positive relationship between the student and the educational curriculum	4.11	0.915	Agree
11	E-learning improves self-efficacy of the student.	4.10	0.971	Agree
12	E-learning gives more satisfaction to the students.	4.03	0.939	Agree
13	E-learning enhances positive personal attitudes.	3.98	0.928	Agree
Dimension Total Score		4.17	0.882	Agree

Table 6.38 shows us more details of mean and std. deviation, with descriptive statistics of faculty members in some Saudi universities towards the motivations for the use of e-learning, with items ranked according to descending mean and std. deviation.

Table 6.38: Descriptive Statistics of Faculty Members in Some Saudi Universities towards the Motivations for the Use of e-Learning, with Items Ranked According to Descending Mean and Std. Deviation

Descriptive Statistics					
Item	**N**	**Min**	**Max**	**Mean**	**Std. Deviation**
The use of e-learning provides solutions to some of the important issues, such as increasing the number of students.	375	1.00	5.00	4.31	.832
E-learning grants more motivation and enthusiasm in the educational process	375	1.00	5.00	4.29	.795
E-learning encourages students to interact with lessons and enhances their performance	375	1.00	5.00	4.26	.874
E-learning helps facilitate communication through ideas and information between educational institutions.	375	1.00	5.00	4.25	.824
E-learning is flexible in the educational process.	375	1.00	5.00	4.23	.915
E-learning increases the quality of teaching and learning because it integrates all the teaching methods.	375	1.00	5.00	4.22	.907
E-learning facilitates learners' choice of most suitable educational methods for them and their needs.	375	1.00	5.00	4.19	.804

Descriptive Statistics					
Item	**N**	**Min**	**Max**	**Mean**	**Std. Deviation**
E-learning helps to attract students to courses.	375	1.00	5.00	4.15	.879
E-learning increases students' motivation to learn.	375	1.00	5.00	4.13	.889
E-learning fosters a positive relationship between the student and the educational curriculum	375	1.00	5.00	4.11	.915
E-learning develops students' self-confidence.	375	1.00	5.00	4.10	.971
E-learning gives students more satisfaction.	375	1.00	5.00	4.03	.939
E-learning enhances positive personal attitudes.	375	1.00	5.00	3.98	.928
Valid N (listwise)	375			4.17	0.882

6.8.4.1 Descriptive statistics of mean, standard deviation, and standard error of mean for the academic qualification scale according to the motivations dimension.

Table 6.39 illustrates the descriptive statistics of mean, standard error of mean and number of participants in terms of the academic qualification scale in relation to the motivation dimension. The results which present the largest average value are those with 'PhD', with average values of 54.71, followed by those with 'Master' degrees, with an average value of 54.61 and the lowest average value was for those with 'Bachelor' degrees, with an average value of 51.50.

As with the three scales under academic qualification for dimension of motivations, the standard error of the mean is higher for three scales of academic qualifications. The highest and lowest standard errors of the mean for faculty members in terms of academic qualification are 1.012 for those with Bachelor degree, .841 for those with Master degree and .534 for those with PhDs, respectively. Also standard deviations of largest to lowest are 8.2 for Master's degree, 8.070 for PhD and 7.299 for holders of Bachelor degrees.

Table 6.39: Descriptive Statistics of Mean, Standard Deviation, and Standard Error of Mean for the Academic Qualification Scale According to Motivation Dimension.

Academic Qualification	N	Mean	Std. Deviation	Std. Error
Bachelor	52	51.50	7.299	1.012
Master	95	54.61	8.201	.841
PhD	228	54.71	8.070	.534
Total	**375**	**54.24**	**8.057**	**.416**

6.8.4.2 ANOVA for academic qualification in terms of motivations using faculty members in teaching

In terms of the level of significant difference between faculty members' motivations and academic qualification, the results of ANOVA in Table 6.40 show no statistical significance differences between academic qualification and motivation of faculty members ($F=3.551$, $p= .030>0.05$) in terms of motivation to use e-learning in their teaching.

Table 6.40: ANOVA for Significant Difference Among perceived Motivations Towards E-Learning in Terms of Academic Qualification Using One-Way ANOVA.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	454.859	2	227.429	3.551	.030
Within Groups	23824.059	372	64.043		
Total	24278.917	374			

6.8.4.3 Descriptive statistics of mean, standard deviation, and standard error of mean of motivation dimension according to years of experience

Table 6.41 shows the descriptive statistics of mean, standard deviation, and standard error of mean of motivation dimension according to years of experience. The results show that the largest average value was for participants with between 15-24 years of experience, (N=84, Mean=57.80, and SD=5.428), the second largest average value was for faculty members with 25 or more years' experience (N=26, Mean=56.23 and SD=7.235). The lowest average value was for those with between 6 and 14 Years of experience (N=141, Mean=54.03, and SD=7.564), followed by those with between one and five years' experience, numbers of faculty members=124, with Mean=51.66, and SD=9.247) respectively.

In terms of years of experience for the dimension of motivation, the highest and lowest standard errors of the mean for faculty members in terms of years of experience are 1.419 for faculty members in the 25 years' experience and above, .830 for those in the group with one to five years' experience, .637 for those with 6-14 years of experience, and .592 for those with 15-24 years' experience.

Table 6.41: Descriptive Statistics of Motivation Dimension According to Years of Experience.

Years of experience	N	Mean	Std. Deviation	Std. Error
1-5	124	51.66	9.247	.830
6-14	141	54.03	7.564	.637
15-24	84	57.80	5.428	.592
25+	26	56.23	7.235	1.419
Total	**375**	**54.24**	**8.057**	**.416**

6.8.4.4 ANOVA for years of experience in terms of faculty members' motivations of use e-learning in teaching

In terms of the level of significant difference between faculty members' motivation and years of experience, Table 6.42 illustrates the results of ANOVA. There is significant statistical difference in terms of years of academic experience among faculty members (F=11.084, p= .000<0.05) with the direction of the motivation for using e-learning in their teaching in favour of those with 15-24 years of experience.

Table 6.42: Significant Difference Among Perceived Motivations Towards e-Learning in Terms of Years of Experience, Using One-Way ANOVA.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1997.082	3	665.694	11.084	.000
Within Groups	22281.836	371	60.059		
Total	24278.917	374			

Third Dimension: The Obstacles to Using E-learning Skills from the Perspectives of the Academic Staff Members' Use of e-Learning in Teaching by Male Faculty Members in Some Saudi Universities

6.8.5 Fifth Question: What Were the Obstacles to Using E-Learning Skills from the Perspectives of the Academic Staff Members?

To study the attitudes of staff members in some Saudi Arabian universities towards the obstacles to using e-learning in teaching, the weighted average and standard deviation (SD) of responses for each item were calculated, then the items were recorded in descending order according to the mean and smallest SD values as shown in Table 6.40.

6.8.5.1 Mean, standard deviation, and standard error of mean for the academic qualification scale according to the motivations dimension.

Table 6.43 shows the respondents' attitudes towards the obstacles to the use of e-learning dimension, with the weighted average of total score of dimension (M=3.88, SD=1.181) which shows that the participants agree that there are obstacles to the use of e-learning. Therefore, to study this dimension in depth we discuss the results of the first and last five items according to their order in Table 6.40 as follows:

The first five items on the table have a weighted average of 4.10 which shows that respondents agree that the absence of an institutional policy for e-learning is one of the obstacles. Moreover, the respondents agree, with a weighted average of 4.08, on the absence of merging and integration between e-learning and the school curriculum. In addition, the results of the third item show that the participants agree with a weighted average of 4.05, that there is a lack of integration of students with technology at one time. The results of the fourth item convey agreement, with an average of 4.04, that there is a lack of support in instructional design for e-learning. Regarding the fifth item, the faculty members agree, with an average of 4.00, that lack of adequate training in the use of e-learning techniques is an obstacle.

In Table 6.43 the seventeenth item shows that the respondents agree with, an average of 3.78, that poor access to Internet services is an obstacle. In addition, the respondents agree, with an average of 3.77 on the fourteenth item, that there is a lack of sufficient financial support. Moreover, regarding the fifteenth item the respondents agree, with an

average of 3.74, that there is a lack of motivation and encouragement from heads. Furthermore, the respondents agree on the sixteenth item with an average of 3.70 that lack of adequate computers for e-learning exercises was an obstacle. The respondents agree regarding the seventeenth item, with an average of 3.46, that the lack of confidence in the use of technology is an obstacle.

Table 6.43 Attitudes of Faculty Members in Some Saudi Universities towards the Obstacles to the Use of e-Learning, with Items Ranked According to Mean and SD.

Item Rank	Item	Weighted average	SD	Attitude
1	The absence of an institutional policy for e-learning	4.10	1.090	Agree
2	No merger or integration between e-learning and the school curriculum.	4.08	1.068	Agree
3	Lack of integration of students with technology.	4.05	1.046	Agree
4	Lack of support in instructional design for e-learning	4.04	1.007	Agree
5	Lack of adequate training in the use of e-learning techniques.	4.00	1.061	Agree
6	Increasing burden of non-teaching administrative tasks.	4.00	1.136	Agree
7	Unavailability of computerized educational programs.	3.96	1.227	Agree
8	Increased teaching load.	3.90	1.186	Agree
9	Lack of technical support at the University of Technology	3.89	1.199	Agree

Item Rank	Item	Weighted average	SD	Attitude
10	Concern about the quality of e-courses	3.88	1.15	Agree
11	Lack of time to develop e-courses	3.87	1.149	Agree
12	Lack of sufficient awareness of the direction of e-learning makes me frustrated and I avoid using it.	3.82	1.302	Agree
13	Weakness in access to Internet services at the university.	3.78	1.266	Agree
14	Lack of sufficient financial support.	3.77	1.284	Agree
15	Lack of motivation and encouragement from heads.	3.74	1.133	Agree
16	Lack of adequate computers for e-learning exercises.	3.70	1.343	Agree
17	Intimidated by the use of technology.	3.46	1.432	Agree
Dimension Total Score		3.88	1.181	Agree

6.8.5.2 Classifications of obstacles to using e-learning skills from the perspective of the academic staff members.

To examine the attitudes of faculty members in some Saudi Arabian universities towards the obstacles to the use of e-learning in teaching, the weighted average and standard deviation (SD) of responses for each item were calculated. The items were listed in descending order according to their mean and SD values (see Table 6.44).

Table 6.44 illustrates three classifications of obstacles facing academic staff members to using e-learning skills from the perspective of the academic staff members. They cited university-level sources and obstacles (institutional sources) as the most significant in

hindering their e-learning implementation in the targeted universities; M=43.03, (out of 60), SD=7.83. The second highest obstacles faced were faculty-level (individual sources); M=15.25, SD=3.364. Finally, across level (individual and institutional) sources were the least cited obstacles; M=7.77, SD=1.874.

Table 6.44: Sub-Scale Groups of Obstacles to Adopting e-Learning in Teaching.

Classification of Obstacle	N	Mean	Std. D
University-level-sources Obstacles. (Institutional sources).	375	43.03	7.83
Faculty-level- Obstacles. (Individual sources).	375	15.25	3.36
Across level (Faculty and University) Obstacles	375	7.77	1.87

Table 6.45 shows the respondents' attitudes towards the items regarding obstacles to the use of e-learning, with the weighted average of total score of dimension (total= 3.88, SD = 1.18), which shows that the faculty members agree that there are obstacles to the use of e-learning. The first item has a weighted average of 4.10, which shows that faculty members strongly agree on it. For instance, **"The absence of an institutional policy for e-learning"** has the highest mean (4.10) of the obstacles. Moreover, the respondents agree with a weighted average of 4.08, which shows that the **"absence of merger and integration between e-learning and the university curriculum"** hinder the use of e-learning. In addition, results of the third item show that the faculty members agree, with a weighted average of 4.05, that there is a **"Lack of integration of students with technology"**. In addition, the result of the fourth item conveys the faculty members' view, with an average of 4.04, that there is **"Lack of support in instructional design for e-learning"**. Moreover, in the fifth item the faculty members agree, with an average of 4.00, that **"Lack of adequate training in the use of e-learning techniques is an obstacle"**. As mentioned in Table 6.42, four of the top five obstacles were university-level-source obstacles (institutional sources). Only the second item, which indicates **"No**

merger and integration between e-learning and the university curriculum", is a faculty source obstacle.

Therefore, the greatest responsibility lies with universities to overcome the obstacles faced by faculty members in the implementation of e-learning.

Table 6.45: Descriptive Statistics of Faculty Members in Some Saudi Universities towards the Obstacles to the Use of e-Learning, with Items Ranked in Descending Order According to Mean and SD.

Items	N	Min	Max	Mean	SD
The absence of an institutional policy for e-learning.	375	1	5	4.10	1.090
No merger and integration between e-learning and the university curriculum.	375	1	5	4.08	1.068
Lack of integration of students with technology.	375	1	5	4.05	1.046
Lack of support in instructional design for e-learning.	375	1	5	4.04	1.007
Lack of adequate training in the use of e-learning techniques.	375	1	5	4.00	1.061
Increased responsibility for non-teaching administrative tasks.	375	1	5	4.00	1.136
Unavailability of computerized educational programs.	375	1	5	3.96	1.227

Increased teaching load.	375	1	5	3.90	1.186
Lack of technical support at the university level.	375	1	5	3.89	1.199
Concern about the quality of e-courses.	375	1	5	3.88	1.15
Lack of time to develop e-courses	375	1	5	3.87	1.149
Lack of sufficient awareness of e-learning.	375	1	5	3.82	1.302
Poor access to Internet services at the university.	375	1	5	3.78	1.266
Lack of sufficient financial support.	375	1	5	3.77	1.284
Lack of motivation and encouragement from heads.	375	1	5	3.74	1.133
Lack of adequate computers for e-learning exercises.	375	1	5	3.70	1.343
Intimidated by the use of technology.	375	1	5	3.46	1.432
Valid N (listwise)	375			3.88	1.181

6.8.5.3 Significant difference among perceived obstacles to e-learning in terms of academic qualifications, using one-way ANOVA.

To test the significant differences among means of perceived obstacles towards e-learning according to academic qualification groups, One-way ANOVA and F-test were used.

The results in Table 6.46 show the average scores of perceived obstacles, according to respondents' academic qualifications, which reveals some differences between the means. In order to test the significance of difference between these means One-Way ANOVA and F-test was conducted ($F_{2,372} = 0.225, p - value = 0.799 > 0.05$) which shows insignificant difference between the means at 5% level of significance. Thus, the faculty members' academic qualifications do not significantly affect their perceptions regarding e-learning obstacles. In addition, the value of eta square ($\eta^2 = 0.001$) according to Cohen means the academic qualification of faculty members does not have an effect on perceived obstacles.

Table 6.46 Significant Difference among Perceived Obstacles to e-Learning in Terms of Academic Qualifications, Using One-Way ANOVA.

Academic qualification	**Mean**	**Source of Variation**	**Sum of Squares**	**df**	**Mean Square**
Bachelor	65.79	Between Groups	58.588	2	29.294
Master	66.72	Within Groups	48520.890	372	130.432
PhD	65.81	Total	48579.477	374	
Total	66.04				
F	0.225	Sig.	0.799	η^2	0.001

6.8.5.4 Significant difference among perceived obstacles to e-learning in terms of years of experience using one-way ANOVA.

The results shown in Table 6.47 indicate the score averages of perceived obstacles according to respondents' years of experience; there are some differences among these means. To test the significance of differences, One-Way ANOVA and F-test was conducted ($F_{3,371} = 1.944, p - value = 0.122 > 0.05$) and shows that there is insignificant difference between the means at 5% level of significance. Thus, the years

of experience of faculty members in the field of e-learning does not significantly affect their perceived obstacles. Moreover, the value of eta squared ($\eta^2 = 0.015$) according to Cohen (2011) conveys a weak effect for years of experience on perceived obstacles.

Table 6.47 Significant Difference among Perceived Obstacles to e-Learning in Terms of Years of Experience Using One-Way ANOVA.

Years of experience	Mean	Source of Variation	Sum of Squares	df	Mean Square
1-5	64.65	Between Groups	751.783	3	250.594
6-14	65.72	Within Groups	47827.694	371	128.916
15-24	68.46	Total	48579.477	374	
25+	66.50				
Total	66.04				
F	1.944	Sig.	0.122	η^2	0.015

Chapter 6.: Qualitative Results, data analysis

B. Qualitative Results and Data Analysis from the Semi-Structured Interviews

Chapter 6.B: Qualitative Results: Interviews

Introduction

6.9 MAIN INTERVIEWS QUESTIONS

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Chapter 6.B: Qualitative Results: Interviews

Introduction

In this era, in which we have witnessed a technical and technological revolution in various areas of life, it is recognized globally that faculty members in higher education institutions need to gain knowledge in modern technology and the high professional skills to use it. Therefore, e-learning is a revolutionary development that cannot be ignored or rejected. Furthermore, as faculty member are one of the cornerstones of any educational and learning process, the development of technological and technical skills is essential to allow them to keep pace with global technological advances in this area. For this reason, it is important to provide adequate training courses for faculty members, together with the necessary experience in the field of e-learning, as well as basic skills in the use of computers.

Therefore, the findings reported in Chapter Five presented faculty members' perspectives regarding the effectiveness of e-learning and its implementation in their teaching and learning, and the adoption and motivations for, and obstacles to, e-learning in an education environment. It was not only useful in this study to explore the views of faculty members and policy makers, it was essential to have such views that relate to the integration and implementation of e-learning in higher educational institutions, particularly universities, in terms of their focus on learning and teaching.

Thus, the main purpose of this chapter is to look at experienced policy makers' views and perspectives on the implementation of e-learning in their teaching and learning.

This chapter is divided into two main parts according to the original research questions. The first part considers the main research question, which focuses on to what extent e-learning is used in teaching and learning environments at university level. The second part tackles the sub-questions to obtain more in-depth details of using and implementing e-learning in some Saudi universities.

The issue of e-learning integration is examined in terms of to what extent integration has matched policy makers' expectations. Finally, at the end of each section there is a summary of the results.

6.9 MAIN INTERVIEWS QUESTIONS

6.9.1 The Current Level of Using e-Learning Skills in Teaching by Faculty Members

Participants representing different roles made up of experienced faculty members and policy makers were asked about the extent to which they currently use e-learning in their teaching.

The results of the interviews show substantial differences among participants since some of them use e-learning skills in their teaching on a regular basis, while others do not use it for many reasons such as they do not have sufficient knowledge on how to integrate technology into the classroom.

