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IMPACTS OF GLOBALISATION AND AWARENESS OF HIGHER EDUCATION
POLICY IN ADOPTION AND USE OF ICT IN LIBYAN UNIVERSITIES

SALEM MELOD KHALIFA ABOD-HER

A thesis submitted to the University of Huddersfield

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ABSTRACT

This research study focuses on impacts of globalisation and the awareness of Higher Education policy Reform HEPR on the Information and Communications Technology for public universities using the University of Tripoli (UoT). The aim of this study therefore is to explore the impact of globalisation and the awareness of implementation of HEPR on the use of ICT in Libyan public Universities (LPUs). This is an important subject since the Libyan state has begun to ensure that ICT is adopted and used in University education. It has undertaken this course of action in order to improve the role of public universities and to further the movement towards sustainable development. This study was designed to contribute to the research development and improvement of ICT adoption in Libyan Higher Education. The main contribution of this study is to provide information on how to make full use of ICT in LPUs and to determine to what extent these universities adopt and use.

Given the nature of this research a qualitative content analysis was adopted to collect and analyse the data and present the findings which gathered via sixteen semi-structured interviews, that were conducted with forty-four graduate students, ten academic staff from UoT and six Higher Education Officials from Ministry of Higher education and Scientific Research (MoHESR).

The findings of this study indicated that the globalisation and the awareness of implementation of HEPR are the most important factors for the adoption and use of ICT by the participants, and globalisation together with HEPR seems gradually to be changing impact and driving adoption, and use of new ICT among LPUs. It is changing the very fundamentals of learning and teaching. The findings also show that the rapid pace of globalisation and the increase level of the awareness of implementation HEPR, which has a significant potential to motivate participants, may lead to increased adoption and the effective use of ICT in LPUs.

Based on the findings, this study offers the following recommendations that can be used to improve and support the adoption and use of ICT tools in the LPUs. These included supporting graduate students, and academic staff in developing their knowledge and skills in using ICT tools, providing a continuous professional development for them in ICT, the need to create a policy in higher education to guide the use of ICT tools in higher education and supporting universities to build their ICT resources and infrastructure. These will help graduate students and academic staff to effectively integrate ICT tools into teaching learning and administrative it also recommended that future research should be conducted with larger samples across different levels of education or with other organisations and other time periods.

Key words: Globalisation, Higher Education Policy, Awareness of implementation policy, ICT use

DECLARATION

I Salem Melood Abod-her hereby declare that this thesis has been composed by myself, that it has not been accepted in any previous application for a higher degree, that the work of which it is a record has been performed by myself, and that all sources of information have been specifically acknowledge. Finally, I hereby give consent for my thesis, if accepted, to be available for photocopying and for inter-library loan, and for the title and abstract to be made available to outside organisations.

Salem Melood Abod-her

ACKNOWLEDGEMENTS

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

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I am deeply grateful to all my brothers; Mohamed, Faraj, Shaban, and Adel for their continued support and encouragement during the course of the research of my PhD. I would also like to thank all my sisters.

And, last but not least, My sister's husband Ramadan Ali Edas, and my dear friend Yousef Mohamed Elmaki, I am extremely thankful to for their unconditional support during the years of my study. Without them, these years would have been very difficult.

DEDICATION

This thesis is dedicated to:

The soul of my father and my mother.. They passed away during the course of this study; I have tried to achieve their dream to complete my study. They encouraged me to be the best I can be, to have high expectations and to fight hard for what I believe. They have also provided me with the best opportunities in life. I feel that they are always with me, supporting and guiding. I always ask Allah to forgive all their sins.

My wife.. The sun of my life was a great tower of strength during our time in the United Kingdom as she has always been. I pray that Allah will prolong her age. She has always been waiting patiently for the last couple years for me to come to a successful ending in this PhD journey. Her practical and prayerful support, her confidence in me, taking care of the children, keeping the house together, comforting me and, most importantly, loving me enabled me to cope with the changes and stresses that accompany life and study in another country. I could not have done it without her. She shares in my success and I will be forever grateful to her for her loving support. This thesis is as much hers as mine.

My son.. The moon of my life who kept asking “When are you going to be done, Dad? He was a constant source of inspiration and motivation. I see my future through his loving eyes.

My daughters.. The stars of my life. I do not forget them and thank my daughters for their patience during my study and for their continued hard work (and success) in their own education at school. Thanks to my daughters.

ABBREVIATIONS

ABEGS.....	Arab Bureau of Education for the Gulf States
CIA.....	Central Intelligence Agency
CQAA.....	Centre for Quality Assurance and Accreditation
CQAA.....	Quality Assurance and Accreditation
GAITs.....	General Authority for Information and Telecommunications
GATS.....	General Agreement on Trade in Service
GCP.....	General Census of Population
GPCE.....	General People's Committee of Education
GDP.....	Gross domestic product
GPC.....	General People's Committee
GPTC.....	General Post and Telecommunication Company
HE	Higher Education
HEIs	Higher Education Institutions
HEP.....	Higher Educational Policy
IAU.....	International Association of Universities
ICT.....	Information and Communication Technology
InfoDev.....	World Bank Information for Development
LTT.....	Libyan Telecom and Technology
MoHESR.....	Ministry of Higher Education and Scientific Research
NASR.....	National Authority for Scientific Research
NHEPR.....	New Higher Education Policy Reform
NPC.....	National Planning Council
NTC.....	National Transitional Council
OECD.....	Organisation for Economic Cooperation and Development
UN.....	United Nations
UoT.....	University of Tripoli
UNDP.....	United Nations' Development Programme
UNESCO.....	United Nations' Educational Scientific and Cultural Organization

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Chapter 1: INTRODUCTION AND OUTLINE OF THE STUDY

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1.0 INTRODUCTION

This is the first chapter of this thesis which presents the main components of the thesis; its purpose is to provide a general description of the area of study. This will be structured in the following way: The chapter begins with a consideration of the background information concerning the study, and the next section outlines the statement of the problem. Following this the aim and objectives for the study and the research questions will be presented.

After which there will be a brief overview of, the methodology, then research motivations and research importance of the study will be described , after that scope and rational for the study will be presented, with the last two sections of this chapter providing the brief outline of this thesis, and the brief summary of this chapter

1.1 BACKGROUND TO THE RESEARCH

The high indices of economic and social development indicators of any state depend on a number of important factors. However, the skills and competencies of a state's people, achieved through education, are probably one of the most important factors. These will derive principally from the university education sector which is considered to be an important factor in providing society with highly trained manpower. Therefore, the university education level is considered to be an important educational stage. Moreover, universities continue to play a major role in the fields of research, teaching, information transfer, and technological development. They are also critical to national social progress and economic growth. In this context, the university education sector is facing extraordinary challenges at the beginning of the 21st century. Recently, scientific knowledge has developed, and life have changed dramatically, due to the discoveries in the ICT field. However, on-going rapid

advancements in ICT have made this ever increasing volume of knowledge more effective and more accessible to networked computers and to new forms of telecommunications which can spread information very quickly around the world.

The internet, particularly, is one of the exciting discoveries that have led to more information than ever being available to those who have the skills to use it and who have access to this extraordinarily valuable resource. Therefore, in response to these rapid changes in these various areas of knowledge, a number of countries all over the world have undertaken significant transformations in financing, in curriculum reform and in technological innovations in their HE systems in order to keep up with the stunning progress in ICT. More specifically, HEIs are susceptible to the powers of globalisation and to undergoing change (Carnoy, 2001).

Libya, in common with many other newly independent postcolonial states, at the end of the 1960s realised that it was necessary to develop its HE sector because of its effect on all other aspects of life. It has sought to modernise its HE system as an effective instrument for the human development needed to achieve social and economic development. In this regard, policy makers and educators have developed pragmatic policies to address problems faced by the HEIs. This sector has undergone a positive change in certain aspects, for example, university education in Libya has witnessed a vital rise in registrations in the past few decades.

The number of postgraduate students has gone from 13,500 in 1975 to 43,258 graduate students in 2011, with an extra 70,000 registered in higher vocational institutions. Furthermore, the number of public universities has also increased considerably, from only two in the academic year 1966-67 to 14 universities in 2011.

This increase can be linked with the increase in oil income which provided Libya with the possibility of accelerating the process of education development. Additionally, the quality and quantity of higher education have increased rapidly since the mid-1990s when the quantitative expansion of higher education was accomplished and the government turned its focus onto ways of improving the productivity of universities as well as the quality and quantity of higher education in general. However, there is no educational system that does not face some challenges.

In this context, and at the turn of the twenty-first century, Libyan universities are not exceptional in facing unprecedented challenges. Nevertheless, it should be noted that it is difficult to encompass all the challenges facing the LHE sector in this study. Therefore, the focus and analysis of this study are directed only to the challenges relating to ICT use in LPUs. It will be suggested in this study that the most important factors that impact on the adoption and use of ICT in LPUs is globalisation and HEP.

1.2 RESEARCH PROBLEM

In these times of knowledge globalisation, ICT is one more product of the digital age. The new ICT is a tool that may contribute to knowledge acquisition. Using ICT tools in the field of HE is a new and important learning model and is now an important tool for universities and other educational centres to gain a competitive edge. It has become a key priority for researchers, policymakers and governments in both developed and developing countries.

The Libyan state has to undertake a serious role within the context of developing ICT and from the early 2000s it has pursued plans containing major policies to ensure that ICT is adopted and used in each facet of learning skills, and of personal life,

particularly in the university education sector. However, the globalisation of HE and progress in this area have triggered structural changes in the Libyan education sector and thereby heightened competition. The success of ICT systems depend largely on their adoption and usage by students, teachers and administrators themselves. The adoption, acceptance and usage of new technologies, including ICT tools, have been studied widely over the past two decades.

Relatively little work has been conducted in the context of drives of globalisation and the impact of awareness education policy on ICT adoption and use in Libyan public universities, the broad area of this research. Therefore, this study is examining globalisation and HEP as factors that drive and have an impact on the adoption and use of new forms of ICT in LPUs.

A problem with the current research study arises from the fact that the adoption of technology by the stakeholders (graduate students, academic staff and Higher Education Officials) at Libyan Higher Education University is faced with a lot of challenges. Knowing these challenges and barriers and finding possible solutions may possibly enable stakeholders to become successful in ICT adoption and use in the future. The use of ICT in the universities is very important for providing opportunities for graduate students, academic staff and higher education officials.

The key barriers investigated in this study were lack of ICT Training, and lack of ICT infrastructure. LPUs have tried to transform themselves to conform to the current applications and extent of ICT development because overall development in the university education sector will not be possible without adopting the use of ICT tools which can improve the quality of teaching, learning and management in universities.

The process of adopting and using modern ICT, and thus reforming universities, has taken considerable resources and time; nevertheless, there is a lot to be accomplished both within the public universities and within nations, which are in a technological race.

Furthermore, the purpose of this research is to make sense of, and take a part in looking at the opportunities presented by globalisation and ICT and it also is primarily concerned with an attempt to explore and analyse what happens within LPUs that have experienced success in the adoption of new ICT.

The research problem for this study was outlined as: what impacts do globalisation and awareness of implementation of HEPR have on ICT adoption and usage in Libyan University Education as shown by the UoT (the first university adopters of such technology in Libya) and the MoHESR (the government ministry that is responsible for determining the general policies of Higher Education) and to learn the benefits of ICT application in Libyan university education and the barriers universities may face in bringing in ICT applications, together with an examination of the existing literature and undertaking interviews conducted with 60 participants. Hence, the current study was undertaken with the following aim and objectives

1.3 RESEARCH AIM AND OBJECTIVES

The focus of this study is on studying the impact of globalisation and awareness of implementation of HEPR on adoption and use of new ICT at Libyan university education.

The overall aim of this study, therefore, is to explore and understand the impacts of globalisation and awareness of implementation of HEPR on the use of ICT in Libyan

public Universities. In order to achieve this aim the following five objectives have been identified:

1. To develop a model of factors that impact ICT usage in LPUs.
2. To explore globalisation process and its impacts on use of ICT in LPUs.
3. To explore the impact of awareness of implementation of HEPR on ICT use in LPUs.
4. To identify the benefits of, and barriers to use ICT in LPUs.
5. To explore the extent of adoption and use of ICTs in LPUs.

1.4 RESEARCH QUESTIONS

In achieving the above aim and objectives, this study tries to answer the following research question:

What impacts does globalisation and awareness of HEPR have on the adoption and use of ICT in Libyan public universities?

The proposed research was based on the following sub-research questions:

1. How has globalisation impacted the adoption and use of ICT in LPUs?
2. How has the awareness of implementation of HEPR impacted the adoption and use of ICT in LPUs?
3. What are the perceived benefits and barriers of using ICT in LPUs?
4. What types of ICTs are commonly used in LPUs? And how is it used?

1.5 RESEARCH METHODOLOGY AND RESEARCH PARADIGM

The issue of research methodology and research paradigm is important to any study, and researchers should be careful when they choose the methodology which must be appropriate for the researcher's objectives and questions.

According to Walter (2010) research methodology is the theoretical lens through which a research is designed and conducted. However, this research is adopts a qualitative research approach, this will assist in understanding emerging issues that are related to the subject, and the purpose of this study was to explore the globalisation and awareness of implementation of HEPR as factors that impact the adoption and use ICT among Libyan public universities. In order to take a more systematic approach in executing the research problem for this study, an extensive review of the literature in globalisation and HEP identified their impact on ICT adoption and use in universities.

This literature review also guided the construction of the aim and objectives of this study. After conducting an extensive review of literature relevant to the topic under this study, the qualitative research methods were employed and 60 individual face-to-face Semi-structured interviews were conducted to collect data from 44 graduate students , and 10 academic staff from the UoT and 6 Higher Education Officials from the MoHESR. This sample (N = 60) is not representative of the overall population, but it is broad enough to give valuable insights into a range of user perceptions. These groups of participants were chosen because of their central role in the ICT process.

The participants of this study , for example, integrate ICT into their learning and teaching as well as undertaking the research. The Higher Education Officials formulates and implements policies and make important decisions on budget allocations that impact the ICT process and introduction of any new ICT equipments in the field of higher education.

Merriam (2009) points out that a qualitative researcher has to state his or her position in terms of the nature of reality (ontology) and the nature of knowledge (epistemology).

With the ontological question the researcher studies the nature of being. Next with the epistemological question the researcher is concerned with the policies that help identify what is known about the world (Henning et al., 2004).

The following is the outline of the ontology and epistemology adopted in this research study research

1.5.1 ONTOLOGY

Ontology is concerned with the nature of the reality and what can be known about it. (Schraw & Olafson, 2008). However, ontology focuses on the independence of the social phenomenon of other factors. The world is one and there is no other perception. While the focus of interpretive paradigms is that the world has different meanings with respect to social phenomena. This means that the change in one factor may affect the change in the social context itself, and therefore different researches can reach different conclusions for the same observation. Critical theory paradigms see the world as something that has to be changed. It involves the criticism and changing social phenomena based on the interrogations of the social phenomena and individual alike (Rahmawati, 2008).

The researcher's ontological viewpoint had been influenced by his position as a journalist and past life experiences. The researcher's belief that there were multiple realities and this greatly influenced the researcher's journalist practices. However, this

was not obvious to the researcher until his PhD journey that facilitated the unpacking of his actions.

The researcher's early upbringing and the influence of the journalism worldviews had contributed to the researcher's practices. At the same time, the researcher was aware that not all participants held the same worldview that he held. Therefore the researcher did not hesitate to transcend to the participants' level of understanding and then from there the researcher worked on moving the participants' understanding to where the researcher wanted them to be. In many cases, this was possible through listening to the challenges that the participant was facing. Based on the information, the researcher offered further examples or alternative explanations to improve the participant's understanding of the subject matter.

In this study the ontological nature of the subject matter is viewed as interperativist, the subject matter is globalisation and awareness of implementation of HEPR and its impacted on ICT adoption and use . The ontological position of ICT adoption and use has to deal with the issue of objectivity or subjectivity in the public universities.

The subjective view of the reality of ICT adoption and use is the assumed position in this study. This subjective view therefore proposes that ICT adoption and use in LPUs is affected by globalisation and awareness of implementation of HEPR. The emphasis here are the subjective meanings that are derived as users (actors) make decisions and take choices for ICT development in their University.

1.5.2 EPISTEMOLOGY

Epistemological assumptions are concerned with the ways to perceive and acquire knowledge (Bryman, 2001).

The social constructivist epistemological paradigm advocates that reality exists through people's subjective social experiences of the world. In this study a social constructivist paradigm afforded the researcher the opportunity to interpret graduate students, academic staff and the Higher Education Officials' perspectives of ICT policy adoption and use. This paradigm offered a lens to explore the experiences of participants in their local context.

For the purpose of this study, epistemology refers to how the researcher knows the reality that he wished to describe. This study is a result of the researcher's motivation to better understand how globalisation and awareness of HEPR as factors impact the adoption and use of ICT at LPUs. The following example aims to describe the researcher's epistemological beliefs as applied in his journalism and teaching practice.

A years prior to this study, the researcher was a journalist, and he released that Libyan government sought to introduce ICT services into Libyan public universities. After that he worked as a researcher and then as an academic staff, when he observed that graduate students and academic staff were more engaged and were motivated in their use ICT. The researcher's "ways of knowing" that influenced his practice can be described as socially constructed (Adler, 2011). At first, the new HEPR2008-2012 was given out as initially project to implement ICT in LPUs, which prompted the question 'are the graduate students and academic staff aware about this policy? Or are there a way to improve the adoption and use of ICT within Libyan public universities?' This led to the decision to explore their perspectives. Underlying this choice was the belief that students academic staff, and Higher Education Officials had different ways of knowing.

The researcher played the role of a facilitator or a guide that assisted the participants to expand their knowledge in the field of ICT adoption and use and also in their use of ICT tools.

In this study, the epistemological assumption is socially constructed (Adler, 2011). Participants will learn how to use ICT to enhance their learning experience. Similar to the researcher's experience presented above, it is influenced by the belief that through social interaction, participants will create knowledge, which will empower them. Given the nature of this research, the interpretive epistemological position was adopted, with the qualitative research mode chosen. Denzin and Lincoln (1994); Creswell (2003) and Bryman (2004), state that the interpretivist epistemological stance emphasises the need to understand the social world through an examination of the interpretation of that world by its participants. The research also employs a case study strategy which is appropriate for investigating a contemporary research phenomenon.

Denzin and Lincoln (1994) stress that qualitative researchers study things in their natural settings, attempting to make sense of phenomena in terms of the meanings people bring to them. This approach was chosen because the researcher's goal centred on understanding rather than on predicting, what the various participants in the research study believed, and how they felt and interpreted events pertaining to adoption and use of ICT in Libyan universities.

The methodology used in this study is explained in detail in Chapter four.

1.6 RESEARCH MOTIVATION

The researcher's first contact with Libyan Higher Education dates back to 1993 when he worked as a journalist on a Libyan daily newspaper, *Al Shams*, which is one of the most important newspapers in Libya. This experience helped him to identify many of the difficulties and challenges associated with the development of Higher Education in Libya. Fifteen years of journalism gave the researcher much useful experience and his knowledge was broadened through the writing of articles and through conducting investigative reporting relating to Higher Education.

Additionally, the researcher also contributed to the press coverage of a number of seminars, workshops and conferences that took place on, or had an interest in, Higher Education in Libya. For example, he covered the first symposium on information, in the Academy of Graduate Studies in Tripoli, Libya, 20-23 May 2000. He also covered the first conference on Higher Education held in Tripoli, 29-31 July 2002. Furthermore, the researcher has interviewed a considerable number of policy makers, most of them in the field of education. This experience will assist this research study in many ways. From a practical perspective, access will be facilitated through personal contacts within the university sector.

On the other hand, academic experience will widen the researcher's knowledge of the difficulties associated with gathering fieldwork data, in particular, through conducting interviews with various respondents. One simple reason for choosing this topic is the change in Libyan government policy towards introducing ICT into Higher Education and the serious steps it has taken over the last a few years to develop ICT within the university education sector.

This had a positive impact on the decision to choose this area of research.

Another important reason for choosing this topic and for selecting the UoT was that the researcher spent more than ten years at this University. In the course of these ten years, he obtained an undergraduate degree in Psychology and one in French, as well spending two and a half years as a researcher before receiving his Master's degree in Education Management from the same university. This interest in ICT development in universities has been developed since the researcher moved to work as a lecturer at a public higher education institution where he has been working for four years. ICT has gained much influence in many institutions and organisations, and has caused them to adopt new ICT systems.

The UoT is one of the institutions for higher education in Libya and set up ICT systems in 2008. In early 2008, the UoT began to offer the new ICT to meet the demands placed upon Libyan public universities. Thus, explore the factors that may impact on the effectiveness of ICT adoption and use such information could help the stakeholders who might be uncertain about the ability or the benefits of the current trends toward the adoption of ICT to retain people who are already using it.

1.7 RESEARCH IMPORTANCE

ICT has increasingly become one of the dominant factors affecting every aspect of development all over the world. Currently, the area of ICT adoption in LPUs is still relatively new and Libya where the use of ICT in Higher education is still very low.

To the best of the researcher's knowledge, there is no study in the English language which focuses specifically on the impact of globalisation and awareness of implementation of HEPR on the adoption and usage of new ICT in the Libyan Higher

Education System. However, the lack of research into the adoption and use of ICT at the university education level within Libyan state, provides the potential for the finding of this research to make a significant contribution to the current body of knowledge that exists. (More details provided in chapter 6 section 6.2).

According to Bingimlas (2009) the use of ICTs in education is very important for providing opportunities for both students and lecturers to operate in an information age. Therefore, the outcomes and the information gleaned from the results of this study will provide graduate students, academic staff and for Higher Education Officials with knowledge of determinants of actual use of ICT in LPUs, as explained in the following manner:

(1) **Graduate students and academic staff**

This study is significant to graduate students and academic staff in broadening their understanding and knowledge about factors which influence ICT adoption and use especially in LPUs. This research study is also important and educationally significant for them because there has been little empirically based research focusing on the aspect of student awareness of implementation of HEPR and its influence on ICT adoption and use. This benefit will help them to raise awareness of the influences that globalisation is having on adoption and use of ICT which may help them to address a number of problems, caused by globalisation and its impacts on the adoption and use of ICT in a number of ways.

It is the first study to consider responses made by Libyan graduate students and academic staff concerning globalisation and awareness of HEPR from ICT perspectives, the study will offer them an opportunity to voice their concerns and views about ICT

adoption and use concerning their universities. It would also benefit University of Tripoli administrators with data about the levels of accessibility of ICT and its use in the University. The other benefit is to address a number of problems, caused by globalisation and its impacts on the adoption and use of ICT. In addition the findings will help graduate students and academic staff to determine ways to improve learning and teaching in higher education with ICT adoption.

(2) **Higher Education Officials**

The findings of this study will assist Higher Education Officials and policy makers in the MoHESR to understand the potential of ICT as a driving force in higher educational reform. It also provides Higher Education Officials with additional knowledge and information on general ICT adoption and use in universities, and offers data from interviews conducted by this researcher to explain how graduate students and academic staff currently use ICT services. In addition, it provides data identifying Higher Education Officials resources graduate students use or would like to access to on IC.

The added knowledge on which factors have the greatest influence on ICT adoption and use will help Higher Education Officials make more informed decisions on how to promote ICT adoption in Libyan public universities.

Finally, this study is also useful for software consultant and vendors as this study provides them a summary of key factors which can add or undermine efforts of their provision of successful products and services to the universities as clients and customers.

1.8 SCOPE AND RATIONALE FOR THE STUDY

The scope of this study entails the impact of globalisation and awareness of Higher Education Policy on the adoption and use of ICT in HE in Libya focusing on Libyan university education. The participants in this study only comprised experienced users of ICT at the UoT. Additionally, this study provides a systematic examination and analysis of the adoption of ICT to improve the use of new ICT in Libyan public universities. This is the first time that such research has been carried out within Libya and its universities.

This thesis will also provide relevant information on the background of the different concepts of globalisation, policy reform and ICT. The intention is also to create awareness and understanding of the influence of ICT on LPUs in order to benefit from the opportunities generated for them by ICT. Research on such issues as ICT and its effects on HE in Libya is rare.

Thus this research can provide data about Libyan HE development which could make it more distinctive. This, along with the researcher's practical, academic and professional experience, encouraged him to make an attempt to investigate some aspects within this field.

1.9 THE STRUCTURE OF THE THESIS

This research study consists of six chapters:

Chapter one:

Provides an introduction to the study and the research problem. This chapter presents the problem statement, with the objectives and significance of the study, and the scope for the study. In addition, the research questions are proposed.

Chapter two;

offers a detailed description of the context of the study. A short overview of the Libyan context will be presented; the education system and higher education system in Libya will also be discussed within this chapter. It also provides an overview of the status of ICT services in Libyan universities.

Chapter three;

Reviews the literature regarding many aspects of the impacts and drivers of the growing globalisation and awareness of implementation of HEPR on ICT adoption and use for higher education in Libya. This chapter is divided into three parts. The first part is a review of the globalisation process. The second part discusses the HEPR. The third part discusses issue of adoption and use of ICT.

Chapter four;

Presents the research methodology in detail, which describes the research design, the research philosophy and approaches this section, also discusses the research methods used in this study, and describes the process of qualitative content analysis. Issues of validity, reliability and ethical considerations are also addressed in this chapter. Chapter five; provides the finding of interviews,

Chapter six;

Presents the limitations of the research, the potential avenues for future research and recommendations and ends with the conclusion. This is where findings are concluded and where proposals are made for areas which need further research.

The framework of the structure of this study is as shown below in figure (1.1)

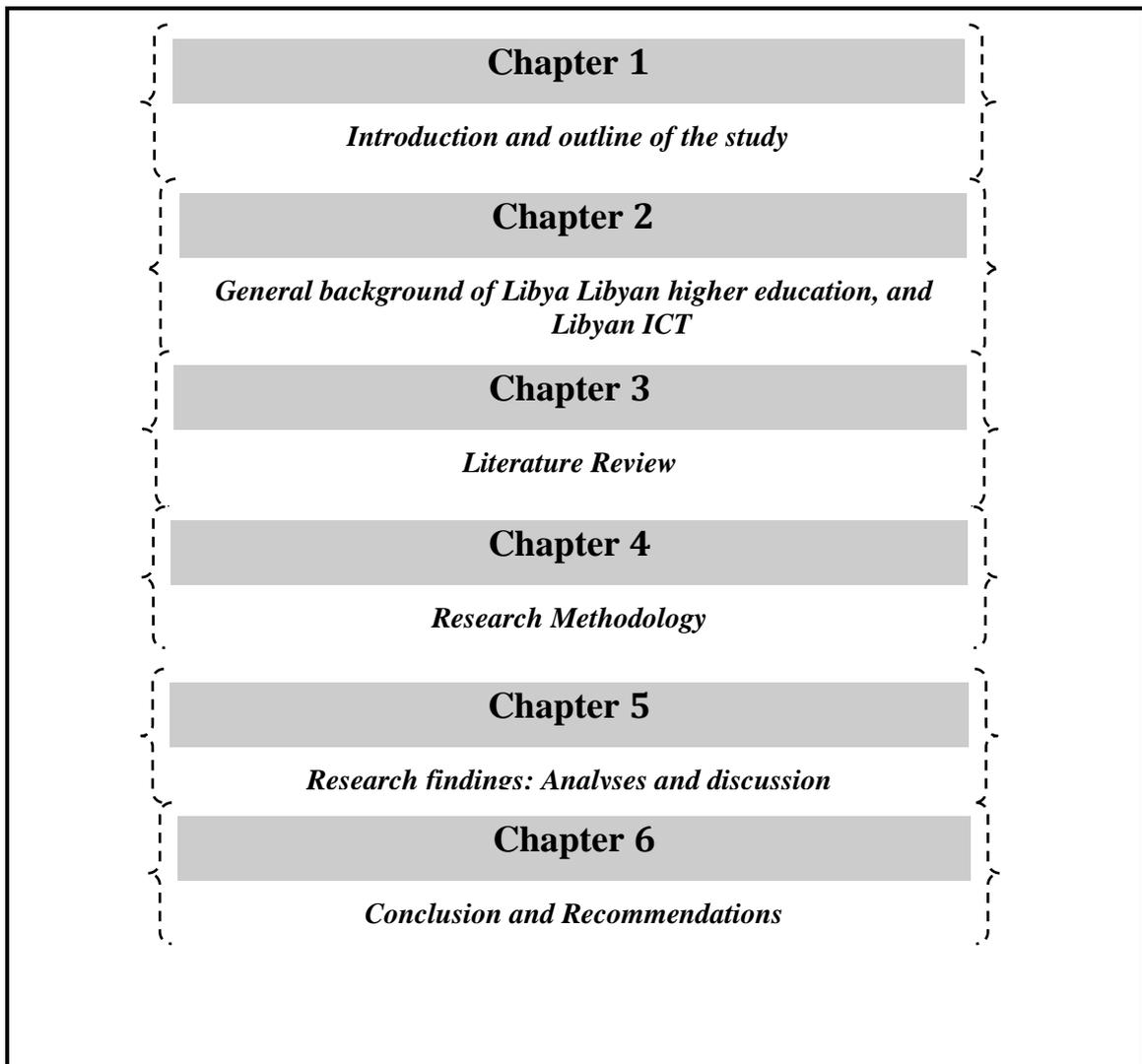


Figure 1.1: Structure of the thesis

1.10 SUMMARY OF CHAPTER ONE

This introductory chapter introduced the background and justification for this thesis the background of the research including its aim and objectives which need to be achieved, as well as the research motivations and motivation, and main expected contributions to the body of knowledge were discussed. Finally the overall structure of the thesis was outline. The next chapter provide a background on Libya and its higher education and the development of ICT sector in Libya

Chapter 2 BACKGROUND ON LIBYA, LIBYAN HIGHER EDUCATION AND LIBYAN ICT

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2.0 INTRODUCTION

A society's political and socio-economic systems are reflected in its educational system and the extent of ICT adoption and use in their educational and Higher Education Systems. For this reason this chapter will offer a brief outline of Libya, its people and its education and Higher Education Systems ,and the current status of their ICT systems, before turning to the address the specific the issues of the study. The first part of this chapter focuses on the environment of Libya, with a description of certain socio-economic indicators and the nature of Libyan politics and economy, while the second part, intended to provide a general background of Higher Education in Libya. The third part is a brief review of ICT sector in Libya. This could help to interpret the findings of the study.