There are also individual differences between the four universities that participated in this study. One of the participants, an associate professor and expert policy-maker in the field of e-learning, from Al-Dammam University reported that:

> *Sometimes, a faculty member uses e-learning skills in his classroom when teaching his students or provides some training courses for students. However, other faculty members do not use e-learning in teaching. Actually it depends on the awareness and knowledge of the faculty member of the importance of e-learning in the process of teaching and learning. However, there is still not a high level of use.*

A participant from Al Jouf University expressed similar views regarding the importance of using e-learning in education, but indicated a more global trend in its use, stating that:

> *At the present time, there is a more global trend towards the use of e-learning than in the past, because of the importance of using e-learning in the process of education. However, current use is unsatisfactory in relation to the technology currently available and the great progress in the field of information and communications technology. It allows faculty members to make the appropriate technical choices for teaching their students in the easiest and quickest way, as well as improving the quality of their teaching.*

One policy maker from King Saud University reported that:

> *We need to carry out a survey research on all e-learning tools that are currently used at the University to answer this question accurately. However, generally, the use of e-learning by faculty members in their teaching is above average, at a high level so to speak.*

One administrative expert from King Saud University supports the above view. He reported that:

> *The use of e-learning by faculty members in their teaching is above average, or at a high level. However, we are very ambitious to get more use out of e-learning in teaching at a high quality.*

The results of interviews with participants from Hail University showed that they expressed the same views as participants from Al-Jouf University. One of the participants revealed that:

> *The ratio of the use of e-learning in teaching by faculty members is less than average, very few of them use it.*

However, another participant from Dammam University had different views from his colleagues. In his own words, he pointed out that:

> *The percentage of usage e-learning skills in teaching by faculty members varies. It depends on educational content needed, and how to use the computer with the basic skills needed.*

It was clear from the interviews conducted with participants from Al-Jouf University that faculty members are still in the initial stages of using e-learning and integrating it in their teaching and learning environment. For instance, one administrator who participated stated that:

> *To be honest with you, the faculty members have not made sufficient effort to integrate e-learning into their teaching. This may be attributed to the lack of training courses on technology, as well as the weakness of computer skills between faculty members.*

A participant from the e-learning deanship, a decision-maker in the University responsible for development and quality believes that the deanship provides a range of services for faculty members. He revealed that:

> *Actually, the deanship supervises e-learning units and information technologies in colleges. Moreover, following up colleges' commitment to e-learning quality standards is overseen by the vice deanship. In addition, a number of projects, programs and mechanisms are included in the deanship's strategic plan that aims to support the University's focus and achieve its strategic objectives, as well as the deanship's strategic objectives.*

THE FIRST MAIN INTERVIEW QUESTION CONCLUSION:

This section presents the answer to the first main question: To what extent do faculty members currently use e-learning in their teaching? The results of the interviews indicate that faculty members at King Saud University and Al-Dammam University achieved high levels of use of e-learning in their teaching. The two universities have almost reached a high level of e-learning, in the teaching and learning process.

On the other hand, Al-Jouf University and Hail University have not yet achieved high levels in faculty members' use of e-learning in their teaching for a number of reasons; for example, the absence of an institutional policy for e-learning. In addition, a number of other obstacles were identified, including: lack of integration of technical support; lack of support in instructional design for e-learning; and lack of adequate training in the use of e-learning techniques.

6.10 The Procedures for Facilitating the Application of E-learning in Teaching at University Level.

6.10 What are the Procedures for Facilitating the Application of E-learning in Teaching at University Level?

This section shows the second main question in the interviews and presents evidence about the solutions to the current level of procedures followed to facilitate the application of e-learning at university level. The results of the interviews showed different levels of application of e-learning among the universities.

Some universities, such as King Saud University and Al-Dammam University, demonstrated a high level of current application and implementation of e-learning in teaching. Hail University and Al-Jouf University showed a low level of application of e-learning by faculty members in their teaching and learning, with a variety reasons given for this. A number of solutions were offered in this section:

A participant from the e-learning deanship, a decision maker at King Saud University responsible for development and quality, stated that:

> *I would say the financial support from the university administration plays a significant role in facilitating the implementation of e-learning. In addition, it spreads the culture of e-learning among faculty members, through the establishment of training courses and workshops for faculty members on applying and implementing e-learning skills and tools in their teaching under the supervision of deanship of e-Learning.*

Interviews with policy makers from Al-Jouf University indicated consensus among participants. One of the policy makers reported that:

> *Actually, there is a lack of specialized training courses in the field of e-learning to provide faculty members the technical skills required to use e-learning tools in their teaching effectively. On the other hand, faculty members have been provided with insufficient e-learning, such as laptops, that would help them in teaching and delivering their lectures.*

One decision-maker from Dammam University suggested that financial incentives of to up 25% of their salary should be granted to each faculty member who uses e-learning effectively in their teaching.

> *Firstly, I would like to mention a significant suggestion to help in the application of e-learning in teaching. It is important to provide each faculty member with access to global search sites on the World Wide Web to develop research skills for faculty members and keep pace of research developments around the world. This would reflect the development in their teaching and on students. In addition, e-mail should be provided between faculty members and their students.*

One decision-maker at the University of Hail offered some suggestions for the implementation and activation of e-learning in teaching among faculty members at the University which was similar to the trends of one of the decision-makers at Al-Jouf University. On the importance of holding specialized training courses in the field of e-learning and methods of use e-learning tools teaching, he stated that:

> *It is necessary to provide advanced training courses in the field of e-learning, as well as for their students, in order to facilitate its use in lectures.*

Another participant from Hail University stated that:

> *Increased financial support is needed by the university to support e-learning programs as well as the establishment of the infrastructure for e-learning in each college linked to the deanship of e-learning in the university.*

A policy maker at King Saud University indicated that:

Undoubtedly, to activate the e-learning application by faculty members at university level it is important to take into account the following points:
-Training in the employment of e-learning tools in teaching.
- Activating the Learning Management System at the University.
- Encourage faculty members to produce their courses online, as well as support instructional design.

It seems, from the interviews with participants who are decision-makers and experts in the field of e-learning, that there are many similarities between views in the new universities such as Al-Jouf University and the University of Hail, such as the importance of training courses for faculty members in the field of e-learning and ICT in teaching and learning, providing a personal laptop for each faculty member, and significant financial support and incentives.

Participants from King Saud University expressed different views, emphasising that faculty members need to be serious in their implementation of e-learning in the process of teaching and learning. One of the participants reported that:

According to the university the infrastructure for e-learning is almost complete. For faculty members to maintain this there must be serious and real activation of the modern methods of teaching in the twentieth first century through e-learning tools to keep up with modern synchronous and asynchronous methods to activate the real role of technology in teaching.

Participants from King Saud University and Al-Dammam University focused on maintaining and updating the infrastructure of software and computers provided, to upgrade programs that will reflect on the performance of faculty members in their application of e-learning skills in their teaching.

The decision-maker stated that:

Although the hardware is provided (some computers), it is necessary to carry out maintenance work and follow up periodically to update its software and development of computer programs.

CONCLUSION OF THE SECOND MAIN INTERVIEW QUESTION:

This section presented suggestions from policy makers and experts in the field of e-learning that could assist universities and institutions of higher education in the integration and application of ICT and e-learning skills in the education environment. In general, participants suggested a number of recommendations, such as the provision of financial incentives to encourage faculty members to use e-learning in their teaching, increased financial support by the university to support e-learning programs, and specialized training courses in the field of e-learning to provide faculty members with the technical skills required to use e-learning tools effectively in their teaching. Participants also suggested the importance of providing each faculty member with access to global search sites on the World Wide Web to develop their research skills and keep pace with research developments around the world, by providing each of them with personal laptops. Participants also focused on encouraging faculty members to use e-learning skills and tools with the production of their courses online, support of instructional design as well as spreading the culture of e-learning among faculty members on a personal level, and on a university level.

6.11 The Main Obstacles, From Your Point of View, that Hinder Faculty Members' Use of E-learning in their Teaching.

This section illustrates the third main question in the interviews, which presents evidence about the main obstacles facing faculty members in the effective implementation of e-learning in their teaching at some universities in Saudi Arabia, according to policy-makers and administrators.

The results of the interviews showed different levels of obstacles to e-learning among universities.

One participant from the e-learning deanship, a decision maker at King Saud University responsible for development and quality, stated that:

Actually, to answer this question specifically requires an in-depth research study, and the Deanship of e-learning in the university is working on the study. However, from our point of view we have found that a large percentage of faculty members do not apply e-learning in their teaching as there are some obstacles, including for example: the rejection of modern technology, lack of time, and preoccupation of faculty members.

Another expert and decision-maker in the e-learning field from King Saud University also added that:

Rejection and lack of the use of e-learning in teaching, is especially found in older faculty members. Also, the use of technology is time-consuming. In addition, a learning management system needs a faculty member to be present continuously and takes a lot of time to use, so the time factor causes faculty members to reject it. However, faculty members also lack the skills needed in the use of technology. Therefore, the content of a scientific electronics course needs preparation in advance, so many faculty members are found to refuse to accept it.

In regards to Dammam University, the faculty members face some problems, such as personal training performance in the use of technology and technical skills.

One of the participants from Al-Dammam University stated that:

There are many obstacles facing faculty members, whether on an individual level or university level, such as: a negative attitude towards the use of e-learning in their teaching by some faculty members, lack of or insufficient training courses in the field of ICT and e-learning provided to staff members, and lack of computers and e-learning tools.

Another participant from Al-Dammam University stated that:

Some faculty members have negative views about the use of e-learning tools in teaching and learning in classrooms. I would say that this could

be attributed to lack of training and experience in the use of e-learning tools. Some of them hate using e-learning tools because they are intimidated by the use of technology.

One of the participants from Al-Jouf University reported that:

Lack of training course specialists in the field of e-learning, and lack of financial support compared to hours of using e-learning by faculty members.
Also, some leased buildings are not equipped with modern technology and that hinders the use of e-learning.

One of the participants from King Saud University reported that:

There is an absence of institutional policy for e-learning and culture of e-learning among officials in the university. In addition, there is an increase in the number of students in the classroom, and a high volume of courses and curriculum and unavailability of computerized educational programs.

It seem there are similar obstacles facing faculty members in the two recently-established universities, Hail University and Al-Jouf University, which are both facing technical problems due to inadequate technical support at university-level (or institutional sources) so to speak.

One participant from Hail University stated that:

There is real difficulty at university level regarding the importance of continuous technical support. This causes many technical problems that hinder the implementation of e-learning among faculty members in their lectures represented as: weakness in networking at the university to access Internet services; lack of adequate training in the use of e-learning techniques; and lack of technical support at university level.

It was clear from the interviews with participants that technical support and incentives play a big role in the main obstacles between universities.

Another policy maker at Hail University stated that:

> *In order to find solutions for the implementation of e-learning in the process of education and learning effectively, the following obstacles must be overcome: lack of integration of technical support; lack of adequate training in the use of e-learning techniques; and lack of motivation and encouragement from heads.*

It is clear that the obstacles addressed by policy makers at recently-established universities such as Al-Jouf University and Hail University are similar to some extent.

One of the participants from Al-Jouf University stated that:

> *Actually, it is important in instructional design for e-learning and all curricula according to high credited quality, that there should be appropriate integration between e-learning and the university curriculums. Another problem is in the improper infrastructure of e-learning which should provide classroom equipment with modern technology and modern computers within the halls of teaching.*

CONCLUSION OF THE THIRD MAIN INTERVIEW QUESTION:

> *Actually, it is important in instructional design for e-learning and all curricula according to high credited quality, that there should be appropriate integration between e-learning and the university curriculums. Another problem is in the improper infrastructure of e-learning which should provide classroom equipment with modern technology and modern computers within the halls of teaching.*

6.12 Sub-section of the interview questions:

6.12.1 The methods of institutional support for e-learning programs at your university.

This sub-section of the interview questions with administrators, experts and policy makers presents further details to provide a clear image about perceptions regarding the methods of institutional support for the e-learning programs at the universities, with the potential of effective implementation in the process of learning and teaching at some universities in Saudi Arabia.

Although each university has a different policy in the methods of institutional support for e-learning programs, all of them work under the umbrella of the Ministry of Education, which oversees all university programs.

One Head of Department at Al-Jouf University stated that:

> *The University has already adopted e-learning and Blackboard but these services have not been implemented. Recently the university has provided Internet access in all faculties, with technical support, as a form of* institutional support for e-learning programs.

Participants from Hail University expressed the same views as those from Al-Jouf University, stating that the University has set methods of institutional support for its e-learning programs. One participant emphasised that:

> *The University has set the methods of institutional support for its e-learning programs through training courses, technical support and financial incentives for faculty staff members.*

The results from the interviews with participants from King Saud University and Al-Dammam University indicate that there are some ways in which the methods of institutional support for the e-learning programs at the university can support and encourage faculty members who use e-learning in their teaching. These two universities

offer to provide faculty members with a laptop and desktop. A participant from King Saud University stated that:

> *The University provides every member of teaching staff with a desktop and laptop to support and encourage faculty members to use e-learning in their teaching.*

This view is consistent with another participant's view from the same university. In his own words, he stated that:

> *There are no financial incentives, but the University provides faculty members with a laptop, desktop and printer. The University encourages staff members to develop their skills in e-learning and communicate with students. Nonetheless, this depends upon the faculty members' skills and personal initiatives in the classroom.*

Similarly, participants from Al-Dammam University emphasised there are no financial incentives, but there are some intangible incentives such as developing skills through training courses, and providing a laptop and a desktop.

One of the participants stated that:

> *The University does not offer any financial incentives for faculty members who use e-learning tools, but it provides other support such as training courses and some e-learning tools that would encourage them to improve their skills.*

This statement is in line with another participant's view from King Saud University. He revealed that:

> *Although some universities provide faculty staff members with desktops and laptops, there are no financial incentives. Therefore, the Ministry of Higher Education was keen to set up a Deanship of E-learning and*

distance learning to direct supervision in the support and implementation of e-learning programs in universities by providing support and ongoing follow-up of faculty members in the introduction of e-learning in their teaching programs.

Section Conclusion

According to the summary of interviews with a number of experts and policy-makers in the four universities, there are a great many similarities in the institutional support for faculty members for the implementation of e-learning in their teaching staff. They also offer deanships of e-learning in universities both to support the computerization programs and to provide technical support. In addition, they offer moral and technical incentives by providing laptops and desktops.

6.12.2 Training Courses in the Use of E-learning

Q- Does your university provide training programs on the use of e-learning in the teaching and learning environments for faculty members?

-If so, could you tell me what types of training programs the University provides?

In this section we review the interview participants' different perspectives regarding training courses offered by their universities to develop faculty members' skills in the implementation of e-learning in their teaching at university level.

The interviews demonstrated an agreement among all participants in relation to the need for students and faculty members to train in the use of e-learning skills, and specifically in how to use e-learning tools. In general, participants agreed that there was a lack of training courses and personal development, as well as a lack of training programs, particularly in the field of e-learning skills. Furthermore, the results of the interviews showed that training team members need more experience in the field of e-learning. One

of the participants from Al-Jouf University stated that:

> *Even though the University has already established a Deanship of e-Learning and Distance Learning for development and support training on e-learning faculties for faculty members and has plans to integrate e-learning into the curriculum, there is no communication via the Internet between students and faculty members. Moreover, the training team members are not specialised in e-learning and are unable to deliver effective training.*

These views are in line with those of participants from Dammam University who reported that there are insufficient training courses in the use of e-learning. One of the participants stated that:

> *Honestly, training courses are not effective in terms of quality and trainers. At the same time, few training courses are held yearly for both students and faculty members. Training courses are limited on how to use the Internet and emails, but there are no advanced courses on e-learning and instructional design.*

Another participant from the deanship of e-learning in King Saud University for Development and Quality reported that:

> *In fact, the deanship is keen to provide specialized training courses in e-learning programs to develop the skills of faculty members and prominent training programs such as training in the use of Learning Management System (Black Board), Smart Board and e-content development. But we face difficulties in the actual application of those skills by faculty members.*

Interviews with participants from Hail University showed that it does not offer many training courses on the use of e-learning in teaching because there are no professional trainers. In his own words, one of the participants mentioned that:

Although the University has set plans for the use of e-learning in teaching, it is not serious in its application. There are relevant training courses that encourage faculty members to communicate with students via emails or other facilities such as: Blackboard, but these courses are insufficient.

Section Conclusion

According to the summary of the interviews with a number of experts and policy-makers in the four universities, there is agreement among all of them that there are not sufficient training courses on the use of e-learning. In addition, there is a need to provide specialized training courses in e-learning programs to develop the skills of faculty members. Furthermore, the results of the interviews showed that there is a need for more experienced training team members in the field of e-learning. Moreover, it is important to increase the number of training courses yearly, with the participation of a larger number of faculty members and students.

6.12.3 The Use of e-Learning Tools in Teaching

Q6.6) Does your university provide the e-learning tools that are necessary for integrating E-learning in teaching?

-If so, could you please provide some examples of these tools?

In this section we will review the different perspectives of the interview participants regarding whether their universities provide the necessary e-learning tools for integrating e-learning in their teaching for the development of faculty members' skills at university level, with some examples of these tools.

Participants from Al-Jouf University and Hail University pointed out that their universities provide laptops and desktops for faculty members, to encourage them to use e-learning tools in their teaching.

Considering the level of use of e-learning tools at Al-Jouf University, one of the participants stated that:

> *Some classrooms are equipped with Smartboards. Some faculty members use email to communicate with their students. Furthermore, classrooms are not equipped with computers which can be used by students.*

This view is consistent with a participant's view from Hail University who revealed that:

> *Actually, the university has made great strides in infrastructure support through the provision of Internet, in return for which it helps to activate and use e-learning tools such as the World Wide Web, e-mail and Blackboard.*

A participant from Al-Dammam University reported that:

> *Actually, some faculty members are fearful of using technology because they have not exerted sufficient effort to learn to use e-learning tools. Some of them hate using e-learning because they believe e-learning tools have no value in the education process. They see e-learning as just entertainment tools which have no role in improving communication between teaching staff and students.*

Another participant from Al-Dammam University stated that:

> *The University has provided Internet access for colleges in order to help faculty members in the use of e-learning tools such as Learning Management System (LMS), Blackboard e-mail and Smartboard.*

One of the policy-makers at King Saud University reported that:

> *Currently, we encourage all faculty members to actively use e-learning tools, but still older faculty members are less likely to accept the use of e-learning tools than young members. Many of them resist the change from traditional teaching methods to the use of e-learning tools.*

It is well known that the effective application and implementation of e-learning needs an appropriate technological environment and the availability of advanced e-learning tools. In this respect, one of the policy-makers at King Saud University stated the following:

> *The university has seen a remarkable development in the activation and use of e-learning tools among faculty members, so it provides a variety of tools to encourage faculty members to use them in their teaching, such as: Learning Management System (LMS) Blackboard, email, Smartboard, video conferences, www, and social networks. In addition, it applies smart classrooms.*

Section Conclusion

This section presented the level of use of e-learning tools in teaching by faculty members in four Saudi universities. In interviews with participants the view was expressed that there is a variation in use in universities between faculty members. Some of the reasons suggested for this were lack of sufficient awareness of their importance, lack of time and a resistance to changing from the use of traditional teaching methods to the use of e-learning tools. In general, the participants mentioned the use of some e-learning tools such as: Learning Management System (LMS), World Wide Web, Blackboard, email, CDs, and Smartboard. Furthermore, the results of the interviews indicated that King Saud University and Al-Dammam University have achieved higher levels of use of e-learning tools in teaching. These two universities have almost reached a high level of e-learning, using Learning Management System (LMS) Blackboard services, email services, World Wide Web, etc. On the other hand, Al-Jouf University and Hail University have not yet achieved high levels of use of e-learning tools in teaching, due to lack of sufficient awareness of their importance, lack of time and some faculty members still resisting changing from the use of traditional teaching methods to the use of e-learning tools. In addition, the most important factors are lack of infrastructure integration at the university to date, and lack of professional experts in the field of training in the use of e-learning tools. Participants from these universities hope there will be a focus on training courses and computer skills to change from the traditional methods and tools of teaching to modern technology and tools required for the

implementation of e-learning.

6.12.4 E-learning Programs to Support the Use of e-Learning in Teaching by Faculty Members in the University

Q7)-What are the most important e-learning programs currently provided by your university to support the use of e-learning in teaching by faculty members?

In this section the perspectives of the participants (experts and policy-makers in the field of e-learning) were sought in interviews regarding the most important e-learning programs currently provided by their universities to support the use of e-learning in teaching by faculty members. It was found that efforts varied between universities. One of the participants from Al-Jouf University stated that:

> *Firstly, I would like to say that the university is working to provide an Internet network in the university departments. Furthermore, there are some e-learning programs which have been applied according to the Deanship of e-learning such as using e-mail, PowerPoint, World Wide Web, to help faculty members to use e-learning effectively in their teaching.*

A participant from Al-Dammam University reported that:

> *Really, the University provides many types of e-learning program to support faculty members to integrate technical skills into their teaching; for instance; Discussion Group, email, PowerPoint, and Learning Management System (LMS) Blackboard.*

A participant from King Saud University, a policy-maker, stated that:

> *Honestly, the university is working hard to provide and support faculty members in the application and implementation of e-learning in their classroom and through teaching with students. Furthermore, the*

> *Deanship of e-learning and Distance learning working through the support and development of many programs that would be useful for the faculty to support technically in the process of learning and teaching, effectively and with high quality. Therefore, the Deanship produces some programs such as Learning Management System (LMS), Virtual Classroom System, Smart Classroom, programs on the production and development of electronic content.*

A number of participants from Hail University indicated a similarity to the programs offered at Al-Jouf University, which aim to provide basic skills to faculty members in the use of computers in addition to computer applications skills.