2.1 THE LIBYAN ENVIRONMENT

As a background to the study's focus, this section will briefly describe the Libyan environment in terms of history, people , economy ,geography, and politics of the country. Libya is located in the centre of North Africa, and shares boundaries with six other African countries, Sudan and Egypt to the east, Chad and Niger to the south and Algeria and Tunisia to the west, while northern Libya has a coastline on the Mediterranean sea of almost 1,900 kilometres . Libya is the fourth-largest country in Africa, being approximately seven time the size of Britain with an area of around about 1. 775 500 million square kilometres (Attir 2006). However, more than 90% of the territory is desert or semi-desert (CIA World Book, 2012) and the immense area covered by the Sahara Desert is virtually uninhabited, with the majority of the population being clustered in and around the coast.

Tripoli is the capital of Libya and its other main cities are Benghazi, Sebha, Musrata, Alzawia, and Sirte. Because of its strategic location and its several ports, Libya has long been a vital link in trade and commerce between Europe and central Africa.

2.1.1 THE LIBYAN PEOPLE

The population of Libya has been increasing steadily over the past few decades, with the population growth rate estimated at to be 1.83 percent in 2005 (GAIT, 2006). Between 1995 and 2005, the population grew from 4,389,739 to 5,323,991, representing an increase of 934,252. In 2003, 86% of the population was urban, compared to 45% in 1970, most live in the north of the country. About 70 percent of men and 35 percent of women were literate within the early 1980s. This has improved and in 2004 the statistics were 90 percent for men and 70 percent for women. There are 1.7 million students, over 270,000 of whom study at higher education level (Hamdy 2007).

In 2009 the population of Libya is approximately 6,276,632. It is estimated that the population will continue to increase by between 1.2% and 2.2% over the next few decades (Maghur, 2010). According to GPC (2010) (formerly known as the General People's Committee) the main reason for this improvement for women comes from the good attendance of girls in the first stage schools. The Preliminary Results of the General Census of Population GCP (2006) showed that Libya has a young population with 67.6% aged under 15 in 2005 (p:3). The official religion of Libya is Islam and the official language is Arabic.

However, some Libyan people speak English, French and Italian. According to CIA World Fact Book (2012) about 5% of the population speaks both Arabic and the Berber dialect.

Libya has one of the world's lowest population densities with roughly three people per square kilometer. This is mainly because most of the country is desert or semi-desert, as mentioned previously, and therefore the majority of the population must live in the coastal areas, in particular, on the north-eastern and north-western coasts. The Libyan population has shown a constant and rapid increase in recent years. A study by Zarrouh et al. (2005) showed that " the number of Libyan university students continues to increase over recent years. There are an estimated by 40 thousand students a year " (International Association of Universities IAU 2009)

2.1.2 HISTORICAL BACKGROUND

Because of its strategic location, Libya has been colonised many times throughout history, by Several other countries such as the Greek , Romans, Spaniards, Vandals, and Byzantines (Birks and Sinclair, 1979). In 642 AD the Arabs brought their language, culture and their Islamic religion to Libya. In more recent history, Libya was under Ottoman Turkish rule from 1551-1911. The Ottoman Turks were in turn expelled by the Italians, who occupied Libya until they were expelled during World War II. The country was then divided between the French, who occupied Fezzan, and the British Military Administration, which controlled Tripolitania and Cyrenaica. However, on December 24, 1951, Libya declared itself an independent monarchy, further to a United Nations UN resolution that the country should be granted independence. It thus became the first nation to gain independence through the UN. King Idris reigned in Libya until 1969.

However, the monarchy was abolished after a coup d'état in September 1969, by Gaddafi and a group of officers toppled King IdrisI. This regime was in place forty

two years later (1969-2011) Libya was renamed the Libyan Arab Republic and the US, and the UK military withdrew in 1970.

THE NEW LIBYAN REVOLUTION

Libya was ruled for 42 years by Muammar al-Gaddafi. During his time as ruler there was no constitution in the country and press freedom was illegal. Journalists also were not free to express criticism in Libya, as a result the country had one of the worst press freedom records in the Arab world. As a result of Arab Spring revolutions and after the success of the revolution in Tunisia and Egypt.

The Libyan uprising against Gadhafi and his family broke out on 17th of February 2011 by tens of thousands of Libyan people across the country. The protests grew in size and spread throughout most of Libya. The regime resorted to quelling the popular demonstrations by all means including shutting off the country's internet connection, using violence to suppress the protesters and finally using African mercenaries to suppress the demonstrators. However, Gaddafi failed to have total control over many parts of Libya especially the eastern part, particularly after the Libyan National Council was established on 5 March 2011.

Several countries, including Western countries, recognized the National Transitional Council (NTC) as Libya's legitimate representative and cut off diplomatic relations with Gaddafi's government; at the same time Gaddafi also lost a large part of the west and sought of the country together with the main cities such as Misurata, Alzentan, Gharyan and Nalut. This led to Gaddafi himself ordering his troops to crush Libyan civilians and to bombard rebel cities which led, in turn, to the deaths and displacement of thousands of civilians in Libya. For this reason, the NTC and the Arab League

appealed to the international community to intervene to protect civilians and save their lives.

On the 17th March, 2011, the international community responded swiftly by adopting UN Security Council Resolution 1973 to protect civilians in Libya. They helped the Libyan people by playing a key role in eliminating Gaddafi's government and cleared the way for the appointment of a temporary government on 6 December 2011 that will guide the country to free elections and will institute a constitution for Libya and set up a replacement for Gaddafi's government.

The 20th of October 2011 saw the end of the Gaddafi era in Libya, and the NTC became the sole governing body of Libya. 7th July 2012 saw the Libyan people voting for the first time in five decades, choosing their constitutional assembly of 200 members which will draft a constitution for Libya during an 18-month timeframe. After this, an elected Parliament will redraft the majority of all state legislation, as well as policy formation practices abolishing Col. Gaddafi's Third Universal Theory as the de facto 'constitution'.

2.1.3 THE LIBYAN ECONOMY UNDER GADDAFI'S RULE (1969-2011)

Before the discovery of oil, Libya was one of the poorest countries on Earth. Al-Fathly and Ibrahim (1997) . By 1962 Libya had become the world's second-largest oil producer in Africa, after Nigeria, and by 1968-69, 80% of the country's total revenues came from oil , Al- Jhemy, (1992). However, from 1992 to 1999, the extensive economic sanctions against Libya, subsequent to the bombing of an American plane in 1988, which Libya was accused of masterminding, had a profound negative effect on

the country's economy. This also has had a major impact on Libyan education sector, including higher education, as well as educational planning.

Agnaia (1997) indicated that " the economic sanctions lead to severe restrictions on Libyan citizens going abroad for training and on experts from outside the country coming to Libya for technical consultations, as well as an inability from Libya to obtain modern technology and equipment from the West " (p.117).

The sanctions were relaxed in 1999 and ended on 12 September 2003. In 2004, GDP increased dramatically as a result of rises in oil and gas prices, which had a 'knock-on' effect on the performance of all economic sectors. After more than 10 years, resulting in the country reappearing back on the world stage, also in the same year the Libyan government agreed to halt the country's nuclear programme, the way then became clear for Libya to launch large scale development programmes with the object of diversifying the economy and decrease the country's reliance on petroleum.

Libya took 64rd place out of 169 countries in the 2010 United Nations' Development Programme Human Development Index, with an average gross domestic product of US\$10,500 (UNDP Report. 2010). Consequently, many improvements were made to the health care system, housing projects; education and higher education sector on a large scale were undertaken.

2.2 BACKGROUND ON EDUCATION AND HIGHER EDUCATION IN LIBYA

Since the latter half of the twentieth century, Libya has been undergoing change in all fields, and education is no exception. In this section an overview of the development of the education and Higher Education System in Libya will be given, beginning with outline and historical background of education and Higher Education System in Libya,

followed by a description of structure and administrative of Libyan education system, then an outline focuses on providing a brief description of the organisational structure and objectives of the Higher Education System in Libya will be provided. Finally, there will be a discussion of the challenges and problems of Libyan Higher Education.

2.2.1 HISTORICAL BACKGROUND OF EDUCATION AND HIGHER EDUCATION

In order to understanding how ICTs are adopted in Libyan HEIs particularly universities it is useful to provide a historical background education and higher education situation in Libya. This information will be very useful in understanding the situation of Libyan education generally and Libyan Higher Education, specifically, some studies have focused on the historical development of education and Higher Education System in Libya, most of these literature is written in Arabic language (Al-badri, 2007 and El- Fnish, 1998; Mogassbi, 1984; Al- Fathly and Ibrahim, 1997; Al-Dhaif et al 2001; Attir, 2006; Attir, 1992, El -Hawat, 2002, El -Hawat, 2003, El -Hawat, 2004 and Agnaia, 1997). In the next subsections, a closer look is taken at the historical development of the general education and HEIs in Libya as following

2.2.1.1 LIBYAN EDUCATION AND HIGHER EDUCATION PRIOR TO 1969

After the adoption of Islam in Libya in 642 AD, Koranic schools were established in which children were taught to recite the Koran and they were also taught basic Arabic language and mathematical skills. These classes were conducted in private homes, in mosques, or even in the open air. Libya became part of the Ottoman Empire in 1551 AD and was to remain within the Empire for 360 years. During this time, many mosques were built throughout Libya and frequently schools were incorporated into these. However, over time these schools became independent from the mosques to which they were originally attached.

In the latter part of the nineteenth century and in the first few years of the twentieth century attempts were made by the Turkish rulers to introduce modern public education in certain schools, but such schools were almost all in and around Tripoli. The principal purpose of such schools was the teaching of languages (the Turkish language in particular) and to prepare Libyan young men to become military officers and civilian officials in the Ottoman regime.

At this time, there was no Higher Education in Libya. The opportunities for Libyans to study abroad were very rare and extremely limited. At this time if Libyans continued their postgraduate studies outside the state they studied in the 'Al-Azhar Mosque University' in Egypt, in the Al-Zaytuna Mosque University in Tunisia, or in the University of Al- Karaouine (which is the first university in the world located in Morocco in Fes) or they graduated from military schools in Turkey.

During the Italian occupation, between 1911 and 1943, a system of public education was set up. However, many Libyans would only permit their children to complete three years of formal education mainly because after the first three years at primary school the curriculum focused on Italian subjects rather than Arabic ones and Libyans were, in fact, discouraged from learning the Arabic language. Only Italians were permitted to have secondary and Higher Education. There was only one higher Islamic school founded in 1935 by the Italian Government in Tripoli and it closed its doors with the outbreak of World War II in the area in 1942.

Under the British and French military administrations, which lasted from 1943 until independence, two principal types of education, each with its own curriculum and

aims, were set up, one for the Libyan Arabs and the other for the Jewish and Italian communities.

During British and French military administrations period, Libyan Arab education developed far more rapidly than it had done under centuries of Ottoman rule.

When the British and French took control in Libya only 16 Libyan graduates at university level could be found in the country. When the UN began its work in Libya in 1949 there had been no significant development in education in general and Higher Education in particular, with the exception of sending sixteen Libyan teachers to Egypt for a short training session in the field of school administration and educational psychology.

On 24 December 1951, when Libya became an independent monarchy, the country was visited by a UNESCO Commission which came to observe the situation regarding education in Libya and to make suggestions for its improvement. They found only twenty-nine primary schools in Tripoli (the capital), one in the city of Zawia and one teacher training centre for women in Tripoli. Between independence and the revolution, under the monarchy, all Libyans were granted the right to education in schools at all levels, although education was not compulsory.

In 1957, the Libyan government issued the Basic Education Law in an attempt to systematise education; this aimed to spread education among the population. This resulted in a significant advance in Libyan education. The first university in Libya was established on 15 December 1955 and two years later a new campus was established in Tripoli. In 1960 the government established the first Islamic university in Baidah to produce religious leaders for Moslem communities: preachers, judges, teachers and

social servicemen in order to diffuse religious knowledge and preserve the Islamic culture. The Islamic University included a Faculty of Arabic Studies, a Faculty of Moslem Law and a Faculty of Religious Principle.

A Faculty of Law was founded in 1962 and, later on, in 1966 a Faculty of Agriculture. By 1967, the Libyan University witnessed further enlargement with the inclusion of a College of Higher Technical Studies and a Higher Teachers Training College that were established in cooperation with the UNESCO. (El-Hawat, 2003 p 392).

Under the monarchy an adult education programme was established and Libyan women began to receive formal education. The number of schools increased from 842 to 947 in 1966; the number of students in primary, preparatory and secondary schools also increased from 178,829 in 1964 to 294,113 in 1967/68.

The rise in the number of students was accompanied by an increase in the number of teachers which increased from 6,692 in 1964 to 8,004 in 1966. With regard to Higher Education the number of university students increased from 31 students in 1955/56 to 1,239 in 1964, to 2,216 in 1967 and reached 3,460 students in 1968 (Ministry of Education, 1976). Meanwhile, the number of scholarships granted to Libyan students to pursue their education abroad also increased.

2.2.1.2 LIBYAN EDUCATION AND HIGHER EDUCATION AFTER TO 1969

As mentioned previously, after 1969 free education at all levels was made available to all Libyans and was made compulsory between the ages of 6 and 15. The objective of this was to obtain an educated and skilled workforce in the country which would assist in the development of the economy and reduce reliance on foreign expertise. Primary and secondary schools were set up throughout Libya. Old Koranic schools were

reactivated and new ones established, giving a strong Islamic aspect to Libyan education.

A large portion from the oil and gas revenues was allocated to extensive social and development plans. These plans aimed to exploit the oil and gas revenues, to create other economic resources and to raise standards in citizens' lives. Through these plans, covering the period of the 1970s, more than 11,225 million Libyan Dinars were spent on development projects distributed among different sectors of the national economy (Ghanem, 1985, p. 223). Gannous (1999) states that during this period Higher Education in Libya witnessed a significant growth in both absolute and proportionate terms.

In 1972 the Libyan universities comprised ten faculties in three major cities and consisted of around 6,000 students and 400 faculty members. The faculties were split between the UoT and the University of Benghazi which was renamed 'Gar Yunis University and included the Baidah faculties (El- Hawat, 2003).

In 1980 a decision was made to emphasise the importance of Islamic subjects, technical subjects and the English language. Placing an emphasis on technical subjects involved an attempt to change the prevailing attitudes in Libyan society at the time, whereby technical work was regarded as inferior in status to clerical work. However, in the same year, military training became part of education at all levels and military uniform was adopted as secondary school uniform for both boys and girls.

In the context of university education two other universities were set up in the 1980s, the University of Sebha and the University of Nazim Sattaa (Bright Star) in Brega (this was also a technical university specializing in engineering and petroleum and was

established to produce qualified personnel who would serve as a link between middle level technical staff and scientific specialists).

Furthermore, two other universities were established, one in Brak city, and the other was established in Gharian city and became known as the El- Jabel El- Garbi University (Secretariat of Education, 1987).

In 1985 more changes in the education system took place as the government decided to establish a secretariats a secretariat for the formation of vocational education. As a result, the number of LPUshas increased considerably from one university in 1970 to 11 universities (El - Hawat, 2003).

During 1990s despite the great efforts of the Libyan government in the field of national education and despite much expenditure the level of general education and technical education remained very low and did not supply the requirements of the country. This was a result of the fact that the education system was based on increasing the quantity of the students rather than the quality.

At the beginning of the nineteen-nineties, the government amended the primary and secondary curriculum for all Libyan schools. In 1995, nearly 160,000 students were enrolled into Higher Education (NPC 1998). In 2004 the existing universities were re-organized into fourteen main public universities.

Since 1990 Libyan universities have changed their admission requirements: students must have obtained a minimum of 65% in order to be admitted to any faculty, and engineering and medicine faculties require students to gain 75% in their marks to be admitted. Students who get below 65% in their marks only get accepted into higher training institutes and vocational training centres.

The university education sector has witnessed a considerable increase in enrolment in LPUs in the past few decades.

The number of students increased from 13,418 in 1976 to 204,332 in the 2000 academic year. By the academic year 2009-2010 there were 340,156 students.

The number of public universities has also increased, from 2 in 1966-67 to 10 public universities in 2010.

Table (2.1) shows some indicators relating to the development of Libyan Higher Education

N	Indicators	Years	
		1970	2009
1	Number of Universities	2	14
2	Number of Institutes of Higher Technology	0	6
3	Number of Students at universities	2,522	340.15
4	Number of MBA students at broad and at Libyan universities	16	6
5	Number of PhD students at broad and at Libyan universities	0	5261
6	Number of twinning agreements with international universities	0	63
7	Number of Agreements on joint supervision with international Us	0	10

Table 2.1: Some indicators of development of Libyan Higher Education
Source: *National Centre for Educational Research and Training(1978)& GPC (2011)*

2.2.2 PRESENT STRUCTURE OF LIBYAN HIGHER EDUCATION SYSTEM

As can be seen from figure (2.1) the general Libyan education sector consists of five stages as: (1) kindergarten, (2) basic school education, (3) specialised intermediate education, (4) Higher Education, and (5) advanced studies. The following two sections will focus on Higher Education and advanced studies

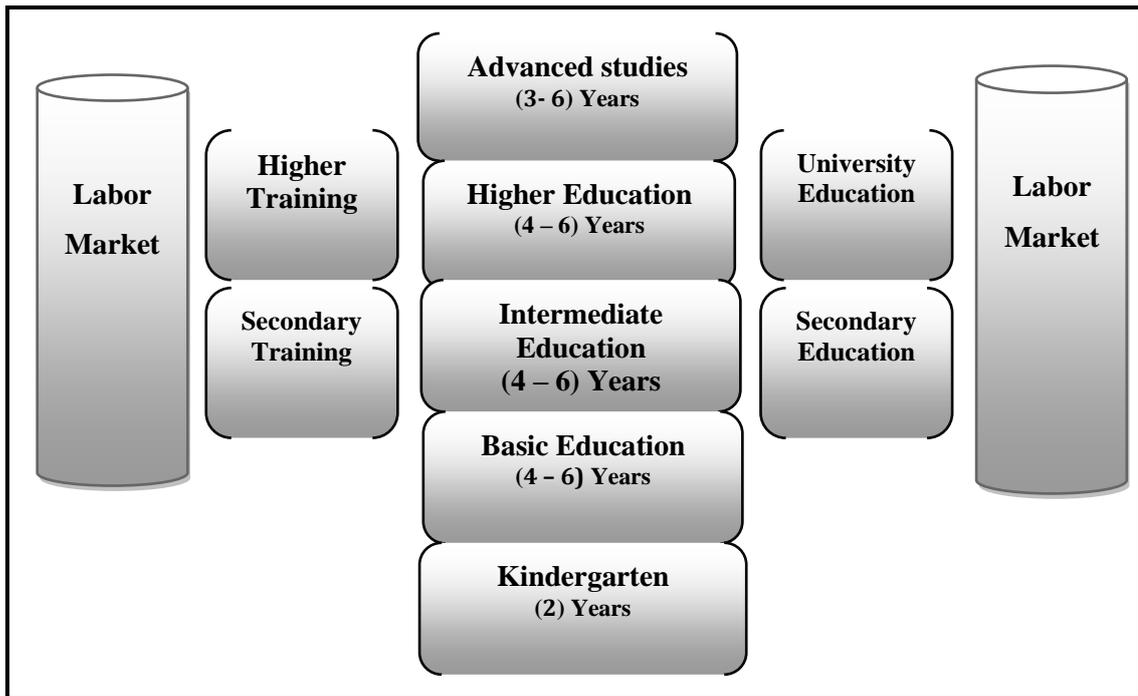


Figure 2.1: structure of the Libyan Education System.

2.2.2.1 HIGHER EDUCATION

This stage follows the secondary stage when students are at the age of 18 or over. Libyan Higher Education constitutes three types of tertiary institutions in: universities both public and private, Technical Colleges, and Higher Vocational Institutions.

2.2.2.1.1 UNIVERSITY EDUCATION

After completing specialized secondary education, a student enrolls in one of the university faculties which suits the specialization he/she got a certificate in or he/she enrolls in a teachers' training college that qualifies him/her to teach in secondary

education in his/her field of specialisation. Table (2.2) shows the regulations set by the GPCE that allow students to enroll for certain courses within University education.

N	Division	University Faculties in which Students Enrolment
1	Basic Sciences	Section of Faculty of Science (Math-Statistics-Physics-Earth Sciences-Computer-Meteorology-Teacher Training Colleges and Higher Vocational Training Centres)
2	Engineering Sciences	Various Section of the Faculty of Engineering, and Teachers' Training Colleges and higher vocational training centres
3	Life Sciences	Medicine-Dentistry-Pharmacy-Veterinary-Medical Technology-Teachers Training College- Higher Institutes Of Health-Faculty of Sciences Departments
4	Economic Sciences	Economy-Accounting-Administrative Sciences and the College of Teachers' Training College- Higher Vocational Training Centres
5	Social Sciences	Literature-Law-Political Sciences-Physical Education-Art And Media
6	Languages	Language Departments And Faculty of Arts and Teacher Training

Table2.2: Enrolment in university education after getting the specialised secondary Education certificate in 2007

Source: Resolution of the General People's Committee for Education (2007)

Students can also enrol at one of the higher vocational centres or HEIs of Technology which offer courses in such subjects as electrical engineering, mechanical engineering, civil aviation, computer studies and so forth.

The government issued decree No. (333) 2009 for determining the criteria for regulating the admission process of the holders of the Secondary Education Certificate to universities.

The qualification awarded after three years of study is the Higher Technical Diploma, or, if the study is continued for a further one or two years, the student may gain a

Bachelor's degree. Advanced graduate studies prepare students for higher diplomas, Masters and Doctoral degrees) .On 2012 the LPU's are ten Universities as follow :

- (1) The University of Benghazi
- (2) The University of Tripoli
- (3) The University of Al-Jabal Al-Gharbi,
- (4) The University of Misratah,
- (5) Omar Al-Mukhtar University,
- (6) the University of Surt,
- (7) the University of Sebha.
- (8) The Open University,
- (9) Nasser International University, and
- (10) University of Asmaria for Islamic Studie.

N	University name	Faculties	Location	Establishment
1	University of Tripoli	20	Tripoli	1957
2	University of Benghazi	13	Benghazi	1955
3	University of Sebha	17	Sebha	1976
4	Omar Al-Mukhtar University	7	Al Bayda	1969
5	Surt University	9	Surt	1989
6	Al-Jabal Al-Gharbi University	22	Azawyah	1985
7	Misratah University	17	Misratah	1983
8	Open University	17	Tripoli	1987
9	Nasser International University	6	Tripoli	2001
10	University of Asmaria for Islamic Studies	7	Zleten	1993

Table 2.3: Libyan universities (2012)
Source: University of Tripoli (2012)

Within Libya there is a mixed system of public and private education; that is to say that most education is provided by the state but there are also private, fee-paying universities.

Table (2.4) shows the five private universities approved by the Centre for Quality Assurance and Accreditation (CQAA)

N	University name	program approved	Locatio
1	Alrefak University	Architecture; Accounting; Business Administration; Law and Computer Science	Tripoli
2	Africa University	English language; Law; and Business Administration	Benghazi
3	African Nations University	English language; Law ;and History	Azawyah
4	Libyan International Medical University	Basic Medical Sciences; Nursing Medicine and Oral Surgery and Dental; Medical Laboratory Technology pharmacy; and Medicine	Benghazi
5	University of Tripoli	Tripoli	Tripoli

Table 2.4: Libyan privet universities
Source: Ministry of Higher Education and Scientific Research (2012)

In March 2009, the GPC took the decision to merge the Secretariat of Education and the Secretariat of Higher Education to form a single Secretariat of Education. However, in the context of university education the curriculum in both state and private universities is controlled by the GPC and, although the curricula are based on Western models, the main language of teaching is Arabic except in medicine and in some branches of science and engineering where the main language of teaching is English.

The MoHESR is responsible for the implementing of Higher Education Policies in Libya. This Ministry comprises the Central Administration which supervises Higher Education policies at various levels of Higher Education and also supervises the sub-departments in the local administrative sub-divisions which implement Higher Education policies and provide all that is necessary for this, including the administrative and technical structure as well as the provision of the President of the University, faculty members, supervisors and so forth.

2.2.2.1.2 TECHNICAL COLLEGE AND VOCATIONAL INSTITUTIONS

Students' studies at technical colleges or at vocational institutions last from 3 to 5 years, after which the graduate technicians are assigned to work on development projects. In November 2009 there were sixteen higher vocational training centres. These are to provide "technical bachelor degrees" in certain specialities and require 3 years of study after getting the secondary school certificate. During the academic year 2010 there were 63 higher vocational institutions in Libya and more than 80,000 students were enrolled in the higher vocational institutions (GPC, 2011).

2.2.2.2 ADVANCED STUDIES EDUCATION

Graduate programmes were introduced in Libyan universities in 1973. They are offered in a variety of fields in Libyan universities. Graduate students can enroll for MA courses and for preparing for Doctorate only at certain institutions.

The Master's degree in most subjects requires, on average, 2-3 years of study after obtaining the Bachelor's degree. Whereas gaining a Ph.D. degree, or Doctorate, in selected specializations and at universities needs 3-4 years of study. Both the Master's degree and the PhD degree have to be approved first by the MoHESR which also sets the admission requirements for both types of degree.

According to the NPC (2007), the largest number of students enters the fields of medicine, educational sciences, social sciences, economics and finance, engineering and industrial sciences. All the Master courses include the English language as a subject. Most science and medicine courses use a content-based syllabus that is organised around the subject matter rather than around language teaching.

2.2.3 THE CHALLENGES OF LIBYAN HIGHER EDUCATION

The literacy rate in Libya is one of the highest in the Middle East and North African countries. However, the quality of education is one of the most important challenges that is faced by Libya. There is a need to build up the system in order to instruct numerous learners in a short space of time. This is a problem not only for Libyan education; it is a problem common to various other developing countries also El-Hawat (2004) stated that some of the serious problems of university education in Libya are “student overcrowding, frequent changing of regulations, leadership and organisation.

universities have become crowded, equipment and academic staff are inadequate and it proves difficult to deal with the changes. However, as in the case of Higher Educational institutions in other countries in the Arab region, HEIs and particularly universities in Libya did not develop primarily in response to a general quest for knowledge. They were established instead to meet a particular need for specific specialized manpower. Higher Education in Libya has several objectives that mirror precisely the country’s social needs, cultural background and national development goals in practice. Libya, in common with other developing countries, has sought to modernize its Higher Education System as an effective instrument for the human

development needed to achieve social and economic development. Therefore, the university education sector is an important sub-sector of public education.

The Libyan government has struggled to develop a system of Higher Education in the hope of improving the foundation for planning the development of the Libyan Higher Education System. As a result the Libyan Higher Education System has undergone many positive changes in certain of its aspects. However, the criterion of quality and efficiency of performance of Libyan Higher Education is extremely low and weak and there are a number of challenges which affect the Libyan Higher Education System and which act as obstacles that face this type of education. It is worthwhile noting that some of these challenges also exerted an influence in previous eras. The following subsections examine these challenges and problems for Libyan Higher Education System.

The financing of education in Libya has always been the responsibility of the government and since 1969 students enrolled in LPUs the government paying for tuition fees for their education and for free room and board. This situation continued until the end of the 1980s when the Higher Education budgets increased to such an extent that the government could not afford to remain the sole financier of education in the country. According to official statistics, during the last three decades education expenditure, on average, was 6.3% of the GDP, while students enrolled in university education amounted to 4.92% of the total population in the year 2000 (GAIT 2003).

Education in Libya is financed mainly by the state with contributions from non-governmental organisations and private citizens as well as loans and assistance from private institutions. In the context of Higher Education, therefore, both graduate and

postgraduate students only pay a nominal amount of money as registration and tuition fees at the beginning of each academic year or semester.

There was a government strategy between 1970 and 1990 to improve education and health (Said et al., 2004). Although the implementation of such socio-economic transformation has brought good results to Libyan economic development, various problems and obstacles besetting the development process have been encountered.

Free education was offered and made compulsory for all children between the ages of 6 and 15 years. As a result the literacy rate has increased dramatically. Many statistics show that there was an upward trend in overall education spending during the first 14 years after 1969; the spending doubled more than 16 times due to the extensive plans that were used during this period.

The second period (1983-1993) experienced large year-to-year fluctuations in the volume of spending and the spending on education witnessed a sharp decline until it reached 17.8 million LD in 1993. The period 2003-2007 witnessed significant growth in spending on education reaching 1.196.3 million LD in 2007. This marked its highest level since 1970.

In the same vein, the Libyan government gave special importance to the Higher Education sector in order to develop its human resources. In this regard data from the GPC indicate that the cost per student in 1971 was 160.3 LD when there were only four universities that had been established. However, it increased gradually to reach 1,509 LD in 2007. These statistics reflect the great efforts made by policy makers over the last few decades as well as the developments which have taken place in Higher Education since the revolution of September 1969.

The most important of these developments has been the great expansion of the university sector. For example, the number of universities rose from only two in the academic year 1966/67 (Ministry of Education, 1976) to twenty-seven in 2007.

Since the mid-1990s, when the quantitative expansion of education was accomplished, the government has turned its focus onto ways to improve the efficiency and effectiveness of university management and the quality of education.

Sawahel (2009) stated that the Libyan government has established the National Authority for Scientific Research (NASR) and the Quality Assurance and Accreditation (CQAA) to help build scientific capacity, improve the quality of education and introduce new teaching and learning methods. However, the strong public support for Higher Education can no longer be sustained due to the rapid growth in the number of students and the increasing social demand for Higher Education.

In sum the researcher identified the major challenges as: addressing the demand in quality and quantity, quality assurance, governance, use of ICT and scientific research. However, special challenges exist in relation to the cooperation between universities and business and industry, and in fact the failure to meet the needs of the labour market and to respond to the changes of the national economy .

2.2.4 RREFORMING LIBYAN UNIVERSITY EDUCATION

In order to get a more comprehensive overview of the policy for the Libyan education system, the researcher has extracted the principal strategies in order to provide an insight into what the policy hopes to administrate. However, Libya's HEPR has been dominated by the government with little attention paid in the past to university

education. The Libya government is implementing a radical process of reform in the Higher Education sector in an attempt to deal with the rapid changes in the demands of society. These reforms are changing colleges, departments and institutions within Libyan Higher Education and the principal goal of this process is to establish a knowledge-based society in Libya and to encourage the science-based development of industry.

The researcher considers that a more accurate conceptualization can be developed if the growing utilization of ICT is seen as only one of the many major changes occurring in universities. The Libyan MoHESR has expressed its intention to improve the Higher Education sector particularly regarding the technology available.

The NPC (2007) reported that the main aim of Libya's HEP is to strengthen the role of ICT in society in general and in LPUs in particular. Higher Education in Libya has become eligible to compete with International education levels, due to international demands and standards. This caused the Libyan government to establish the New Higher Education Policy Reform NHEPR 2008-2012 NHEPR in an attempt to increase the quality of Higher Education and its handling of economic, social, scientific and technological challenges. This NHEPR 2008-2012 should have a major effect on the current Libyan Higher Education System. As already mentioned, one of the new HEPR aim's is to develop human learning in order to increase people's knowledge by using ICT to support continuous learning in education. One of the strategies to provide new knowledge to people is via research.

Previously, the organisation of the Libyan public university sector was teaching-oriented and concentration was mainly on teaching. But in accordance with the

NHEPR 2008-2012, the UoT now has strategies to become a research-oriented university because it realised that being a research oriented university will contribute significantly more benefits to the country than being a teaching-oriented university. It is thus questioned whether the implementation of such a research university plan will significantly impact on the influence of ICT usage.

On the other hand, graduate students, administrators and academics who acknowledge such a research university plan might prepare themselves by trying to use ICT equipment to search for information for their research. Whereas others, who have not acknowledged this plan, may concentrate only on teaching or learning and not pay any attention to research. Thus such a policy may impact on and influence the determinants of ICT usage.

According to Hamdy (2007), the NHEPR 2008-2012 objectives for ICT in Libyan education are to improve the quality at each level or stage of education through ICT by adopting modern teaching techniques and modern teaching methods, developing open and distance learning as well as continuing education, supporting and encouraging the scientific and academic community to engage in research activities that have a real impact and benefit to the country, and encouraging and boosting the profile of Libyan HEIs. The NHEPR 2008-2012 emphasises the role that technology and ICT might, and will, play in transforming learning by making it more accessible to individuals everywhere through the need for a unifying perspective. The reforms of the Libyan government in Higher Education consist of:

1. Offering many Libyan students the opportunity to continue their studies abroad and to gain internationally recognised qualifications. For instance, during 2009-2010 10,675 students were studying outside Libya in more than 45 countries.

2. The establishment of 20 new universities distributed throughout the country instead of the system which created and opened faculties and departments as branches of the already existing main universities in the cities that are located around them, and

3. Reforming the methods of student training, strengthening quality and continuously improving the Libyan university system by establishing a National Authority for Scientific Research (NASR) and a Centre for Quality Assurance and Accreditation (CQAA). NASR aims to formulate and implement policies relating to science, to direct and support research, to prepare educational programmes in specific scientific fields and to help increase scientific capacity. The authority studies and analyses the country's requirements and advises the government on ways to create and maintain the necessary number of qualified scientists and the facilities needed to carry out research and teaching. It is also developing scientific standards to measure quality and innovation in scientific research. The CQAA is concerned mainly with assessing the academic performance of the education system according to international performance standards, strengthening quality and continuously improving the Libyan university system.

With regard to the previous review, the researcher suggests that the planning of university education must be linked to the development planning of society and universities must be supported by government and local authorities for the purpose of promoting and encouraging scientific research, and that reforms should take the global revolution in the field of ICT and its influence on the life of students and society into consideration, and that the planning of university education should also not ignore economic and social developments in the world and their effects on knowledge and should balance the need for both theoretical information and its practical application in

order to increase the comprehension of students. Furthermore, national and global issues should be given a place within the reformed curricula and universities in Libya should be encouraged to contribute to the implementation sustainability. In addition, more attention should be paid to the establishment of laboratories in each department and to supplying them with modern ICT equipment. The following sections provide an overview of the key developments in Libyan ICT sector

2.3 THE DEVELOPMENT OF ICT IN LIBYA

A government decision to adopt ICT in its public or private organisations or sectors can only be taken if there is strong motivation to encourage the transformation to the new government paradigm. Such a decision must be driven by compelling reasons which may appear in many aspects. However, Libya is considered as an example of a nation state trying to develop, based on the adoption and use of ICT in an increasingly globalised world (despite Libya being one of the most prosperous countries in Africa due to oil revenues and the fact that the population is not large). Before 1990 ICT use in Libya was mainly limited to radio and landline telephones. In September 1998 Internet services started in Libya (GPTC Report, 2002). By the beginning of 2008 Libyan government has issued the New Higher Education Policy Reform NHEPR 2008-2012 which has the clearly stated aim of establishing a new systems that is able to make best use of advanced ICT tools at all sectors including university education sector. The NHEPR 2008-2012 issued by the Libyan government states that information technology should be adopted to facilitate teaching and learning processes and as an instrument to disseminate information and knowledge. The NHEPR 2008-2012 is one of the strategies to stimulate e-Education. However HEP, as a key factor,

could be further framed around three sub factors that may influence the use of ICT in universities.

The GPTC was established in 1984. It was the only one company for telecommunications services in the state and was the controller for all telecommunications services. It had no administrative and financial independence. In 1997 the Libyan Telecom Technology became the first company which worked in the field of communication and information technology. In 2006 the General Telecommunications Authority (GTA) was established. From 2006 until 2011 the GTA was considered as one of the priority sectors and it became one of the fastest growing sectors. It became the telecommunications regulatory body in Libya and was headed by a son of Libya's former President who had the absolute power to make decisions without censorship. The GTA has the responsibility for promoting the growth of ICT and is in charge of following up the services and activities of the post and telecommunication sector and for the implementation of linked legislation as well as preparing technical conditions and standards for communication systems, organizing telecommunications' networks, systems and ICT services, and taking all legal measures against telecommunications' and post service violations.

The GTA has increased rapidly over the past few years and is considered as one of the priority sectors for the Libyan government, thus it has been an active participant in the sector with much development over the last years. Libya is about to launch its first e-governance programme which will allow people to pay bills and fines, get information on public and private tenders and apply for ID cards online. When compared to other countries, such developments could be a good point of comparison yet it also shows that the sector has not reached its full potential. For instance, in 2003 the number of

telephone lines was almost 750,000 and in 2008 Libya finally topped the 100% mark for mobile phone penetration, showing the rapid delivery of services, while in March 2009 the country had a mobile phone penetration rate of 103% in terms of active subscriber, well above Tunisia (83%), Algeria (80%) and Egypt (62%).

By 2009, Libya had almost 6.2m subscribers, roughly 99% of the customers for companies in the pre-paid segment. Therefore, in order to achieve its targets or goals the Libyan state should improve its Higher Education System through applying effective and tough ICT policies. However, the impact of ICT is most evident in the NHEPR 2008-2012 where the present policy stresses the role that technology must play in changing learning by making it more available to persons in all places through online education for each student's needs. Technology and ICT are considered as a top priority for the Libyan government in order to reform the content of the Libyan Higher Education System and in enhancing the interaction between lecturers and learners in public universities.

2.4 SUMMARY OF CHAPTER TWO

This chapter has, after giving background information about Libya in terms of its history, people, economy, geography, and politics of the country, examined the structure of the Libyan education and higher education system. The chapter started by describing the environment of Libya. Finally, the development of ICT system in Libya has been highlighted. The next chapter examines and investigates the available literature pertaining to the issues of globalisation, HEP and adoption of ICT in the university education sector.

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3.0 INTRODUCTION

The previous chapter provided a thorough background to the development of the Libyan Higher Education System. It examined the development of globalisation, HEP and ICT in the field of Higher Education in Libya. This chapter aims to explore the factors that influence the use of ICT in Higher Education. It will be a review of globalisation and Higher Education policies looking at factors that impact on ICT adoption and acceptance within Higher Education which will serve as part of the thesis, the literature review also looks for answers to the research questions put forward in chapter one. This chapter reviews studies and literature from several publications, scholarly dissertations and Masters' theses, conference papers, journal articles and books, in order to create review of the three areas Globalisation, HEP and ICT acceptance and adoption will be reviewed and any research gap in the literature will be identified.

Merriam (2001) stated that a literature review is intended to sum up and critique what has previously been written on relevant issues. In the same vein, its necessary operation of a literature review is to make sure one browses widely around the subject field within which one plans to conduct one's analysis study. It is necessary for a scientist to grasp not only what other researchers and students have found in respect to constant or similar queries but also it is necessary to review what theories imply and what gaps exist within the relevant body of information. According to Marshall and Rossman (1999), the literature review has several aims which are to inform the research model that underpins the study, identify related research and intellectual traditions, identify gaps in prior research, and increase the scope of the research questions under investigation. In this vein, literature review should be of direct

relevance to the research problem. The focus of the literature review was provided in part by the identification of the research problem. It also provided a focus for the main data collection phase and, in an important way, contributed to the data collection itself and the analysis of the semi-structured interviews, as is discussed later.

The review of the literature for this research study has a focus on these three main areas: the globalisation area; the HEPR area and explaining the adoption and use of ICT within the Libyan university education context. The rest of this chapter is organized as follows. Section 3.1 covers the literature review that looks at recent studies that have covered the context of growing globalisation. Section 3.2 looks at the issues of policy process and HEP and section 3.3 reviews the issue of adoption and use of ICT.

3.1 GLOBALISATION

This section aims to examine and explain the process of globalisation in the context of university education. Consequently, it begins with the definitions and concepts of the phenomena of globalisation and attempts to provide a clearer definition of this term in order to assist in gaining a deeper understanding of globalisation as a factor that impacts on ICT adoption, acceptance and usage within Libyan public universities. This will be followed by presenting a precise definition of globalisation that fits with the context and purpose of the study.

Then a closer look is taken at the most significant aspects of globalisation with particular attention being paid to the ICT as one aspect of globalisation and to the relationship between globalisation and ICT adoption acceptance and use

3.1.1 DEFINITIONS OF GLOBALISATION

This section aims to provide a quick review of the literature on the conceptualization and meaning of “globalisation” by using different theories from authors to redefine the term in order to attach it to this research aim. However, among researchers and scholars (and all those interested in the issues of globalisation) there is a general agreement that this phenomenon is a very complex and multifaceted one that cannot be defined in a single term. Nevertheless, in recent years, there has been increasing interest in globalisation. It has become a controversial topic and a great deal of literature has been devoted to the concept and to its implications for society around the world. According to Williams (2012) “ Globalisation may well be an olden theme but it is that capacity to progress explains why it has become the main subject of the modern world”: (p. 27) . Gunn (2005) claimed that “Globalisation is about changes in technologies and communications, which inevitably lead to changes in cultural beliefs and practices”.

Bouch (1997) disclosed that, over the past twenty years, the quantity of articles printed with ‘globalisation/global’ within the title have proliferated with nearly a threefold increase. Not surprisingly, the scope of the definition of globalisation is extremely broad. According to Giddens (1996) globalisation has come out of nothing to be everywhere. Globalisation has been outlined in very diverse suggestions by a variety of theorists and there are many varied and widely differing definitions of this word including the complicated processes of integration (both global and regional) that are currently under way internationally. It can be argued that globalisation is quite a complex process. The subject of globalisation is particularly complicated because it has many dimensions as it is worldwide phenonmen. It also has multifaceted aspects.

As Moghadam (2005) argued that globalisation is “an common political, economic, and cultural, process in which the flow of capital, ideas, organisations, and inhabits has taken on an increasingly global form” (p. 17). The huge growth in interest in studying globalisation shows the impact that globalisation has on many sectors. It is by its nature complex and this research will review the literature on the main concepts of the term globalisation that are relevant in the context of Higher Education. In this context this study will point out about globalisation and its effect on Higher Education. This researcher argues that this can be achieved or measured by the degree to which Higher Education is shaped by globalisation and also by the type of Higher Education Reform that is required. Van Damme, (2002) argued that “ the forces of globalisation represent a dramatic totally different environment for educational activity establishments and policy makers to work within the changes to educational activity everywhere in the world are more and more exposed, and varied, even contradictory ” and therefore the comprehensive concept of globalisation is far from being clear and well outlined. There is confusion as every definition of globalisation originates from a specific theoretical, political or philosophical perspective. It often seems indistinguishable from other terms such as internationalisation and transnationalisation and generally refers to the growing interconnectedness of different parts of the world. According to Scholte (2000) globalisation means “globality” or a global condition. However, in his view, globalisation is very often used to rename already well-known phenomena. Scholte argued that there are at least five broad definitions of globalisation, namely:

1. Internationalisation
2. Liberalisation

3. Deterritorialisation
4. Universalisation and,
5. Westernisation or modernisation

As can be seen, Scholte claimed that the first definition of globalisation equates with internationalisation or views globalisation as synonymous to internationalisation. In this context, globalisation is seen basically as an adjective that designates cross-border relationships between nations. This is a largely international economic perspective that defines the progress in worldwide exchange and interdependence. Hirst and Peters (1996) indicated that “with increasing flows of capital investment and international trade, there is an opportunity of moving from an international economy to a stronger version of the globalized economy in which distinct national economies are subsumed into the system by international process and transactions” (p 10). Hence globalisation within this perspective is not comprehensive and is not very broad and politically objectionable.

The second definition view globalisation as liberalisation focuses on the liberalising dimension of globalisation which refers to a method of eradicating government imposed limitations on movements between nations in order to create an open world economy” (Scholte 2000). This is with the intention that institutions are going to be eradicated and will no longer play a role in the economy.

The third definition of globalisation as listed above is deterritorialisation. Here 'globalisation' is understood as the process of reshaping of geography. Giddens (2003) defined globalisation as the growth of wide-reaching social relationships that link distant people in some such way that local happenings can become a unit formed by

events stirring several miles away and contrariwise (p. 60). The fourth definition of globalisation according to Scholte (2000) is universalisation which means the procedure that propagates ideas and experiences to people all over the world leading to the international harmonisation of aspirations and experiences.

The last definition of globalisation given by Scholte (2000) considers globalisation as Westernisation or modernisation, whereby modern (i.e. occidental) social structures, such as capitalism and industrialism, extend worldwide leading to the destruction of cultures and local autonomy. As shown by the previous reviews on the concepts of globalisation show it is quite difficult to give a precise or an exhaustive definition of globalisation because so many definitions exist. However, it is necessary to consider a precise definition of globalisation to fit with the context and purpose of this study. This will be provided in the next section.

3.1.2 GLOBALISATION DEFINITIONS FOR THIS STUDY

Globalisation is viewed as the primary cause of changes occurring in Higher Education. However, globalisation in this thesis is as outlined by Grunzweig and Rinehant (2003) who described globalisation in the following terms. “ The process and consequences of instant world-wide communication created a potential by new technology. The results embrace increase on the quantity, quality, and scope of accessibility of information, as well as the continually increasing integration and interdependency of economic systems and new world finances’” (p.7)

The researcher considers this definition for this study because it helps make sense of the empirical data. The qualitative research methods used aimed to allow interviewees to be as open as possible and not be constrained by a particular definition or concept. This allows for interviewees’ perspectives to be analysed with reference to the various

points of reference that this definition articulates, which are very broad. If a narrow definition of globalisation had than opening the topic up. Another important reason for considering this definition to be suitable is that this definition provides a ‘bridge’ to the globalisation literature on ICT adoption in Higher Education which is a good reason for its appropriateness in this study. The researcher therefore believes that, of those definitions that he has reviewed, the definition by Grunzweig and Rinehant is the one that is most suitable for use by this thesis. Based on the previous literature the researcher argued that globalisation is that it is an ongoing process. However , to understand fully the process of globalisation it is necessary to take into account the economic, political, cultural and technological process. These will be discussed next few sections

3.1.3 ASPECTS OF GLOBALISATION

Many authors have attempted to define globalisation in a variety of ways and there are many different definitions and descriptions of this term. There are a vast number of studies focusing on globalisation which vary in their emphasis on a particular set of consequences or in their distinct perspectives of globalisation. The aim of this section is not, and cannot be, to cover the full variety of possible viewpoints on globalisation as they are publicised in very dissimilar disciplines such as economics, politics and cultural studies. Instead, the following sub-sections will, therefore, outline some of the most crucial arguments in the debate.

Numerous studies focus on the aspect of economic globalisation (Stromquist and Monkman, 2000; Castells 2005; Porter, 2001; Burbles and Torres 2000; and Gray 1998). There are also numerous studies discussing political globalisation (Featherstone 1995; Weiss 1999; Friedman 2006 ; Friedman,1999; Carnoy 2001; Tabb 1999 ;

Castells 2005; and Scholte 2000) . Some studies have investigated the past and current socio-cultural forces that form globalisation processes (Strange 1995; Held and McGrew2003; and Giddens1996).

3.1.3.1 ECONOMIC GLOBALISATION

The term globalisation is often used to refer to economic globalisation, that is the integration of a national economy into the international economy through trade, (the world's market system), large migration flows, foreign investment, capital flows of technology and ICT. Castells (2005) argued that a new economy has emerged around the world due to globalisation over the last twenty years of the last century. He described globalisation as a new product of capitalism which has three essential types: (1) Productivity and competitiveness are by, and a function of, information processing, (2) Essential economic actions are global; they have the size to work as a part in actual time, and (3) Firms and territories are organized in networks of management and construction.

Economic globalisation increases demand for education, particularly university education, and this increases the pressure on the Higher Educations System. This means that reform in HEIs is seriously urgent, especially in developing nations. Friedman (2006) remarked that those countries which do not adequately train their people for the new knowledge economy will be left behind and will not be able to compete effectively in the global economy. According to Burbules and Torres (2000) “globalisation has resulted in the collapse of economic nationalism”.

Globalisation specifies the key importance of the significant role of Higher Education in development of human societies where it can be considered both as a principal tool

and as occupying an important position based on its role as the producer and supplier of skilled human capital for industry.

As an employer of a large workforce (Porter and Vidovich, 2000). However, Beck's (2000, p.154) question as to how social justice is possible in the global age, still has not been satisfactorily answered. While consumerism and production grow, especially in prosperous countries, poverty, disease and the depletion of the natural resource increases in the world's poor nations and the gap between rich and poor is becoming wider. The Oxford English dictionary describes globalisation as:

“The process by which businesses or other organisations develop international influence or start operating on an international scale: fears about the increasing globalisation of the world economy” (Oxford Dictionary, 2012).

Additionally, economic globalisation refers to the international integration of economies and systems of communication. The economic ideology behind the process of globalisation calls for the primacy of the market, the dissection of labour established on relative advantage, privatisation and a diminished role for the public sector. As Ozga and Lingard (2007) identified, globalisation is “cancelling the differences between the universal and the local, and in so doing, influences a new subjugating to politics” (p. 65). However, globalisation from an economic perspective is also described by Burbules and Torres (2000) as “a transition from Fordist to post-Fordist forms of workplace organisation; a rise in internationalized advertising and consumption patterns; a reduction in barriers to the free movement of goods and chattels, labours and investments across national boundaries, and, similarly, new forces on the roles of employers and customers in states”.

Given the previously stated definitions by various researchers, economic globalisation can be seen as a process that may have a significant impact on ICT adoption and use by all sectors of the society, particularly in the Higher Education sector as one of the most important sectors. In this vein, Ozga and Lingard (2007) assumed that "globalisation has a significant impact on both the public and private sectors, and also affects economics, politics, electronic communications and electronic media, as well as education" (p. 60).

Furthermore, and in the context of HE and the adoption of new ICT, Altbach (2012) found that poor and low-income countries face a host of challenges and several difficulties dealing with, and coping with, the IT levels required by the top academic institutions, due to the high costs for building databases and for the provision of internet access. He stated that the age of globalisation has recognized a neo-imperialism. However, it is difficult to explore the economic impacts of globalisation without exploring the neo imperialism. The recent advent of neo-liberalism stems from criticisms of the welfare state that gained popularity in the 1980s under the leadership of Ronald Reagan and Margaret Thatcher.

For advocates of neo-liberal policy, the keys to a prosperous future for the greatest number of individuals throughout the world are the expansion of a free market system and a large decrease in national governments' responsibilities for social welfare. Specifically, neo-liberal economic policies, which have been taken up in countries around the world, advocate a freer, competitive market system; decreased public spending; and decreased government interventions (Harris, 2007). The increased competitiveness and expansion of market values is characteristic of a globalised

nation-state. In terms of economics, in a neo-liberal environment, the state has the job of enabling and steering its citizens through a competitive and an open market system.

Higher Education is also impacted by neo-liberal, particularly the belief that there should be less government funding and intervention in institutions associated with social welfare. Because of the neo-liberal emphasis on a decrease in public spending on social services, such as education, there has been a move toward the privatisation of educational institutions and services. Therefore, universities become areas of business rather than the promoters of social values. According to Steiner-Khamsi, (2006) neo-liberalism promotes the treatment of education as part of the open market

Based on these findings of Altbach, Higher Education should support a better understanding of other societies and cultures, and it should be viewed as a crucial element in the construction of communities by supporting each individual member of the community to realise their full potential and to participate fully in society, as well as preparing citizens to be able to cope with the changing world and to play an effective role in the global community by giving them the abilities they require to cope with the numerous elements of globalisation in addition to providing the successful adoption and implementation of the new ICTs within its institutions .

Globalisation can be also seen in the increase in foreign direct investment throughout the world and in the expansion of foreign direct investment and global trade, foreign exchange, massive capital flows and labour flows, as well as in the emergence of multinational corporations with the latest up-to-date information on information and communications technologies (ICT). This fact is supported by Soros (2004) who viewed globalisation as an economic phenomenon “ the development of worldwide

monetary market, the expansion of international firms, and their increasing domination over domestic economies “.

Peta (2002), on the other hand, defined globalisation as a rapid growth in international occupation through the area and extension of external direct investment throughout the recent two decades that has controlled the making of a new global economy.

The previous definitions reflect on the impact of globalisation as an economic phenomenon on ICT adoption and use within HEIs, including universities, as various studies show that there is certainly a relationship between ICT adoption and foreign direct investment (FDI). FDI is a direct investment into manufacture or trade in a country by an separate or company in another country, whichever by export a company in the target country or by expanding operations of an existing business in that country. Foreign direct investment is in contrast to portfolio investment which is a passive investment in the securities of another country such as stocks and bonds. For example, a study conducted by Alexander (2010) showed that there is a link between ICT and foreign direct investment. His study also found that ICT plays a more significant role in promoting foreign direct investment activities as a country progresses (p:98).

By using the above literature the researcher argues that economic globalisation is producing new many opportunities for developing countries for Higher Education in general and for universities in particular. Therefore, the most important opportunity that ‘opens the door’ for accepting the adoption and use of ICT, is to keep up with what is going on in the other universities in developed nations. On the other hand, there are many challenges associated with such opportunities that can only be tackled

by international action in order to reduce the negative impact of the rapid economic globalisation process. Therefore, there is an important necessity for changes in the Higher Education System, which is becoming one of the important sectors, in order to adopt new ICT and to respond to the demands of globalisation. Moreover, economic globalisation has been felt to have had an impact on the adoption, acceptance and usage of ICT perhaps to an even greater extent than it has had in the economic domain. This means that economic globalisation is not something new and unique for the age of free flowing information and knowledge .In addition, the growing role of globalisation in business, economics and in engaging in entrepreneurial activity has already been reflected in the changing role of all fields, particularly in HE including universities and colleges around the world.

To sum up, universities in developing nations, including Libyan universities, are the largest beneficiaries of foreign direct investment and of economic globalisation because Libya as a third-world country simply does not have the means to accommodate students to face global competition and to take full advantage of the appropriate adoption and use of modern ICT.

3.1.3.2 POLITICAL GLOBALISATION

Since the end of the Cold War, and after the fall of the Berlin Wall, together with the expansion of capitalism, globalisation has become a key concept for politics. As has been defined by Featherstone (1995), “several education institutions face enormous difficulties and challenges. These relate to major issues such as improving the quality and quantity of education through developing curricula, facilitating access to Higher Education and the adoption and use of ICT in HEIs including universities. Furthermore, Weiss (1999) asserted that ‘globalisation has largely become

synonymous with the erosion of state power. This implies that global and national oppose each other rather than complementing each other, and are separate rather than being connected together’.

The integration of global and local cultures has led some authors, such as Carnoy (2001) to conclude that the nation-state may be on the way to extinction and that the stage is set for a new “global democracy”. Carnoy (2001) argued that globalisation may well signal the demise of the nation-state if it is unable to redefine itself to face the new conditions confronting it within a global setting. In this context, Tabb (1999) defined globalisation as a method of reducing barriers between countries and inspiring closer economic, political and social interaction.