A participant from Hail University reported that:

> *Actually, we are working in the university to improve the faculty members' skills by providing a variety programs to develop the contact between faculty members and students. Furthermore, to integrate the e-learning skills in teaching, for example: Learning Management System (LMS) blackboard, using e-mail, PowerPoint, and World Wide Web.*

Section Conclusion

This section presented the views of faculty members and policy makers regarding the most important e-learning programs currently provided by the University to support the use of e-learning in teaching by faculty members.

Accordingly, we found a variation in views in terms of electronic online programs offered by universities to faculty members for the implementation of e-learning in their teaching. For example, universities such as Al-Jouf and Hail were keen to provide basic programs in the use of the computer and its applications in education techniques such as

the use of e-mail to communicate with students, presentations (PowerPoint), and other technical basics.

On the other hand, other universities such as King Saud University and Al-Dammam University have made great strides in effective technology and programs to develop faculty members' skills in the learning and education process. Moreover, King Saud University has introduced more advanced programs in the integration of faculty members with modern technology such as: Learning Management System (LMS), Virtual classroom system, integrated system in the operation of smart classroom, and programs for the production and development of educational content.

6.12.5 The Importance of Faculty Members Using e-Learning in their Teaching

In this section we will review the perspectives of the participants regarding the importance of faculty members using e-learning in their teaching by the following variables: age, academic rank, teaching experience, academic qualifications, experience in the field of e-learning, skills in the computer field, and getting the necessary training courses in the field of e-learning. This is done according to the following scale: 3 = very important, 2 = important to a lesser extent and 1 = not important.

In a review of the views of experts and policy-makers in the field of e-learning regarding the importance of faculty members' use of e-learning in their teaching, different views were found in the universities.

Interviews with participants from King Saud University showed that the University placed importance on faculty members using e-learning in their teaching by the important variables. For instance, one of the participants revealed that:

> *Actually, according my experience and position at the Deanship of e-learning in the University we consider it very important for faculty members to use e-learning in their teaching and to get the necessary training in the field of e-learning, Experience in the field of e-learning and skills in the computer field, and the availability of such basic ingredients with the faculty member is found in the application of the*

initiation and activation of e-learning tools in teaching and being uniquely creative and motivating his students as well as for the use of e-learning to communicate.

This statement is in agreement with a policy-maker, also from King Saud University, who reported that:

The availability of the necessary training course, experience in the field of e-learning, and skills in the computer field, plays a really important role in helping faculty members to effectively apply and activate e-learning in their teaching.

Interviews with participants from Al-Dammam University are in agreement with views of other participants from King Saud University according to the above-mentioned variables.

Another participant from Al-Dammam University emphasised that:

When the important basic potentials for faculty member are available such as the necessary training courses in the field of e-learning with experience, as well as basic computer skills he should be creative and distinct in the use of e-learning in teaching. It is quick and has the basics the faculty member needs to be a flexible, effective teacher with technological development and skills.

Also, interviewers from Al-Jouf and Hail Universities placed the same importance as participants at other universities on the importance of training and experience as well as on providing basic skills in the use of computers in order to apply and implement e-learning in teaching by faculty members.

One of the participants from Al-Jouf University added that:

In fact, we found more acceptance and enthusiasm for the implementation and use of e-learning skills in their teaching from the younger faculty members than from older faculty members.

Participants from Hail University reported that:

In general, some faculty members have not improved their skills in the use of e-learning tools in teaching. I would say that it is very important for faculty members to get adequate training and the necessary experience in the field of e-learning as well as basic skills in the use of computers.

Hence, this is observed in the university through the activation of E-learning among faculty members with training and experience in the field of information and communication technology.

Section Conclusions

The results of the interviews conducted with participants from the four universities regarding the importance of faculty members using E-learning in their teaching concerning the different variables, indicate that the three main important variables were experience in the field of e-learning, skills in the field of computing, and getting the necessary training courses in the field of e-learning.

6.12.6 Suggestions for the Development and Progression of Faculty Members for Enhancing the Use of e-Learning in their Teaching in Higher Educational Institutions

Q9) What are your suggestions for improving the development and progression of faculty members to enhance their use of e-learning in their teaching in higher educational institutions?

In this section administrators and policy makers in the field of e-learning put forward their suggestions regarding development and progression to enhance e-learning in the

process of teaching and learning by faculty members in Saudi higher educational institutions.

The results from the interviews demonstrated different views regarding recommendations for enhancing e-learning in teaching at Saudi higher educational institutions. Participants' responses are shown below:

It is known among Saudi universities that they grant their faculty members some additional incentives called "allowances for the use of computer" added to the monthly salary of a faculty member; in some universities it is up to 25% of their basic salary.

One policy-maker at King Saud University, suggested that:

> *From my point of view, the best way to activate the use of e-learning in teaching by faculty members is to link financial incentives such as allowances for the use of the computer for those who provide evidence that they are using e-learning skills in their teaching.*

Another participant from the same university gave the same suggestion regarding financial support incentives for using e-learning technology effectively, but had added that:

> *The University should take serious action towards the application of e-learning in the classroom, and promotion of faculty member to evidence that they are using e-learning skills in their teaching and in communication with students.*

Interviews with participants from Hail and Al-Jouf Universities were in agreement. One of the participants reported that:

> *Actually, the University should establish an institutional policy for e-learning programs, and provide equipment for classrooms with*

technological and technical infrastructure and tools such as laptops, printers, and technical programs, to help faculty members in delivering their lectures. In addition, it is important to provide continuous maintenance for the devices.

On the other hand, faculty members should be made fully aware of the importance of the application and implementation of e-learning in their teaching in order to motivate their students and communicate with them.
Another participant from Hail University stated that:

It is important to increase awareness among faculty members of the use of e-learning, to encourage and provide more professional training courses in the field of e-learning to improve their skills in technology.

The participants from Al-Dammam University agreed with the views of other participants from King Saud University regarding the suggestion of financial incentives for faculty members, particularly those who use e-learning in teaching.

A participant from Al-Dammam University reported that:

Undoubtedly, financial support is important at many levels in the university to apply and implement e-learning. Modern technology is necessary to equip the infrastructure - classrooms, theatres and labs with computers, the Internet and other e-learning facilities. This will encourage to suitable and attractive e-learning environment and provide interactive e-learning by faculty members in their teaching.

It is important for any higher education institution to implement and apply e-learning for the preparation and processing of infrastructure with the provision of internet and intranet networks in an academic work environment.

This was confirmed by one participant from Al-Jouf University who suggested that:

Honestly, one of the basics of the application and implementation of e-learning at University level is the provision of a high-speed Internet

network by providing all the faculties and facilities in the University to allow faculty members and students at the University to use e-learning and communicate with their students quickly and well.

Section Summary

This section presented the views of experts and policy makers in the field of e-learning, which could help higher education institutions in the Kingdom of Saudi Arabia to find appropriate solutions to create attractive academic educational environments for the application and implementation of e-learning at university level in general, as well as in the development of faculty members' skills in particular. Participants suggested a number of valuable recommendations:

In general, all the participants agreed that there is an absence of an institutional policy regarding the implementation and application of e-learning programs at the university level.

However, they confirmed the importance of fully adopting its application effectively from the highest level.

Furthermore, participants offered other recommendations, such as financial incentives for using e-learning technology effectively, equipment for classrooms with technological and technical infrastructure and tools such as laptops and printers, and technical programs to help faculty members in delivering their lectures. They also stressed that it is important to increase the awareness among faculty members regarding the use of e-learning. Participants also focused on encouraging and providing more professional training courses on e-learning to improve their skills in technology.

6.13 Summary of Policy-makers' Views Regarding e-Learning in Universities.

Table 6.48 presents a comparison of policy-makers' views regarding the effectiveness of the application and implementation of e-learning skills in teaching by academic staff members in some Saudi Universities.

Table 6.48: Comparison of policy makers' and administrative staff views between Universities.

Statements	Universities			
	King Saud	Al-Dammam	Al-Jouf	Hail
The current level of use of e-learning in teaching by faculty members	Achieved higher levels of use of e-learning in teaching among faculty members.	High levels of use of e-learning in teaching among faculty members.	Low level of use of e-learning in teaching among faculty members.	Low level of use of e-learning in teaching among faculty members.
Procedures to facilitate the application of e-learning at University level.	Significant financial support, training in how to use e-learning tools, activating the learning management systems (LMS), encouraging the presentation of courses online, and instructional design	Access to global search sites on the world wide web, maintenance and updating the development of software and computers programs.	Lack of specialized training courses in the field of e-learning, and insufficient provision to faculty members of e-learning tools such as laptops, and specialized training courses in e-learning skills	Advanced training courses, and increased financial support for e-learning programs,
Obstacles that hinder faculty members' use of e-learning in their teaching.	The rejection of modern technology, lack of time, and preoccupation of faculty members.	A negative attitude towards the use of e-learning in their teaching by some of faculty members, lack of sufficient training courses in the field of ICT and e-learning provided to staff members, lack of computers and e-learning tools.	The absence of an institutional policy for e-learning, Lack of training course specialists in e-learning, lack of financial support and lack of infrastructure integration	The absence of an institutional policy for e-learning, weakness in network at the university to access the Internet, and lack of technical support at the university level.
The methods of institutional support for e-learning programs.	Internet and technical support in all faculties, laptops, desktops	Training courses, some advice, laptops, desktops.	Training courses, technical support, and financial incentives for faculty staff members	Training courses, technical support, and financial incentives for faculty staff members
Training Courses in the Use of e-learning	Specialized training courses in e-learning such as: Learning Management System (Blackboard), Smartboard and e-content development	Not effective in terms of quality and trainers. -There are no advance courses in e-learning and instructional design, and only a few training courses are held yearly.	No special courses in e-learning, lack of quality, and lack of professional trainers in the field of e-learning.	No special courses in e-learning, lack of quality, and lack of professional trainers in the field of e-learning.
E-learning tools used in teaching	Learning Management Systems (LMS), Blackboard, email, Social Networks, Video Conference. In addition apply SmartClassroom.	Black Board (LMS), email and Smartboard.	Some classrooms are equipped with Smartboards, and classrooms are not equipped with computers.	Some faculty members use email and Blackboard

E-learning programs to support use e-learning in the teaching by faculty members in the University	Learning Management System (LMS), Virtual Classroom System, Smart Classroom, Programs on production and development of electronic content, and instructional design.	Email, PowerPoint, and Learning Management System (LMS) Blackboard.	Email, PowerPoint, World Wide Web	E-mail and PowerPoint
The importance of faculty members using e-learning in their teaching	Classed as very important in the following: the necessary training courses in the field of e-learning, Experience in the field of e-learning and skills in the computer field	Classed as very important in the following: the necessary training courses in the field of e-learning, Experience in the field of e-learning and skills in the computer field	Classed as very important in the following: age, and skills in the computer field	Classed as very important in the following: training and experience in the field of information and communication technology.
Suggestions for the development and progression of faculty members to enhance the use of e-learning in their teaching in higher education institutions	Financial incentives for faculty member who use e-learning skills effectively in their teaching.	Financial incentives for faculty member who use e-learning skills effectively in their teaching. Infrastructure and tools such as laptops, printers, and technical programs	An institutional policy for e-learning programs. Equip classrooms with technological and technical infrastructure and tools such as laptops, printers, and technical programs, with provision of high-speed Internet network	Financial support, equip the infrastructure - classrooms, theatres and labs - with computers, the Internet and other e-learning facilities.

6.14 Summary of the qualitative findings

In this summary, the main purpose was to investigate and explore the opinions and views of policy makers and administrative staff regarding the effectiveness of the use of e-learning in their teaching, and its implementation and application by faculty members. It also looked at the motivations and obstacles they faced. The views of participants from four universities in Saudi Arabia are considered in this study.

The results from the interviews showed that the views of policy makers and administrative staff differed in terms of the current use of the skills of e-learning in teaching among faculty members. In King Saud University, for example, the decision-makers indicated that there is a high standard of quality in the field of technology. Dammam, Al-Jouf and Hail Universities, however, still show below average levels of the use of e-learning skills in teaching.

This chapter also presented the results regarding the current use of e-learning in higher education institutions in Saudi Arabia with the procedures and solutions that help the application and implementation of e-learning at university level. Also, the most prominent procedures mentioned by policy makers at King Saud University pointed to the importance of financial support, more specialized training courses in the field of e-learning skills and encouraging faculty members to present their courses online, as well as creating and developing e-learning content courses and training programs, and the importance of instructional design. Participants from all four universities agreed on the importance of these points.

In addition, the chapter presented participants' views on the main challenges and obstacles facing faculty members in the effective implementation of e-learning in their teaching at both university level and individual level. These included: the absence of an institutional policy for e-learning; lack of technical support; lack of support in instructional design for e-learning; and lack of adequate training in the use of e-learning techniques.

In general, participants in the universities had differing views about the e-learning tools used in their teaching. For instance, Al-Jouf, Al-Dammam and Hail Universities have a basic level of use of e-learning tools by faculty members, thus they need more advanced skills. On the other hand, King Saud University has introduced Blackboard services (LMS) Smart classroom with integrated technology, provided faculty members with personal laptops, printers, and provided training courses on the use of e-learning facilities.

Regarding suggestions for the development and progression of faculty members in enhancing the use of e-learning in their teaching in higher educational institutions, participants in the study suggested several options, such as financial incentives for faculty member who use e-learning skills effectively in their teaching. Participants also suggested that an institutional policy be provided for e-learning programs, as well as equipping classrooms with technological and technical infrastructure and tools such as laptops, printers, and technical programs, with the provision of high-speed Internet networks and other e-learning facilities.

Chapter 7: Discussion of Research Findings

Chapter 7: Discussion of Research Findings

Introduction

In the past decade, the world has witnessed increasing educational and technical development in all areas of life, and increasing advances in technology especially, with remarkable developments. In particular, with the use of ICT and e-learning skills in higher education institutions, academic staff members in Saudi universities are now being encouraged to use e-learning skills in their teaching and lectures.

This research has sought to obtain a deeper insight by means of an investigation into the use of e-learning in Saudi higher education institutions through faculty members' perceptions' of effectiveness of the usage of e-learning in the teaching and learning process. It has also looked at the motivations for the use of e-learning and obstacles facing faculty members in its implementation.

This study aimed to investigate male academic staff members' perspectives of the effectiveness of the use of e-learning skills in teaching in some Saudi universities. The objective of the research was to understand the reality of e-learning approaches practised in the classroom, as well as to analyse suggestions from academic staff members and policy makers in order to put forward suggestions that will lead to the development of teaching methods to make them more effective, and to extend the use of information and communication technology to record their ideas and to improve teaching methods and higher education curricula in the Kingdom of Saudi Arabia.

The main instrument used to collect data for the research was the questionnaire, with interviews as a support instrument. In this chapter, the results from the questionnaire and the interviews form the basis for the discussion which will focus on the research questions initially laid out in Chapter One which are.

- What is the extent of the use of e-learning skills in teaching by academic staff members in some Saudi universities?

- Are there any statistically-significant differences in the use of academic staff members' e-learning skills in teaching in terms of the variable, academic qualification?

- Are there any statistically-significant differences in the use of academic staff members' e-learning skills in teaching in terms of the variable, years of experience?

- What were the motivations for academic staff members using e-learning in teaching?

- What were the obstacles to using e-learning skills from the perspective of the academic staff members?

In Chapter Five the research questions were explored using a quantitative research method. The questionnaire was distributed to 375 academic staff members. In Chapter Six a qualitative research method was described in the form of semi-structured interviews with experts of academic staff members and policy makers.

This chapter discusses both the quantitative and qualitative research findings and examines the similarities and differences between academic staff members', and policy makers' views. It also explores the consistency of the study results with related existing empirical studies and discusses them from a theoretical perspective.

In addition, this chapter summarises, explains and then explores the degree of compatibility or contrariety of the quantitative and qualitative results of this study with earlier studies. The research results of the analyses will be discussed to investigate male academic staff members' perspectives of the effectiveness of the use of e-learning skills in teaching (46 items) as a whole which, as suggested by the literature, were categorised in three dimensions. This chapter has three sections following the introduction as follows:

Section 7.1 discusses the results relating to the three dimensions namely: the extent of usage of e-learning skills in their teaching by academic staff members (16 statements or items); the motivations for academic staff members to use of e-learning in their teaching (13 statements or items); the obstacles to using e-learning skills in their teaching, from the perspectives of the male academic staff members in some Saudi universities (17 statements or items). Each dimension will be analysed separately using the same method.

7.1 Discussion of the Results by Dimension

This section discusses the results derived from the questionnaire, the interviews and the literature across the three dimensions: the extent of usage of e-learning skills in their teaching by academic staff members (16 items); the motivations for academic staff members to use e-learning in their teaching (13 items); and the obstacles to using e-learning skills in their teaching, from the perspectives of the male academic staff members in some Saudi universities (17 items). The same method is used to analyse each dimension separately. It also highlights a number of suggestions and recommendations based on the discussion.

7.2 First Question: To what extent do Academic Staff Members use E-learning Skills in their Teaching

This section aims to investigate perceptions of academic staff about the effectiveness of the use of e-learning skills in their teaching at the four universities in the study, according to the results of the academic staff members' questionnaires and the policy makers' interviews. It highlights the fact that, in general both academic staff members and policy makers realise the importance of the use of e-learning skills in teaching.

The first question is important in order to discover the attitudes of academic staff members regarding the effective use of e-learning in their teaching. Therefore, this study asked: What was the extent of the use of e-learning skills in teaching by academic staff members in some Saudi universities?

7.2.1 The First Dimension: Attitudes towards the Use of E-learning by Academic Staff Members.

The respondents were asked about their attitudes toward the use of E-learning. The question included sixteen items, all of which were related to the theme of the use of e-learning skills in teaching, and Table 5.21 in Chapter Five illustrates the results. The weighted average overall (M=4.18, SD=0.909) shows that the academic staff members strongly agree, with a mean of 4.18 out of 5.00, that the effects of the use of e-learning in

the teaching and learning process are positive.

Dimension 1 illustrates the results of respondents' attitudes towards the extent of the use of E-learning in teaching, and consists of 16 items, which can be divided into three groups. The items were listed in descending order according to their mean rating (see, Table 6.29 in Chapter Six).

Q1: <u>GROUP 1.</u> *STRONGLY AGREE* IN THE FIRST DIMENSION:

Respondents in the first group ***strongly agree*** regarding the majority of items (nine items) with the highest score being 4.52 and the lowest 4.21 out of 5.00. All of these items (1-9) concerned academic members' increasing sense of positive effects and attitudes regarding the use of E-learning in their teaching. In addition, These items were related to e-learning: facilitating and improving communication between academic staff members and their students; helping in the development of technical skills in the field of computers; enhancing self-confidence to facilitate learning; contributing to diversity in modern teaching methods; increasing the efficiency of academic staff members in teaching; encouraging innovation and creativity in the application of information and communication technology; improving efficiency through increased motivation for learning by learners; saving time and effort for both academic staff members and students; and contributing to the development and promotion of skilled direction of knowledge content. The ratings showed the psychological impact of E-learning on attitudes of academic staff members that will reflect on their teaching skill and their students.

Although respondents answered *strongly agree* to all of these items, the overall rating for the perception of freedom and positive effects offered by e-learning was the highest across all items in the questionnaire.

E-learning has the potential to impact positively on education. It provides great opportunities for academic staff members to enrich their educational experiences (Holmes and Gardner, 2006) as a useful tool for enhancing the quality of teaching and learning. Furthermore, E-learning is an "innovative approach to education delivery via

electronic forms of information that enhance the learner's knowledge, skills, or other performance" (Siritongthaworn, Krairit, Dimmitt & Paul, 2006, p. 139).

Thus, E-learning is shown by the present study to have achieved its key and most important objective as perceived by the academic staff members. Further details for each item, taking into consideration previous studies included in the literature review and data analysis results, according to quantitative and qualitative data results, are given below.

Academic staff members were asked regarding the extent of their use of e-learning skills in their teaching in terms of the following items:

Item 1, **'E-learning facilitates and improves communication between academic staff members and their students'**, received the highest mean in this dimension from the academic staff members in the questionnaire (M= 4.52) which highlights their strong agreement. The results show that e-learning facilitates the process of learning and improves interaction between academic staff members and their students. The reason for the high score is that the flexibility of e-learning in terms of being able to access it from anywhere at any time makes it very attractive to both learners and academic staff members. (Al-Musa & Al-Mobark, 2005). Holmes and Gardner, (2006) as online access to learning resources, anywhere and anytime.

E-learning can enhance the efficiency of access to knowledge and qualifications (Marc, 2002). It also encourages interaction through discussion forums by eliminating the barriers that might hinder participation such as fear of talking to others in a physical setting (Hameed *et al*., 2008). In addition, more features of e-learning are referred to in the literature review such as (Berke and Wiseman, 2004), (Cantoni *et al.* 2001) & (Cantoni *et al*., 2004)

Through the presentation of the first dimension and the reactions of academic staff members in terms of use and effectiveness of e-learning in their teaching, the results indicate a positive attitude towards the use of e-learning. This indicates the importance of e-learning in teaching applications for positive dealing with modern technology. This is consistent with studies in the literature review such as (Gay, 2008),Law *et al*. (2010) and Valentín *et al*. (2013). In order to facilitate the exchange of ideas and information, many modern higher education science and technology institutions have recognized this urgent need to use ICT to facilitate communication (Paechter et al., 2010).

Item 2, **'E-learning helps in the development of technical skills in the field of computers'**, received the second highest mean from academic staff members who responded *strongly agree* to the questionnaire (M=4.35). This result was confirmed in the literature review which showed that the use of information and communications technology in higher education plays an important role in the development of the skills of academic staff members and reflects on their performance in teaching (Rienties *et al*., 2013).

It is well known that the effective application and implementation of e-learning requires an appropriate technological environment and the availability of advanced e-learning tools to allow faculty members to use it effortlessly. In this regard, one policy-maker at University (A) stated the following:

> The university has seen a remarkable development in the activation and use of e-learning among faculty members' tools, so it provides a variety of tools to encourage faculty members to use it in their teaching, such as: Learning Management System (LMS) Blackboard Email, Smartboard, video conferences, www, and Social Networks. In addition, it provides smart classrooms.

Item 3, **'E-learning can enhance self-confidence to facilitate learning'**, was ranked third highest by academic staff members responding *strongly agree* to the questionnaire by (M=4.34). This result is that which every higher education institution is working to achieve: a high level of self-confidence in their academic staff members that will reflect on their students to give them a positive attitude towards e-learning. Data collected from faculty members through their responses to the importance of using e-learning shows that it can enhance self-confidence and therefore facilitate learning. According to Prestridge (2012), when teachers display greater confidence in their own ICT competency, this brings about more confidence in the use of e-learning in the classroom.

Item 4, **'E-learning helps diversity in modern teaching methods'**, was ranked fourth highest by academic staff members responding *strongly agree* to the questionnaire (M=4.30). A key feature of e-learning is its flexibility, with online education offering learners the choice of the most appropriate learning methods to suit their needs, which can have a very positive impact on learners' satisfaction (Sun *et al*., 2008).

The main problem higher institutions in Saudi Arabia face, in terms of teaching methods, is their adherence to traditional teaching methods in which the academic staff member leads the class, and does not respect the students' ideas sufficiently. They often do not give students the opportunity to showcase their skills and talents.

However, the main impact of ICT in education can be seen in the improvement of the capabilities of instructors, changing the educational structure, creating opportunities for greater and more comprehensive learning, and ultimately enhancing educational quality and improving teaching skills. The use of e-learning focuses on students' creativity, enabling them to develop. However, there is a global trend in modern teaching methods to prompt and develop knowledge in learners, not just to transfer knowledge. (See pages of 93to99, the Teacher's role in ICT in chapter 4). And
Table 4.5 compares the traditional and e-learning roles. Source: Clarke (2008).

This is confirmed in interviews of participants from University (A), who expressed perspectives emphasising that academic staff members need to take the implementation of e-learning in the process of teaching and learning seriously. One policy maker reported that:

> According to the university the infrastructure for e-learning is almost completed and, in order for faculty members to achieve this, there must be serious and real activation of the modern methods of teaching in the twentieth first century through synchronous and asynchronous e-learning tools to remain up to date and activate the real role of technology in teaching.

Item 5, **'E-learning increases the efficiency of academic staff members in teaching'**, was ranked fifth highest by academic staff members who responded *strongly agree* in the questionnaire (M=4.28).

Regarding the progress of information and communication technologies as a key factor of change in human society, the main impact of ICT and e-learning in education can be seen in the improvement of the capabilities of instructors, changing the educational structure, creating opportunities for greater and more comprehensive learning, and ultimately enhancing educational quality and improving teaching skills for academic

staff members by the influence of technology involved in teaching and learning (Ahmadi *et al*., 2011).

Item 6, **'E-learning encourages innovation and creativity in the application of information and communication technology'**, was ranked sixth highest by academic staff members responding *strongly agree* to the questionnaire (M=4.28). This result indicates the importance of applying e-learning in teaching to achieve a high quality of education in higher education institutions in Saudi Arabia, as was referred to in the literature review. ICT has fundamentally changed the tools and even the policies and goals of education (Shahmir *et al*., 2011).

This result is consistent with previous studies which confirm the importance of the adoption of ICT and e-learning competencies in teaching and learning, which will impact upon the approaches available to academic staff members, encouraging them to devise practical and creative applications for ICT (Nechita & Timofti, 2011).

Therefore, in the modern learning context, ICT and the use of e-learning is potentially of great significance to education systems, providing other methods to promote the growth of knowledge and skills of the learners, as well as encouraging and improving creativity, critical thinking and even improving their overall understanding of how to learn. This prominent role in education may be due to the adaptability of ICT and its capability to form relationships among academic staff members and their students.

In this context, this study discusses the importance of reviewing the policies and targets of education in higher education institutions in the Kingdom of Saudi Arabia in order to encourage each faculty member and student to adopt high values in terms of modern technology and its applications represented in the immediate implementation of e-learning in teaching and learning.

Item 7, **'E-learning is characterized by efficiency through increased motivation for learning by learners'**, was ranked seventh highest by academic staff members responding *strongly agree* in the questionnaire (M=4.28). Clearly, this result shows a very positive impact on learners from e-learning by enabling them to be more efficient through increased motivation; this will reflect on students by making them enthusiastic to learn.

Furthermore, the results are consistent with previous studies which confirm the importance of the adoption of e-learning systems by university students due to their proven effectiveness, as they bring about increased motivation, positive personal attitudes and a clear direction for the self-efficacy of the student (Li et al., 2012) (Paechter et al., 2010). In addition, ICT has become an integral part of the daily lives of many students and professionals who must be competent in the effective use of this technology. Therefore, there are strong arguments that ICT and the use of e-learning in teaching among academic staff members and their students in higher education institutions are indispensable in the educational process (Kisla *et al*., 2009).

Item 8, **'E-learning saves time and effort for both academic staff members and students'**, was ranked eighth highest by academic staff members responding *strongly agree* in the questionnaire (M=4.25). Effective time management is important in the nature of academic work, and e-learning management systems (LMS) activated in some universities by academic staff members and their students saves both time and effort. Furthermore, this item endorsed the most important characteristic of e-learning, which is the facilitation of interaction between academic staff members and their students at any time, in any place and at any pace. This result is consistent with the benefits of e-learning which includes saving time. Also, it highlights the most important feature of e-learning which is flexibility in terms of time and place (Al-Musa & Al-Mobark, 2005).

Item 9, **'E-learning contributes to the development and promotion of skilled direction of knowledge content'**, was ranked ninth highest by academic staff members who responded *strongly agree* in the questionnaire (M=4.21).

Therefore, this results are consistent with previous studies which confirm the importance of the adoption of the appropriate technology and pedagogy approach determined content knowledge (Rienties et al., 2013), (Panda and Mishra, 2007).

Furthermore, the significant importance role of the use of information and communications technology in higher education in the development of the skills of academic staff members, (ibid). See figure 2.2 in chapter two. The TPACK model from http://tpack.org.

Therefore, to present the key finding in summary through discussing the first dimension attitude's academic staff members towards the use of e-learning in teaching as it is

referred to in the first question, all participating teachers had positive views regarding the introduction of e-learning in education. Hence, within strongly agree by significantly affected their use of those technologies in their teaching at classroom.

Q1: <u>GROUP 2.</u> *AGREE* IN THE FIRST DIMENSION:

The second group in the first dimension consisted of six items, all of them rated *agree*. The highest mean was 4.19 and the lowest was 4.03 out of 5.00. These items (10 to 15) were about e-learning: giving more stability and satisfaction in the educational process; engaging learners more than other forms of learning; motivating students in their educational practices; encouraging students to give greater importance to lessons; helping to use blended learning model to improve the teaching skills and effectiveness of the quality of education; and improving educational innovation.

Item 10, **'E-learning gives more stability and satisfaction in the educational process'**, was ranked tenth by academic staff members responding *agree* in the questionnaire (M=4.19.

Undoubtedly, the primary target of using e-learning in teaching is to achieve stability and satisfaction in the educational process. This is also reflected in the high performance of both academic staff members and their students. However, as the student is the cornerstone of the learning process and the teacher is the supervisor aiming to facilitate advancement, the focus should be on stability and satisfaction to achieve the desired goals.

(Liaw, 2008) Confirm that, the use of information and communication technology and e-learning in teaching, will bring about increased stability in the education process(Otaghsara & Mohseni, 2012). In addition, a positive perception of e-learning technology influences students' satisfaction with courses (Otaghsara & Mohseni, 2012).

Item 11, **'E-learning can engage learners more than other forms of learning'**, was ranked eleventh by academic staff members who responded *agree* in the questionnaire (M=4.18). This item endorsed the most important characteristic of e-learning, which is the ability it gives to learners to engage in teaching at any time, in any place and at any pace, more than other forms of learning.

Thus, the results in this item confirm the review of studies in the literature review. This is consistent with Higgins (2008), who mentions that the availability of e-learning anytime and anywhere depends on both the availability of appropriate technology and a suitable place (S. Higgins, 2008)

Item 12, **'E-learning motivates students in their educational practices'**, was ranked twelfth by academic staff members who responded *agree* in the questionnaire (M=4.17).

In general, many higher educational institutions globally, are aiming to achieve motivation in practical interaction with students and improved infrastructure of hardware and software. This will improve the teaching environment to make it more interesting and attractive for the process of learning and teaching.

This is consistent with So *et al* (2012) who state that the positive attitudes of many students towards the use of computers and their past experiences with ICT will impact on teaching practices in the future.

This result is confirmed in interviews with participants. One policy maker, a participant from (B) University, agrees, emphasizing the importance of the appropriate infrastructure in classrooms. He reported that:

> Undoubtedly, technical support is important for many levels in the university to apply and implement e-learning with the provision of modern technology; it is necessary to equip the infrastructure - classrooms, theatres and labs - with computers, the Internet and other e-learning facilities. This will encourage a suitable and attractive e-learning environment and provide interactive e-learning by academic staff members and students in their teaching effectively.

Item 13, **'E-learning encourages giving greater importance and influence to the lessons'**, was ranked thirteenth by academic staff members responding *agree* in the questionnaire (M=4.15).

This confirms that e-learning enhances the pedagogic value of lessons. This is reflected in the academic staff members' awareness of the importance of encouraging students' participation in using technology.

Furthermore, the use of e-learning in teaching and learning is encouraged to improve the abilities and skills of educators to give lessons greater relevance and impact. In addition, the use of e-learning plays a major role in modern education with its effect on the diversification of teaching methods (Ahmadi *et al*., 2011).

Furthermore, according to So *et al*., (2012) the positive attitudes of many students towards the use of e-learning, reflect the importance of its impact on teaching practices in the future

Item 14, **'E-learning helps to use blended learning model to improve the teaching skills and effectiveness of the quality of education'**, was ranked fourteenth by academic staff members who responded *agree* in the questionnaire (M = 4.10).

It is known that students find the use of the traditional model of teaching repetitive. However, modern technology and e-learning have added a modern technique to education in general and diversity in teaching methods, in particular.

Furthermore, new ways and models of teaching and learning have emerged, such as the blended learning model. This has improved the teaching skills of academic staff members, as well as providing greater efficiency and effectiveness of the quality of education.

Item 15, **'Allows the use of e-learning to upgrade educational innovation'**, was ranked fifteenth by academic staff members responding *agree* in the questionnaire (M=4.03).

This result shows the importance of the application of e-learning in the educational process, which allows more creativity in teaching methods making them more attractive and interesting.

Furthermore, it is noticeable that this item represents the lowest agreement by respondents. This signifies that academic staff members largely do not have adequate appreciation of the importance of innovation in e-learning programs; perhaps this is because they have not received adequate training in innovation and creativity in the field of e-learning.

This aspect was clearly elucidated during interviews. One policy maker reported that:

> Honestly, training courses programs are not effective in terms of quality and innovation. At the same time, few training courses are held yearly for both students and faculty members. Training courses are limited on how to use the Internet and emails. Furthermore, there are no sufficient of advance training courses in innovation and instructional design in e-learning.

Q1: <u>GROUP 3.</u> *NEUTRAL* IN THE FIRST DIMENSION:

The third group in the first dimension consisted of one item, rated *neutral*. The mean was 3.20 out of 5.00. This item (16) was about the difficulty of dealing with e-learning, making it frustrating to use.

Item 16, **'The difficulty of dealing with e-learning, making it frustrating to use',** was ranked sixteenth by academic staff members responding *neutral* in the questionnaire (M=3.20).

It is noticeable that this item comes at the lowest end of the first dimension (attitudes towards the use of e-learning by academic staff members) with a mean of 3.20 responding *neutral* academic.

In general, this result shows that the majority of the academic staff members are frustrated by the use of e-learning in their teaching for two reasons, not having attended training courses in the field of e-learning, and not having experience in the field of e-learning.

Furthermore, this was confirmed in the results of the quantitative data from the responses of academic staff members in the questionnaire. Likewise, we found that, more than 245 of the academic staff members who responded to the questionnaire (65%) had not attended training courses in the field of e-learning.

In addition, the results regarding respondents' experience in the field of e-learning display that the majority of the academic staff members (292, representing 77.9%) reported that they did not have experience in the field of e-learning. This is consistent with Morris (2010) who mentions that, there is a recognized lack of awareness among teachers and faculty members about the kinds of techniques available and how they can

be used to support the delivery of the curriculum, as well as a lack of sufficient of training.

Summary of the first Question.

Obviously, key finding to emerge from this dimension is that, through perceptions of academic staff about the effectiveness of the use of e-learning skills in their teaching. it seems to be effective, at least from the academic staff members' perspective and this is therefore some encouragement to continue to develop this type of learning.

However, academic staff members in Saudi universities shown a positive reaction in this dimension which is the effectiveness of the use of e-learning in their teaching. This was also confirmed in the interviews, for example when and this was confirmed by the policy makers in their respondents through interviews at satisfactory levels "generally, the use of e-learning by faculty members in their teaching is above average, at a high level so to speak", but we aspire to more quality in e-learning at educational process.

In conclusion, the answer to the first question shows us the main theme received almost total support from academic staff members, administrative staff and policy makers as the respondents in universities involved in this study. They showed a positive attitude towards the use of e-learning in the educational and learning process. This is reflected in their belief in the impact on students and curriculum development and the overall effect on learning. In addition, the key findings indicated a belief in the importance of using e-learning in teaching by academic staff members due to the features of e-learning such as: the development of technical skills and knowledge, giving more confidence to both academic staff members and their students and facilitating communication along with he enabling interactive and creative learning environment. Overall it gives a positive indication in supporting the continuity of use and further activating the role of e-learning in the teaching process in higher education institutions. The overall rating for this dimension was 4.18 - agree.

7.3 Statistically Significant Difference between Academic Staff Members across the Demographic Variables

This section discusses the results derived from the questionnaire, the interviews and the literature to assess the statistically-significant differences between academic staff members only, from the analysis of their answers to the second and third research questions in Chapter Six according to demographic variables *academic qualification* and *years of academic experience*, across the three dimensions. It also highlights a number of recommendations based on the discussion.

7.4 Second Question

This question discusses the results derived from the questionnaire, the interviews and the literature to assess the statistically-significant differences between academic staff members in terms of demographic variable *academic qualification*. Q.2 Are there any statistically-significant differences in the use of academic staff members' e-learning skills in teaching in terms of the variable *academic qualification*?

The reason for the researcher including *academic qualification* as an independent variable was to understand the role of the effect of the practices of academic staff members using e-learning in teaching, with the standard classification *degree of qualification*. In a bid to obtain useful results, the researcher chose to include policy makers at universities in which the study was applied to discover their perceptions of some important points in the implementation and application of e-learning in teaching ex-officio leaders decision-making strategies.

7.4.1 The Degree of Academic Qualification

The results indicate that there is a statistically-significant difference between academic staff members in terms of the *academic qualification* variable in one of the three dimensions, D1, (the extent of usage of e-learning skills in their teaching by academic staff members'). The academic staff members are holders of Ph.Ds. They have an average mean of 67.92 ($p=0.001<0.05$) which could be explained by the fact that, due to

their qualifications they may have received lessons and training courses on the use of e-learning skills in teaching during their academic study and vocational rehabilitation which was reflected in their performance. Their colleagues who hold Bachelor's and Master's degrees may not have received adequate training in the use of e-learning in teaching.

In addition, there is a lack of specialized materials in ICT and e-learning at university level which meaning students have insufficient knowledge and familiarity to deal with technology such as ICT and e-learning skills.

Also, it is clear from the results that there is no statistically-significant difference between academic staff members in terms of the *academic qualification* variable in two of the three dimensions: D2 (the motivations for academic staff members to use learning in their teaching) and D3 (the obstacles for academic staff members' use of e-learning in their teaching), with the values of ($p = 0.030$ and $0.799>0.05$) respectively. There are two reason for the absence of a statistically significant difference. First, academic staff members may have poor academic qualifications in the use of e-learning during their studies; and second, they may lack practical application in the practice of e-learning which reflects on their performance.

In brief summary for the second question as the results indicated that, there is a statistically-significant difference between academic staff members in terms of the academic qualification variable in one of the three dimensions, D1, (the extent of usage of e-learning skills in their teaching by academic staff members') for academic staff members are holders of Ph.Ds. On the other hand, the results indicated that, there is no statistically-significant difference between academic staff members in terms of the academic qualification variable in two of the three dimensions: D2 (the motivations for academic staff members to use learning in their teaching) and D3 (the obstacles for academic staff members' use of e-learning in their teaching) for several reasons had been discussed above. (See Table 6.28 Statistically significant and non-significant difference between of variables to get a brief detailed description for that).