The nation state still has considerable power in many places but it has also lost a lot of power in relation to globalisation even if the state can still control the use and distribution of ICT capacity. This is because many of organisations such as (UNESCO; The World Bank WB ; the Organisation for Economic Co-operation and Development OECD; and the General Agreement on Tariffs and Trade GATT) are well funded and supported and this can put pressure on the leaders of nations who rely on their help. In addition, the multinational organisations have political impact in that they often create new positions in the global political hierarchy.

Governments should give universities the ability to establish links locally and internationally based on the resources and. From this perspective, and with regard to the relationship between ICT adoption in HE and the impact of political globalisation, it becomes clear that a government’s primary goal is to make sure that both teachers and students at HEIs are prepared to contribute to the new globalised arena and to deal

with the modern ICT. Fundamental advances in technology and ICT have accelerated the speed of globalisation.

Friedman (1999) dealt with the concept of globalisation and he believed that globalisation itself is not a phenomenon, but that it can be regarded as an international system that closely models the local politics dealings of every state. In Friedman's view, all regions of the world are becoming linked ever more closely by inexorable historical processes, with free-market capitalism acting as the driver of globalisation. On the other hand, Friedman (ibid) argued that "globalisation is a process by which individuals as well as companies become empowered". He, however, stated change is made possible through intersecting technologies and social protocols, like cell 'phones, the internet and open supply software packages. Friedman (2006) does not agree with the societies that seek to resist these changes. According his point of view, it is necessary and needed to adapt to global change forces and to cope with the challenges that create many of the pressures on businesses and individuals as otherwise these societies will not progress.

Castells (2005) described globalisation as the central driving power in modern societies, arguing that "in general, the critical issues conditioning everyday life for individuals in every state are essentially produced and formed by globally interdependent processes that go beyond the realm of countries as defined by the territories under colonialism"(p.10). In this respect, the researcher asserts that these new trends lead to creating important changes in a number of areas and these might be reflected in Higher Education in general and in university education specifically in the light of the influence of globalisation in terms of their capacity to be political when collaborating with universities in other fairly developed nations. However, this might

lead to relying on each other and competing with each other's state, although this may cause state's inability to maintain its own political influence. Based on Castell's (2005) and Friedman's (2006) views international cooperation between universities in developing nations (including Libyan universities and other universities throughout the whole world especially in developed countries) could have an impact on the adoption and usage of ICT. Also, as stated in several national reports prepared by the Libyan National Commission for Education, Culture and Sciences regarding the development of education in Libya (which was presented to the International Conference on Education, held in Geneva, in Session 46 (2001), the main obstacles and barriers that face Libyan Higher Education are "the lack of scientific coordination and cooperation among Libyan universities and the lack of coordination between them and the international universities" and the "lack of encouragement of scientific research and the lack of encouragement of teachers to participate in international and Arabic scientific events and to publish their research in Arabic and international journals" (p.12).

Drawing on the literature regarding the impact of political globalisation on ICT adoption within Higher Education it is clear that political globalisation has arguably already had a strong impact on the adoption and use of ICT, and, as shall be seen in the next section, globalisation has influenced cultures as well.

3.1.3.3 CULTURAL GLOBALISATION

Globalisation generally can be seen as a process that has affected several areas of human life, one area being that of Higher Education. Higher Education undergoes constant changes as a result of cultural processes. In terms of culture, this viewpoint clearly faces the view of globalisation as enforcing a global worldview, new values

for cultural properties, new concepts, values and new habits through a global cultural trade. Some authors like Beck (2000) argued that globalisation can be seen as outside regional boundaries and it relies only on the ability to dominate and control. According to Strange (1995), globalisation may be a term employed by thinkers who are referring to trends in style, in tastes for food and drink, clothes, music, sports and diversion within the provision of economic services and therefore scientific research, either in causes or in consequences. Giddens (1996) defined globalisation as the increase in the development of social relationships in the whole world which link countries in such a way that local happenings are formed through events which may occur in very remote areas and vice versa. He also views globalisation as "the transfer of social local activities through establishing a huge network of relationships whose scope is worldwide".

The effects of cultural globalisation on education generally and on Higher Education in particular brings and communications are being used inside universities' systems across the world as ideas, values and information data, and the changing roles of stakeholders such students, academic staff and educational workers are producing a shift in society from industrialisation towards a new information-based society. The growth of a worldwide society driven by technology, communication and media exposure is prompting postgraduate students in the world to become 'global inhabitants', bright individuals with a wide range of skills and information to apply to a modest, information-based civilisation.

Globalisation encompassing culture is widely presented as the main of cultural changes that obviously is integrally associated with political and economic globalisation which is the only way to reach the eventual goal of cultural globalisation

It seems clear that the United States of America is pursuing a path to force its culture on other societies in the whole world (an Americanization of different cultures). Globalisation functions at a cultural level and involves such fields as the exchange of ideas, beliefs and art, allowing therefor for the potential formation of a ‘global culture’. Such trends indicate an increase in relationships among human societies and demonstrate a growth in inter-reliance between countries, businesses, organisations and individuals. Hsiao and Wan (2007) linked global culture to “the concept of lifestyle and with the rise of global consumerism” (p.363)

On the other hand problems with English language is one crucial barrier within the area of globalisation and when using ICT especially, from graduate students because of their relatively low level of English language. In foreign research, the most significant language barrier is usually identified as terminology, which impedes both technology use and communication about technology (Eisma et al., 2004). However, in the context of Libya as mentioned in chapter two teaching on the English language in Libyan educational institutions begins at quite a late stage (i. e., in intermediate and secondary school) and this could be one of the major aspects affecting students' ICT acceptance and use (GPCE 2008). Also, Gadour (2006) indicated that to deal with this problem, programmes for training school-level teachers of English were designed, but the local educational culture prevalent among teachers and learners had led to nothing ,because Libyan teachers of English had been accustomed to using old methodologies and to materials which were solely built on Libyan culture.

In addition, the generation of students who graduated during the time when English was not being taught are still limited in their ability to take advantage of existing opportunities with western countries, such as work opportunities at foreign companies

in Libya (p:180). These are indicative of the lack of learning English language opportunities. It is difficult for some academic staff and most of graduate students to use complicated ICT applications because of their lower level of English language and lack of mastery of English script. Abo -Abdalhaq and Yasin (2008) found that many factors affect the adoption and use of IT. They found that English language skills is considered as the main factor that has a positive impact on the teachers' attitude towards IT uses in Palestinian schools. However, in this study, the most significant language barrier was found to be gaps in or a lack of English learning in Libyan universities.

In the early nineteen-eighties Libyan government policies led to the eradication of teaching English (1984-1993) from all levels of primary schools. This badly affected the education of English Foreign Language teachers at university. There was no need during that time to prepare teachers of English as a Foreign Language as there was no demand for them in the schools. In the 1990s it was realized that learning English was necessary because of trends towards globalisation. There is an increasing need to educate English foreign language teachers in the UoT's English Department and to improve English teaching in schools. However, the IAU (2009) showed that after the welcoming of English, the Committee of Higher Education arranged a massive scholarship programme abroad to allow more than 72,000 teachers and students to get MAs and PhDs from different western countries, such as the UK and the USA, from 1999 to 2009.

Scholarships had also been offered for graduate students and teachers before 1986 but there were very few scholarships from 1991 to 1999(only 1,733). This reopening of scholarships (after 1999) created two generations of teachers (p.36).

The influence of language can be a barrier to such a take-up. For example, software is frequently provided in English first and then in other languages. This impact on the effectiveness of it when it becomes further available to other diverse language speakers. Language plays a key role in the globalisation of culture. The influence of language as one aspect of cultural globalisation can also be a barrier to take up especially in the context of Higher Education.

Altbach (2004) argued that “some of the aspects of globalisation impacting upon Higher Education include the hegemonic rise of English as the language of scientific communication and advancements in ICT”. According to Crystal (2003), English is the global medium of communication for the world’s scientific knowledge, especially in areas such as science and technology and ICT . Those who have access to English-language media therefore (and comprehend it) have access to more viewpoints than those for whom English is not their first language. It is also significant to note that ICT resources are available only in the English language. Teaching on the English language in Libyan educational institutions begins at quite a late stage (i. e., in intermediate and secondary school) and this could be one of the major factors affecting students' ICT acceptance and use.

Altbach (2004) also reported that " the facility of English for communication as an element of globalisation, and Higher Education worldwide, should contend with the role of English. This role of English can give English-speaking authors an advantage to control the international academic marketplace".Al-Fahad and Al-Musa (1999) conducted an analytical study aimed at determining the development of faculty members in the English language and its relationship to the use of computers and ICT in Saudi Universities. These researchers found that there was a lack of awareness of

the importance of ICT and an inability to use and deal with it. The next section provides detail on the relationship between globalisation and ICT adoption and use.

3.1.3.4 TECHNOLOGICAL GLOBALISATION

As has been mentioned previously, globalisation is a complicated process and its benefits are unevenly distributed. It impacts on all aspects of daily life including the status of Higher Education. For this reason many initiatives have been undertaken to adapt to it with the objective of taking the opportunities created by it to develop societies. Globalisation has opened up considerable opportunities for developing countries to grow more and to adopt new information and communication technologies. It provides improved competition and a great level of technological awareness for which many in developing nations are not prepared. Therefore, this section reviews and highlights globalisation as a factor that impacts on ICT adoption and acceptance in HEIs in general and in university education in particular. According to Carnoy (2001) globalisation has had an influence on the adoption of ICT in terms of improved admission into the education field and also on quality in education. “Adoption of ICT and the internet have contributed significantly to the globalisation phenomenon” (Farazmand 1999). In addition, the drivers of globalisation in the areas of acceptance, use and the adoption of ICT in HEIs have particularly drawn the attention of theorists and scholars. Kagia (2003) stressed that education is viewed as central to life in a technologised global economy. Burbules and Torres (2000a) believed that education is at crossroads with the power of globalisation offering new challenges for education. According to Burbules and Torres, education has been placed in the complicated situation of confronting ever-changing expectations

requiring flexibility, ability and collaboration. There are a large number of studies that focus on technological globalisation (Schultz and Kitchen, 2000).

The impacts of globalisation on the adoption, acceptance and use of ICT within HE have particularly drawn the attention of theorists and educators. This study believes that there is a reciprocal relationship between globalisation and ICT. This section, therefore, examines the impacts of globalisation as a factor on the adoption of ICT in Higher Education. However, some scholars discuss the influence of globalisation on ICT within the education sector in general. Over the past two decades, significant economic and political changes brought by globalisation have affected all aspects and levels of education. Knight (2003) defined globalisation as "a phenomenon of a process that is influencing numerous sectors, and education is no exception". In this regard, Kishun (1998) maintained that "the globalisation process is changing Higher Education across the world, and is predicted to powerfully influence the international nature of a university" (p.64).

Furthermore, Van Damme (2001) discussed the influence of globalisation when "*it is tied with the rise of a knowledge-based society*" (p.22). Van Damme argued that "globalisation appears to create new and extremely important demands and needs on universities as centres adopting new ICT applications. This implies that scientific research and the development of technologies in general and ICT in particular are vital activities in a knowledge- and information-driven whole society, and will become even more important in the future" (p.23). He also mentioned that "the opportunities created by new communication technologies and the Internet, is considered as one of the most visible features of globalisation that can successfully develop the resource of educational facilities .

Van Damme's discussions are useful for outlining the main issues in the globalisation of Higher Education. It is within this context that technological globalisation continues to gain ground in Higher Education and has already enhanced the student and teacher experience.

From the technological perspective, the effects of individual elements of globalisation on the adoption and use of ICT are important. However, since most features of globalisation are closely related, it is impossible to include them all individually in one reversion. This is what is undertaken in this study. Therefore, the growing force of globalisation has arguably already had a much stronger impact on the use of ICT; it represents a driver of change in ICT adoption and use. In this vein, Sadlak (1998) stated that "globalisation is concerned with the facility to make and use knowledge as well as the ability to develop (adopt) new ICTs". Jeon et al. (2006) examined the determining features of the adoption of e-business by small and medium enterprises in South Korea. They found that globalisation and governmental strategy have impacts on the e-adoption knowledge of Information Technology e-businesses in South Korea. Growing globalisation continues to gain ground in Higher Education and has already improved the student and teacher experience.

The internationalisation of research has been facilitated by allowing and encouraging graduate students and staff to collaborate and share ideas and expertise across the world without travelling, through ICT tools such e-mails. Research can be enhanced by simpler and faster access to information, to digital data sets and to the latest studies in research which are frequently online and remotely available. The nation-states still have much considerable power in many places but they have also lost a lot of power with regard to globalisation even if states can still control the use and distribution of

ICT capacity. Concerning this point, a government's primary goal is to make sure that both teachers and students are prepared to contribute to the new globalised arena. Fundamental advances in technology and ICT have accelerated the speed of globalisation.

The possible influence of globalisation is significant, and long-term, due to the nature and scale of this phenomenon. It has major implications which, in turn, affect the adoption and the usage of ICT. It is true that many developments in ICT usage are due to growing globalisation and many of these have not yet reached their full potential. For this reason policymakers need to have conceptual tools to discern what the real impact is of this phenomenon on ICT usage.

Globalisation in the Higher Education field has had an impact through widening the adoption of ICT. For example, globalisation has contributed to bringing various solutions to aspects in the acceptance and adoption of new ICT. Due to a reduction in the barriers to the cross-border movement of goods this has led to reducing time, distance and the information gap and allows capital to flow quickly. This, in turn, tends to lead to improvements in, and increase the opportunities for, ICT acceptance adoption and use.

Forman et al. (2005) found that ICT adoption in general and internet adoption in particular is increasing in site size because of the awareness of information organizations in the modern cities. [This claim provides evidence](#) of the influence of ICT adoption. They also found evidence that supported the fact that ICT and internet adoption breaks down barriers in a geographical sense and lowers communication costs. Hence they provided evidence to show that internet adoption breaks down

barriers across geography. Additionally, globalisation stimulates universities to share knowledge and expertise in their own country or with other countries by the use of ICT equipment from any location and at any time. Globalisation also has the potential to form new social relationships with people from other cultures and countries in a manner undreamt of in the past, allowing people to increase their adoption and use of ICT tools such as e-mail and skype. Global companies, as a form of the globalisation, have also had a major impact on the performance improvements in the adoption and use of ICT in Higher Education, in terms of greater efficiency, sharing information, increased international experiences, and an improved competitive position. In this vein, the globalisation of the economy also influences the adoption of new ICT in HE.

Meredith and Crowley (2003) studied the effect of the use of technology and ICT adoption in domestic import-competing and foreign exporting firms and found that technology and ICT adoption changes tariffs of and that country specific tariffs induce local import-competing firms and external trading companies to adopt new ICT. Thus, they found evidence on how policies in trade tariffs can affect the adoption of technology. Another study undertaken by Joshi and Sauter (1991) in found foreign exchange to be one of the main elements that has a control over the adoption of ICT.

It replaced as a restraint and it also offered an important opportunity for accelerating progress in order to meet India's goals of self-reliance and quicker economic growth. It acted as a component fuelling growth and economic development. Furthermore, the adoption of ICT by all HEIs leads to improved productivity and efficiency in learning, teaching and in the administrative processes of HE.

Globalisation also be derived from the easier and quicker access to information, to digital datasets and to recent researches that are often online and remotely accessible (digital libraries, etc.). Libyan universities, therefore, should open up their universities to connection up with global universities so as to be able to access philosophies targeted at educating resident economies. Figure (3.1) shows some aspects of globalisation as follow

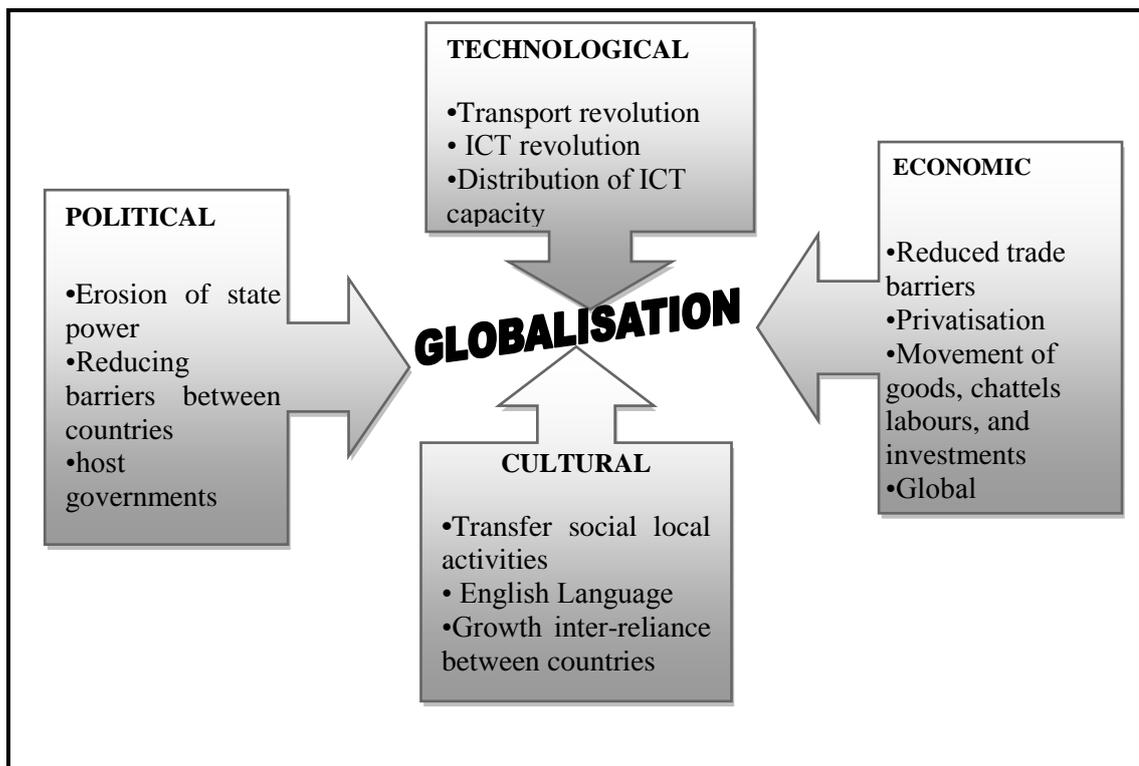


Figure3.1Aspects of globalisation

3.1.4 HIGHER EDUCATION REFORM

Higher Education reform is a specific type of educational change. This term will be used to describe planned attempts to change the characteristics of educational systems with the goal of improvement or development in a desired direction. The way that people feel about the educational reform process is important because people's

attitudes and opinions can affect the approach as to how the reform is implemented by those charged with implementing it. Therefore, educational reform may be understood as pre-planned change in a desired direction. The reform may also have to adapt along the way to cope with changing external realities. However, when discussing reform, there are several issues to look at one issue is the emphasis on education as an economic investment. The next sub-sections will explain in more detail reform and educational reform

3.1.4.1 DEFINITION OF REFORM AND EDUCATIONAL REFORM

Reform is defined by the Oxford English dictionary (2012):

''As making changes in (something, especially an institution or practice in order to improve it ''.

Levin (2001) claimed that reform "often includes a positive normative character, indicating something requisite". This definition stresses the political element in educational reform. Also, according to Tyack and Cuban (1995), there are two most important points when dealing with the reform of education; it seems that these points are unforeseen or unobserved by planners. The first aspect is that education reform does not come out of thin air but relies heavily on past reforms and policies that have been implemented before. The second one is that policy makers generally undertake that reforms are going to be applied in schools in precisely the method that the policy makers plan not looking at how institutions change reform policies to suit their own needs and resources.

For the most part reforms become integrated with previous patterns of schooling, even though they may insert various new practices into the work of schools. Moving through each stage of reform implementation inevitably creates more complicated

issues that need to be dealt with by the end of the process, since the way that policy is accepted, changed and interpreted has as much to do with the intended goals as with the previous practices and beliefs that existed prior to the reform. Therefore, it should be stressed that the term reform, as it will be used here, refers not just to the creation of official educational policy documents but also to the implementation and adaptation of educational policy as it is passed down successive levels of administration and bureaucracy. For some, the integrity of the process of educational change is just as important as, perhaps even more important than, seeing the stated goals of such change come to fruition. For others, the successful achievement of the pre-conceived goals is the main driving force behind their work while the means by which the goals are reached is of secondary concern. While the idea of the human component in educational change is hardly a new idea, it is one that justifies a closer investigation.

This field covers:

1. The beliefs and assertiveness of personalities who participate in educational reform during transitions.
2. How those beliefs and attitudes may affect those individual interactions with other educational reform actors, and
3. Ultimately, how the success or failure of the transition is measured.

Adeniran (2009) defined educational reform as “those applies and programmes planned to carry about positive changes and new progress in one or additional features of the educational system of a state” .The goal of this change is to eliminate defects systematically; this is the "perpetual quest" of policy makers (Covaleskie, 1994). As a result of a scarcity of clarity about the purpose when the intention behind the amendment has not been expressed clearly. This lack of consideration of the aim of

the development will cause major problems. One among the foremost problems in education these days is that individuals do not have a clear sense of meaning regarding what educational change is for, what it is, and how it should be implemented . Therefore, there is much superficiality, confusion, failure of amendment programmes, unwarranted and misdirected resistance and misunderstood reform. What is needed may be a clear image of what the persons who are involved in, or affected by, an educational change can use to make sense of what they, and others, are doing (Fullan, 1991 p.4).

The next section will explore Higher Education reform and the possible relationship between globalisation and the nation state's Higher Educational Policy in the context of reform.

3.1.4.2 GLOBALISATION IN THE CONTEXT OF HIGHER EDUCATION REFORM

As previously discussed, globalisation is a process leading to the integration of different societies, cultures and economies. Also, as a result of technological developments that have increased the ease and speed of communication and travel, the role of the state and national boundaries has been reduced lessening the barriers to the free flow of goods and services, particularly the flows of new ICT, which have facilitated international commercial and financial transactions. According to Gutek (2006) "Globalisation is a force that causes the setting of new educational priorities and the restructuring of the curriculum" (p. 111).

Under such circumstances, it is becoming increasingly clear that new ICT may lead to greater radical changes in reshaping universities in terms of infrastructure development and also in the teaching and learning process, this being achieved by a

reshaping of new reform policies which offer increased awareness of the possibility of a radical change in the successful implementation, adoption and use of ICT equipment in these universities. Furthermore, the rapid evolution of educational technologies and the rapid changes in ICT has brought about a change in the trends and views of practitioners, researchers, stakeholders and policy makers through the need for new measures and for reform to keep pace ever increasing what as well as helping educational institutions (including universities) to respond to new developments effectively. Additionally, regulatory reform requires clear reform policies. This requires improvement in the framework of the administrative systems at both state and university level for achieving the universities' objectives in the light of opportunities and challenges in this new era of globalisation. This framework applies to the Libyan context, although Libya is classified as a developing nation. It is, however, currently implementing a radical process of reform in the Higher Education sector in an attempt to address the rapid changes in the demands of society. This reform is changing the colleges, departments and institutions within Libyan Higher Education and the principal goal of this process is to establish a knowledge-based society in Libya and to encourage the science-based development of industry.

According to a document issued by the government NHEPR2008-2012, ICT applications have become widely used in LPUs and have become the first choice among technology tools. LPUs have received computers and ICT tools to facilitate their employment of computer technology, internet access via computers and other important technology tools in order to deliver education to all the students and academic staff in Libyan universities to face assist in facing the consequences of globalisation. Naidoo (2003) argued that all governments worldwide have linked

Higher Education Reform policies to the processes of globalisation (p.249). Moreover, the demand for a high level of skills has necessitated an expansion of Higher Education in all countries.

The researcher argues that the structure, scope and function of Higher Education Policy have changed with more attention being paid to the role of HE in economic growth. These, and other changes already announced, take out have necessitated an expansion in Higher Education in all countries, especially in developed countries. This is because this expansion is becoming a prerequisite for progress towards a knowledge economy imposed by globalisation in the countries which have seen an unprecedented expansion in its HE.

The Higher Education Policy HEP field nowadays is multi-layered stretching from the local to the global. Therefore, the autonomy of the HEP field has been somewhat reduced, given the challenges of globalisation. In this context Mann (2000) proposed five socio-spatial networks: (1) local, (2) national, (3) international (relationships between nations), (4) transnational (passing through national boundaries) and (5) global which covers the globe as a whole, offer some knowledge on how the global policy field in education might work in the nested relationships between and across these networks. Thus HEP should encourage an understanding of others and advance the sense of belonging to the wider world.

A possible link between a nation's educational reform policies and a broader world context was first made by Ginsberg et al. (1990). This link allows analysts to gain a clearer understanding of the recent all-pervading influence of globalisation on public policy. The underlying assumption is that global influences have a significant effect on a nation's policies. Ginsberg et al. (1990) offered a viable theoretical underpinning for

the analysis of national educational policy within an international context. The researcher believes that this theoretical framework can also be usefully applied to the connection between globalisation and awareness of implementation of HEPR in Libya.

Ginsberg et al. (1990) based their views on a critical review of the consensus and conflict theoretical approaches. Their theory has three main aims which are to explore and understand educational reform, to investigate the practices, purposes and consequences of educational reform, and to develop a clearer conceptualisation of the meaning of educational reform with particular emphasis on timing and focus. They focused particularly on the relationship of the state to the economy, and their contention is that the reproduction and accumulatory functions of a state are contradictory and that this leaves room for a state's relative autonomy.

Ginsberg et al. (Ibid) advocated the world system-level conflict approach to analysing educational reforms. The focus of this approach is basically an economic one and emphasises the centrality of the world economic system as capitalist. Although it takes culture and politics into account, it views these in relation to the economy, with a complex set of capital labour relations being fundamental to the global economy.

They classify nations as being 'core', 'semi-peripheral' or 'peripheral'. The core nations generally have a comparatively free wage labour system, while labour in the peripheral countries undergoes varying forms of compulsion, allowing multinational companies to acquire excess value. The world system approach maintains that this transfer is the main cause of the unequal relations between core countries and peripheral countries.

According to Carnoy and Levine (1986), this transfer process implies that class struggle and conflict in the Third World or peripheral areas are “not simply between dominant and subordinate classes in a given country, but between subordinate classes on the one hand and an alliance of local dominant groups with a transnational technocracy from the first world on the other hand”. Ginsberg et al. (1990), rather than seeing the position of nation states and regions in the world system as rigid and unchangeable, contend that “world system dynamics occur through social struggles taking place on a terrain characterised by a set of fundamental contradictions”.

At the national level there is a double level of competition at the economic level involving competition for capital accumulation and profit making between states and regions and among various capitalist institutions. Furthermore, social struggles in the global system involve conflict and cooperation between countries, between capital and labour, and between other social groups (Ibid, 1990). The reproduction accumulation contradiction involves the struggle by countries in terms of legitimising both nation states and the capitalist relationships of production (that is, reproduction) as well as the promotion of capital accumulation at local, national and international levels (that is, accumulation) (Ibid,1990).

Ginsberg et al. (1990) emphasised the part played in the processes of the world system by transnational organisations, corporate foundations, aid agencies and universities. These organisations play a crucial part in directing the focus, content and timing of educational reform. They do not always serve the same interests but the control they are able to acquire from establishing an unequal association with the least developed nations allows them to have a great impact on the determination of the policy of educational reform. Hence these organisations play an excessively large part “on the

terrain of contradictions of the world capitalist system” (Ibid, 1990) and should be fundamental to the analysis of the underpinnings of education policy in any country. Ginsberg et al. (1990) maintained that educational reform should not be seen as merely reacting to the requirements of the global economic environment, but should have a more complex and inductive analytical underpinning.

The incompatibilities in the capitalist system at both state and global levels lead to a situation in which “the dynamics of the global economy do not determine in some simple direct correspondence how education and the state in any society are structured or restructured”. They advocated an analysis of education that emphasises the interface between cultural, economic and political elements at local, regional and national levels and the dynamics of the world system. On the same point, “educational reform is shaped by a complex interaction amongst local, national and international features” (Simmons, 1986). Ginsberg et al. contended that their intention in including in their analysis the world-system and national structural and ideological contexts of education systems is “to emphasise that the world system constitutes an important part of the terrain on which groups struggle over educational institutes, aims, curriculum, training, funding, and so on” (Ginsberg et al., 1990 p.495).

Both the form and substance of educational reform will vary from nation to nation depending on the particular form of the interface between national and global dynamics and the conflicts over educational reform.