7.5 The Third Question

This question discusses the results derived from the questionnaire, the interviews and the literature to assess the statistically-significant differences between academic staff members in terms of demographic variable (academic qualification). Q3 Are there any statistically-significant differences in the use of academic staff members' e-learning skills in teaching in terms of the variable *years of academy experience*?

The reason for the researcher including *years of academy experience* as an independent variable was to understand the role of the practices of academic staff members using e-learning in teaching. In a bid to obtain useful results, the researcher chose the participation of policy makers at the universities in which the study was applied to discover their points of view on some important points in the implementation and application of e-learning in teaching ex-officio leaders decision-making strategies.

7.5.1 Years of Academy Experience

The results indicate that there is a statistically-significant difference between academic staff members according to their years of academic experience in two of the three dimensions, D1 and D2. D1 (the extent of usage of e-learning skills in their teaching by academic staff members) shows a statistically-significant difference between academic staff members who had between 15-24 years' experience, with an average 70.45 and p=value of 0.00<0.05 and those with five years or less, 6-14 years, and more than 25 years. The difference could be related to the professional experience gained over the years. In addition, D2 (the motivations for academic staff members' to use e-learning in their teaching) indicates that there is a statistically-significant difference between academic staff members according to their years of academic experience in favour of those with between 15-24 years' experience, with an average mean of 57.80 and p=value of (0.00<0.05).

On the other hand, there are no statistically-significant differences between the years of experience of academic staff members in dimension D3 (the obstacles to academic staff members using e-learning in their teaching), with the values of (p = 0.122>0.05).

In the summary of this third question as the results indicated that, there is a statistically-significant difference between academic staff members in terms of according to their years of academic experience in two of the three dimensions, D1 and D2. D1 (the extent of usage of e-learning skills in their teaching by academic staff members) shows a statistically-significant difference between academic staff members who had between 15-24 years' experience, with an average 70.45. Also, D2 (the motivations for academic staff members' to use e-learning in their teaching) indicates that there is a statistically-significant difference between academic staff members according to their years of academic experience in favour of those with between 15-24 years' experience, with an average mean of 57.80. While, there are no statistically-significant differences between the years of experience of academic staff members in dimension D3 (the obstacles to academic staff members using e-learning in their teaching), with the values of ($p = 0.122>0.05$). (See Table 6.28 Statistically significant and non-significant difference between of variables to get a brief detailed description for that).

7.6 Fourth Question

In this question the researcher aims to understand and highlight the importance of motivations for academic staff members to carry on using e-learning skills in their teaching. The question was: What were the motivations for academic staff members using e-learning in teaching?

This question was answered through Dimensions 2 of the questionnaire and the policy makers' responses from the interviews are discussed.

7.6.1 Dimension 2: the motivations for academic staff members to use e-learning in their teaching

In this question the respondents were asked through the questionnaire about the motivations for academic staff members to use e-learning in teaching, and policy makers expressed their opinions in the interviews. This dimension illustrates the results of respondents regarding motivations to use e-learning in teaching by academic staff

members, and consists of 13 items, which can be divided into two groups. The items were listed in descending order according to their means.

Q4: GROUP 1. *STONGLY AGREE* IN THE SECOND DIMENSION:

The first group in the second dimension consist of six of 13 items rated ***strongly agree***, the highest being 4.31 and the lowest being 3.98 out of 5.00. All of these items (1 to 6) were about the increasing sense of the motivations for academic staff members to use e-learning skills in their teaching. In addition, these items were about the motivations for using e-learning to provide solutions to some of the important issues, such as: increasing the number of students; providing more motivation and excitement in the educational process; encouraging students to interact with lessons and enhancing their performance; facilitating communication through exchange of ideas and information between educational institutions; offering flexibility in the educational process; and increasing the quality of teaching and learning because it integrates all the teaching methods. Each item in the second dimension is explained in more detail using the previous studies in the literature review and data analysis results, according to quantitative and qualitative data results. Academic staff members were asked about their motivations for using e-learning in teaching as reported by the related literature regarding the following items:

Item 1: '**E-learning provides solutions to some of the important issues, such as increasing the number of students'**, was ranked highest by academic staff members responding *strongly agree* in the questionnaire (M=4.31).

In this result indicate that academic staff members believe that e-learning offers practical and logical solutions in many aspect of life, especially in the field of education. It provides the solutions to the problem of the increasing numbers of students in the classroom, by firstly allowing learners the freedom to learn in a place and at a time that is convenient for them, and secondly facilitating communication between academic staff members and their students. This will stimulate both academic staff members and students in the educational process.

Likewise, this result is consistent with a study by Blin and Munro, (2008) which confirmed that e-learning provides useful solutions to important issues for many higher

education institutions, such as increasing student numbers in classes. In addition, the study confirmed that using e-learning and ICT guarantees the creation of many opportunities for higher education institutions, such as lifelong learning and flexibility in education (*ibid*).

Item 2: **'E-learning provides more motivation and excitement in the educational process'**, was ranked second by academic staff members responding *strongly agree* in the questionnaire with a mean of 4.29 out of 5.

In general, according to this result the most important factors that characterize e-learning are motivation and enthusiasm in the educational process and this is proven by e-learning through modern tools and the diversity of teaching methods.

This result is consistent with a study of the adoption of e-learning systems in universities, which proved to be effective, with the emergence of some important factors such as increased motivation and positive personal attitudes (Drennan et al., 2005), (Paechter et al., 2010).

Item 3: **'E-learning encourages students to interact with lessons and enhances their performance'**, was ranked third by academic staff members responding *strongly agree* to the questionnaire (M=4.26).

E-learning plays a major role in encouraging students to interact with lessons, which will enhance their performances. Thus, this confirms the most important factor regarding the motivation for using e-learning in the educational process.

This result was consistent with So *et al*. (2012) who found that e-learning encourages positive attitudes in students that will impact on their teaching practices in the future.

Item 4: **'E-learning helps facilitate communication through ideas and information between educational institutions'**, was ranked fourth highest by academic staff members responding *strongly agree* in the questionnaire (M=4.25).

The substantial progress made in the field of e-learning offers solutions to many important problems faced by educational institutions, for instance: exchange of knowledge, support, and funding (Blin & Munro, 2008). In addition, in order to facilitate the exchange of ideas and information between many modern higher educational

institutions, the importance of using ICT to facilitate communication is recognised (Liaw, 2008). Item 5: **'E-learning is flexible in the educational process',** was ranked fifth highest by academic staff members responding *strongly agree* in the questionnaire (M=4.23)

The feature of e-learning which distinguishes it from other is its flexibility. Many studies refer to the importance of flexibility of e-learning in the teaching process. Some such studies are Higgins (2008); Al-Musa & Al-Mobark (2005); Schoech (2000); Blin & Munro (2008); Iris & Vikas (2011); Ageel (2012); Khan (2005).

E-learning provides an approach and method that has uniqueness and flexibility. It also offers the learner the opportunity to study in a convenient way and, in terms of time and place, each student chooses what suits him or her (Al-Musa & Al-Mobark, 2005).

Item 6: **'E-learning increases the quality of teaching and learning because it integrates all the teaching methods'**, was ranked sixth highest by academic staff members who responded *strongly agree* in the questionnaire (M=4.22).

This result shows that academic staff members believe the use of e-learning in teaching increases the quality of teaching by stimulating academic staff members' diversity in teaching methods that suit their students, which reflects its impact on academic staff members with the development of teaching skills and quality (Ahmadi *et al*., 2011; Langstaff *et al.,* 2004; Sun *et al*., 2008).

Q4: GROUP 2. *AGREE* IN THE SECOND DIMENSION

The second group in the second dimension; D2 (the motivations for academic staff members to use e-learning in their teaching) consists of seven items; all of them rated ***agree***. The highest mean was 4.19 and the lowest was 3.98. These items (7 to13) were about e-learning facilitating learners' choices of the most suitable educational methods for them and their needs; helping to attract students to courses; increasing students' motivation to learn; fostering a positive relationship between the student and the educational curriculum; developing students' self-worth; giving more satisfaction to students; and enhancing positive personal attitudes.

Item 7, **'E-learning facilitates learners' choices of the most suitable educational methods for them and their needs'**, was ranked seventh by academic staff members responding *agree* in the questionnaire (M=4.19).

This finding shows that another key feature of the motivation to use e-learning in teaching, with a diversity of teaching method by academic staff members for their students, is that it allows the students to choose the most appropriate method for them to learn. The related literature also supports this point; for example, Sun *et al*. (2008) state that e-learning offers learners the choice of the most appropriate learning methods to suit their needs.

This finding is also consistent with a study by (Li et al., 2012) in which they conclude that e-learning develops with the emergence of some important factors such as increased motivation, and positive personal attitudes among the students (Liaw, 2008).

Item 8: **'E-learning helps to attract students to courses'**, was ranked eighth by academic staff members responding *agree* in the questionnaire (M=4.15)

This result shows that e-learning stimulates students' interest in courses. Thus, it reflects a positive impact on the students in the educational process.

This finding is also consistent with the study by So *et al*. (2012) which shows that e-learning has a great impact on teaching practices by students through their positive attitudes towards it, attracting them to courses, and their studies.

Item 9: **'E-learning increases the motivation of students to learn'**, was ranked ninth by academic staff members responding *agree* in the questionnaire (M=4.13).

In general, this result reflects on students' performance and motivation towards the use e-learning in teaching. It is consistent with the study by Samari and Atashak (2011), which examined the effect of the use of ICT and e-learning by university students. The results of their study showed that students educated by e-learning progressed much further than those who learning through traditional approaches. It also showed that students found e-learning to be considerably more educationally stimulating than traditional methods.

Item 10: **'E-learning fosters a positive relationship between the student and the educational curriculum'**, was ranked fifth highest by academic staff members who responded *agree* (M=4.11).

This result proved a positive relationship between students and the educational curriculum, which makes the e-learning a motivation for students and their relationship with educational curriculum.

This result is consistent with the results of the study conducted by Langstaff *et al* (2004) which looked at the use of e-learning techniques at Iowa University, involving students and academic staff members in order to identify the constraints and advantages of its usage. The results showed a sharp rise in the number of academic staff members and students who use this technique. They also showed that one third of students take at least one course using e-learning in teaching every semester.

Item 11: **'E-learning improves self-efficacy of the student'**, was ranked fifth by academic staff members who responded *agree* in the questionnaire (M=4.10)

This result reflects the key motivation for the use e-learning among the students which is to improve self-efficacy and give them more confidence in using e-learning. It is also consistent with the study by (Paechter et al., 2010) which shows that adopting e-learning by university students proved to be effective and increased direction for the self-efficacy of the student.

Item 12: '**E-learning gives more satisfaction to the students'**, was ranked twelfth by academic staff members responding *agree* in the questionnaire (M=4.03)

It is clear from this outcome that the most important factor of e-learning in teaching is the satisfaction of learners. In addition, it consists of satisfaction in several of the most important points such as flexibility; and choice of appropriate teaching method, which is reflected in its positive impact on the satisfaction of students. This result is confirmed and consistent with the studies of Sun *et al*. (2008); and Drennan *et al.*, (2005).

Furthermore, the study by Valentín *et al*. (2013) on the impact of ICT on university students in terms of motivation and learning strategies showed the belief that the use of ICT will increase students' satisfaction with their subjects.

Item 13: **'E-learning enhances positive personal attitudes',** was ranked thirteenth by academic staff members who responded *agree* in the questionnaire (M=3.98)

In general, this result confirms that the user of e-learning feels positive towards it. These outcomes are consistent with most studies in the field, including one by Sun *et al* (2008) and another by (Liaw, 2008) both of which found that the use of e-learning in teaching can have a very positive impact on students, and increase motivation, and positive and personal attitudes towards the use of e-learning. This was also confirmed by Bhuasiri *et al*. (2012) who found that "the most important factors influencing e-learning success in developing countries were typically related to an increasing level of technology awareness, as well as to a positive attitude towards e-learning based upon recognition of its role in enhancing basic technology knowledge and skills".

7.7 Fifth Question

In this question the researcher aims to highlight the obstacles facing academic staff members in the effective implementation of e-learning in teaching at some Saudi Universities.

Q5: What were the obstacles to using e-learning skills from the perspective of the academic staff members?

This question has been answered through the third dimension of the questionnaire and the policy makers' responses in the interviews are discussed.

7.7.1 Dimension 3: the Obstacles to Using e-Learning Skills in their Teaching, from the Perspectives of the Male Academic Staff Members in Some Saudi Universities.

In this question the respondents were questioned regarding the obstacles to academic staff members using e-learning in teaching. The response of academic staff members in the questionnaire, and the reactions of policy makers in the interviews in this dimension, illustrate the their perceptions of the obstacles to using e-learning in teaching by academic staff members, and consists of 17 items ranked in descending order of mean

and standard deviation with the highest mean for "absence of an institutional policy for e-learning' (M=4.10) and the lowest for " intimidated by the use of technology" (M=3.46).

The literature review identified a range of factors as obstacles facing academic staff members in implementing e-learning in higher education institutions. This section will discuss all seventeen obstacles

In accordance with the previous studies highlighted in Chapters Two and Three, the obstacles are divided into three categories: The first category, university-level obstacles (institutional sources), contains 11 items. Here, there is agreement of academic staff members regarding the obstacles relating to institutional issues. The second category, faculty members-level obstacles (individual sources) consists of four items. Again there is agreement of academic staff members regarding the obstacles relating to individual issues. The third category of the obstacles, across categories (individual & institutional sources) has two items on which academic staff members agree regarding the obstacles (Rogers, 2000; Muir-Herzig, 2004; Franklin *et al*. 2001; Scrimshaw, 2004; Jones, 2004; Al Hafezy; 2008; Al Khateeb, 2006; and Liaw, 2008).

The ability to recognise the barriers and obstacles to using e-learning is extremely important and its implementation may not be achieved without overcoming the barriers that arise as a result of the implementation process. Thus, the following sections will discuss each category of obstacles with details of the items.

7.7.1.1 First category, University-level Obstacles (institutional sources)

This section will discuss the obstacles in the first category facing academic staff members at university level (institutional sources).

As mentioned before in the data analysis chapter, academic staff members cited university-level sources and obstacles (institutional sources) as the most significant in hindering their e-learning implementation in the targeted universities (M=43.03 out of 60), and SD=7.83.

This category consists of 11 obstacles facing academic staff members in implementing e-learning at higher education institutions at university level (institutional sources). These items are ranked in descending order according to mean, and all of them rated *agree*.

These items (1 to 11) were reported in the related literature and include: absence of an institutional policy for e-learning; lack of integration of students with technology; lack of support in instructional design for e-learning; lack of adequate training in the use of e-learning techniques; increasing burden of non-teaching administrative tasks; unavailability of computerized educational programs; increased teaching load; lack of technical support at the University of Technology; lack of encouragement from heads; weakness in networking at the university for accessing Internet services; lack of sufficient financial support; lack of adequate computers for e-learning access.

Item 1: **"The absence of an institutional policy for e-learning"**, was ranked as the highest mean of academic staff members responding *agree* in the questionnaire (M=4.10 out of 5.00).

This result confirms the importance of the role of institutional policy at many institutions in higher education, for the use of e-learning in teaching and support programs. It is also consistent with many of the studies in the literature review such as that by (Panda & Mishra, 2007) which mentions the role of institutional support of academic staff members and its impact on the use of information and communication technology and e-learning in the twenty-first century.

This is confirmed by participants in the interviews. One policy maker from University (A) stated that:

> "There is an absence of institutional policy for e-learning and culture of e-learning among officials in the University".

This shows that there is a lack of awareness of the importance of the future of the implementation of e-learning at university level. In addition, it is as if there are plans to adopt the implementation of e-learning policy but there is no serious follow-up to this application.

Item 2: **"Lack of integration of students with technology"** had the second highest mean in the first category with a mean of 4.05 out of 5.00 academic staff members responding *agree*.

In this era of technical development and speed of access to knowledge it is essential to provide learners with modern instruments and techniques in order for them to access information rapidly, and if these instruments and techniques are not available in institutions of higher education, there will be a lack of technical integration between the students and the technology which will hinder the use of modern technology in classrooms.

This result is consistent with the study by Higgins (2008), which shows that the benefits of e-learning "availability of technology (any time any place) is only for those who have the proper technology and proper place without disturbance or interruption". In addition, the results agree with the study conducted by Hakkarainen *et al*. (2000) among school students in Finland which found surprisingly low use of e-learning. This was because the e-learning tools were confined to computers in a lab separate from the classroom and access to them was through special courses, which was a major impediment to students preparing themselves for the knowledge society.

Item 3: **'Lack of support in instructional design for e-learning'***,* had a mean of 4.04 out of 5.00 of academic staff members responding *agree*.

In fact, the effective use of instructional design for the use of e-learning as a framework for developing modules or lessons increases and enhances learning. It also encourages the engagement of learners so that they learn faster and gain deeper levels of understanding, making the acquisition of knowledge and skill more efficient, effective, and appealing (Merrill, Drake, Lacy & Pratt, 1996).

This result confirms that the lack of adequate support to design education programs at institutional level is an obstacle to the implementation of e-learning. Furthermore, this result is consistent with the response of participants in the interviews, with one of the policy-makers at University (D) when asked about the most prominent obstacles in the implementation of e-learning indicating that:

> "Actually, instructional design is important for e-learning and all curricula. Integration between e-learning and the university curriculums is necessary for highly accredited quality".

Item 4: **'Lack of adequate training in the use of e-learning techniques'** had a mean of 4.00 out of 5.00 of academic staff members responding *agree*. This result is consistent with that confirmed by Morris (2010); Muir-Herzig (2004); and Yalcin *et al*. (2011) who found that a lack of sufficient of appropriate training programs was an obstacle to successful implementation. In addition, a study by Gülbahar and Güven (2008) conducted on teachers integrating e-learning and ICT in their teaching, found that the most significant hindrance was a "lack of in-service training opportunities".

These results are in line with the views of participants from University (B), who reported that there are no sufficient training courses on the use of e-learning in teaching. One of the participants stated that:

> "Honestly, training programs are not effective in terms of quality and trainers. At the same time, few training courses are held each year for both students and faculty members. Training courses are limited to how to use the Internet and emails, but there are no advanced courses on e-learning and instructional design".

Item 5: **'Increased responsibility for non- teaching administrative tasks'**, had a mean of 4.00 out of 5.00 of members of academic staff member responding *agree*.

This result is consistent with the opinions of decision-makers in e-learning who consider one of the main obstacles in the implementation of e-learning in teaching to be the increase in responsibilities of faculty member, such as the departmental meetings and deanships as well as administrative tasks like managing a section.

Item 6: **'Lack of unavailability of computerized educational programs'***,* had a mean of 3.96 out of 5.00 of members of academic staff members responding *agree*.

This result supports the previous item regarding instructional design, and confirms the importance of integration in the technological and technical support in e-learning at university level. It also corroborates studies in the literature review such as Ahmadi *et al*. (2011); Prestridge, (2012); and Rogers (2000).

One of the policy maker participants from King Saud University, when asked about the most significant obstacles they faced at university level, cited the "Lack of unavailability of computerized educational programs"

Therefore, poor implementation may be due to but not limited to the lack of high-quality programs in the areas of training and development in ICT and E-learning at university level.

Item 7: **'Lack of technical support at the university level'** had a mean of 3.96 out of 5.00 of academic staff members responding *agree*.

This result reflects the opinion of one participant, a policy maker from University(C) who, in the interview, stated that:

> There is real difficulty at university level in the lack of continuous technical support. This has created a lot of technical problems that hinder the implementation of e-learning among faculty members in their lectures. This is caused by: weakness of networking at the university to provide access to Internet services, lack of adequate training in the use of e-learning techniques and lack of technical support at university level.

It was clear from the interviews with participants that technical support and incentives are among the main obstacles in universities.

Item 8: **'Weakness for networking at the university to access Internet services'**, had a mean of 3.96 out of 5.00 of academic staff members responding *agree*.

This result confirms the study by Odabasi (2000) who mentions that the most important factor in determining the use of technological resources was found to be the availability of the Internet.

Item 9: **'Lack of sufficient financial support'**, had a mean of 3.96 out of 5.00 of academic staff members responding *agree*.

In this result 'Lack of sufficient financial support' includes many aspects of barriers including a lack of financial stimulus for faculty members to provide hardware and software equipment as well as infrastructure to support the adoption of e-learning at university level.

This result was consistent with previous studies that have been presented in the literature, including Panda and Mishra (2007) and Spodark (2003).

Item 10: **'Lack of motivation and encouragement from heads',** had a mean of 3.96 out of 5.00 of academic staff members responding *agree*.

Item 11: **'Lack of adequate computers for e- learning exercise'** had a mean of 3.96 out of 5.00 of academic staff members responding *agree*.

7.7.1.2 Second category: level of academic staff members - obstacles (individual sources).

This section will discuss the second category to show the obstacles on the level of academic staff members (individual sources). It consists of four obstacles to the use e-learning in teaching at higher education institutions facing academic staff members on the individual level.

These obstacles, reported by the related literature, include: no merger or integration between e-learning and the university curriculum; concern about the quality of e-courses; lack of sufficient awareness regarding e-learning; and individuals intimidated by the use of technology. They are ranked in descending order according to mean, and all of them rated ***agree***, with means of 4.08, 3.88, 3.82 and 3.46 respectively (out of 5.00).

These results confirm those of Morris (2010) who mentions that there are several obstacles preventing the integration of e-learning by academic staff members. It is necessary to overcome these obstacles such as: lack of awareness among academic staff members of the kinds of techniques available and how they can be used to support the delivery of the curriculum, in order to use e-learning in teaching effectively.

They also confirm the study conducted by Hakkarainen *et al*. (2000) on 'integration' and 'merger', which found that lack of merger or integration caused segregation and isolation between student and e-learning tools, which prevented them from applying their knowledge. This is compatible with a study by Al Khateeb (2006) which found statistically-important differences related to the awareness levels of academic staff members in public universities.

7.7.1.3 Third category: obstacles across individual & institutional sources.

This section will discuss the third category to show the obstacles across individual & institutional sources.

It consists of two obstacles to the use of e-learning in teaching at higher education institutions facing academic staff members across individual & institutional sources.

These items, reported by the related literature, were increased teaching load and lack of time to develop e-courses. They are also ranked in descending order according to mean, and all of them rated ***agree***, with a mean of 3.90 and 3.87 respectively (out of 5.00).

The increased teaching load on academic staff members does not allow them the opportunity to develop and follow up e-learning programs, which hinders effective implementation communication with their students. This result is compatible with a study by Panda and Mishra (2007), which confirms that one of the barriers facing academic staff members is workload.

These findings agree with those of several studies that a major barrier to faculty members' use of e-learning is lack of time (Franklin *et al*. 2001). However, other studies on obstacles facing academic staff members and experts in the field of e-learning cite "the inability of faculty members to implement and use the existing resources they have available to them, as well as not saving time and effort due to insufficient training" (Morris, 2010).

7.8 Summary

This chapter has discussed the results of the perceptions of effective use which showed a moderately positive attitude towards e-learning, to continue to attract more academic staff members to adopting e-learning skills in their lessons. Several obstacles need to be overcome, which is seen at the university-level, individual level, and across the levels.

The following chapter will offer the conclusions and recommendations of this study based on the perceptions of academic staff members identified through the questionnaire and semi-structured interviews.

Chapter 8: Conclusion and Recommendations

Chapter 8: Conclusion and Recommendations

Introduction

This study aimed to investigate male academic staff members' perspectives of the effectiveness of the use of e-learning skills in teaching at some Saudi universities. The objective of the research is to understand the reality of the approaches to e-learning practices in the classroom. Based on the findings, the research also provides recommendations for the development of teaching methods to improve teaching with the use of e-learning for greater effectiveness, and the extent to which information and communication technology and e-learning are used to develop teaching methods and the higher education curriculum in the Kingdom of Saudi Arabia. Also the research will assess suggestions from academic staff members and policy makers to present suggestions that will lead to the development of teaching methods to make them more effective, and extend the use of information and communication technology to record their ideas in order to improve teaching methods and the higher education curriculum in the Kingdom of Saudi Arabia.

This chapter presents a summary of the research findings, its recommendations, the limitations of the study, the contribution of the study to the literature and suggestions for further studies relevant to this study.

8.1 Research Objectives

The study aims to identify issues about the use of e-learning skills in the educational process by academic staff members in some Saudi universities. An investigation of their attitudes to the use of e-learning, motivations for using it, and the obstacles they face has been closely examined to achieve the following aims:

- Provide detailed information about the perspectives of the participating academic staff members regarding the effectiveness of the use of e-learning skills in their teaching in Saudi Arabian universities, and investigate the current use of e-learning skills by academic staff members in their teaching practice.

- Determine the use of e-learning skills in the educational process by academic staff members in Saudi Arabian universities.
- Identify the relationship between variables such as job, academic qualifications, and years of academic experience, in the usage of e-learning by academic staff members in their teaching practice.
- Identify the motivations and incentives for academic staff members using e-learning skills in their teaching
- Determine obstacles and challenges facing academic staff members in the use of e-learning skills in their teaching practice.
- Provide recommendations for raising the level of IT utilization rates of academic staff members, and the perceived need for the development of e-learning skills.

8.2 Research Questions

The study has sought to obtain a deeper insight by means of an investigation into the use of e- learning in Saudi higher education institutions by academic staff members. The main research question is: What are (male) academic staff members' perspectives of the effectiveness of the use of e-learning skills in their teaching in some universities in the Kingdom of Saudi Arabia (KSA)? Based on this question, the research aims to answer the following sub-questions:

- What is the extent of the use of e-learning skills in teaching by academic staff members in some Saudi universities?
- Are there any statistically-significant differences in the use of e- learning skills by academic staff members in teaching in terms of the variable, academic qualification?
- Are there any statistically-significant differences in the use of e- learning skills by academic staff members in teaching in terms of the variable, years of experience?
- What were the motivations for academic staff members using e-learning in teaching?
- What were the obstacles to using e-learning skills from the perspectives of the academic staff members?

8.3 First Question

"What is the extent of the use of e-learning skills in teaching by academic staff members in some Saudi universities?" This question was answered through the first dimension of the questionnaire (Attitudes towards the Use of e-learning by Academic Staff Members), which is summarized in the subsection below.

8.3.1 The First Dimension D1: Attitudes towards the Use of e-Learning by Academic Staff Members.

The academic staff members reported a positive attitude towards the use of e-learning in their teaching, stating that dealing with e-learning can facilitate and improve communication with their students and help in the development of technical skills in the field of computers; thus, their self-confidence is enhanced. It also increases diversity in modern teaching methods, and staff members stated that the use of e-learning increased their efficiency in teaching, which encouraged them toward innovation and creativity in the application of ICT. Hence, e-learning leads to an increase in educational innovation and contributes to the development and promotion of skilled direction of knowledge content. e-learning saves time and effort for both academic staff members and their students, which gives more stability and satisfaction in the educational process. Moreover, e-learning can engage learners more than other forms of learning as it highly motivational. In addition, a proportion of respondents gave a neutral response regarding the difficulty of dealing with e-learning, and considered it frustrating for two reasons: they have not attended training courses and they have no experience in the field of e-learning. This point does not appear to affect academic staff members' enthusiasm for the use of e-learning in the teaching and learning process, which in general is positive. Results obtained from using academic e-learning were better than those from traditional learning. The rating for this dimension was M=4.18 *agree*, placing it first on the scale of all of the dimensions.

8.4 Correlation of Variables

The results showed that there are no statistically significant differences between academic staff members' responses attributed to Academic Qualification in two dimensions, motivations for and obstacles to using e-learning in teaching. On the other hand, there are statistically significant differences attributed to Academic Qualification for those who are holders of Ph.D. Degrees in the dimension of attitude towards the use of e-learning in teaching between academic staff members. Also, the results showed that there are no statistically significant differences between academic staff members' responses attributed to Years of Academy Experience in terms of the dimension of obstacles facing academic staff members. Furthermore, there are statistically significant differences between academic staff members in the dimensions of attitudes towards the use of e-learning and motivations by those who had experience of between 15-24 years. In relation to variables, the results are shown in questions 2 and 3 below:

8.5 Second Question

"Are there any statistically-significant differences in the use of academic staff members' e-learning skills in teaching in terms of the variable *academic qualification*?" The results can be summarized as follows:

There are no statistically significant differences between academic staff members' responses attributed to *Academic Qualification* in two dimensions, D2 (the motivations for academic staff members to use e-learning in their teaching) and D3 (the obstacles to academic staff members using e-learning in their teaching). On the other hand, there are statistically significant differences attributed to Academic Qualification for those who are holders of Ph.D. Degrees in dimension D1 (academic staff members' attitudes towards the use of e-learning in their teaching) between academic staff members. They have an average mean of 67.92 ($p=0.001<0.05$) which could be explained by the fact that, due to their qualifications they may have received lessons and training courses on the use of e-learning skills in teaching during their academic study and vocational rehabilitation which was reflected in their performance. On the other hand, their colleagues who hold Bachelor's and Master's degrees may not have received adequate training in the use of e-learning in teaching.

8.6 Third Question

"Are there any statistically-significant differences in the use of academic staff members' e-learning skills in teaching in terms of the variable *Years of academy experience*?" The results can be summarized as follows:

There are no statistically significant differences between academic staff members' responses attributed to *Years of academy experience* in terms of dimension D3 (the obstacles to academic staff members using e-learning in their teaching). However, there are statistically significant differences between academic staff members in two of the three dimensions, D1 (academic staff members' attitudes towards the use of e-learning in their teaching) shows a statistically-significant difference between academic staff members who had between 15-24 years' experience, with an average 70.45 and p=value of 0.00<0.05, and D2 (the motivations for academic staff members' use of e-learning in their teaching), with an average mean of 57.80 and p=value of 0.00<0.05, for those who had between 15-24 years' experience. This means that length of experience is important.

8.7 Fourth Question

"What were the motivations for academic staff members using e-learning in teaching?" This question was answered through the second dimension of the questionnaire, D2 (the motivations for academic staff members' use of e-learning in their teaching). This is summarized in the subsection below.

8.7.1The Second Dimension, D2: the Motivations for Academic Staff Members' Use of e-Learning in their Teaching

In this dimension the academic staff members expressed enthusiasm regarding motivation for the use of e-learning in their teaching, through their responses to the questionnaire. The rating for this dimension was (M=4.17) *agree* and it came second in three dimensions.

This dimension contains 13 items, the first six items in this dimension were rated strongly agree, the highest being M=4.31 and the lowest being M= 3.98 out of M=5.00.

Thus, the most prominent results of stimulus for academic staff members to activate the use of e-learning in their teaching, indicate that it provides solutions to some of the important issues such as: increasing the number of students; providing more motivation and enthusiasm for the educational process; encouraging students to interact with lessons and enhancing their performance; facilitating communication through exchange of ideas and information between educational institutions; offering flexibility in the educational process; and increasing the quality of teaching and learning because it integrates all the teaching methods.

In addition, the seven other items in this dimension classified were rated agree, with the highest mean of M=4.19 and the lowest M= 3.98. The positive responses of the academic staff members in the motivation dimension, are reflected in their students' use of e-learning to facilitate their choice of the most suitable educational methods for them as well as their choice of courses. Moreover, increasing students' motivation to learn, fosters a positive relationship between the student and the educational curriculum. Furthermore, developing students' self-worth provides more satisfaction to students, and enhances positive personal attitudes.

8.8 Fifth Question

"What were the obstacles to using e-learning skills from the perspective of the academic staff members?" This question has been answered through the third dimension of the questionnaire, D3 (the Obstacles to Using e-Learning Skills in their Teaching, from the Perspectives of the Male Academic Staff Members in Some Saudi Universities), which is summarized in the subsection below:

8.8.1 The Third Dimension, D3: the Obstacles to Using e-Learning Skills in their Teaching, from the Perspectives of Male Academic Staff Members in Some Saudi Universities

In this dimension the respondents were questioned regarding their perceptions of the obstacles to using e-learning in teaching by academic staff members. This dimension contains 17 items, ranked in descending order of mean, with the highest mean for absence of an institutional policy for e-learning (M=4.10) and the lowest for intimidated

by the use of technology (M=3.46). The rating for this dimension was (M=3.88) agree, making it third in the order of the three dimensions. The literature review and previous studies identified a range of factors as obstacles facing academic staff members in implementing e-learning in higher education institutions. These obstacles are divided into three categories: university-level obstacles (institutional sources), which contains 11 items; faculty members-level obstacles (individual sources) which consists of four items; and across categories (individual & institutional sources) which has two items. They are also ranked in descending order according to mean, and all of the items rated agree, with means of 43.03, 15.25, and 7.77 respectively.

The results from the quantitative data analysis identified several obstacles facing faculty members in terms of the implementation of e-learning in their teaching at some of the institutions. The study describes how most obstacles identified by academic staff members were regarded as being at university level and individual sources, for example, the absence of an institutional policy for e-learning. In addition, a number of other obstacles were identified, including: lack of integration of technical support, lack of support in instructional design for e-learning and lack of adequate training in the use of e-learning techniques. In addition, several other obstacles that should be considered to find appropriate solutions through proposals and recommendations are presented in the research.

The study shows through the quantitative and qualitative data a number of findings in about academic staff members' perspectives. This is through quantitative data by questionnaire to academic staff members, as well as administrative staff and policy makers in the university level through interviews and qualitative data.

A synthesis of this data overall is also important, providing details of the points of agreement, conflict and outcomes from making this comparison, in the follow section.

According to quantitative outcomes in three dimensions of questionnaire of perspectives towards attitudes of usage of e-learning skills in teaching, motivations and obstacles in higher education institutions by academic staff members had shown a positive attitudes in almost of first dimension in questionnaire of usage of e-learning skills in teaching that, for instance e-learning facilitates and improved communication between academic

staff members and their students, use of e-learning helps in the development of technical skills in the field of computers, and also shows strong agreement with that e-learning enhances self-confidence thereby facilitating learning. However, Faculty members had shown a positive attitude towards the use of e-learning skills in teaching through the first dimension in the quantitative data (questionnaire). The results of the qualitative evidence in interviews towards the level of use e-learning skills in teaching by faculty members indicate some disparity. This is in the views about the use of e-learning skills about the teaching and learning process between higher and lower levels of use. Several reasons were mentioned for example: lack of time, lack of training and experience in the use of e-learning tools, intimidated by the use of technology, lack of training course specialists in the field of e-learning, and lack of financial support compared to hours of using e-learning by faculty members.

The results of quantitative data showed that there are no statistically significant differences between academic staff members response attributed to Academic Qualification in two dimensions (the motivations for academic staff members' to use e-learning in their teaching) and (the obstacles to academic staff members using e-learning in their teaching). Also, it indicates there are statistically significant differences attributed to Academic Qualification for those who are holders of Ph.D. Degrees in the dimension of academic staff members' attitudes towards the use of e-learning in their teaching.

In addition, there is almost a convergence and agreement of views between the faculty members and policy makers on the university issues towards the obstacles that hinder the application of e-learning skills in the teaching and learning process, for instance: there is agreement among faculty members and policy makers in several obstacles towards using e-learning skills in teaching such as: an absence of institutional policy for e-learning and culture of e-learning among officials in the university, lack of adequate training in the use of e-learning techniques; and lack of technical support at university level and the important in instructional design for e-learning and all curricula according to high credited quality, that there should be appropriate integration between e-learning and the university curricula.

Furthermore, the results show that there was no statistically significant difference between academic staff members' responses in terms of years of academy experience in relation to the dimension of the obstacles to academic staff members using e-learning in their teaching. However there were statistically significant differences between academic staff members in two of the three dimensions in terms of attitudes of academic staff members towards the use of e-learning in their teaching and the motivations for academic staff members' to use e-learning in their teaching. These showed a statistically significant difference between academic staff members who had between 15 and 24 years' experience.

Overall positive attitudes to e-learning have been shown to reflect positive attitudes towards two variables: academic qualification and years of academy experience. This is in relation to the use e-learning skills in the teaching and learning experience according to the perspectives of academic staff members consulted for this study.

The dimension of 'attitudes towards motivation to use e-learning in teaching' shows agreement with 'strongly agree' in six of 13 items in same dimension among faculty members that e-learning increases students' motivation to learn. This indicates that faculty members tend to believe that motivation positively affects the use of e-learning in teaching.

A number of faculty members mentioned obstacles that hinder the application of e-learning skills in teaching at higher education institutions in Saudi. The results from the quantitative data analysis identified several obstacles facing faculty members in terms of the implementation of e-learning in their teaching at some of the institutions. The findings indicate that most obstacles identified by faculty members were regarded as being at university level and involved, for example, the absence of an institutional policy for e-learning. In addition, a number of other obstacles were identified, including the lack of integration of technical support, lack of support in instructional design for e-learning and lack of adequate training in the use of e-learning techniques.

By contrast, and perhaps not surprisingly, policy makers in the university level mentioned that to improve and develop the e-learning environment more powerful roles, such as establishing a Deanship of e-Learning and Distance Learning has proved to be an

essential step in coping with technological advancement in the field of education. The aim of this was to improve the educational process at the university by establishing an integrated educational environment using technology in distance learning and learning management in a way that serves the university's strategic plan. The senior post perhaps enabled institutional issues to be tackled more systematically.

Therefore, the higher education institutions' aims in establishing this deanship was to make a quantum leap in higher education and develop it from a traditional approach using traditional methods of teaching, to one that looks forward towards improvement and excellence in terms of teaching methods. They believed that employing technology in education would support a high-quality level of achieving continuous development.

8.9 Limitations of the study

Despite the strengths of this study, such as the sampling from four universities, and a methodology which included a mixed method approach to triangulate academic staff members' perceptions as expressed through questionnaire, as well as interviews with expert policy makers at university level, the study has a number of limitations. These include the narrow geographical spread, the exclusion of students, and the fact that it was restricted to public universities and male academic staff members.

As the researcher only had permission to apply the study over three months, the sheer size of the country meant that it had to be restricted to three regions, with two universities in the north (Hail and Al-Jouf), one university in the east (Dammam) and one university in Riyadh, the country's capital (King Saud) (see Figure 2.1: Map of Saudi Arabia). However, despite the fact that it represented a narrow geographical spread, the researcher tried as far as possible to cover as much of the region in the application of the study.

The study sample included male academic staff members and expert policy makers at university level in government universities only. Students and private universities were excluded due to the limited period of time set for the research, as well the difficulties involved in gaining approval for extending the survey to a wider audience. In the implementation process, there was some delay in obtaining the required permission, particularly for cultural reasons, to conduct the semi-structured interviews.

There were a number of difficulties caused by the infrastructure, which impeded the collection of the data. Saudi Arabia is a huge country and there are problems involved in travelling between the regions and universities to conduct the interviews and collect the questionnaire. As a result, the researcher had to distribute the questionnaire himself to guarantee obtaining sufficient responses.

In addition, there were some inconsistencies between the responses of academic staff members to the various research instruments addressing the dimensions as shown by differences in questionnaire responses to the items of each dimension.

Despite carefully applying the questionnaire to a pilot sample to check the clarity and accuracy of its drafting, unexpected answers and patterns were found in the second part of the questionnaire. It is assumed that this arose because of a misunderstanding of the format of some items in the questions. There may have been confusion in the exact understanding of the terms e-learning, distance learning, and blended learning.

8.10 Research Contribution

This study provides a significant contribution to knowledge in the following areas:

Firstly, the study contributes to bridging a gap in the literature particularly from its generation of useful information to support future development in the use of e-learning skills in teaching by academic staff members in the higher educational system not only in Saudi Arabia, but also in other Arab countries and internationally.