In this thesis, an attempt is made to provide a study of education reform policy based on precisely this interface. As nations cannot survive alone, globalisation has an inevitable impact on the development of education policy. Policy development is

related to wide, but interconnected, categories of the international socio-political and economic world order. The traditional limitations within these categories are altered by technological progress which has enhanced international markets, communication, culture and political aspects.

In policy formation, it is vital to understand the methods in which global, political, cultural, economic and social effects exceed the national context of education policy, foundations and influences which shape the provision of such a policy. Political globalisation has an impact on education policy in terms of international agreements and cooperation resulting in the establishment of organisations such as the United Nations and its associated agencies. Globalisation has resulted in the diminution of the autonomy and power of the nation-state. Beck (2000) has named this denationalisation and also referred to the potential for conversion into a transnational state (p. 14). These developments take place as nation-states increasingly find it necessary to react to the demands of global obligations regarding environmental, economic, cultural, political and technological developments. Grumley (1989) stated that Foucault maintains that "the idea of society as a whole is a utopian idea that paralyses local initiative." (p.188). Global organisations impose commitments on the local social forces.

Many nations are currently affected by this form of governmentality, the results of which are not always detrimental. Several issues, including certain aspects within environmental issues, have benefited from global influences, as nation-states that are members of global environmental organisations have been obliged to sign conventions and protocols regarding the protection of the environment. Similarly, many nations launch the processes of constructing policies in order to strengthen their educational systems and to establish frameworks of education in order to act in accordance with

global policies. In spite of these efforts, Beck's (2000) question as to how social justice is possible in the global age still has not been satisfactorily answered (p.154). While consumerism and production grow, especially in prosperous countries, poverty, disease and the depletion of natural resources increase in the world's poor nations and the gap between rich and poor is becoming wider.

3.1.4.3 GLOBALISATION AND ICT IN LIBYAN HIGHER EDUCATION REFORM

One of the most significant areas of concern in the Libyan Higher Education System is the issue of globalisation. Higher Education in Libya is undergoing a transformation due to the forces of globalisation. This trend affects funding patterns and every aspect of Higher Education. Nherera (2000) argued that "while economic globalisation has an effect on a marketplace, especially through economic reforms, it still continues to affect the education system". Al- Sudairy (2007) claimed that "Arab countries are grateful to take part in globalisation and to open their educational systems to international forces. Al- Sudairy added that Arab countries should be ready to face the challenges brought to them by the General Agreement on Trade in Services GATS. Membership of GATS brings challenges, in that to compete successfully with other GATS member countries which have higher levels of economic development, a skilled workforce is necessary." From this it can be seen that the responsibility for Higher Education cannot be dealt with by the government alone. Geographically, Libya is not far from Europe which adds to its potential. Its situation makes it ideally placed to act as an axis for trade between the 'four corners' of the globe. In addition, Libya offers many incentives for foreign investors, in particular tax concessions. Foreign companies can be attracted not only by trade and short-term business deals but also by

long-term projects, for instance in agriculture and industry. The Libyan government has begun to open up the private sector and aims to attract foreign investment.

One of the most positive developments in terms of enhancing the opening of the door for merging Libyans with the global community are the many programmes such as those which facilitate cooperation between local universities' educational interests and international educational interests through cooperative contracts and memorandum of understandings. Additionally, the Libyan government is seeking to provide a great number of young Libyans with the opportunity to continue their studies abroad and to gain international qualifications. Hence, the recent GPC's (formerly known as the General People's Committee) Decision Number 8 to send 825 students for graduate studies abroad, 602 for Doctorate degrees, 141 for Masters, and 82 for both Doctorate and Masters' degrees.

In order to meet the above challenges, the Libyan government has slowly begun only recently to implement a new HEP. This will be dealt with in greater detail later in chapter three. The following subsections explore the main key features of the HEP with an emphasis on the adoption and use of the new ICT in Libyan university education within HEP

3.2 POLICY AND HIGHER EDUCATION POLICY HEP

In the context of this thesis, it is only possible to gain a clear understanding of the usage of ICT services in LPUs if it is viewed within a policy and HEP context. In other words, to discuss the issues surrounding the acceptance and use of ICT in the Libyan Higher Education System it is necessary to have an understanding of what a policy is and what policy implementation is. In addition, it is just as important to

understand HEP in Libya. It is possible to obtain pertinent strategic information on implementation as well as on success and failure.

This section therefore aims to review the literature concerning policy processes. It begins by exploring the different definitions of policy in general and education policy in particular from the perspectives of Western and Arabic writers. It then reviews key literature dealing with policy processes, discusses education policy making and explains how education policy is undertaken in Libya. The last part of this section will look at policy in the context of ICT .

3.2.1 DEFINING POLICY AND EDUCATION POLICY

Education policy can be a connecting complex relations between numerous constituencies including commercial leaders, policymakers, instructors, state organisations and HEIs. To understand such complexities, a look at the typical definitions of policy is in order. However, it is important to note that there is no single definition of policy, although many authors and practitioners have attempted to define the term. Indeed, according to Pal (2006) public policy is "a course of action or inaction chosen by public authorities to address a given problem or interrelated set of problems" (p. 2).

It is this interpretation that best corresponds to the understanding of policy used in this thesis. However, the one important element of the previous definition is that it does not make a separation between policy makers and policy receivers.

The term 'policy' is indefinable, attributable to the several different ways it is used to describe various sets of phenomena. It is perhaps because there is no agreed-upon or

uniform definition of policy that much ambiguity surrounds the term and thus many claim to have little or no understanding of policy.

Policy is occasionally used synonymously with words such as ‘plan’ or ‘programme’ or used to signify formal statements of actions to be followed. In other words, the term policy can be used to mean a plan or course of action to produce desired results and is also used as a synonym for a problem or issue. This part of the section will attempt to review the various definitions of this term. In general terms, “policy” according to the dictionary means: *“A course or principle of action adopted or proposed by an organisation or individual: the government’s controversial economic policies”* (Online Oxford Dictionary, 2012).

Furthermore, Webster’s Dictionary (2012) defines the word policy as: *‘A definite course or method of action selected from among alternatives and in light of given conditions to guide and determine present and future decisions’*.

Policy as being what a government actually delivers rather than what it has promised; policy as a theory ,these descriptions of policy have been addressed by other authors, as will be seen throughout this section.

Policy is “a statement of intent to achieve certain goals by local, regional or national governments of a country” (UNESCO, 2005 p. 2). According to this definition, policy does not exist in a vacuum; it does not occur in isolation from the social, historical, and political context. Frequently, policy is referred to as a proper entity relating to government officials structures at numerous levels, such as a state’s or government’s organisations or institutions setting forth steps to take action in several areas of practice that are thought to need immediate changes. In this regard, policy can be a

form of “ purposive activity, an elusive concept, a process providing major pointers for action ” (Silver 1990 p. 12).

Policy may also refer to government programmes supplied in the form of documents involving choices, procedures, acts or other activities of the government intending to achieve their exact aims. In this regard, Keeley and Scoones (2003) stated that “a policy is an official document, extremely politicized to realise together economic and social goals firmly on the political agenda" (p. 22). In this context, there is Dye's (1995) simple definition of policy as “whatever governments choose to do or not to do” (p.2). Aminin's (1995) definition of policy is a “set of basic programmes with a wide range of actions and series of resolutions to determine how to develop targets and how implement them” (p.54). Taylor et al. (1997) saw policy as the study of what governments do, why and with what effects. Ball's (1993) description of policy is a less straightforward one as he describes policy as “an active process containing text discourse and action, including outcomes" adding that “policy is not essentially about what to do or not do, but instead make a of circumstances where the choices presented for action have established” (p.12).

The word ‘policy’ is very flexible and it is an unclear one, used in various means in diverse cases and is conditional at an extreme level on the perspective and area of concern of those leading the research. Thus, policy in this study is viewed as the written terms of a general purpose aiming to address identified problems which have become a matter of concern and which is directed towards the success of some specified goals. While the concept of policy is elusive, as pointed out earlier, and, as the definitions above illustrate, even more elusive is the concept of education policy. Regarding education policy, which is the interest of this study, Dale et al. (2004)

stated that policy refers to the definitions and combinations of what we see as the three key components of education systems; their mandate (what it is considered desirable for education systems to achieve), their capacity (what the resources are available to make it feasible for them to achieve) and their governance (how and by whom they are coordinated to achieve their ends and how these are prioritised and collated into collections of documents, strategies, guidance, goals and pointers). The rulers of the society deploy the foremost to develop young people into the type of citizens needed by the norms and ideals of the overriding political community (Parker, 2001).

The education system can be considered as a means of social reproduction, with each state using its education policy as a means to present its own ideology to its citizens. (Spinner, 2005) . However, when significant social changes take place, similar changes will occur in the education system and thus education may be seen as a primary tool for change in societies in transition. In the same vein, Young and Levin (1998) argued that educational policies form the structure of schools by determining the content and methods of instruction, how students are dealt with and the general operation of the institution. From the Arabic perspective, policy can be defined as the Articles of the Constitution concerning education which present the general principles underlying the planning for the establishment of institutions and the identification of the objectives of the educational process to the supervisors of educational institutions (Al- Mengash, 2007 p.15).

The Arab Bureau of Education for the Gulf States, ABEGS (2005), has defined policy as a series of decisions issued by governments in the form of official documents presenting a number of directives and critical decisions made to bring about desired goals. In this context, Amininh (1995) has defined education policy as a “set of

principles, trends and general rules laid down by the State to direct the education at different levels and types relating to the purposes and aspirations of society in the light of circumstances and the possibilities available to serve the objectives of the State Assembly and the national interest in line with global developments” (p.22).

Education policy has also been defined as a set of decisions and actions linked to many educational sectors which are the outcome of classifying goals and the ways of implementation that take these choices into account, these decisions being within the general framework of the educational philosophy of the political system (Al-Maedane, 1992). With regard to Arabic literature in general, and to Libyan literature specifically, on research concerning the impact of educational policy, the researcher found a great lack of research in this area, particularly as regards research examining the impact of educational policy on the adoption of ICT in universities. Most of what the researcher found focused on the impact of policy on students as they are considered the core of the educational process.

The Libyan educational act (1970) defines educational policy as the general guidelines on which the educational process is based in order to acquaint the student with the religion, in order to satisfy the needs of society. While the previous definition may be considered slightly broader than that of Al-Mengash (2007), it, nonetheless, clearly reflects the perspective of policy as an exercise of political power. Although the above definitions are certainly not without relevance to the issue of policy and education policy in particular, they could, nevertheless, be viewed as inadequately conveying the complexity inherent in the policy process. Broadly, they incline to over-simplify the concept of policy, implying that its main goal is finding the solution to problems and that it involves logical steps from specification to execution (Trowler, 1998).

The conclusion may be drawn that policy is a result of complex processes relating to contextual, social, economic and political pressures, as well as being a result from seeking advice and consultation. The inference that may be drawn is that policy encompasses the exercise of political power. However, the policy-making process is further complicated by the fact that practitioners frequently may have different interpretations of policy texts. The next section reviews the key literature dealing with the stages of HEP.

3.2.2 STAGES OF POLICY AND HIGHER EDUCATION POLICY-MAKING PROCESS

Higher Education Policy-making is complex as it involves linkages connecting social and politico-economic factors with policy implementers involving issues of actors' understandings and power relationships. Jackson and Jackson (1990) suggested that there are numerous influences which impact on policy-making. They argue that the influence of the social elements of culture, behaviour and economics should not be overlooked in the policy-making process as these factors may assist in shaping policies by drawing attention to issues which are required to be addressed by policies. Therefore, they argue that the institutions in society play an important part in this context in determining what policies will be made to address particular issues and the way they will address them (Jackson and Jackson, 1990). Furthermore, policy-making may be heavily influenced by the diverse interest groups in a society or in an institution, as these will make demands of the policy-makers. Therefore, according to Jackson and Jackson numerous influences affect policy-making. However, policy implementation may comprise a very wide variety of actions, including actions concerned with problem analysis, collecting data, personnel, funding and negotiation with various interested groups. Implementation may also be seen as a process of

communication between the aims and the actions conducive to their achievement. Hence, implementation may be seen as the capacity to take subsequent steps in the series in order to obtain the desired objectives.

Barrett (2004) took the view that if implementation is considered as a process of putting policy into effect, it is basically dependent on (1) knowing what you would like to do; (2) the supply of the desired resources; (3) the power to manage and control these resources to achieve the specified result, and (4) if others are to carry out the tasks, communicating what is wanted and controlling their performance.

Bell and Stevenson's (2006) linear model of educational policy development begins the beginning of the policy. When there is evidence of an evolving problem, views are collected and developed around an exact choice in the process which is called reformulation of opinion. After that, the policy options are offered officially in the appearance of change stages.

These alternatives are argued upon and formed into a policy proposal at the conversation and debate level. Policy-makers classify and select the basic policy in the legitimisation phase. Finally, in the implementation phase, administrative procedures are developed to operationalize the policy. It should be noted that the aforementioned perspectives on policy implementation by Edwards (1984), Pressman and Wildavsky (1984) and Barrett (2004) implies that it is a linear process. However, this approach has been criticised on the grounds of over-simplification. Similarly, regarding education policy, the Higher Education Policy-making process is also a complex practice as it involves a number of stages passing through the state created agencies responsible for education and the public good. It is multi-dimensional and exists in a

particular context. Educational policy drives through three core stages before it is practised (1) formulation phase, (2) adoption phase, and (3) policy implementation phase. It starts precisely , then setting the agenda and formulating the policy to be adopted and then implemented. However, the successful implementation of educational policies depends on different factors.

According to Al- Mengash (2006), the policy formulation phase should include clearly written and articulated policies because a policy with vague and undetermined goals and purposes is unbalanced and a waste of time, money and effort. Education policy is created within three different levels, each of which needs a suitable theoretical plan. The first is the economic or structural level which entails a structural analysis, inspecting the role that education plays in output and therefore looking at the link between education and capital accumulation. The second is the political level which includes an understanding of the politics and power of education and the changing interventions of effective sets and constituencies in the political process.

The third level involves an analysis of the philosophical element which includes the method by which education policy is formulated, discussed and represented (Ball and Gold, 1995 p.435). Ball (1990) argued that each level has an individual impact on the characteristics of education policy (p.11).

Cibulka (1994) argued “early education policy theorising had a strong empirical base and fell within the rationalist tradition. It viewed the state as a neutral intermediary between the diverse interests of different groups involved in, and affected by, policy” p.105). However, the consensus paradigm was challenged in the mid-1970s, particularly by Neo-Marxists and this saw the emergence of an alternative policy

paradigm termed critical policy sociology. Although this paradigm stemmed from Neo Marxism, theoretical debate had gone further than the earlier narrow structure explanations to include a detailed understanding of the structure-agency relationship. In the modern era, educational establishments have become places where concepts of citizenship are transmitted, both through the transmission of knowledge about the past, although this may be in an idealized form, and hopes and ideals for the future.

In the majority of countries textbooks tend to offer an 'official' story focusing on narratives that encourage patriotism (Hein and Seldon, 2000, p. 21) Rather than being innate identity is seen as something built by a process of socialisation. Therefore, national identity is a result of this process, with formal education being one of the most influential agents involved. Ball (1990) argued that education policy is built amongst within three diverse levels: economic, political and ideological, each one of which needs a correct theoretical strategy.

The economic level needs a structural analysis to investigate the role that education plays in output, thus the connection between education and capital growth. The political level contains an understanding of the politics of education and constituencies in the political process. The third level involves an analysis of the ideological dimension which includes the approach in which education policy is formulated, discussed and represented.

Ball (ibid) also argued that each level has a separate impact on the features of education policy and so is given a relatively autonomous part in shaping education policy within a controlled and delimited structural setting. The education policy making process is a complex exercise and it is not possible to foresee the outcomes of

its impact. Inherent in policy texts are potentials, restrictions and contradictions. Limitations and contradictions may lead to resistance or make teaching staff feel that they are being forced to change against their will, although the opposite may be true and they may welcome the policy (Ball, 1990)

There are cyclical and continuous stages in the policy-making process that imply that there are opportunities for reconceptualization to occur through the practice. In this vein reform of education is one of the foremost necessary issues which are of vital concern for policy-makers in the Higher Education Sector because of the opportunities caused by developments in ICT. These developments create an imperative need and have given rise to the adoption of new education policies to keep up with these changes.

The following provides clear details about the impact of awareness of implementation of HEPR on ICT adoption.

3.2.3 IMPACT OF AWARENESS OF IMPLEMENTATION OF HEPR ON ICT USE

ICT is fast becoming one of the main drivers of change in organisations (Adebambo and Toyin, 2011). However, the introduction of ICT into Higher Education is mostly a policy issue since countries around the world have, from the early 1980s, attempted to introduce computers into their educational institutions, including universities. Thus, awareness of implementation of HEPR has a large impact on ICT adoption; it is a main factor driving the implementation of ICT successfully as well as the adoption and use of ICT applications which might improve and increase the quantity and quality of output and additionally making education become more efficient and productive.

Awareness of implementation of HEPR has been found in some studies to have possible influence on the adoption and usage of ICT in educational institutions. According to Crown (2007), policy and planning are significant in identifying the aims of using ICTs in education and in influencing priority and resources. Education authorities and the centres for which they are responsible have key tasks related to enabling, implementing and monitoring the use of ICTs for learning and teaching. Gulbahar (2007) also asserts a failure of ICT integration in education caused by a lack of appropriate ICT integration policies. There are some initiatives of ICT integration that might not yield enough results due to lack of sufficient ICT policy .

Selinger and Austin (2003) in their comparative study on the influence of government policy on teacher training in ICT in England and Northern Ireland indicated that the introduction of ICT teacher training policies had a significant impact on trainee teachers' competence and confidence in using ICT. According to Reynolds et al. (2003) a national educational policy has been identified as an important factor in the effective use of ICT in educational institutions.

Rashid and Al- Qirim (2001) considered awareness public policy as one of the four environmental factors that impact on ICT adoption. However, reforms in bureaucratic systems, mainly in developing countries, are significant requirements for such development Ciborra and Navarra (2005).

Therefore, appliers of ICT are likely to supply the policies which the government implement in order to encourage growth through ICT. Ciborra and Navarra (2005) explained that ICT policy plans have obtained international validity by managerial people as a catalyst of reform. The high level of awareness of implementation of

HEPR is related to the features of ICT applications and the economics of transition from a backward state organisation towards a more refined organisation enabled by ICT when governments decide to adopt ICT, they are likely to expand, develop and improve the communication between government and its stakeholders (Stoltzfus, 2005).

See (2012) confirmed that “ ICT policy are tied to staff development polices. When policy ICT integration in education, institutions need to plan professional development for teachers, administrators, and students as some of them may be not familiar with technologies,as well as with ICT ” Government policies, including HEPR, are drivers of government and public sector reform in the ICT area. According to (Chutimaskul and Chongsuphajaisiddhi, 2004) government policy or public policy is a set of unified decisions taken by a group of actors relating to the selection of objectives and the means of achieving them within a particular situation where those decisions should, theoretically, exist within the power of those actors to achieve it. Government policy is one of the more significant influential drivers for developing and implementing successful ICT projects. There is no adopting that the adoption and use of ICT in developing countries is more influenced by government than in developed countries. “. Moreover, the development and adoption of ICT services are largely influenced by government policies which facilitate the success of a country’s adoption and use of ICT applications (Tan and Lim, 2005).

HEPR is important for ICT adoption because of the expense involved in implementing ICT applications. Since ICT in HEIs including universities must be installed incrementally, policy will assure the equitable distribution ICT and it will assure a means of deciding how distribution will be made and under what conditions decisions

are made. The need for a consistent method of treating the development of ICT has been apparent for at least the last several years. Some universities have been relatively advanced in the development of a state-wide HEP connected with the state-wide development of technology.

Other universities have utilized ICT rapidly but they have failed to articulate policy to guide ICT adoption and uses. ICTs are regarded as one of the priorities especially in developing countries. It is only when a HEP is considered before and during the implementation of ICT that a system for making principled judgments about the appropriate uses and the growth of ICT can emerge. Then, ICT policy can help in making continual decisions about technology and other issues of public importance. As a result of clearly stated policies, states can avoid making arbitrary decisions that lead to inequities.

Increasing awareness of implementation of HEPR influenced the adoption and use of ICT applications in universities. The interaction between a university and ICT may be complex if the university is not sufficiently established to deal with such new applications. According to Serous and Henderson-Sellers (2002), innovation adoption creates serious challenges to universities due to the fact that innovation adoption not only addresses changes in ICT and systems but also entails the need to change the way a university runs its function in terms of processes and policies. Therefore, the university should be aware of, and open itself to, the influence of new ICT and applications in order to benefit from new ICTs that might emerge with e-government.

Ebrahim et al. (2004) argued that the existence of adequate ICT equipment and technologies in universities is a critical determinant of the successful adoption of

innovation. According to them the key to success for ICT adoption in the public sector is to plan and implement an adequate technical infrastructure and provide qualified ICT staff that can support users to ensure easy and unfailing electronic access to government information and services.

Tinio (2003) argued that governments that have succeeded in implementing an ICT in education policy have conducted a thorough assessment of their current education system to define goal lines, needs and implications. Success requires the awareness from of stakeholders, leading and determining the sources of continued development. Tinio also found that countries that have successfully implemented an ICT in education policy considered physical facilities and the availability of telephony and electricity. The impact of the policy in ICT usage in LPU scan be explained by the fact that the success of any ICT usage programme requires guidance by a clear HEP as well as an ICT policy.

Wallsten (2005) explored if policy had any bearing on the adoption of ICT or whether adoption is only prevented by a lack of physical equipment. He confirmed that “nations that order access by internet service providers have less internet users, while nations which regulate the internet have higher costs for internet access” (p.501) In this vein, Libya has a great deal of control over the adoption and use of ICT, and also great control over ICT in its education system including public universities. It has taken proactive steps to prepare a new policy for the public sector as a basic plan to ensure that the needs of ICT in the public sector including the university education sector are met.

In sum, ICT has had a major impact in the university context, and awareness of HEPR have a major effect on the current Libyan Higher Education System, and perhaps will transform Libyan universities to be able to keep pace with rapid technological changes. The HEPR was presented as a response to ICT and a rapidly changing society within a global economy that focuses on knowledge as its main commodity. The acknowledgement of stakeholders such as graduate students, academic staff and Higher Education Officials on the new HEPR may positively affect ICT usage by them because they may prepare themselves to increase their utilisation of the new ICT as compared with those who did not acknowledge this policy. Therefore, it is worth investigating whether the acknowledgement of a HEP may impact on the influence of the determinants of ICT usage.

3.3 ICT ADOPTION AND USE

ICT refers to a very broad field encompassing numerous concepts and activities and there is a comprehensive range of literature available on ICT which reflects central governments' agendas for developing ICT in HEIs. The first section in this part (3.3.1) reviews various definitions of technology and what is understood by the term ICT in the context of its adoption in HE focusing on Arab and Libyan institutions and exploring the factors that influences ICT usage in universities. Section 3.3.2 outlines the many theories and models that explain the adoption, acceptance and use of ICT. Section 3.3.3 examines the factors affecting ICT adoption and use in universities. Section 3.3.4 provides a summary of the conceptual relationship between globalisation and policy issues as factors that impact on, and drive, ICT adoption with respect to Libyan universities.

3.3.1 DEFINITION OF ICT IN THE CONTEXT OF ADOPTION

This section attempts to review ICT in the context of adoption. It also examines the available literature looking at the definition of ICT in Higher Education.

The term ‘technology’ is defined in the Oxford Online Dictionary (2012) as:

“The application of scientific knowledge for practical purposes, especially in industry: advances in computer technology.

The technology adoption processes are defined by Porter and Stern (2001) as processes that involve creating or reengineering products or services to meet new market demands by introducing new technologies to improve productivity, developing or incorporating new forms of management systems and techniques to improve operational efficiency. The concept of technology transfer (TT), although a recent one, has been dealt with extensively in the literature. According to Cohen (2004), the term ‘transfer’ in this context is generally used to refer to the transfer of knowledge and skills from developed to developing countries, although it is also engaged to transfer the methodically prepared conversation of information between two institutes, frequently situated in diverse states.

ICT has been defined by Ritchie and Brindley (2005) as “the array of primarily digital technologies designed to collect, organise, store, process and communicate information within and outside an organisation”. Also, Barba-Sánchez et al. (2007) view ICT as a collective term for a wide range of software, hardware, telecommunications and information management techniques, applications and devices, that could be used to create, produce, analyse, process, package, distribute, receive, retrieve, store and transform information.

According to Bryant (2006) “ after the evolution of the Internet computer applications became widely used information technology started to provide communication, therefore the name should be changed from information technology (ICT). ”The acronym "IT" has been replaced recently by ICT which has different meanings and no one generally accepted definition in the research literature. It is a common term broadly used in various areas. ICT has been described by Apulu and Latham, (2009c) as “ any technology that facilitates communication and assists in capturing, processing and transmitting information electronically”

ICT have recently been identified as having a significant impact on all areas of human activity; it has become a major driver of economic and social change in the world. It is also an important instrument that can encourage and support future economic development. However, that success powerfully depends on the solid founding of ICT infrastructure and its use.

The World Bank Information for Development Programme, InfoDev (2005), pointed to the fact that, during the last decade, many leaders in government, business and social organisations around the globe have considered how best to harness the power of ICT for development. As long as governments continue to spend huge amounts of public money on new information technologies. For example, in the United Kingdom, the government spending on educational ICT in 2008–09 was £2.5bn while, in United States, the expenditure on K-12 schools and HEIs was US\$6 billion and US\$4.7 billion respectively in 2009 (Nut, 2010).

Policymakers will continue to look for ways to improve the usage of technology and ICT among organisations in various sectors. Moreover, they are increasingly investing in the use of ICT to support all aspects of organisational work from group

work to individual teaching, training and learning. In this context, ICT has been the recipient of much investment, and ICT investment has accelerated in most developed countries although the pace of that investment has differed widely (Van Ark et al., 2002).

ICT is used strategically to enhance learning and teaching which may enhance teaching possibilities. It also helps to improve the quality of education (with the introduction of advanced teaching approaches), to improve learning outcomes and to allow for reform or the better organisation of education systems particularly university education systems. People will continue to look to information technologies as a means for improving their performance over time in various fields. It is widely believed that the use of ICT can provide important drivers for reform or for the better management of Higher Education Systems and can also improve learning outcomes and quality. It can also contribute to improving access to Higher Education. Consequently, over past decades, ICT has become an area of growth across the Higher Education sector and is at the very heart of the educational process.

The term ICT in education is commonly connected with the use of computers and the internet and other facilities are swiftly becoming available. It is imperative to note that ICT is 'here to stay' and will continue to play a serious role in international educational (Tinio, 2003). Anderson (2010) defines ICT integration in education includes the uses of technologies that enable students to receive information, communicate, and exchange information with others in an educational setting.

Recent developments in technology have served, among other things, to introduce new terms into the language particularly terms beginning with the letter "e" for electronic,

such as e-mail and e-learning (Selwyn, 2002). ICT, especially with the advent of the internet has helped organisations improve their communications and information processing. The internet therefore is a very good example of widely used technology.

Castells (2005) asserted that development is not possible without the use of ICT, and development without the internet would be the same as development without electricity. He also referred to the internet not only as a technical tool but also as a way of organising power and capacity. ICT provides developing countries with an unprecedented opportunity to meet vital development aims. According to Rao (2006:492) defines ICT as a range of technologies that integrate information technology devices like personal computers with communication technologies such as telephones and telecommunication networks.’’. Moreover Rogers (2003) considered that the personal productivity aids, the enrichment add-ins, and the paradigms as being the three levels of new technology adoption for HE.

For the purpose of this study, ICTs are defined as a range of technologies that consists of hardware, software, and networks that facilitate the collection, storage, processing, transmission, retrieval, presentation and communication of information (voice, data, text, images) using electronic means. This definition encompasses the ICT services .