The aim of the study was to contribute to a better understanding of e- learning through an investigation of academic staff members' perspectives of the effectiveness of the use of e-learning in teaching in such a way that the attitudes, motivations, and obstacles facing academic staff members, requirements, and the proposals for e-learning development could help to develop e-learning.

Secondly, this research provides details of the literature in order to offer a definition of e-learning, present its history, and highlight its positive and negative aspects and features and its relationship with different kinds of learning.

The researcher aims to apply the findings to help in the development of teaching methods through the effective use of modern strategies in the field of e-learning, in order to improve teaching methods on the one hand, and university curricula on the other. This could be achieved through attention to instructional design in learning, which is reflected in the quality of output in tertiary education and in students' results.

This study also distinguishes itself by addressing three issues related to the process of the use of e-learning in teaching integration: academic staff members' perceptions to the use of e-learning, motivations for using it, and obstacles faced in its implementation. These are considered in terms of academic staff members, at university level and across the two.

Thirdly, it will provide academic staff members in higher educational institutions in Saudi Arabia with a new understanding of university level usage of e-learning in their teaching in the classroom and their perceptions of it, by indicating motivating factors influencing academic staff members to use e-learning and identify challenges and obstacles faced in the implementation of e-learning in teaching in the field of education.

Fourth, presenting academic staff members' views on the present use of e-learning and its influence on their teaching styles will enable policy makers in the Ministry of Education (MOE) to make decisions based on informed judgments rather than intuition.

In addition, it will broaden the horizons of decision-makers in the Ministry of Education by showing the importance of academic staff members using e-learning and its tools in their teaching. It will highlight the need for highly skilled personnel, through the provision of advanced electronic training programs to facilitate instructional design for the effective implementation of e-learning.

8.11 Suggestions for Future Studies

In view of the limitations faced in this study, further studies may be conducted in the future.

Firstly, this study has only targeted male academic staff members' perspectives and interviews with male policy makers at university level, through which a comparison could be made. This study recommends conducting a study on female academic staff members' views, to compare male and female perspectives. In addition, in order to improve the spread of the research, other studies could concentrate on the views of students, academic staff members and policy makers at the Ministry of Education (MOE) level, to give a greater depth to the findings.

Secondly, this study has targeted four public universities which are entirely funded by the Saudi government. There are eight private universities in the Kingdom, which are worthy of being researched and investigated. On the other hand, other future research could involve a comparative study that takes into account both public and private universities. This would lead to the strengthening and enhancement of e-learning in all Saudi universities.

Thirdly, this study was conducted in education and science faculties only. Other future studies could be conducted in different faculties, such as Colleges of Engineering or Colleges of Medicine, in order to compare these faculties with Education and Science faculties.

There is a need to carry out further research to determine the impact of increased knowledge of the use of e-learning on learners and academic staff members in the educational process through the application of new strategies of modern teaching methods and the relationship between them.

8.12 Recommendations of the Study

On the basis of the study results, the literature review and the data analysis, several recommendations can be made which would be useful for the future of e-learning, by

helping to enhance the environment of e-learning in teaching and improving teaching approaches used by academic staff members, as well as developing relevant educational policies in universities. They would also aid the effective implementation of ICT and e-learning in the educational process. Thus, the universities must adopt technology enhanced learning in their methodologies and policies effectively. The following recommendations arose from the study findings:

8.12.1 Recommendations for the Universities

Effective adoption of e-learning stems from the policies followed by the senior leadership in universities and continues through the activation of projects and plans and sustainable technology programs. Therefore, universities should put forward future plans with bold lines and clear programs for e-learning and its implementation and ongoing follow-up programs. Thus, universities should pay attention to the importance of the application and implementation of e-learning and ICT skills in the educational process according to clear regulations for participation in e- learning.

This is based on several points, the most important are that they should:

- Provide infrastructure at university level represented in the provision of high-speed online networks, modern equipment and advanced maintenance, and most importantly to maintain and update software, with sufficient resources to support the hardware and software and adding appropriate developments to their e-learning software.

- Offer training of highly qualified cadres of trainer through adequate and capable human resources as the need arises, and advanced training programs in e-learning and the use of information and communication technology in education to develop the skills of academic staff members.

- Adopt a clear policy towards the activation and implementation of e-learning at university level. As the findings have shown, the absence of institutional

policy regarding e-learning in the dimension of obstacles facing academic staff members in the implementation of e-learning were the greatest barriers. Therefore, it is recommended that this element should be developed to overcome this obstacle with the adoption and activation of e-learning programs in earnest.

- Create a unit that specializes in the instructional design of e-learning through computerized educational programs even for academic staff members to use, and train them on how to prepare for and develop them.

- Grant greater incentives for academic staff members to spread the spirit of fair competition between faculty members for the use of e-learning in their teaching in the classroom, as well as developing incentive systems that encourage academic staff to engage in ICT and use its facilities in the teaching process. These could include tangible financial incentives such as monthly allowances, personal laptops, scholarships and courses outside the university or outside the country.

- Benefit from the experiences of developed countries in e-learning with work projects for the exchange of partnership interests and educational experiences in the field of educational information and communication technology industry.

- Activate the electronic services management that the study recommends universities should provide to academic staff members and their students with personal email accounts that enable them to communicate with each other effectively. This could be done by developing more sophisticated information systems that help in creating emails for academic staff members and their students with more activation by them.
- Establish advanced research centres to promote excellence and advanced research in various areas of communications and information technology in education and the implementation of e-learning. Leadership in these centres

should be qualified and trained and specialized in the field of e-learning in order to achieve the objectives set for successful e-learning in universities. However, as the major role of research centres is to support scientific research and help officials to make sound decisions on a solid scientific basis, these centres should provide support and partnership for all those interested in the development of ICT and e-learning, whether students, academic staff members, or members of the local community. They should support scientific research and encourage systematic studies into the effects of e-learning, and provide the necessary facilities for its success. In particular, they should conduct more specialized studies that reveal the effectiveness of e-learning programs and their impact on academic staff members' capacity and thinking.

- The results of this study have shown a perceived lack of technical support at university level. Therefore, the universities should establish units in each college to provide advanced technical support and advice for academic staff members and repair technical problems immediately, with direct connections to reply to enquiries regarding the use of e-learning, online networks and computers. In addition, they should provide qualified staff to support e-learning programs such as: instructional design programs, computerized educational programs, educational content and management of software.

8.12.2 Recommendations for the Ministry of Education (MOE)

It is the role of most countries' Ministries of Education to maintain the quality and originality of education and keep up with all the new advancements in science to facilitate improvements in higher education for future generations.

A number of useful recommendations could be provided, based on the results of this study and the literature review, which relate to the role of the Ministry of Education in Saudi Arabia (MOE) in the activation of e-learning for high-level programs. These recommendations can be summarized as follows:

- Unify clear policies and standards by the Ministry of Education (MOE) for the effective implementation and application of e-learning programs in all Saudi universities in accordance with a clear strategic vision.

- Work seriously, on the adoption of e-learning certificates and provision of training courses in e-learning programs in an official capacity, to equate e-learning certificates with other certificates. Through the Ministry of Education (MOE), the government could recognize e-learning qualifications as the equivalent of traditional certificates for employers in both the public and private sectors. This would introduce e-learning in earnest to all segments of society.

- The Ministry of Education (MOE) should appoint a government agency responsible for e-learning and ICT policy formulation, implementation, and evaluation. This agency would combine its efforts and resources to achieve maximum results, reflect on implementation of e-learning on the institutional and individual level by academic staff members and their students, to spread the culture of technology between members of the academic community.

- The Ministry of Education (MOE) should give higher educational institutions at university level more authority and freedom to manage and run themselves, including their financial matters.

- The Ministry of Education (MOE) should open high-level training and professional centres with qualified instructors, to train academic staff members and students on how to use and apply e-learning effectively. In addition, training should not merely focus on basic e-learning skills but should also progress to modern methods in teaching for integrating and effectiveness of e-learning in teaching and learning.

8.12.3 Recommendations for the Government

In the context of this study, useful recommendations could be provided, based on its results and the literature review, related to the role of the government in the effectiveness

of the implementation of e-learning on a high authority level of e-learning programs. These recommendations can be summarized as follows:

- As the lack of sufficient financial support was considered a major hindrance to the implementation of e-learning in the teaching process, in coordination with the Ministry of Finance, the government should allocate sufficient budget to support e-learning and the development of systems and administrative procedures that facilitate the activation of e-learning technology at university level.

- A clear strategy for e-learning programs and information and communications technology should be adopted in coordination with the Ministry of Education, the Ministry of Communications and Information Technology and the Ministry of Planning, the aim should be to set up joint plans and programs in accordance with the timetable for the activation of e-learning programs and communication and information technology in education and included in the government's next five-year and ten-year plans.

The researcher hopes that this study will encourage other researchers to conduct follow-up studies in the field of e-learning and ICT in the teaching process. Academic staff members' use of e-learning is still in its early stages of application and implementation and further research should therefore be encouraged and welcomed.

Finally, based on suggestions from the respondents, and the study results, the researcher recommends arranging an international conference in Saudi Arabia on e-learning and its implementation in the educational process.

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◦ http://www.mohe.gov.sa.

◦ http://www.mohe.gov.sa/en/aboutus/Pages/default.aspx.

APPENDICES

Appendix 1: Questionnaire (English version)

Dear Academic Staff Member:

The researcher conducting a study entitled (Investigating academic staff members' perspectives of the effectiveness of the use of e-learning skills in teaching in Saudi Arabia universities). In order to complete the requirements for obtaining a PhD in Information and Communication Technology in Education in e-learning from the University of Durham in the UK.

E-learning (in this research) means the use as a member of the faculty at the University of the skills of e-learning in teaching through the transfer of educational content to the learner using information and communication technology interactive available and available either (synchronous or asynchronous) is allows the learner to interact with the active content in this and the completion of this learning at a time and place as quickly as that suits your circumstances and abilities.

The aim of this study was through three main dimensions to take the actual perceive about "the use of e-learning skills in teaching and motivations of uses, as well as knowing the obstacles that confront you in the actual application from your point of view." Because of the importance of your point of view, as the most important stakeholder, it will be used investigating in assessing the effectiveness of the use of e-learning in teaching. The researcher has prepared this questionnaire, which includes Initially General Information In addition to the three main dimensions required to answer the research questions and hopes you will, kindly, fill in the questionnaire by reading it carefully, and then ticking ( ) below the option which is compatible with your point of view, on the five point Likert scale:

Strongly agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly disagree (1)

All data will be used only for research purposes. As there are no questions to identity the participants strict confidentially is ensured. I would also like to draw it to your attention that your participation in this survey is voluntary and you are free to withdraw at any point. It will not take more than 15 minutes, but it will benefit the researcher and the community through contributing in "Investigating academic staff members' perspectives of the effectiveness of the use of e-learning skills in teaching in Saudi Arabia universities", indeed, your feedback is essential to improving e-learning in the future.

Thank you very much for your support and your cooperation, and for further queries about the questionnaire please email correspondence to the following address:

Yours Faithfully,

MISHAL AL-SHAMMARI

School of Education

Durham University

United Kingdom

Email: m.o.al-shammari@durham.ac.uk

Please make (✓) in the right place: Part- A: Demographic data

1-	Department	Education ( ) Science( )
2-	Age	29 & Less ( ) 30-39 ( ) 40 - 49 ( ) 50 &Above ( )
3-	Academic Qualifications	Bachelor ( ) Master( ) Ph.D ( )
4-	Years of Academy Experience	1-5 ( ) 6-14 ( ) 15-24 ( ) + 25 ( )
5-	Academic Position	Lecturer ( ) Assistant Professor( ) Associate Professor( )Professor( )
6-	Have you got any training courses in the field of e-learning?	Yes ( ) No ( )
7-	The technical skills in the field of Computer.	Beginner ( ) Intermediate( ) Skilled ( )
8-	Do you have experience in the field of e-learning?	Yes ( ) No ( )

9- Use a computer to communicate with students.

1 - Daily ( ) 2 -weekly ( ) 3 - month ( ) 4 - never used it ( ).

10 - Use e-mail to communicate with students.

1 - Daily ( ) 2 -weekly ( ) 3 - month ( ) 4 - never used it ( ).

11 - Teaching through the use of e-learning tools.

1 - Daily ( ) 2 -weekly ( ) 3 - month ( ) 4 - never used it ( ).

12- Use of e-learning tools.

N	Tools	Always (5)	Often (4)	Sometimes (3)	Rarely (2)	Never (1)
1-	**World wide web.**					
2-	**E-mail.**					
3-	**Discussion Groups.**					
4-	**Mailing list.**					
5-	**Interactive video.**					
6-	**CD.**					
7-	**Chat.**					
8-	**Video Conference.**					
9-	**Smart Board.**					
10-	**Social Networks.**					

Part –B: Dimension 1: Attitudes towards the Use of E-learning in Teaching.

N	Items	S.A (5)	A (4)	N (3)	D.S (2)	S.D (1)
1-	E-learning facilitates and improves communication between academic staff members and their students.					
2-	E-learning helps in the development of technical skills in the field of computers.					
3-	E-learning can enhance self-confidence to facilitate learning					
4-	E-learning helps diversity in modern teaching methods.					
5-	E-learning increases the efficiency of academic staff members in teaching.					
6-	E-learning encourages innovation and creativity in the application of information and communication technology					
7-	E-learning is characterized by efficiency through increased motivation for learning by learners.					
8-	E-learning saves time and effort for both academic staff members and students.					
9-	E-learning contributes to the development and promotion of skilled direction of knowledge content.					
10-	E-learning gives more stability and satisfaction in the educational process.					
11-	E-learning can engage the learners more than other forms of learning.					
12-	E-learning motivates students towards their educational practices					
13-	E-learning encourages giving greater importance and influence to the lessons.					
14-	E-learning helps to use blended learning model to improve the teaching skills and effectiveness of the quality of education.					
15-	E-learning encourages educational innovation.					
16-	There are difficulties in dealing with e-learning and therefore frustrating to use.					

Dimension 2: Motivations to Use E-Learning in Teaching

N	Items	S.A (5)	A (4)	N (3)	D.S (2)	S.D (1)
17-	E-learning provides solutions to some of the important issues, such as increasing the number of students.					
18-	E-learning provides more motivation and enthusiasm in the educational process					
19-	E-learning encourages students to interact with lessons and enhances their performance					
20-	E-learning helps facilitate communication through ideas and information between educational institutions.					
21-	E-learning is flexible in the educational process.					
22-	E-learning increases the quality of teaching and learning because it integrates all the teaching methods.					
23-	E-learning facilitates learners' choices of the most suitable educational methods for them and their needs.					
24-	E-learning helps to attract students to courses.					
25-	E-learning increases the motivation of students to learn.					
26-	E-learning fosters a positive relationship between the student and the educational curriculum					
27-	E-learning improves self-efficacy of the student.					
28-	E-learning gives more satisfaction to the students.					
29-	E-learning enhances positive personal attitudes.					

Dimension 3: Obstacles to Using E-learning in Teaching.

N	Items	S.A (5)	A (4)	N (3)	D.S (2)	S.D (1)
30-	The absence of an institutional policy for e-learning					
31-	No merger or integration between e-learning and the school curriculum.					
32-	Lack of integration of students with technology.					
33-	Lack of support in instructional design for e-learning					
34-	Lack of adequate training in the use of e-learning techniques.					
35-	Increasing burden of non-teaching administrative tasks.					
36-	Unavailability of computerized educational programs.					
37-	Increased teaching load.					
38-	Lack of technical support at the University of Technology					
39-	Concern about the quality of e-courses					
40-	Lack of time to develop e-courses					
41-	Lack of sufficient awareness of the direction of e-learning makes me frustrated and I avoid using it.					
42-	Weakness in access to Internet services at the university.					
43-	Lack of sufficient financial support.					
44-	Lack of motivation and encouragement from heads.					
45-	Lack of adequate computers for e-learning exercises.					
46-	Intimidated by the use of technology.					

Appendix 2: Interviews Questions – (English Version).

INTERVIEWS - Main-questions:

Q1) To what extent do faculty members currently use e-learning in their teaching?

Q2) What are the procedures for facilitating the application of e-learning at university level?

Q3) What are the main obstacles, from your point of view, that hinder faculty members' use of e-learning in their teaching?

Sub-questions

Q4) What are the methods of institutional support for e-learning programs at your university?

Q5) Does your university provide training programs on the use of e-learning in the teaching and learning environments for faculty members?

-If so, could you tell me what types of training programs the University provides?

Q6) Does your university provide the e-learning tools that are necessary for integrating e-learning in teaching?

-If so, could you please provide some examples of these tools?

Q7) What are the most important e-learning programs currently provided by your university to support the use of e-learning in teaching by faculty members?

Q8) Regarding the following variables, how would you rate the importance of faculty members using e-learning in their teaching?

3 = very important, 2 = important to a lesser extent 1 = not important

- Age ( ) - Rank ( ) - Teaching experience ( ) - Academic qualifications ( )

- Experience in the field of e-learning ( ) - skills in the field of computing ( )

- Getting the necessary training courses in the field of e-learning ().

Q9) What are your suggestions for improving the development and progression of faculty members to enhance their use of e-learning in their teaching in higher educational institutions?

Appendix 3: Letter from the Supervisor to the Saudi Cultural Bureau in UK Confirming the Undertaking of the Field Study

Durham University
School of Education

3rd May 2013

Dear Sir

I believe that you may be able to offer some help to one of my doctoral students and ask that you might kindly consider my request. I am the supervisor for Mr Mishal Al-Shammari for his PhD studies here at Durham University.

He is going conduct his field research on "Investigating Academic Staff Members' Perspectives Of The Effectiveness Of The Use Of E-Learning Skills In Teaching In Saudi Arabia". He intends to undertake the survey fieldwork for his studies next year over the next few months.

It would be very much appreciated if you could help to make this study possible and to facilitate any steps necessary to make this happen. The study is potentially valuable to develop more effective use of e-learning and blended learning more widely in Saudi Arabia and could inform strategic development of more effective e-learning approaches and support for academic staff members in higher education.

Should you require any further information, please do not hesitate to contact me.

Yours sincerely

S. G. Higgins

Professor Steven Higgins
School of Education, Durham University
Leazes Road, Durham, DH1 1TA, UK
Tel: 0191 334 8359
Fax: 0191 334 8311
s.e.higgins@durham.ac.uk

Appendix 4: Ethical approval for Research Ethics and Data Protection Monitoring from Durham University.

RE: Research Ethics and Data Protection Monitoring Form

RE: Ethical approval: Mishal Al-Shammari

Dear Michal

I am pleased to inform you that your application for ethical approval has been granted by the School of Education Ethics Committee in respect of Investigating academic staff members' perspectives of the effectiveness of the use of e-learning skills in teaching in some Saudi Arabia universities'.

May we take this opportunity to wish you good luck with your research.

Best wishes

Sheena Smith Research

Office School of Education

Durham University

Tel: (0191) 334 8403

www.dur.ac.uk/education

Appendix 5: Certificate as evidence for paper publication.

From: IISRC <info@iisrc-research.org>
Date: 22 March 2015 11:35:24 GMT+3
To: AL-SHAMMARI M.O. <m.o.al-shammari@durham.ac.uk>
Subject: Re: Certificate as evidence for paper publication.

Dear Al-Shammari,

Your paper had already published in International Journal of Information Technology and Computer Science (IJITCS) (http://www.ijitcs.com) in Volume 19: issue no: 2.

Please check on it.