3.3.2 PERCEIVED BENEFITS OF USING ICT IN UNIVERSITIES

ICT is essential to any higher education institution that hopes to succeed in a 21st-century world driven by intense globalisation. With the ICT, learners can indeed study where and/or when they have time to do so—rather than where and/or when classes are planned. While traditional correspondence-based distance learning has long played this role, ICT have enhanced traditional distance education enabled the rise of a

continuum of practices between fully campus-based education and fully distance education. ICTs indeed allow a very cheap cost of reproduction and communication of a lesson, via different means like the digital recording and its (ulterior or simultaneous) diffusion on TV, radio or the Internet. ICT also provides several facilities and possibilities for educational administrators to do their tasks, it also reduce cost, and improve productivity, ICT is considered as an umbrella for communication devices or applications; for example, computers and networks, hardware and software, satellite systems, and so on (Jain, 2006). Therefore, the successful use of Information Communication Technology (ICT) has a crucial part in knowledge societies and helps to reduce the digital divide. ICT is an indispensable tool in commercial and economic development as it can reduce transaction costs and build up new industries. There are a wide range of choices and opportunities available for developed as well as developing countries by enabling ICT tools. ICT can play a profound role as part of an overall national strategy for development. The utilisation of ICT in many developed countries is facilitating the transition from industrial based economies to knowledge based societies. For instance, the European Commission consider: “a modernized ICT enabled government is crucial to promote the growth and competitiveness of the European knowledge society” (Wimmer et al., 2007).

A significant number of studies have shown that perceived benefits is a strong antecedent of user acceptance behaviour, for example, Al-Hajri and Tatnall (2008) considered relative advantage, organisational performance, customer relationship and ease of use as factors that act to determine whether a given technology is feasible to be adopted by the banking industry in a developing country such as Oman. However, Jabnoun and Al-Tamimi (2003) examined perceived services' quality in commercial

banks in the United Arab Emirates, stressing the significance of provision quality in relation to keeping marketplace share. From an investigation of 426 responses from an analysis of bank clients they resolved that clients price human skills the most in service quality. Perceived benefits is the primary determinant, positively affecting users' actual use of the system. When users believe that a new ICT is useful for jobs and enhances their performance, they will accept it . According to Jaffer, (2007) ICTs can improving educational outcomes, for example improving pass rates and enhancing and improving the quality of teaching and learning. It should not be forgotten that ICT is part of the curriculum in all developed countries . ICT is growing in importance in all forms of education but can have a particularly valuable role for this with higher education, where ICT can have a significant role to play and this can apply in many different environments regardless of their level of educational, technological and economic development.

According to Christiana (2008) “ Information and Communication Technology (ICT) plays a vital role in supporting powerful, efficient management and administration in education sec-tor. It is specified that technology can be used right from student administration to various resource administration in an education institution” . Other research debates that perceived benefits is a determinant of continual system use (Kim and Malhotra, 2005). Bourgonjon et al. (2010) reported that a student's preference for using computer is directly affected by usefulness, ease of use, learning opportunities and personal experience.

An impotent study was under taken by Krishnaveni and Meenakumari (2010) which aimed to identify the various functional areas to which ICT is deployed for information administration in higher education institutions and to find the extent of

usage of ICT in all these functional areas pertaining to Information administration. The study was found that current level of usage indicates a clear integration of ICT for managerial or information-based administration in higher education institutions. This study reveals that demographic factors do not have major impact on Information administration in higher education institutions.

The study also reveals that that enhancing the usage of ICT on these functional areas and especially for general administration will enable enhancement of overall information administration in higher education institutions in the realm of global competitive environment. (pp282-285).

According to Al- Ansari (2006) academic staff in Kuwait University use the computer and internet and other ICT tools because they have helped them to save time, find up-to-date information and compare their work/research with their colleagues. This study expected that academic staff and graduate students would use ICT to the extent they believed it would help them improve their learning or teaching as well as their work performance. When graduate students and academic staff believe that a new ICT system is useful for tasks and enhances their performance, they will use it, because the system provides benefits for them. Conversely, if they believe that a system is not useful, they will not use it. In the same context Aldobiyani (2004) examined the potential benefits of access to Information using the Internet by researchers in Saudi universities. The study found that 97 percent of respondents have a strong internet connection, and they can easily connect to the internet. 81.6% per cent of the respondents are using the internet for academic research purposes and to provide sources containing useful information related with their studies, while 78% of them said they use the internet to keep pace with the rapid developments in their field of

academic specialization and keep up with technology. 36% of those surveyed said that teaching is the primary purpose of using the internet, while 23.6% of participants using the internet to disseminate their academic research. On the other hand, according to opinions of the respondents the major motivation to use the Internet in Saudi universities there were three important motives for Internet usage. These were as follows ; (1)Information seeking, (2) Quick and easy access to these information, and (3) diversity, and reliability of the information provided by the web"" (pp 58-60) .

The following section review the literature that explore lack of training and the lack of ICT infrastructure as two major factors prevent the effective adoption and use of ICT services in LPUs

3.3.3 PERCEIVED BARRIERS AND CHALLENGES TO USING ICT IN UNIVERSITIES

A barrier can be regarded as whatever prevents advancement or attainment of any clear aim. Therefore, according to this definition there are several barriers that confront learners when adopting and using ICT in Higher Education, For the implementation of ICT to be successful, educational institutions, managers, technical staff and academic staff should overcome barriers. However, most developing countries including Libya have not so far succeeded in effectively utilizing ICT for economic development. Additionally, ICT services are not yet a reality in most institutions in these countries. There are many studies that focus mainly on barriers influencing ICT at the actual implementation stage and these studies on factors relating to initial acceptance and use. Several of these studies are carried out to examine the factors that impact on the adoption and use of ICT in teaching and learning processes in Libyan universities. For instance Al-badree (2006) and Al-teer (2006) indicated that there were numerous obstacles to the use of ICT in Libyan

higher education such (1) Lack of support, (2) Lack of training , and (3) Increased workload for academic staff . However, Keong, Horani, and Daniel (2005) identified six major barriers faced by the one hundred and eleven (111) teachers in the implementation of ICT into their mathematics classroom. These barrier were lack of time in the school schedule for projects involving ICT (54.6%), inadequate teacher training opportunities for ICT projects (40.8%), lack of adequate technical support for ICT projects (39.2%), lack of knowledge about ways to integrate ICT to enhance the curriculum (38.8%), integrating and using different ICT tools in a single lesson (36.8%) and the absence of access to the necessary technology at the homes of students (33.0%). Saye (1998) categorized the barriers in integrating ICT in mathematics instruction into three; teacher anxiety, lack of knowledge and skills, and pedagogical belief systems. Lee (2009) explored the factors that impact on the adoption and use of the internet in the banking sector in Taiwan. The study discussed: (1) performance risk, (2) social risk, (3) and financial risk. Also Olson and Boyer (2003) explored factors that influence the utilization of internet purchasing in small organizations. Data for this qualitative exploratory study were collected through a survey of 416 customers of a famous and major internet retailer of commodity office supplies.

The study also identified factors that may lead to a loyal customer base instead of using an opportunistic approach to get the lowest prices. Also Kim (2008) found that perceived risk plays an influential role in the citizen' intentions to use e-government services and citizens are more willing to use transactional e-government services when their online privacy concerns are addressed. Kim also found that when people perceive

less risk their degree of trust toward e-government web sites and the government itself increases.

3.3.3.1 LACK OF ICT INFRASTRUCTURE

The research literature suggests that ICT infrastructure and support are key factors in the adoption of ICT (Yusif 2006, Drent & Meelissen, 2008; Afsshari et al. 2009, Elzawi 2010 , Mokaya 2012). The United Nations (2008b; 2005) reports still consider technical infrastructure problems as a barrier that divides the world between those who have access to technology and those who do not. The ICT Development Index (IDI) published by the ITU shows that between 2007 and 2008, all 169 countries achieved better scores in terms of ICT diffusion. However, developed countries ranked at the top of the IDI index, whereas developing and low-income countries were at the bottom (ITU, 2010a). Similarly, the results from The World Bank demonstrate the digital divide between high-income economies having 416 PC/1,000 people and low-income economies with only 6 PC/1,000 (World Bank, 2003). According to the World Bank Centre for Democracy and Technology there are three major challenges (Brown and Thompson, 2011) in the context of developing countries:

1. Infrastructure development
2. Law and public policy
3. Digital divide

In terms of Internet penetration and usage the Internet World Statistics (Internet World Statistics, 2009) show that the Middle East and African regions trail Europe and the Americas [North America 13.5%, Europe 24.2%, Africa 5.6% and the Middle East 3.2%]. The UNDESA (2008b) e-readiness index indicates that most developing

countries have minimal web presence, with little telecommunications infrastructure and a very few computers to access the internet.

According to Afsshari et al. (2009, p: 8) software and network infrastructure must be available in order to integrate ICT in education. ICT infrastructure, in this study covers ICT facilities (availability of computers labs), ICT hardware (computers - desktops and laptops), software (operating systems), networking (wired - Ethernet or wireless - routers), and connectivity (broadband). ICT support is related to how ICT is being supported in universities, and refers to the availability of ICT coordinators and ICT technicians in the universities . Therefore , subject of infrastructure in this study is used in order to learn of the impact of this factor on use of ICT. The researcher, assumes that infrastructure may have an effect on the ease of ICT use either in practice or in people's perceptions, and the literature review on its impact of infrastructure in actual usage of ICT shows that there has been little study undertaken in this area in Arab and Libyan context .However , The ICT infrastructure barrier existing in governments and organisations can be monitored by viewing different indicators, such as: reliability, affordability, websites and e-services (EIU, 2009; Gil-García and Pardo, 2005; Ebrahim et al., 2004). Websites are particularly pertinent as they represent the main source of government information (Choudrie et al., 2009). However, government websites in developing countries are associated with several difficulties, including layout, search and navigation (Choudrie et al., 2009). As mentioned before, there is continuous change these days in Libya toward more globalisation because Libya is more open to the world than ever before.

Elzawi (2010) has performed research on the way that academic staff, students and other stockholders perceive the use in higher education institutions in Libya . The

main resources for them to connect is through Internet cafés. This thus requires that more attention should be paid to improve ICT infrastructure. On the other hand InfoDev (2010) reported common barriers of ICT integration in education namely infrastructure barrier, a lack of institutional framework and plans, and lack of capacity building.

Mokaya (2012) concluded that there is a strong statistical relationship between communication infrastructure and ICT adoption. In addition, a comparative study by Yusif (2006) identified the barriers to ICT infrastructure status as compared between the Arabic and intercontinental world, and discovered that information illiteracy among the Arabic countries reached 95%. This means that there is a need to increase the awareness of policy, and the use and access to, electronic information resources in order to reduce this illiteracy. It is evident, as many other writers such as, Yang (2008) established that lack of infrastructure was one of the major obstacles that resulted in computers being used.

3.3.3.2 LACK OF TRAINING

The Ministry of Education in Libya (2007) defined training as a planned activity aimed at bringing about changes in the individual and in groups in terms of information, experience, skills, rates of performance, methods of work, behaviour and trends; it enables individuals to do their work efficiently and productively. Training is needed to improve the skills of people with poor ICT literacy. Work progresses on an ICT programme, which aims to train people to become advanced information workers (United Nations, 2009). In the light of this view, it could be argued that training is any programme that is planned and designed to increase productive efficiency by remedying deficiencies or by providing the workers in the teaching profession with all

the new information, skills and attitudes in order to increase their professionalism and refine their expertise. More specifically in relation to education and training, the Libyan government is considered to have strong tertiary education enrolment rates but it is ranked 134 (out of 139) and 110 (out of 139) for " Local availability of research and training services and extent of staff training" respectively (World Economic Forum, 2010, p.217) .

Training in ICT in the field of education in general, and Higher Education in particular, refers to the sharing of knowledge, skills, expertise and traditions that serves not just to support local, regional, national and international requirements, but also to assist those who participate in the educational process (students, teachers, community and so forth).

The lack of in both ICT and instructional methods leads to concerns about teaching in unfamiliar teaching environments (Wright et al, 2009). In this respect, Patrick (2006) argued that " the implementation of new ways of teaching will require new ways of thinking around expert involvement, teaching, and curriculum methods that license teachers to connect with today's learners" in their world, the online world, several issues, including certain aspects of educational issues, have benefited from global influences, as nation-states that are members of global educational organisations have been obliged to sign conventions and protocols regarding the equal right to quality education.

Likewise, many nations launch processes of constructing policies to strengthen their education systems and establish frameworks of education in order to act in accordance with global policies.

In summary, providing training is an important factor that can be changed and impacting the actual use of the different applications of the technology and ICT. Lack of ICT equipment in institutions is also one of the most often cited factors that impact on ICT adoption and use in universities. Providing training in the use of information and communication technologies and encouraging comparative thinking, widening the traditional curricula to better reflect global cultural diversity, and also emphasising the improvement of communication skills and cultural awareness by teaching foreign languages. The researcher has so far briefly reviewed some of the main arguments in the academic debate about globalisation Amutabi (2004) did a study on the prospects and dilemmas of ICT in university education in Africa: the case of Kenya. He states that universities have serious problems when it comes to the use of ICTs. The lack of trained and experienced technical personnel to control and maintain the increasingly large numbers of ICT resources means that their utility values, effectiveness and efficiency, cannot be ascertained.

The lack of theoretical knowledge and practical management, control and maintenance skills of ICT staff leads to these units being managed, controlled and maintained virtually on a trial and error basis. Some of the technicians are untrained or semi-trained in the real sense of ICT training.

Amutabi (2004) further explains most of the ICT technical staff were trained initially not in computers but in other technical fields such as electronics, librarianship, or mechanics and only later on switched to managing computers, creating a continuity and credibility gap between professions training, and training in ICT services in particular, in order to improve the Libyan Higher Education System. According to

Sawahel, (2009) there is a program for training teachers and higher education staff in ICT use.

The policy seeks to improve the quality of learning in higher education and open and distance learning by adopting modern techniques and methods in education and also to encourage the scientific community in research. The policy includes a \$US72 million ,and it foresees the creation of a national ICT resource centre for educators and the automation of university management systems through ICTs such as student information systems, university procedures, financial operations.

The process of implementing the national ICT policy is still at an early stage. The lack of training results in teachers using traditional “chalk and talk” methods which do not help students learn how to think. Instead, there is a tendency for students to learn by memorisation rather than by reasoning and meaningful learning (The General People’s Committee of Education, 2008).

Many Arab writers have confirmed that there is a serious gap in the literature in the field of training and development practices in Libyan universities, or indeed in the country of Libya generally (Atiyyah, 1996). According to the World Economic Forum (2010), The Global Competitive Index ranks Libya's Higher Education and training as 88 out of 132, thus scoring in the bottom one-third against the all-important education/training/skills indicators; also for technological readiness it is ranked 114 out of 139 (p.216) .

For example, Manternach (1999) observed that teachers were very frustrated by this lack of access to ICT resources and teachers said that it was one of the main reason why they did not integrate ICT more into their teaching and learning.

An important study prepared by Elzawi (2012) investigated the factors that affect internet use by staff members in Libyan universities and how the internet affects research and teaching. The study also examined the main goals for using internet tools. The study concluded that there were some barriers which deter academic staff in Libyan universities from using the internet namely lack of internet access, low speed of connection, lack of encouragement and incentives from their educational institutions, lack of skill in the English language, lack of training, lack of computer support and internet skills.

In this context many Arab writers have confirmed that there is a serious gap in the literature in the field of training and development practices in Libyan universities, and indeed in the Libyan country generally (Atiyyah, 1996; Mahfod et al., 2006).

Romero (2002) have highlighted, that a lack of technical support hampers ICT usage and successfully implemented habits and good practice in the use of ICT in teaching and learning processes should one become of the main objectives when trying to elicit from teachers and students a positive attitude towards the use of ICT. According to Tearle (2004), the presence of appropriate hardware and software is a pre-requisite for the adoption and use of modern ICT tools in teaching and learning.

The major factors that impede the use of ICT in universities are:

- (1) poor telecommunication infrastructure, leading to very low teledensity
- (2) low investment in ICT equipment
- (3) linguistic barriers within, and among, Arabic countries
- (4), lack of relevant ICT skills and lack of policies

(5) the lack of capacity to manage and plan, and

(6) inadequate standardisation of ICT equipment.

To summarise, lack of ICT equipment is one of the most often cited institutional barriers to ICT use in universities. The ICT infrastructure in universities, was frequently reported by the participants as inefficient and as not efficiently serving the full purpose for which they were introduced, that is to support learning, teaching and administration.

This lack of infrastructure poses serious threats to improving access, to enhancing the quality of teaching and learning, and to the general quality of education in universities in Libya. More significantly, the constant weakening of infrastructure has affected science education in the universities.

Al-Ghaith et al. (2010) explored the factors that influence the adoption and usage of online services in Saudi Arabia and concluded that the kind of quality of the internet was one of the significant factors impacting on the adoption and usage of ICT in Saudi Arabia. Baek and Kim (2008) found that teachers' lack of experience, skills and knowledge with regard to using computers and the available newer ICT tools made them less ready to integrate ICT into their teaching. Similarly, another study conducted by Balanskat et al. (2007) explored the factors that cause teachers to avoid ICT in a sample of schools in Europe and they found that the most important of these factors were lack of teacher confidence, lack of pedagogical teacher training and lack of suitable educational software.

Another important study conducted by the OECD (2009) identified a number of barriers inhibiting the use of ICT in education. These barriers, according to this study,

were an inconsistent number of computers per students, a deficit in maintenance and technical assistance and, finally, a lack of computer skills and/or knowledge among teachers. There are factors that impede the adoption of educational technology in Higher Education: lack of time, perceptions of low status (and hence rewards) applied to teaching as compared to research, lack of reliable and adequate infrastructure (including technical support) and lack of basic information (Haywood et al., 2000)

Howell and Lundall (2000) pointed out that the most important factors preventing the use of computers as tools for teaching and learning are "inadequate moneys, inadequate numbers of computers, lack of computer taught teachers, lack of teachers' skills in using computers in different learning areas, and the absence of correctly developed curricula for teaching computer skills".

A work prepared by The OECD (2009) considered lack of skills, lack of competition high prices charged for ICT as factors affecting ICT adoption and use. As mentioned before, there is a continuous technology. The use of ICT in teaching, learning and management activities in university education has been a priority issue in Arab HEIs for a number of years.

Harris (2003) established that teachers from high schools with computers and who had access to the internet at home were implementing technology in their classrooms more frequently. Friedman (2000) stated that, in his view, those countries which do not adequately train their people for the new ICT and new knowledge economy will be left behind and will be able to compete effectively in the current global economy.

Developing countries wish to use ICT but the adoption process has been halting and their use of ICT is not on a par with that attained in developed countries (Danowitz,

Nassef and Goodman, 1995). One reason for this is the great expense involved in constructing and implementing ICT. However, other factors are also involved, as there has been evidence of failure even in some cases where financial expenditure has not been an issue.

Several studies have been carried out on the use of ICT in Arab universities, for instance, an applied study prepared by Askol (2005) which was conducted in King Abdul-Aziz University (as an educational institution in the public sector) and in other private colleges in Jeddah to investigate the role of ICT in the development of Saudi Higher Education. The study found that “the internet and the electronic mail service were the most important elements of ICT used by faculty members in those universities”. Mohsen (2010) investigated the attitudes of academic supervisors at Al-Quds Open University in Palestine towards the use of the internet in education. Mohsen showed that the attitudes of the academic supervisors on the internet were totally positive in all domains. An important study was prepared by Mohammad et al (2012) on the use of the internet in Bahrain. The results of their study showed that 95.3% of the respondents surveyed said that they had used the internet to collect information for research purposes, as a social networking site, for using email, to get news online and to read newspapers. Also the results of this study confirmed that Google, Excite, Lycos and Yahoo were the most frequently used search engines respectively. The study also found that 83% of the respondents were satisfied with the results gained from using the internet.

A comprehensive field study conducted by Braudi (2009) explored Algerian Higher Education and its relationship to new ICT. The study found that building up a modern and highly efficient telecommunications network is one of the most important

conditions that must be taken into account in order to improve the quality of the Higher Education Sector in Algeria, to enhance the acceptance and use of new ICT. 68.71% of the sample confirmed that the existing curriculum in Algerian universities has not kept pace with the rapid changes in ICT and they also confirmed that there was an urgent need to consider training to enhance the place of ICT in the university curriculum in Algeria. The study also found that there is a lack of technological devices used in Algerian universities, and that they are limited to computers and modern projectors in the technical disciplines, while the students in humanities and social sciences depend entirely on books. According to the outcomes from this study, university graduates do not meet labour market requirements because they do not have the necessary ICT skills. Additionally, most students and teachers do not know how to skilfully use computers. This makes many of them reluctant to embrace and to use the new ICT and the internet particularly with regard to using a foreign language as English is the prevalent language for communication on the internet and most of the scientific studies and research on the internet is available in English. Al- Zahrani (2008) indicated that the use of multimedia technologies in the educational process can be used as an education tool in (1) Enhancing the effectiveness of students through diversifying learning methods and the use of different assistive (audio, visual) technology devices in the educational process;(2) For students who cannot understand information rapidly and who need to have someof the basic issues repeated (this includes students who have learning difficulties), and (3) For students with physical disabilities or who cannot attend their courses due to health problems or other circumstances.

Al-Dubayan (2005) examined the potential benefits of access to information using the internet by researchers in Saudi universities. The study found that 97 percent of respondents had a strong internet connection and that they could easily connect to the internet. 81.6% percent of the respondents used the internet for academic research purposes and to provide sources containing useful information relating to their studies, while 78% of them said they use the internet to keep pace with the rapid developments in their field of academic specialization and to keep up with technology. 36% of those surveyed said that teaching is the primary purpose of using the internet, while 23.6% of participants used the internet to disseminate their academic research. According to the opinions of the respondents there are three important motives for using the internet. These are:” Information seeking, quick and easy access to this information, and diversity and reliability of the information provided by the web” (pp. 58-60).

3.4 STATE OF ICT IN LIBYAN PUBLIC UNIVERSITIES LPU

As mentioned in chapter two the MoHESR has expressed its intention to improve the higher education sector regarding the technology available, However , in June 2007 a cooperation agreement was signed between the Director of the Libyan Higher Education and scientific research Ministry and the headquarters of the United Nations Education, Scientific and Cultural Organization (UNESCO) with regard to the implementation of the national project for the use of information and communication technologies (ICT) in the Libyan higher education sector. The agreement aims to provide the higher education institutions with computer laboratories and classrooms for education and training in addition to the creation of digital libraries, and also the establishment of a local information network linking the universities with each other. This project consists of 450 workshops and laboratories comprising more than 600

computers, as well as the creation of rooms for digital presentation in each university consisting of computers along with display screen Libya government has ongoing ICT projects in universities and is contractually bound by state purchases made during the Gaddafi regime. This now needs to increase nearly threefold.

The post-conflict projected budget for Libyan infrastructure development is now set as 500 billion Libyan Dinars (£250 billion) as estimated by the Transitional Government (Jebril, 2011). The increase in the number of university students and in the number of Libyan students who wish to study in LPUs necessitates the use of the opportunities provided by ICT facilities within the universities. Therefore, Libya should use ICT to bridge the huge development gap between its universities and the rest of the universities in developed countries all over the world.

Libya had some room to manoeuvre during the Gaddafi regime and still has on spending, because it had built up substantial reserves during several years of high oil prices, and the Libyan government was (and is) the largest customer in the country. However, the main obstacles to these projects continuing in post-conflict Libya are firstly, security and, secondly, the prevailing feeling that most of these projects suffer from corruption and this will make it difficult for the government to gain consensus on reinstating these projects measures have been taken by the Transitional Government to establish a public procurement revision committee with a mandate to review all contracts (EU, 2012).

The next section provides a summary of the conceptual relationship between globalisation and policy issues as factors that impact on ICT adoption and use , with respect to Libyan universities

3.5 LINKAGES BETWEEN GLOBALISATION, POLICY AND ICT ADOPTION AND USE

The purpose of this section is to provide a summary of the literature review examining globalisation and HEP as factors in influencing the adoption and usage of ICT in universities, with particular focus on the integration between these three areas (globalisation, HEP and ICT adoption). The researcher believes that an understanding of the linkages between these factors can facilitate improved understanding and will illustrate the clear picture that emerges in relation to ICT adoption and use in the Libyan university education system. According to Gunn (2005) globalisation is about changes in technologies and communications, which inevitably lead to changes in cultural beliefs and practices. These cultural aspects generally relate to the notion of the global village; that is, a global community connected through time and space by technology, migrations, and the media.

Given the above, it seems that globalisation and awareness of implementation of HEPR may be two of the many key factors that affect the adoption and use of ICT. However, it may be worth noting that a specific definition of globalisation and policy is still unavailable; they have been given countless definitions from different perspectives and from different points of view by many scholars.

Globalisation in the Libyan context means that the country is more open to the world than before; this change thus requires that more attention is given to training in ICT services in particular, in order to improve the Libyan Higher Education System. Globalisation in this thesis is defined as “the process and consequences of instantaneous world-wide communication made likely by new ICT. The consequences include an explosive growth in the quantity and accessibility of knowledge, and

repeatedly growing intercourse and interdependence of world financial and economic systems’’ (Grunzweig and Rinehant, 2003, p.7).

HEP within this study has been defined as a set of principles, trends and general rules laid down by the state to direct education at different levels and types related to the purposes and aspirations of society in the light of the circumstances and the possibilities available to serve the objectives of the State Assembly and the national interest and in line with global developments (Amininh, 1995 p.22).Dale et al. (2004) summarised the link between ICT, policy and management and demonstrated it as a two-way interaction process in which teaching and learning and ICT are in the centre. They confirmed that, for the successful implementation of ICT in teaching and learning, there should be a balanced and interactive relationship between policy, management and ICT, including all their different aspects.

According to the previous literature reviewed in this chapter globalisation and awareness of HEP are the two main factors which have actual effects and impact on ICT use and adoption in universities. In this context ICT is an integral part of the accelerating pace of globalisation. The literature review has highlighted that HEP and the emerging different aspects of globalisation political, economic and cultural have a major role to play in the implementation of any ICT policy which must be cost-effective and adaptable. Globalisation and its link to ICT seems to be taken for granted but should not be ignored. Globalisation and ICT have resulted in increased usefulness for different Libyan organisations, including the university education sector, and they have also led a transformational trend in the international human community. A good example of globalisation forces on Libya and Libyan HEP, in particular on university education, is that both the major trends of globalisation and policy are leading many

countries, including Libya, to keep up with the fundamental changes that are occurring in the economy and thus have put ICT adoption and use in place and have given it full backing by its public policy. This has already led to reflection on the development of the adoption and use of ICT services, especially by Libyan public universities, which have had to come up with policies to face the challenges of the globalisation. This means that Libyan policy makers in the Higher Education Sector are key stakeholders in the process of helping Libyan HEIs, including public universities, to participate in global knowledge via the adoption and effective use of ICT services. As discussed in the literature, this study considers the simultaneous relationships that affect the ways in which ICT use and adoption in Libya university education and HEP must be more dynamic in order to keep up with the rapid developments and with the ongoing rapid globalisation process. The adoption and effective use of ICT in university education has been considered as a real and big challenge for policymakers and will require fundamental shifts in the HEP implementation. To highlight this point, it has been recommended that policies, and especially HEP makers, need to focus their efforts on improving the rate of take up of ICT as this, in turn, will improve the ICT skills of students and academic staff in HEIs. As there is evidence that the adoption and use of ICTs in university education is now becoming sufficiently significant and has fundamentally changed the practices teaching and learning, it is now believed that awareness of implementation of HEPR can provide the factors that can potentially increase the effect of effective ICT adoption and use, if implemented appropriately. Many argue that the these two major powerful factors, namely the economic, political, and cultural aspects of globalisation and the awareness of implementation of a new HEPR are closely associated, each driving the other forward and both being driven by

other, as both forces continually reinforce one another and thus, therefore, influence the adoption and use ICT within university education. Additionally and, as stated earlier, there is an agreement among scholars and authors that globalisation has had enormous impact on people and societies all over the world. universities and other HEIs are no exception. Relevant literature has been reviewed and this has shown that economic, political, and cultural aspects of globalisation are all crucial factors of globalisation that have impacted on education policy reform. The review has also shown that globalisation and HEP are major drivers for ICT adoption especially in universities. These factors have influenced educational technology and ICT adoption in particular all over the universities. Over the past two decades, significant economic and political changes brought about by globalisation have affected all aspects and levels of education. From the technological perspective, the influences of individual elements of globalisation on economic ICT use are important. However, since most components of globalisation are strongly related, it is difficult to include them all separately in one review. On the other hand, using collective indicators of globalisation has been much studied when looking at the general influence of globalisation. This is what has been undertaken in this literature review. Therefore, the power of globalisation has possibly now had a greatly stronger impact on the use of ICT; it represents a driver of change in ICT use.