Regards
Secretariat
IISRC

Al-Shammari, M.O. & Higgins, S. (2015) Obstacles Facing Faculty Members in the Effective Implementation of e-learning at Some Universities in Saudi Arabia *International Journal of Information Technology and Computer Science* 19.2 pp 1-13. http://www.ijitcs.com/volume%2019_No_1/Al-Shammari.pdf

Appendix 6: Letter from the Saudi Cultural Bureau in UK to the King Saud University to facilitate and Requesting Consent to Carry out the Field Study.

بسم الله الرحمن الرحيم

ROYAL EMBASSY OF SAUDI ARABIA
CULTURAL BUREAU
LONDON

سفارة المملكة العربية السعودية
الملحقية الثقافية
لندن

إفـــــــادة

2013/05/08م

رقم الملف S13640

تفيد الملحقية الثقافية بسفارة المملكة العربية السعودية في لندن بأن الطالب مشعل عقلا طراد الشمري (سجل مدني 1015657883) ملحق بالبعثة من قبل وزارة التعليم العالي لدراسة الدكتوراه في تخصص علوم التربية في جامعة Durham اعتبارا من 10-03-2011 حتى تاريخ 30-09-2015.

وبناءا على توصية المشرف الدراسي على بحث الدكتوراه سيتقدم المبتعث بطلب القيام على رحلة علمية الى المملكة العربية السعودية لاكمال اجراءات بحثه .

ونظرا لضرورة ارفاق موافقة من الجهة المستضيفة في المملكة لاستكمال طلب الموافقة على الرحلة العلمية تم منحه هذا الخطاب بناءا على طلبه وذلك لتقديمه الى جامعة الملك سعود.

وتقبلوا فائق التحيات،،،

الملحق الثقافي

بسفارة المملكة العربية السعودية في لندن

فيصل بن محمد المهنا أباالخيل

الرقم : ..... التاريخ : ..... الموافق : ..... المرفقات : .....

630 Chiswick High Road, London W4 5RY Tel: +44 (0) 20 3249 7000 Fax: +44 (0) 20 3249 7001 E-mail: sacbuk@uksacb.org
www.uksacb.org

Appendix 7: Letter from the Saudi Cultural Bureau in UK to the Al-Dammam University to facilitate and Requesting Consent to Carry out the Field Study.

ROYAL EMBASSY OF SAUDI ARABIA
CULTURAL BUREAU
LONDON

سفارة المملكة العربية السعودية
الملحقية الثقافية
لندن

إفـــــــادة

2013/05/08م

رقم الملف S13640

تفيد الملحقية الثقافية بسفارة المملكة العربية السعودية في لندن بأن الطالب مشعل عقلا طراد الشمري (سجل مدني 1015657883) ملحق بالبعثة من قبل وزارة التعليم العالي لدراسة الدكتوراه في تخصص علوم التربية في جامعة Durham اعتبارا من 10-03-2011 حتى تاريخ 30-09-2015.

وبناءا على توصية المشرف الدراسي على بحث الدكتوراه سيتقدم المبتعث بطلب القيام على رحلة علمية الى المملكة العربية السعودية لاكمال اجراءات بحثه .

ونظرا لضرورة ارفاق موافقة من الجهة المستضيفة في المملكة لاستكمال طلب الموافقة على الرحلة العلمية تم منحه هذا الخطاب بناءا على طلبه وذلك لتقديمه الى جامعة الدمام.

وتقبلوا فائق التحيات،،،

الملحق الثقافي

بسفارة المملكة العربية السعودية في لندن

فيصل بن محمد المهنا آباالخيل

الرقم : ..... التاريخ : ..... الموافق : ..... المرفقات : .....

630 Chiswick High Road, London W4 5RY Tel: +44 (0) 20 3249 7000 Fax: +44 (0) 20 3249 7001 E-mail: sacbuk@uksacb.org
www.uksacb.org

Appendix 8: Letter from the Saudi Cultural Bureau in UK to the Hail University to facilitate and Requesting Consent to Carry out the Field Study.

بسم الله الرحمن الرحيم

ROYAL EMBASSY OF SAUDI ARABIA
CULTURAL BUREAU
LONDON

سفارة المملكة العربية السعودية
الملحقية الثقافية
لندن

إفـــــــادة

2013/05/08م

رقم الملف S13640

تفيد الملحقية الثقافية بسفارة المملكة العربية السعودية في لندن بأن الطالب مشعل عقلا طراد الشمري (سجل مدني 1015657883) ملحق بالبعثة من قبل وزارة التعليم العالي لدراسة الدكتوراه في تخصص علوم التربية في جامعة Durham اعتبارا من 10-03-2011 حتى تاريخ 30-09-2015.

وبناءا على توصية المشرف الدراسي على بحث الدكتوراه سيتقدم المبتعث بطلب القيام على رحلة علمية الى المملكة العربية السعودية لاكمال اجراءات بحثه .

ونظرا لضرورة ارفاق موافقة من الجهة المستضيفة في المملكة لاستكمال طلب الموافقة على الرحلة العلمية تم منحه هذا الخطاب بناءا على طلبه وذلك لتقديمه الى جامعة حائل.

وتقبلوا فائق التحيات،،،

الملحق الثقافي
بسفارة المملكة العربية السعودية في لندن

فيصل بن محمد المهنا أباالخيل

الرقم : ..... التاريخ : ..... الموافق : ..... المرفقات : .....

630 Chiswick High Road, London W4 5RY Tel: +44 (0) 20 3249 7000 Fax: +44 (0) 20 3249 7001 E-mail: sacbuk@uksacb.org
www.uksacb.org

Appendix 9: Letter from the Saudi Cultural Bureau in UK to Al-Jouf University to facilitate and Requesting Consent to Carry out the Field Study.

بسم الله الرحمن الرحيم

ROYAL EMBASSY OF SAUDI ARABIA
CULTURAL BUREAU
LONDON

سفارة المملكة العربية السعودية
الملحقية الثقافية
لندن

إفـــــــادة

2013/05/08م

رقم الملف S13640

تفيد الملحقية الثقافية بسفارة المملكة العربية السعودية في لندن بأن الطالب مشعل عقلا طراد الشمري (سجل مدني 1015657883) ملحق بالبعثة من قبل وزارة التعليم العالي لدراسة الدكتوراه في تخصص علوم التربية في جامعة Durham اعتبارا من 10-03-2011 حتى تاريخ 30-09-2015.

وبناءا على توصية المشرف الدراسي على بحث الدكتوراه سيتقدم المبتعث بطلب القيام على رحلة علمية الى المملكة العربية السعودية لاكمال اجراءات بحثه .

ونظرا لضرورة ارفاق موافقة من الجهة المستضيفة في المملكة لاستكمال طلب الموافقة على الرحلة العلمية تم منحه هذا الخطاب بناءا على طلبه وذلك لتقديمه الى جامعة الجوف.

وتقبلوا فائق التحيات،،،

الملحق الثقافي
بسفارة المملكة العربية السعودية في لندن

فيصل بن محمد المهنا أباالخيل

الرقم : ..... التاريخ : ..... الموافق : ..... المرفقات : .....

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www.uksacb.org

Durham University
School of Education

Appendix 10: Questionnaire (Arabic version)

السلام عليكم ورحمة الله وبركاته وبعد :

يقوم الباحث بدراسة بعنوان ((التحقق من استخدام أعضاء هيئة التدريس لمهارات التعلم الالكتروني في التدريس من وجهة نظرهم والمعيقات التي تواجههم في بعض الجامعات السعودية)).

وذلك إستكمالاً للحصول على درجة الدكتوراة في تخصص تكنولوجيا المعلومات والاتصالات في التعليم

(التعلم الالكتروني) من جامعة دورهام في بريطانيا.

ويقصد بالتعلم الالكتروني (في هذا البحث): إستخداماتك كعضو هيئة تدريس في الجامعة لمهارات التعلم الإلكتروني في التدريس من خلال نقل المحتوى التعليمي للمتعلم بإستخدام تكنولوجيا المعلومات والإتصالات التفاعلية المتاحة والمتوفرة سواء بصورة(متزامنة أو غير متزامنة) بشكل يتيح إمكانية المتعلم للتفاعل النشط مع هذا المحتوى وإتمام هذا التعلم في الوقت والمكان بالسرعة التي تناسب ظروفه وقدراته.

وتهدف هذه الدراسة من خلال ثلاثة محاور رئيسة إلى أخذ تصوراتكم الفعلية نحو" إستخدام مهارات التعلم الإلكتروني في التدريس والمحفزات لذلك وكذلك معرفة المعوقات التي تواجهكم في التطبيق الفعلي من وجهة نظركم" .

ولأهمية وجهة نظركم كأهم المستفيدين في تقييم فاعلية استخدام التعلم الإلكتروني في التدريس، فإن الباحث قام بإعداد هذه الإستبانة والتي تتضمن في البداية معلومات عامة بالإضافة إلى ثلاث محاور رئيسية يتطلب الإجابة عليها جميعاً ، آمل التفضل بتعبئة الإستبانة من خلال قراءة عباراتها قراءة متأنية ، ومن ثم وضع علامة ( ) أمام الخيار الذي يتوافق مع وجهة نظركم ، من خلال المدرج الخماسي الذي يتعلق بمدى الموافقة على كل فقرة :

موافق تماما (5)	موافق (4)	محايد (3)	غير موافق (2)	غير موافق تماما (1)

كما أفيدكم بأن جميع البيانات لن تستخدم إلا لأغراض البحث العلمي فقط ، كما أنه لا توجد أسئلة تحدد هويتكم ، وإجاباتكم سوف تعامل بسرية تامة . كما أود أن ألفت انتباهكم أنه لن يستغرق من وقتكم أكثر من 15 دقيقة ، ولكنه حتماً سيفيد الباحث والمجتمع من خلال البحث في فاعلية إستخدام مهارات التعلم الإلكتروني في التدريس في الجامعات السعودية .

شاكراً ومقدراً لكم حسن تعاونكم ، وتكرمكم بتعبئة الإستبيان، سائلاً الله عز وجل أن يكتب لكم الآجر ، والله يحفظكم ويرعاكم.

أخوكم الباحث /

مشعل الشمري

m.o.al-shammari@durham.ac.uk

الإستبانة :

أ) الجزء الأول : المعلومات العامة.

يرجى وضع علامة ( ) في المكان المناسب :

1	التخصص	نظري ( ) عملي ( )
2	العمر	أقل من 29( ) 30 39( ) 40 49( ) اكثر من 50 ( )
3	المؤهل الأكاديمي	بكالوريوس ( ) ماجستير( ) دكتوراة( )
4	سنوات الخبرة الأكاديمية	1 5 ( ) 6 14 ( ) 15 24( ) + 25 ( )
5	الرتبة الأكاديمية	معيد ( ) محاضر ( ) استاذ مساعد( ) أستاذ مشارك ( ) أستاذ بروفيسور ( )
6	هل حصلت على دورات تدريبية في مجال التعلم الالكتروني؟	نعم ( ) لا ( )
7	مدى المهارات التقنية في مجال الحاسب الالي	عالية ( ) متوسطة ( ) لا يوجد مهارة ( )
8	هل لديك الخبرة في مجال التعلم الالكتروني؟	نعم ( ) لا ( )

9 استخدام الكمبيوتر في التواصل مع الطلاب.

1 يومياً ( ) 2 أسبوعياً ( ) 3 شهرياً ( ) 4 أبداً لا استخدمه ( ).

10 استخدام البريد الالكتروني في التواصل مع الطلاب.

1 يومياً ( ) 2 أسبوعياً ( ) 3 شهرياً ( ) 4 أبداً لا استخدمه( ).

11 التدريس من خلال استخدام أدوات التعلم الاكتروني .

1 - يومياً ( ) 2 أسبوعياً ( ) 3 شهرياً ( ) 4 أبداً لا استخدمه( ).

12 رتب استخدام أدوات التعلم الالكتروني .

م	الأداة	دائماً (5)	غالباً (4)	أحياناً (3)	نادراً (2)	أبداً (1)
1	محركات البحث الالكترونية(World wide web).					
2	البريد الإلكتروني (E-mail).					
3	مجموعات النقاش(Discussion Groups).					
4	القوائم البريدية (Mailing list) .					
5	الفديو التفاعلي(Interactive video).					
6	الأقراص المدمجة (CD).					
7	المحادثة(Chat).					
8	مؤتمرات الفديو (Video Conference).					
9	السبورة الذكية (Smart Board).					
10	شبكات التواصل الأجتماعية مثل (Social Networks) :الفيس بوك برامج الايفون					

ب) الجزء الثاني : المحاور العامة:

المحور الأول : مدى استخدام التعلم الالكتروني .

م	العبارة	موافق تماما (5)	موافق (4)	محايد (3)	غير موافق (2)	غير موافق تماما (1)
1	يمكن التعلم الإلكتروني من تعزيز الثقة في النفس لتسهيل التعلم.					
2	يتيح استخدام التعلم الإلكتروني إلى الارتقاء بمستوى الإبتكار التربوي.					
3	يشجع التعلم الإلكتروني على الإبتكار والإبداع في تطبيقات تكنولوجيا المعلومات والاتصالات.					
4	يساعد التعلم الإلكتروني في تطوير المهارات التقنية في مجال الحاسب الالي .					
5	التعلم الإلكتروني يسهم في تنمية وتعزيز المهارة اتجاه المحتوى المعرفي.					
6	صعوبة التعامل مع التعلم الالكتروني وبالتالي محبط للإستخدام.					
7	التعلم الإلكتروني يساعد على استخدام نموذج التعلم المدمج لتحسين المهارات التدريسية وجودة فاعلية التعليم.					
8	التعلم الإلكتروني يساعد على التنوع في طرق التدريس الحديثة.					
9	التعلم الإلكتروني يشجع على إعطاء قدر أكبر من الأهمية والتأثير للدروس.					
10	التعليم الإلكتروني يحفز الطلاب نحو ممارساتهم التعليمية.					
11	التعلم الإلكتروني يمنح مزيداً من الاستقرار والرضا في العملية التعليمية.					
12	يمكن التعلم الإلكتروني إشراك المتعلمين أكثر من غيرها من أشكال التعلم.					
13	التعلم الإلكتروني يوفر الوقت والجهد لكل من المعلمين والطلاب.					
14	االتعلم الإلكتروني يسهل ويحسن التواصل بين المعلمين وطلابهم.					
15	التعلم الإلكتروني يزيد من الكفاءة التدريسة لعضو هيئة التدريس.					
16	التعلم الإلكتروني يتميز بالفاعلية من خلال زيادة الدافعية للتعلم من قبل المتعلمين.					

المحورالثاني : الدوافع والمحفزات لإستخدام التعلم الألكتروني.

م	العبارة	موافق تماما (5)	موافق (4)	محايد (3)	غير موافق (2)	غير موافق تماما (1)
17	التعلم الإلكتروني يشجع على تفاعل الطلاب مع الدروس وجعلهم أكثر أداء.					
18	التعلم الإلكتروني يمنح مزيداً من الدافعية والتشويق في العملية التربوية والتعليمية.					
19	التعلم الإلكتروني يساعد على جذب أذهان الطلاب للدروس.					
20	التعلم الإلكتروني يعززالمواقف الشخصية الإيجابية.					
21	التعلم الإلكتروني يمنح مزيداً من الرضا التام من قبل الطلاب.					
22	التعلم الإلكتروني يطور الكفاءة الذاتية للطالب.					
23	التعلم الإلكتروني يوثق علاقة الطالب الإيجابية بالمنهج التعليمي.					
24	التعلم الإلكتروني يمنح زيادة دافعية الطلاب للتعلم.					
25	يسهل التعلم الالكتروني على المتعلمين إختيار الأساليب التعليمية والتربوية الأكثر ملائمة لهم وتناسب إحتياجاتهم.					
26	استخدام التعلم الاكتروني يقدم حلولاً لبعض القضايا الهامة مثل زيادة أعداد الطلاب .					
27	يساعد التعلم الإلكتروني على تسهيل التواصل من خلال الأفكار والمعلومات بين المؤسسات التعليمية.					
28	يتميز التعلم الالكتروني بالمرونة في العملية التربوية والتعليمية .					
29	التعليم الإلكتروني يزيد من جودة التعليم والتعلم لأنه يدمج جميع طرق التدريس.					

المحور الثالث : معيقات إستخدام التعلم الإلكتروني.

م	العبارة	موافق تماما (5)	موافق (4)	محايد (3)	غير موافق (2)	غير موافق تماما (1)
30	عدم الوعي الكافي اتجاه التعلم الإلكتروني يجعلني محبط واتجنب استخدامه.					
31	عدم توفر التدريب الكافي على إستخدام تقنيات التعلم الإلكتروني.					
32	عدم وجود التحفيز و التشجيع من قبل الرؤساء .					
33	زيادة العبء التدريسي.					
34	زيادة العبء من المهام الإدارية غير التعليمية.					
35	الربط الشبكي في الجامعة ضعيف للوصول لخدمات الأنترنت.					
36	عدم توفر الدعم المادي الكافي.					
37	عدم توفر أجهزة الحاسوب الكافية لممارسة التعلم الاكتروني .					
38	عدم توافر البرامج التعليمية المحوسبة .					
39	عدم التكامل في دمج الطلاب مع التقنية في وقت واحد.					
40	عدم الدمج والتكامل بين التعلم الاكتروني والمناهج المدرسية .					
41	عدم وجود الدعم في التصميم التعليمي للتعلم الإلكتروني.					
42	عدم وجود سياسة مؤسسية للتعلم . الإلكتروني					
43	عدم وجود الدعم الفني للتقنية في الجامعة.					
44	عدم وجود الوقت لتطوير المقررات الإلكترونية.					
45	القلق حول نوعية المقررات الإلكترونية.					
46	الترهيب الذاتي من استخدام التكنولوجيا .					

Appendix 11: The Interview Questions (Arabic version)

م	أسئلة المقابلة
	الأسئلة الرئيسة
س1	إلي أي مدي يستخدم أعضاء هيئة التدريس التعلم الإلكتروني في تدريسهم ؟
س2	ما هي الإجراءات المتبعة لتسهيل تطبيق التعلم الإلكتروني في الجامعة؟
س3	ماهي المعوقات الرئيسية من وجهة نظرك والتي تعيق إستخدام أعضاء هيئة التدريس لتطبيق التعلم الإلكتروني في تدريسهم؟
	الأسئلة الثانوية
س4	ما هي طرق و أساليب الدعم المؤسسي لبرامج التعلم الإلكتروني في الجامعة ؟ اذكرها :1 ..... 2 ..... 3 .....
س5	هل هنالك برامج تدريبية لأعضاء هيئة التدريس لإستخدام وتطبيق التعلم الإلكتروني في الجامعة؟ نعم ( ) لا ( ) اذا اجابتكم ب نعم أذكر البرامج التدريبية : 1 .....2..... 3 .....4.....5.....
س6	ما هي أكثر أدوات التعلم الألكتروني إستخداماً من قبل أعضاء هيئة التدريس و أثبتت فاعليتها ؟ 1 ..... 2 ..... 3 .....
س7	ماهي أهم برامج التعلم الإلكتروني المطبقة حاليا في الجامعة لدعم استخدام التعلم الإلكتروني في التدريس من قبل اعضاء هيئة التدريس؟
س8	رتب أهمية أستخدام أعضاء هيئة التدريس للتعلم الإلكتروني في تدريسهم حسب المتغيرات التالية: 3= شديد الاهمية 2= مهم بدرجة اقل 1 = ليس لها أهمية العمر ( ) الرتبة الأكاديمية ( ) الخبرة التدريسية ( ) المؤهل الأكاديمي ( ) الخبرة في مجال التعلم الإلكتروني ( ) مهارات في مجال الحاسب الآلي ( ) حصول على الدورات التدريبية اللازمة في مجال التعلم الإلكتروني ( )
س9	ما هي إقتراحاتكم لتحسين التطوير والتقدم لأعضاء هيئة التدريس في استخدام التعلم الإلكتروني في تدريسهم في مؤسسات التعليم العالي؟