Jeon et al. (2006) examined the determining factors in the adoption of e-business by small and medium enterprises in Korea. They found that globalisation and governmental strategy has influences on the e- adoption knowledge of IT/e-business, in South Korea. Internationalisation of research has been facilitated by allowing and encouraging graduate students and staff to collaborate and share ideas and expertise

across the world without travel, through ICT tools such e-mails. ICT can also provide access to important information stores, digital datasets and to recent online research more easily and quickly. Also the nation-state still has wide-ranging power in several places, it has also lost a lot of power in relation to globalisation although states will still manage the use and distribution of ICT capacity. From this perspective the government's primary goal within the field of education is to make sure that both teachers and students are prepared to contribute to the new globalised area. Fundamental advances in technology and ICT have accelerated the speed of globalisation. It has a complex nature and the potential impacts of this phenomenon may be far-reaching. It has therefore major implications which, in turn, will affect the usage of ICT. It is true that many developments in ICT usage are due to growing globalisation and many of these developments are not yet fully grasped. For this reason policy-makers need to have conceptual tools to discern what the real impact is of this phenomenon on ICT usage, and Libyan universities should open up to connect up with worldwide universities in order to connect and exchange ideas targeted at improving local economies. In respective governments should give universities the power to initiate local and relationships built on the comparative elements. In addition, HEPR has a large impact on ICT adoption; it is a major factor in driving the implementations of ICT applications/projects successfully and in the adoption and use of ICT applications which can improve effectiveness, develop productivity and advance development. The previous literature looked at in this chapter has also dealt with the linkages between globalisation, awareness of implementation of HEPR and ICT adoption within universities and has examined how each factor impacts on the other factors. In this regard, HEPR is much affected by the phenomenon of

globalisation. For instance, globalisation in Higher Education has resulted in the strengthened influence in policy terms of international organisations like the World Bank or the United Nations. This leads to the acknowledgement that globalisation impacts on education policy and is a driver in the adoption of ICT in universities around the world especially in Libya and other developing countries . In this respect, Amirault and Visser (2009) argued that the future success of a university as an integral educational structure will only be as effective as its ability to successfully participate and adapt to change in several types of ICT. The impact of policy on ICT use in Libyan universities can be explained by the fact that the success of any ICT use programme requires guidance by a clear HEP as well as an ICT policy. Wallsten (2005) explored whether policy has any bearing on the adoption of ICT or whether it is purely a lack of physical equipment and training that affect adoption. Countries that control access to internet service providers have less internet hosts and users. In this vein, Libya as a developing country has a great deal of control over the use and adoption of ICT. Consequently, and in order to further improve ICT in HEIs including public universities, the Libyan government has taken proactive steps to prepare a new policy for public sectors as a basic plan to ensure that the needs of ICT in the public sector, including in the university education sector, are met. This chapter also attempted to look at the relationship between globalisation and the adoption of ICTs at the university level. However, it is important to review the role of ICT in universities as well as the benefits of its adoption, acceptance and use, this is especially important in the light of increased criticisms that suggest ICT in educational institutions has not significantly contributed to students performance improvement.

To sum up, for some the linking of the emerging and effects of globalisation in Higher Education, and awareness of implementation of HEPR on ICT adoption offers new opportunities and challenges for the adoption, use and integration of new ICT in HEIs and has brought about radical changes within relationships between universities all over the world and among organisations and individuals (in the context of adoption and use of new ICT by universities to exchange the experiences of researchers, knowledge and electronic data. Observably, the adoption of ICT, such as the internet, makes it inexpensive and easier for universities to extend their activities. ICT's increasingly substantial role in the modern world is most visible in the Higher Education, and the university education, sector. However, with the rapid advancement in the area of globalisation, particularly in the third world, it is important for developing countries to be acquainted with the adoption, acceptance and use of ICT. From the perspective of developing countries, adoption and access to ICT will determine who will be part of the world of ICT in the future.

3.6 SUMMARY OF CHAPTER THREE

This chapter explored the factors that influence the use of ICT in Higher Education. It reviews of globalisation and Higher Education policies looking at factors that impact on ICT adoption and use within LPUs, the literature review through this chapter also looks for answers to the research questions put forward in chapter one. This chapter reviews studies and literature from several publications, scholarly dissertations and Masters' theses, conference papers, journal articles and books, in order to create review of the three areas globalisation, HEP and ICT adoption and use . The discussion in this chapter showed that globalisation is a difficult concept to perceive.

Chapter 4: RESEARCH METHODOLOGY

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4.0 INTRODUCTION

In previous chapter, the literature review have discussed. This chapter presents and justifies the research methodology used in this study. Therefore, the issue of research methodology is important to any study. Wellington (2003) points out no-one will decide or judge the importance of a piece of research while not knowing its methodology. If an inappropriate methodology is employed, or if is employed, poorly, the results of a study may well be dishonorable. According to De Vaus (2002) the research methodology consists of descriptions of respondents, research design, sampling, and ways in which gathering data. Saunders et al (2006) defined research methodology as the theory of how research ought be assumed and research methods as the techniques and procedures used to find and analyse data.

The purpose of this chapter is to discuss the research methodology in order to address the research problem as outlined in chapter one, it, therefore, provide a description of the research design used in collecting the data required for discussing and answering the research questions of this research, and also addresses these subjects in the context of the purpose of this study, which is to attempt to explore how globalisation and awareness of implementation of HEPR has influenced ICT use in Libyan public universities.

This chapter begins by restating the aims of the research and clarifying the key research questions that drive the study. It then articulates the issues of the research philosophy and research approach associated with the qualitative research methodology, followed by the rationale for the choice of a qualitative approach. Then the research design and context of the study will be described described .Followed by identify the population and sample frame the collection of data and the qualitative

content analysis method. Finally, validity and reliability used in this study will explained

4.1 AIM, OBJECTIVES AND RESEARCH QUESTIONS

The focus of this study is on studying the impacts of globalisation and HEP on adoption and use of new ICT at Libyan Higher Education. This thesis therefore explores globalisation and HEP in the context of ICT in Higher Education, with a particular emphasis on university education, shown by UoT also this study is crafted to better understand use of ICT in university education. Corresponding to the above discussion, the main aim of this study is to explore and understand the impacts of globalisation and awareness of implementation of HEPR on the use of ICT in Libyan public Universities. In order to achieve this aim the following five objectives have been identified. Hence the objectives were developed to examine the impact of globalisation and HEP on adoption and use ICT at LPUs as follow:

1. To develop a model of factors that impact ICT usage in LPUs.
2. To explore globalisation process and its impacts on use of ICT in LPUs.
3. To find out the impact of awareness of implementation of HEPR on ICT use in LPUs.
4. To identify the benefits of, and barriers to use ICT in LPUs.
5. To explore the extent of adoption and use of ICTs in LPUs?

However, the data will collect and analyse according to the following research questions:

1. How has globalisations impacted the adoption and use of ICT in LPUs?

2. How has the awareness of implementation of HEPR impacted the adoption and use of ICT in LPUs?
3. What are the perceived benefits and barriers of using ICT in LPUs?
4. What types of ICTs are commonly used in LPUs? And how is it used?

These questions will be answer through semi structured interviews with sixty participants. However, in order, to achieve the above aim and objectives and to answer the above questions it was considered to be very important to select an appropriate method; therefore outline the most suitable philosophical approach for the present research is discussed in the next section.

4.2 RESEARCH PHILOSOPHY AND PARADIGM

A clear understanding of different philosophical standpoints is essential for a researcher to clarify his/her fundamental beliefs and to justify ‘why,’ ‘what,’ and ‘how’ particular research practices are chosen. Saunders et al. (2009) explain that research philosophy is influenced by the manner in which a researcher reasons about the development of knowledge and will affect the way the researcher conducts the research itself. Easterby -Smith et al. (2008) gives several reasons relating to why should understanding the philosophical issues, per him the following three main reasons is most significant ; the first one is that philosophy is provided a clearly description of the final design of the research, the second reason is that the select the acceptable and right design likewise knowing the limitations of each research , and the third reason is regarding characteristic which can be facilitate knowing the way to adapt analysis styles to totally different contexts. According to Remenyi and Money (2004) it is necessary for the researcher to determine a philosophical orientation, because it is through a sagely chosen philosophical approach that makes the research

audience convinced by addressing philosophically the questions regarding the why, what and how to research.

According to Taylor et al (2007), define the paradigm as “*a broad view or perspective of something*” (p. 5) Similarly, Denzin et al. (2006) definition of paradigm is “*the basic belief system or world view that guides the investigation*” (p. 105). It therefore helps to shape the understanding of the interconnectivity of real life elements. However in order to answer the main research question: ***What impacts does globalisation and awareness of HEPR have on the adoption and use of ICT in Libyan public universities?***. It is significant to reveal about what methodologies and methods will employ in the research , this will indicate that the research carry out has created a contribution to knowledge within the general space of the research. However, Saunders et al (2006) argued that the research philosophy mentions to the way the researcher thinks about the development of knowledge. The research philosophy is that the cluster of values and ideas that underpin the manner within which the elements of the research topic come together and the way that means may be scan into what the research reveals. A research philosophy is significant to the research process. Gummesson (2000) suggests that research philosophy can be used to show the perspectives, ideologies myths ,theories, and official actions that govern their thinking and action . Easterby-Smith et al. (2008) also regarded two philosophies as being used in social science, these being positivism and social constructionism (Phenomenological). Saunders et al.(2007), on the other hand, reported ten philosophies: Positivism, Realism, Interpretivism, Objectivism, Subjectivism, Pragmatism, Functionalist , Interpretive, Radical humanist, and Radical structuralist. However, Some previous studies (Easterby-Smith, et al 2008. Teddlie & Tashakkori,

2009; Denzin and Lincoln, 2000; Bryman, 2008; and Creswell, 2007) have shown that there are two main philosophical paradigms in research, positivism and interpretivism. Easterby-Smith et al. (2004) also regarded two philosophies as being used in social science, these being Positivism and Social Constructionism (Phenomenological).

Table (4.1) summarise the distinction between positivist and phenomenological philosophies .

	Positivism	Phenomenology
The observer	Must be independent	Is part of what is being observed
Human interests	Should be irrelevant	Are the main drivers of science
Generalisation	Statistical probability	Theoretical abstraction
Explanations	Must demonstrate causality	Aim to increase general understanding of the situation
Research progress	Hypotheses and deduction	Gathering rich data from which ideas are induced
Concepts	Need to be operationalised so that they can be measured	Should incorporate stakeholder perspective
Units of analysis	Should be reduced to simple terms	May include the complexity of 'whole' situations
Sampling requires	Large numbers selected randomly	Small numbers of cases chosen for specific reason

Table 4.1: Contrasting Implications of Positivism and Phenomenology

Source: (Easterby-Smith et al., 2004, p. 30)

Collis & Hussey (2003) also provide an outline of the differences between the two as shown in Table (4.2)

Positivism Paradigm	Phenomenology Paradigm
Tends to produce quantitative data	Tends to produce qualitative data
Uses large samples	Uses small samples
Concerned with hypothesis testing	Concerned with generating theories
Data is highly specific and precise	Data is rich and subjective
The location is artificial	The location is natural
Reliability is high	Reliability is low
Validity is low	Validity is high
Generalises from sample to population	Generalises from one setting to another

Table 4.2: The main differences between positivism and phenomenology Paradigms

Source: (Collis & Hussey, 2003)

However, the positivist, and the interpretivist paradigms discussed in the subsequent sections

4.2.1 POSITIVIST PARADIGM

The positivism, has defined by Easterby et al (2008), as a philosophy that the social world exists externally, and which its properties have to be compelled to measure through objective methods, instead of being secondary subjectively through awareness, thinking or intuition. This paradigm concerns researchers who are trying to search for or test the universal laws about social phenomena. Advocates of this paradigm believe that the social world is a world of natural phenomena.

It assumes that social reality, including attitudes, beliefs, behaviours and satisfaction can be measured objectively by employing traditional scientific methods by independent observers (outsiders). This paradigm uses the quantitative approach and statistical analysis. However, for IS research to be classified as positivist and in accordance to Orlikowski and Baroudi (1991: p.5), “There is evidence of formal propositions, quantifiable measures of variables, hypothesis testing, and the drawing of inferences about a phenomenon from the sample to a stated population”.

4.2.2 INTERPRETIVE PARADIGM

The interpretive paradigm attempts to “understand, explain, and demystify social reality through the eyes of different participants” (Cohen, Manion & Morrison, 2007, p.19). This paradigm concerns researchers who are trying to understand social phenomena through the meanings that people assign to them such as language, consciousness, shared experiences, publications, tools, and other artifacts (Walsham, 2006) However, data is subjective and thus its interpretation is necessary. As such, the interpretive researchers are using qualitative research approach to provide an understanding of the social and organisational contexts, based on building a complex, holistic picture, formed with words, reporting detailed views of participants, and conducted in a natural setting (Creswell, 2003).

The interpretative paradigm has seen a growing acceptance among IS researchers in recent years (Walsham, 2006; Merali and McKelvey, 2006; Andrade, 2009; Jabar et al., 2009). This is due to the shift in IS research focus from technological to behavioural issues (Rohde et al., 2009). However, most IS research focuses on the issues of design, implementation, acceptance, use, management, and evaluation in different organisational and social contexts (Mansour and Ghazawneh, 2009). This

means that the nature of most IS research is contextual, since they require interaction between social and technical issues embedded in a dynamic evolving environment. Accordingly, the research in ICT adoption and usage needs to focus on new methodologies that provide in-depth understanding of the relationship between globalisation policy and ICT use

4.2.3 SELECTION OF RESEARCH PARADIGM

The researcher has chosen an interpretive stance, which according to Merriam is where most qualitative research is located. This position as Merriam explains, "assumes that reality is socially constructed, that is, there is no single observable reality. Rather, there are multiple realities, or interpretations, of a single event" (p. 8). Thus, interpretive researchers start out with the assumption that access to reality is socially constructed through language, consciousness and shared meanings.

Apart from multiple realities which are context bound, an interpretive or constructivist epistemological perspective seeks to describe, understand and interpret events, instead of controlling events. Thus, according to Merriam, researchers do not find knowledge, they construct it (p. 9). Higgs (2001) further points out that in the interpretive perspective, knowledge is constructed through a search for meaning, beliefs and values (p. 49).

The researcher has chosen an interpretive perspective as a reaction against the graduate students, academic staff and Higher Education Officials perspective that is primarily, positivist. In the LPUs and MoHESR, the world is viewed as linear, empirical, objective and reductionist. In this context, everything in the UoT and MoHESR needs to be measured and quantified to show constant improvement and 'change'. The researcher's experiences in working in journalism suggest that multiple realities, social construction

and subjectivity are at the periphery and consequently challenge the high value placed on positivism as the dominant epistemological position in UoT and in MoHESR.

The interpretive perspective fits the researcher's worldview and his conceptions of reality. His experiences have influenced this perspective. Further, the researcher believes that knowledge is co-constructed and that multiple perspectives and complexity exist, as well as alternative strategies to solving challenges facing higher education in Libya. He believes that positivist or empirical perspectives have not revealed why and how participants use ICT in teaching, learning and administrative and how ICT tools are used. As such, this research study, with its interpretive stance, does not test theory or measure using a positivist approach, but instead seeks to understand the experience of using ICT in teaching, learning and administrative and adopting the ICT programme from the perspective of the participants.

The researcher is interested in discovering, using the dual lenses, which factors influence these participants to fully or superficially adopt and use ICT. The researcher also acknowledges that in his research, his understanding of the participants and the context is to some extent that of an outsider. In describing the world of the participants he understood he would be bringing in some of his own biases and world views. However, he believes, this is all part of the difficulty of taking an interpretive approach.

Based on the nature of this research, the researcher adopted an interpretive stance, which is created on the view that there is no general truth and, therefore, regards reality as an essentially subjective social product that is constructed and interpreted by humans according to their beliefs and value systems. Interpretive research tries to know phenomena through the meanings that the research participants assign to them. It focuses

on the on the complete quality of human sense-making as a situation emerges (Bryman, 2008).

In the context of this research, interpretivist paradigm is the most suitable for this study because of its subjective stance and view of the world as socially constructed through human perceptions and interactions. This allowed the researcher to know what the various stakeholders in the research study viewed as priorities in Higher Education System. It also enabled him to understand what the participants believed, and how they felt and interpreted events pertaining to adoption and use of ICT for learning, teaching and administrative process. In addition, this stance suited the types of social interactions that occur in the processes of use and adoption of new ICT. It is for this reason that an interpretive methodological perspective is utilised in this thesis.

4.3 RESEARCH APPROACHE

The research approach is identified by Babbie, (2010), as a: “systematic and orderly approach taken towards the collection and analysis of data so that information can be obtained from those data”. Creswell (2003) stated that two vital factors which must be taken into consideration when selecting a research approach are the characteristics of the topic and the time allocated to conduct the research.

The major part of this chapter is the presentation of the research approach. However, the most widely used research approaches are the 'deductive' approach and the 'inductive' approach.as well as qualitative approach and quantitative approach . These will be outlined in the following sections.

4.3.1 THE DEDUCTIVE AND INDUCTIVE APPROACHES

The deductive approach initiates with overall concepts. It begins with general ideas (such as theory, laws, and principles) and based on them, specific hypotheses are formed. These can be tested in order to support the general ideas. If an hypothesis is supported, it can be said that the initial (general) idea was indeed correct. This includes the development and verification of a theory and is often thought of as scientific research. According to Bryman (2001) the six stages in a deductive approach are theory; hypotheses; gathering data; findings; rejection or confirmation of hypotheses confirmed or rejected and; revising the theory. The deductive approach is generally used in the attempt to offer an explanation of causal relationships and entails the development of a hypothesis or hypotheses. Frequently, the hypothesis or hypotheses are tested using quantitative data (Robson, 2002). The methodology followed in such an approach is highly structured, facilitates replication and ensures reliability. It is also characterised by reductionism. If the researcher adopts a deductive approach, an hypothesis evolving from a specific theoretical framework is tested by determining reality, with the aim of rejecting or confirming the hypothesis. A substantial theoretical element in the research is required when taking a deductive approach such an approach has a stronger connection with objectivism and positivism.

The inductive approach, on the other hand, is more closely related to phenomenology, subjectivism and anti-positivism, as it aims primarily to arrive at general principles from a starting-point of several particular examples, e.g. the observation of specific cases. It is where the theory is still unknown but it is developed as a result of the analyses of the data collated (Saunders et al., 2007). The inductive approach is widely used in the social science domain as it is consider that causal connections can only be

identified through comprehending the manner in which individuals construe their environment. In the inductive approach alternative theories can be posited, as opposed to the deductive approach which tests only one theory. Table (4.3) depicts the major differences between the deductive and inductive approaches to research.

Deductive approach	Inductive approach
Certainty of conclusions (primary distinction)	Probability of conclusions (primary distinction)
No new information in the conclusion	Possible new information in the conclusion
From general to particular (usually)	From particular to general (usually)
From cause to effect (usually)	From effect to cause (usually)
A priori (typically)	A posteriori reasoning (from experience)
Philosophical reasoning (typically)	Scientific reasoning (typically)
Argument forms are valid or invalid	Argument forms are strong or weak
Arguments are sound or unsound	Arguments are cogent or uncogent

Table 4.3: Major differences between both approaches to research

Source: (Saunders et al., 2007)

This study seeks to contribute to the appreciative of ICT adoption and use by and for graduate students, staff academic, and Higher Education Officials. The main aim of the current research study was to explore and understand the impacts of globalisation and the awareness of implementation of HEPR on the use of ICT in Libyan public Universities. This research does not involve generating and testing pre-developed hypotheses, but aims to offer an explanation and interpretation of a facet of social reality. Hence, an inductive approach and a qualitative method have been chosen as being the most appropriate to the nature of the topic and the aim of the research. Primary data gathered through fieldwork inform the research and hence should be considered as inductive research. Taking into consideration the differences in approach, it could be seen that the inductive approach emphasises the close

understanding of the research context, the collection of qualitative data has a more flexible approach to allow for changes in research emphasis as the study progresses. In this study, an inductive approach would be required to appropriately answer the research questions and achieve the objectives of the research. The researcher will rely heavily on qualitative data obtained via interviews to achieve these objectives. The next section discusses the approach researcher took to carry out this study.

4.3.2 THE QUANTITATIVE AND QUALITATIVE RESEARCH APPROACHES

Quantitative and qualitative methods of research can be used in social science research. Kumar (2005) states that the philosophy behind the nature of the inquiry of qualitative and quantitative research methodologies differs, as do, to a certain degree, the methods, models and processes employed. The quantitative method can be described as an extreme of empiricism, which relies on control and explanation of the phenomenon (Altameem, 2007). Creswell (2003) argues that the quantitative approach is most appropriate when the problem is to identify factors that influence an outcome; understand the best predictors of outcomes; or the utility of an intervention. Moreover, in order to perform tests in the quantitative approach, the method has to be expressed in terms of “operation”; such as, surveys, laboratory experiment and mathematical modelling. The analysis of data will depend on statistical principles. According to Hughes (2006), the quantitative approach is known as the scientific empirical tradition approach, while the qualitative approach is known as the naturalistic phenomenological approach. Given that the focus is different, the use of these two approaches depends to a large extent on the research paradigm, the underlying assumptions of the researcher and the nature of the phenomenon to be studied (Yauch and Steudel, 2003). Quantitative research is more formalised than qualitative and is

based on systematic and structured observations, whereas qualitative research is constructed on data in the form of words rather than figures and reaches conclusions based on data that is not quantified, such as feelings and beliefs . Accordingly, the differences between the two approaches in terms of many respects can be summarised as stated in the study of Kumar (2005) as shown in Table (4.4)

Difference	Qualitative approach	Quantitative approach
Underpinning philosophy	Empiricism: The only knowledge that human beings acquire is from sensory experiences	Rationalism: That human beings achieve knowledge because of their capacity to reason
Approach to inquiry	Unstructured/flexible/open methodology	Structured/rigid/predetermined methodology
Main purpose of investigation	To describe variation in a phenomenon, situation, issues etc.	To quantify extent of variation in a phenomenon, situation, issues etc.
Measurement of variables	Emphasis on description of variables	Emphasis on some form of either measurement or classification of variables
Sample size	Fewer cases	Emphasis on greater sample size
Focus of inquiry	Covers multiple issues but assembles required information from fewer respondents	Narrows focus in terms of extent of inquiry, but assembles required information from a greater number of respondents
Dominant research value	Authenticity but does not claim to be value-free	(Reliability and objectivity) (value-free)
Dominant research topic	Explores experiences, meanings, perceptions and feelings	Explains prevalence, incidence, extent, nature of issues, opinions and attitude; discovers regularities and formulates theories
Analysis of data	Subjects responses, narratives, or observation data to identification of themes	Subjects variables to frequency distributions, cross-tabulation or other statistical procedures
Communication of findings	Organisation more descriptive and narrative in nature	Organisation more analytical in nature, drawing inferences and conclusions, and testing magnitude and strength of a relationship

Table 4.4: Qualitative approach vs. Quantitative approach.

Source: (Kumar, 2005)

Qualitative research is exploratory. It takes place in the natural setting (Creswell (2007)). In this case, the researcher visited the study areas (UoT and MoHESR) and carried out investigations, exploring how the globalisation and awareness of implementation of HEPR is impact the adoption and use of ICT , and how ICT used. Qualitative research is interpretative, interpretivist paradigm suggests that “ the observer and the participant are linked and that the reality that is represented is co-constructed as a result of the interaction between the two (Teddlie and Tashakkori, 2009). There is increasing recognition, that scientific reality is not generated from objectives of the study but rather, it is socially constructed. Therefore, the way graduate students, academic staff and Higher Education Officials understand globalisation and factors may facilitate understanding the current position of ICT use in LPUs. Table (4.5) shows both strengths as well as weaknesses of applying the qualitative research method

Strength	Weakness
The qualitative analysis allows a complete rich and detailed description	Qualitative difficult to analyse and needs high level of interpretative skills
An attempt to take account differences between people	Great chance of bias
Does not reduce complex human experiences to numerical form and allows a good insight into the person’s experiences and behaviour numerical form and allows a good insight into the person’s experiences and behaviour	Hard to draw brief conclusions from qualitative data
Results are said to be rich, deep and meaningful	Qualitative faces difficulties in terms of comparisons
Ambiguities which are inherent in human language, can be recognised in the analysis	Low level of accuracy in terms of statistics

Table 4.5: Qualitative approach- Strengths and weaknesses

Source: (Bernard, 2000)

The qualitative method does however, have its weaknesses. The complexity and richness of data can obscure the analysis process. More significantly it leaves the data open to interpretation; both interviewee and researcher bias become a real threat. However, the overall situation is dynamic and the case's circumstances can keep changing, which may affect the research validity and verification (Cornford and Smithson, 2006).

The above views and other reasons to be described, support the study to employ qualitative approach. Therefore the qualitative approach enabled the researcher to understand how graduate students, academic staff and Higher Education Officials understand globalisation and Higher education policy and how these impact adoption and use of the ICT services, as well as communities interpret their use of ICT, and their views in HEPR on University education system. It is also useful in the study of explore participants views on the meaning of globalisation and policy. Questions like how participants understand the term globalisation?, what does policy mean in the area of higher education? or what the biggest barriers or challenges they face in adoption and use of ICT? process are among the semi structured interview questions asked the participants to enable the researcher understand the broad meaning of the globalisation and policy and what graduate students, academic staff and Higher Education Officials do in order to deal with global situation in the context of ICT.

Qualitative research is preferred when there is little previous research into the phenomenon to be investigated and it needs to be more understood. The study used qualitative research approach and methods to help understand the factors affecting adoption and use of ICT by graduate students, staff academic, and Higher Education

Officials. The following sub section provide the reason why selecting qualitative research approaches.

4.3.3 RATIONAL FOR SELECTING QUALITATIVE RESEARCH APPROACHE

Choosing an appropriate method to address the research questions was considered to be very important. Among the most bases of any research design is the choice of a suitable methodology. Therefore, in view of the investigative and inductive nature of this research, and in order to achieve the research goals, qualitative research methods will be used to produce and gather collect rich data. According to Ghauri et al (1995) qualitative methods are therefore are so a lot of appropriate once when the objectives of the study demand in-depth insight into a phenomenon .and given the nature of this research, which investigates a process rather than simply a static outcome this approach was deemed to be more suitable than a quantitative approach for this research.

The nature of the research questions in this study was mainly about the graduate students ,academic staff and Higher Education Officials ' thinking, their views and perceptions of the globalisation and awareness of implementation of HEPR as factors that impact adoption and use of ICT instead of the frequencies and prevalence of incidences or outcomes. As compared with the quantitative research which is primarily about the outcomes or products, the qualitative research method, which is mainly concerned with the process, understanding and interpretation, was considered as more appropriate for this study. It is assumed that meaning is embedded in people's experiences through the investigator's own perceptions; therefore the qualitative research method is better than the quantitative research in tapping people's

perceptions. On the other hand, as this study aims study is to explore and understand the impacts of globalisation and awareness of implementation of HEPR on use of ICT in Libyan public Universities, it is necessary for this research to conduct a qualitative research.

The qualitative approach was chosen for this study because its inductive approach emphasises the processes and meanings that are not experimentation studied in terms of quantity, or frequency. This design built-in fit with the aim of the study, that was to get an understanding of the global Higher Education , structural, technological and other factors affecting the adoption and use of ICT for graduate students, staff academic, and Higher Education Officials, with a view to developing a proposed model for ICT usage based on the experience, perceptions, and of graduate students, staff academic, and Higher Education Officials. Hence, there are variety of reasons for selection qualitative approach for this study that are summarised and printed as follow:

Firstly, A qualitative research technique was chosen as the main approach for this research because it was considered to be the foremost appropriate for answering the research questions. Moreover, this approach can change the researcher to become more deeply concerned within the reality context of the investigations.

Secondly, Perhaps most significantly, a qualitative approach is most well-liked for the work presented here is that the research questions need wealthy data information that cannot be achieved through quantitative means.

Thirdly, A qualitative method has a benefit as a technique of achievement full information with incomplete resources. For example, new concerns can be and explored through an interview process. For the purposes of this study, principally in the light of the research questions asked, the research approach adopted, which are

explanatory approaches with the view to finding out the impact of globalisation and the awareness of HEPR on the use of ICT.

Fourthly This research study focuses on the ICT adoption and use process in Universities as organisations and seeks to learn more about the practices and key challenges. According to Cassell and Symon (1994) “ the qualitative method is more appropriate if the research question is concerned with organisational processes” .

Fifthly

The main advantage of using qualitative data is in building a holistic picture of the research problem. This is a major focus of this study’s research question and one of the existing gaps in the literature in studying ICT in Libya as a developing country. Applying the qualitative method will help to fill this gap.

The design which the researcher deemed most appropriate is flexible in nature data collected through the use of semi interviews with the participants who have been selected. In summary, the researcher select to inform the stories of those sixty participants during a qualitative research respecting their opinions, and attempting to provide the maximum amount detail as doable for the reader to feel they were a part of this method , it had been a starting hopefully of an extended commitment on a part during this research area.

4.4 RESEARCH DESIGN

A research design is the overall plan for making decisions as to what data are to be collected, what sources will be used and what methods employed in their collection It is the research question or questions which inform the research design.

Nachmias and Nachmias, (2008) defines that the research design "guides the researcher in the process of collecting, analysing and understanding observation. It is a

logical model of proof that enables the research to draw inferences that enables relations among the factors under investigation. According to them Importance of research design stems from its role as an important link between the theory and argument that educated the research and the empirical data collected.

According to Bryman (2008), the research design creates the framework for the collection and analysis of data, and the perform of research design must be guided by the research questions. Cohen, Manion, and Morrison, (2011) states that process for choosing the research design is very important in research as it will influence research outcomes.

Yin (2003) argues, the aim of the research design is to help in achieving the research aim and objectives. Hence, the selection of a research design ought to be to keep with the general research strategy, because the chosen methodology directs the strategies used and also the manner during which every is used (Silverman, 2000). In the context of this study the research design will give the researcher a detailed plan, which will be used to guide and focus the research process.

The UoT that will be endorsed for this research to investigate the adoption and use of ICT, and were used to produce and gather collect rich data due to the nature of the data collection process. This technique allowed the researcher to answer the main research questions : *What impacts does globalisation and awareness of HEPR have on the adoption and use of ICT in Libyan public universities?.*

And achieve the main research aim which was: *To explore and understand the impacts of globalisation and awareness of implementation of HEPR on use of ICT in Libyan public Universities* See figure (4.1)

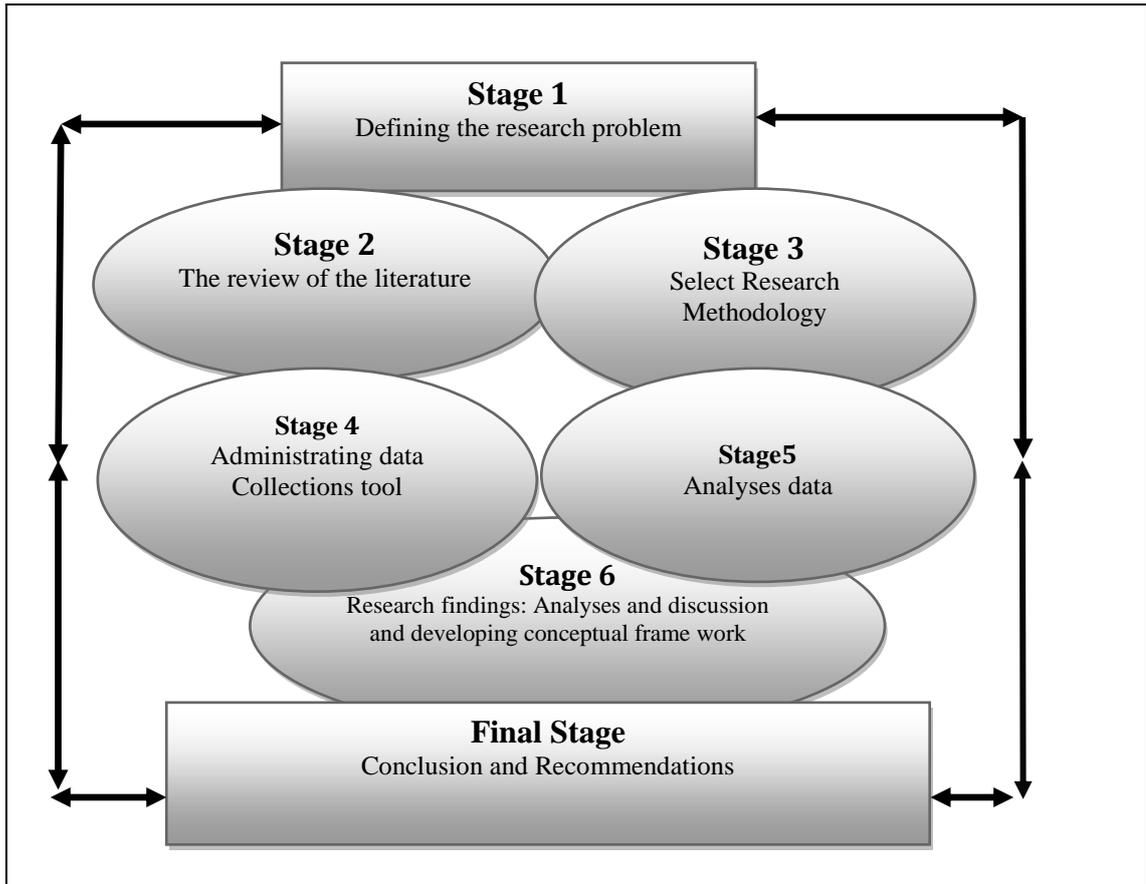


Figure 4.1 Overall Research Design

4.5 CONTEXT OF THE STUDY

In order to get an in-depth understanding of the situation being studied, and to answer the research questions, UoT and MoHESR has select as a context of this study to choose the participants, and to decide their nature and number, the researcher carried out an extensive and detailed investigation of the “population” of the public universities that were in existence at the time of conducting the research. However, the choice of UoT and MoHESR as being appropriate for this study was also based on strategic selection. Given below are the brief description of UoT main reasons for selecting UoT as the context for this study.

4.5.1 UNIVERSITY OF TRIPOLI UOT

University of Tripoli UoT (formerly known as Al-Fateh University) was selected in this study. It started 1954 with Faculty of Science, the Faculty of agriculture was added in 1966, It is the most important institute of Higher Education in Libya providing undergraduate, and post-graduate stages of study. Four good reasons to choose the UoT as follow:

First reason.

The significance and contribution of the information got from the selected institution to explaining the research questions was considered.

Second reason.

Older-established university is assumed to be more resilient and resistant to change than universities which have been established more recently.

Third reason.

Institution located in or nearby one of the Capital city is assumed to be less preoccupied with regional development than universities located in rural areas.

Forth reason.

The researcher chose to get participants from UoT because it is a public university that have been using ICT equipments for quite some time compared to other public Libyan universities.

Also statistics indicate UoT takes more graduate students than any other public universities in the country. However, Glesne (1998) argues that the number of sites for a study depends on the data in the research interest and what the researcher wants to

learn in the process. One of the major steps in formulating a research design is to define the population according to the objectives of the study. During the academic year 2010 the University has fourteen faculties.

As shown in table (4.6) the total students were 43258 male and female students. 12 faculties in Tripoli while, 2 branch faculties of teachers training outside University.

	Faculty	Males	Females	Total
1	Science	871	1806	2677
2	Engineering	5954	2078	8032
3	Agriculture	1396	2543	3939
4	Law	1506	2520	4026
5	Physical Education	521	27	548
6	Veterinary Medicine	173	109	282
7	Economics and Political Science	4793	1920	6713
8	Arts and Media	547	551	1098
9	Information Technology	333	43	376
10	Languages	658	2378	3036
11	Arts	624	3841	4465
12	Teachers training Janzour	120	2361	2481
13	Teachers training Gaser Ben Gesher	230	2841	3071
14	Teachers training Tripoli	73	2441	2514
	Total	17799	25459	43258

Table 4.6 Number of students enrolled for 2010-2011 in UoT
Source: University of Tripoli UoT (2012)

The UoT was offer; Bachelor Degree of human science, Bachelor of Science degree, and Master degree in most specializations. See Table (4.7) in the next page

N	Faculty	Departments	Degrees	Duration
1	Science	Mathematic, Computer Science/Statistics/ Geophysics Division of zoology Botany/Chemistry, and Physics/Atmospheric/Geology	Bachelor and Masters	Eight semesters = Four years
2	Law	-	Bachelor and Masters	Eight semesters = Four years
3	Engineering	Civil engineering,/Mechanical Engineering/Electrical and electronic engineering Department of marine engineering/Architecture/Computer Engineering Petroleum engineering/Materials Engineering Aerospace engineering/Nuclear Engineering/Chemical Engineering/Geological Engineering	Bachelor and Masters	Nine semesters equivalent of Five years
4	Arts	Arabic language/English language/Islamic studies/Tourism studies/Education and psychology/ social work I /Sociology/Philosophy/ Geography/Library and Information	Bachelor and Masters	Eight semesters = Four years
5	Economics And political Science	Economic /Accounting/Financial planning/Political science /Banking and insurance /Statistics and econometrics/Electronic commerce	Bachelor and Masters	Eight semesters = Four years
6	Information Technology	Computer Science /Software Engineering / Net Works		Eight semesters = Four years
7	Agriculture	An animal production/Food/Soil and water Plant protection/Horticulture/Agricultural Economics/Crop/Grasslands and forests/Agricultural Engineering/Aquaculture and fisheries		Eight semesters = Four years
8	Physical Education	Teach physical education Athletic training Rehabilitation Pharmacology		Eight semesters = Four years
9	Veterinary Medicine	Anatomy/Physiology/Disease diagnostic laboratory Pharmacology and toxicology/Food control/Animal medicine/ medicine /Veterinary Preventive surgery, Poultry and fish		Five years
10	Arts and Media	Fine and applied arts /Media /Visual arts /Musical arts/ Performing arts		Eight semesters = Four years
11	3 Teachers training	Mathematic /Chemistry / Arabic language /English language/sociology / Physics / Kids		
12	Languages	English language/France/language/Arabic language/African languages / Translation and Arabisation		Eight semesters = Four years

Table 4.7 Faculties at the University of Tripoli UoT

Source: Source: University of Tripoli UoT(2012)

As shown in table (4.7) the yearly and semester system are two study system applied in the UoT UT that is indistinguishable from all systems in other public universities in Libya. The yearly system and semester system are two systems of study administered which provides by this university according to the rules of study and examination for each faculty. In the yearly system; a student does not have any choice in the selection of courses. Instead, he/she has to complete a predetermined schedule for a minimum of four successive years in theoretical faculties or five to seven years in faculties of medicine.

At the end of the academic year, the student is examined on-site once in each course. Unsuccessful students are given another chance to resit at the end of the annual vacation. If the student fails again, he/she has no other option but to repeat the year. However, most faculties in the UoT use the semester system which replaced the old system that was based on credit hours. About the academic staff in the UoT, they are necessary to hold a Master or Ph.D. degree from any Higher Institutions recognized by the MoHESR.

According to decision No. 501 (2010) there are five ranks are used for academic staff in UoT and all other LPUs Libyan These ranks are as follow:

1. Assistant lecturer: The first rank for academic staff holding a Master degree.
2. Lecturer: The first rank for academic staff getting a PhD, and the second for Master degree with 4 years of teaching as an assistant lecturer and one publication.
3. Assistant professor: Academic staff with Ph.D. degree, three years of experience as lecturer and three publications. Or academic staff with four years of experience as lecturer, and three publications. and Master degree

4. Associate professor: Academic staff with Ph.D. degree, four years of experience as assistant professor and 4 publications. Or academic staff with Master, six years of experience as assistant professor and five publications.
5. Professor: Academic staff with Ph.D. degree, four years of experience as associate professor and five publications.

Each faculty in the University is represented by its dean. These deans are implemented the general policy of Higher Education set by the MoHESR at university level. The head of the University is appointed through a "cabinet" decree upon a recommendation of the Ministry. The deans of the faculties are appointed by the secretary of head of the University .

The main campus is located in Tripoli the capital city of Libya. UoT has active academic links with a number of renowned universities and institutions; it also has signed agreements of cooperation and partnership of scientific and cultural ties with many universities and leading companies around the world.

Each academic year is divided into two semesters, students have to complete eight semesters (four years) successfully in order to be eligible for a Bachelor's degree in theoretical fields, and five to seven years in some scientific fields such as Medicine. Each year is divided into two semesters.

The length of the fall and the spring semester is 15 weeks in addition to a period of examination. The first semester starts in September and finishes in February. The second semester starts in Mars and end in July. Study system, examination system and entry requirements may vary slightly from one faculty to another depending on nature and level of study. See figure (4.2) in the next page

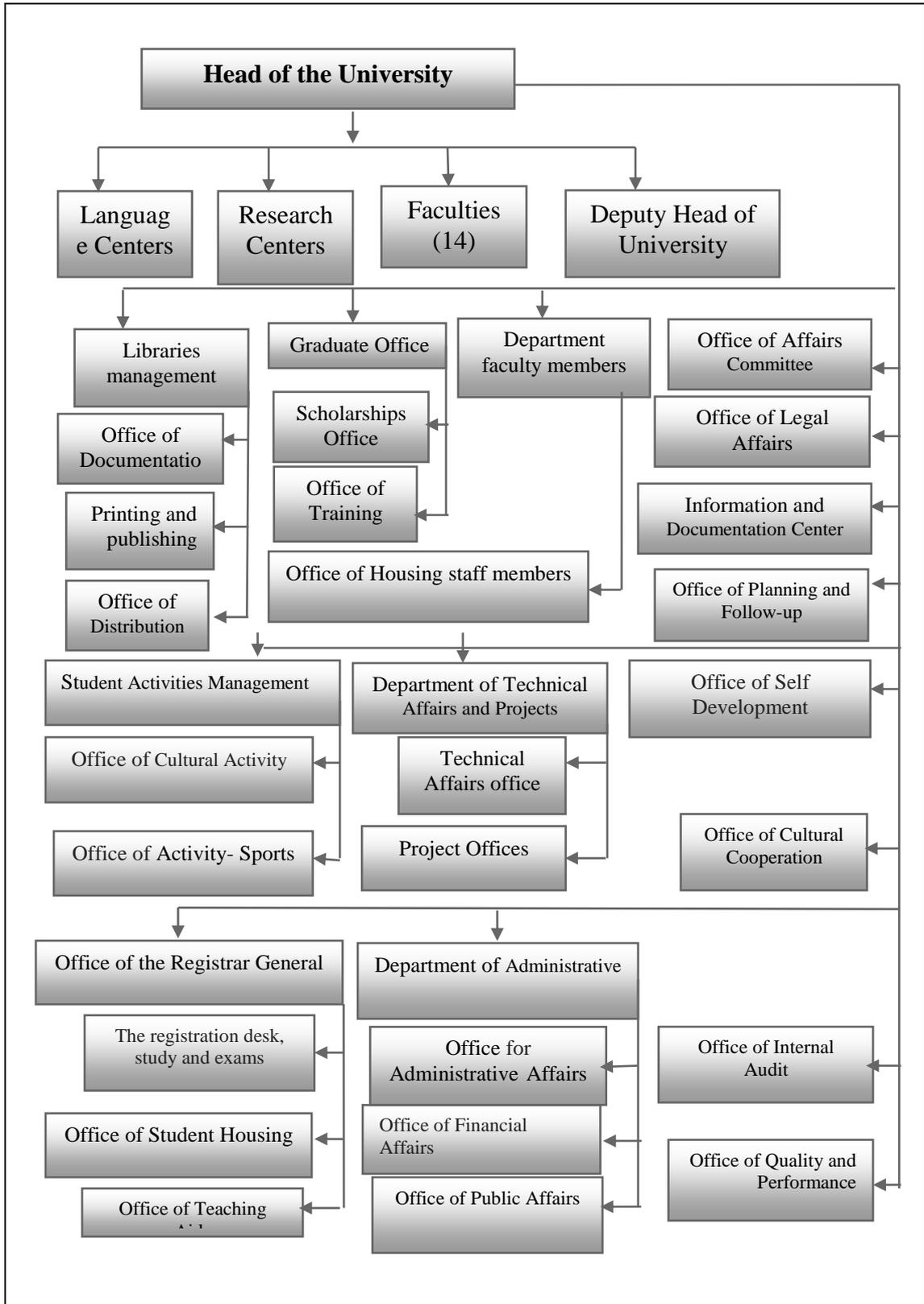


Figure 4.2 Organisational Structure of the University of Tripoli UoT
Source: University of Tripoli UoT(2012)

4.5.2 MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC RESEARCH MoHESR

In Libya, a separate the first Ministry of Higher Education was established in 1992 under the name of the GPCHE (formerly known as General People's Committee For Higher Education). In 2000 the government has cancelled the Ministry and created a new one called Ministry of Public Services, which entrusted with multiple tasks, including responsibility of supervising the universities and their coordination. In 2004 the Libyan government was re-establishing the MoHESR, but was cancelled again and was merged with the Ministry of Education in 2006.

Before February 17 Revolution 2011 ,Higher Education System is extremely centralized and governed by Gaddafi's government, and is now administered through MoHESR transitional Government which was established by the NTC. However, within the general context of our research, this case study is relevant for the following two main reasons. First, MoHESR was consider as the highest educational authority, responsible for all educational activities include the university education sector ,and second, main tasks are planning, developing HEP, governing higher educational affairs, monitoring and directing all its activities, coordinating all its organisations, and allocating appropriate funding to all its institutions.

The objectives of the Libyan Higher Education System stress the importance of developing new ways to advance technical and professional development and supporting individual capacities; education programs should empower learners by equipping them with the latest ICT skills, distance learning and online learning techniques, so that they can rely on themselves as independent self-directed learners. The National Transitional Council (NTC) has given the Ministry of Higher Education and Scientific Research the right of management, organisation and development of

plans, policies and educational programs, and distinctive quality standards at all HEIs, correct up to settling their assurance to all regulations and documentations operative in force within the field of Higher Education and scientific research. This minister comprises the central administration, which supervises Higher Education Policies at various levels of Higher Education and the sub-departments in the local administrative sub-divisions, which implement Higher Education Policies and provide all that is necessary for this, including the administrative and technical structure, as well as the provision of president of the University, faculty members supervisors and so forth. Higher Education is completely financed by Libyan government, except for private universities.

In the context of universities the MoHESR has the responsibility to conduct, supervise and finance general education university and has authority to appoint, promote, transfer, discipline and dismiss presidents and faculty members. Although each university in Libya has its own charter, functions, budget, and occasionally different purposes which are assumed semi independently, all universities serve as a centre for disseminating knowledge, teaching, educating and training students, supporting and promoting research activities, and involving themselves vigorously in advancing the nation in all areas. However, each institution is administered by a self-governing council. The presidents of the University and their deputies in all HEIs take their orders from the MoHESR and implement these orders, transmitting them to Heads of faculty, faculty members, and students, and the " Committees" are responsible for the quality of services offered by university.

Libyan Higher Education is based on set of legislations like (1) the Higher Education Act No. 1 of 1992 on the organisation of Higher Education,(2)the GPC decision No

281 for 1999 concerning the restructuring and re organisation of universities.(3) the GPC decision No. 119 of 2004 on the establishment of the National Council of universities,(4) the organisational structure of universities and Higher Institutes No. 22 in 2007.(5) the decision No. 535 2007 about the reorganisation of universities and HEIs, and (6)the Higher Education Act No. 18 of 2010 concerning education. The following figure illustrates the structure of the MoHESR.

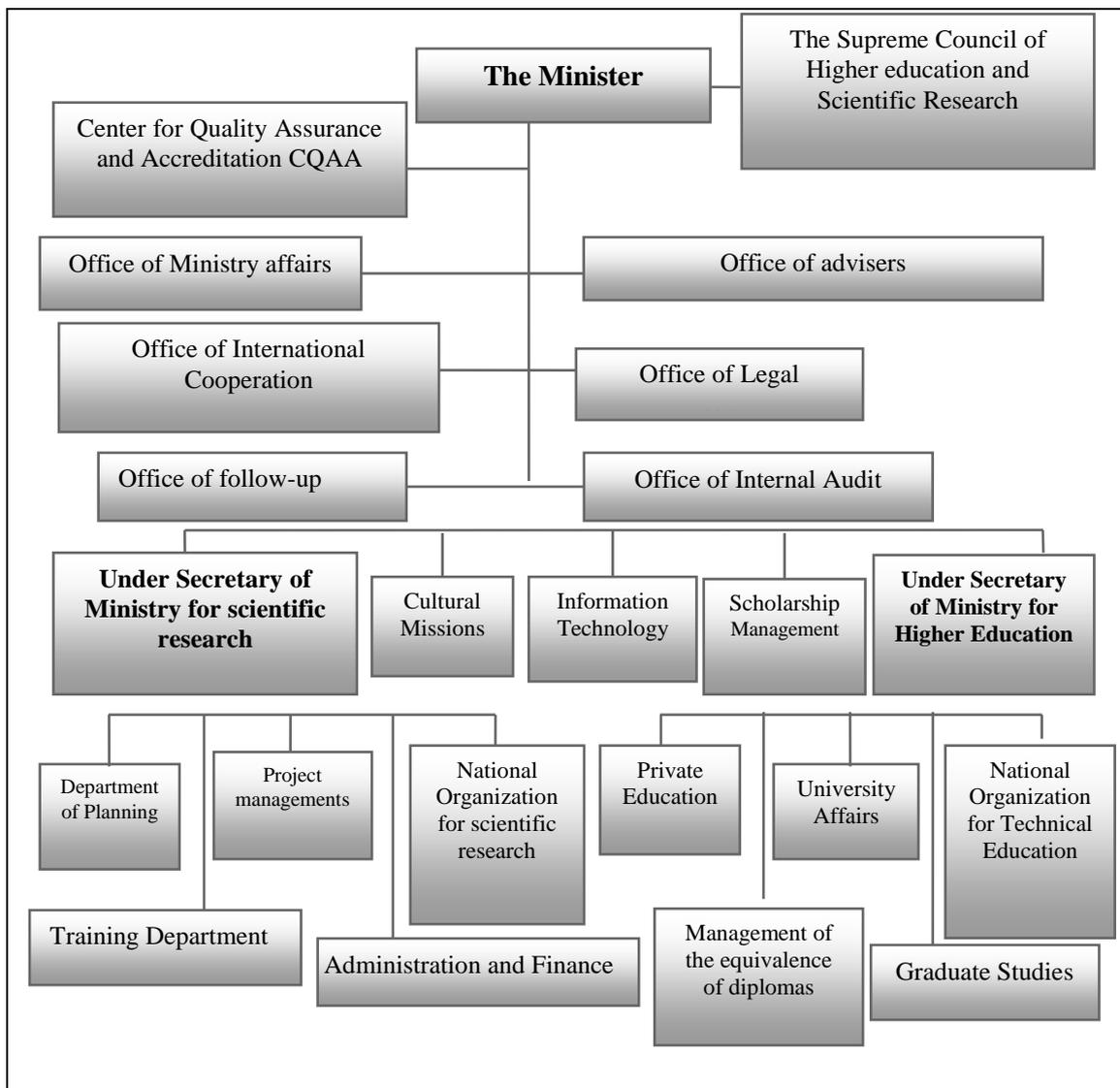


Figure 4.3 Organisational chart of the Ministry of Higher Education and Scientific Research

Source: Ministry of Higher Education and Scientific Research MoHESR

4.6 POPULATION AND SAMPLE FRAME

The researcher used a procedure to select a research site and a maximum sampling to select research participants from whom the researcher could learn the most about this research problem. Therefore it became necessary to identify the target population that the study wished to generalize when analysing the results. The study population as the whole collection of cases around which the researcher desires to draw conclusions (Kothari 2004). Hence, the main reason strategically choosing university in this way was to keep research costs within practical limits. One benefit of this approach is that it allows more detailed information to be gathered in a short period through semi structured interviews it will also be an easy way to communicate with interviewees in the same region.

As Patton noted that (2002) No rule of thumb exists to tell a researcher specifically some way focus a study. The extent to that, a research or evaluation study is broad or slim depends on the goal, the resources available, the interests of those involved. The UoT has 14 faculties offer three types of qualifications , Bachelor Degree of arts in humanities, Bachelor of Science degree, which requires four or five years of study in most programmes it also offers Master's, but only six faculties that was offer Master's and Doctoral degree. However, the population that is being studied is also called the target population. As shown in table (4.8) in the next page only these six faculties were purposefully selected to be involved in this study. All of these six faculties selected were either located in Tripoli. The reasons are why the other eight faculties in the university did not participate is because only these six faculties have offering graduate studies (Masters Degrees) and relatively adequate information technology infrastructures and Internet connection.

N	Faculty	Males	Females	Total
1	Science	230	96	326
2	Engineering	89	40	129
3	Law	126	122	248
4	Economics	199	236	435
5	Arts	533	263	796
6	Information Technology	42	18	60
7	Total	1217	795	1994

Table 4.8: The number of all Graduate Students enrolled for the 2010-2011 Academic Year in University of Tripoli UoT

Source: University of Tripoli UoT(2012)

In addition the researcher eventually selected these four faculties, because it has practiced ICT since in the late 2006. Hence all graduate students on these six faculties have Email addresses, and they appeared to learn global and ICT content to a greater extent than students at other faculties. It was essential to select these six faculties which actively practices ICT education, since the study required rich data about the elements of the acceptance and use ICT perspectives that graduate students offer and the contextual factors that affect their acceptance and use. However, due to the time frame of the research and scope of the research site, it was not possible to conduct interviews with all graduate students academic staff and Higher Education Officials at MoHESR .Therefore the researcher used a sample in order to represent the target population as a whole. The following section explains the methods and procedures that were applied in the selection of the sample that was studied.

4.6.1 SAMPLING STRATEGIES

The selection of an appropriate participant sample size was of major concern to the researcher, first to ensure representativeness of the population while maintaining a high level of precision and reliability of the sample assessments, second for economic considerations, and third for time considerations and a desire to complete the data collection process within a fixed time frame of two months. Sampling is one of the important stages in designing a study. It is a process of selecting participants for a research project. Larson-Hall (2010) defined the sample as “the actual people who participate in the experiment” and the sample size on the other hand can be defined as “ the number of participants in a study” (p: 401). Passed on the literature, there are two types of sampling methods or procedure. The first is called a probability sampling and second is a non-probability sampling. Both probability and nonprobability sample techniques can be divided into different types of sample, as shown in table (4.9).

Random sample	Definition
Simple random	Selecting the required number of respondents randomly from a list of the population
Cluster	Selecting a sample randomly from a large population. (e.g., some schools from a district)
Systematic	Selecting subjects from a population list in a systematic rather than random way
Non-Random sample	Definition
Convenience (accidental)	Choosing the nearby persons to help as respondents and continuing that process until the required sample size has been obtained
Purposive	Choosing the respondents who possess the required data
Dimensional	Identifying various factors of interest in a population and obtaining at least one respondent of every combination.
<i>Snowball</i>	<i>Identifying a small number of individuals who have the required characteristics and then using these individuals to identify others who have the same qualities</i>

Table 4.9 The types of sample techniques

Source: Cohen et al ,(1994)

Bryman (2008) defines a non-probability sample as "a sample that has not been selected using a random selection method" (p: 85). Passed on this definition, this current research perfectly applies to the sample involved in research study, which implicitly makes the non-probability method the most appropriate method of sampling for the purpose of this research.

The selection of the sample in this study used a snowball sampling, the researcher was able to use snowball sampling to get participants from the faculties in UoT and from the MoHESR. Snowball sampling is a type of purposeful sampling that identifies cases of interest from people who know people who would be willing to participate in the study and these people know other people who could be referred and the chain continues.

The snowball gets larger and greater mutually as one accumulates new information-rich cases (Patton, 2002). Through this method of selecting participants from the UoT and the MoHESR was able to get good interview subjects referred to him by his key informants and their friends. These participants also provided the researcher with information that was rich and in-depth, with the assistance of his key informants the researcher ensured that all of the participants had used some of ICT tools before. This was important, as it provided a variety of additional information from a different perspective.

4.6.2 PARTICIPANTS AND RESPONSE RATE

The researcher will interview people who are in capacity or another concerned in Libyan Higher Education and have a deep understanding and a great deal of

information on the issue relating to adoption and use ICT in public university education in the country.

Rubin and Rubin (2005) state that the quality of the interviews depends on the data of the interviewees or participants within the study. This means that having interviewees with different perspectives adds to the richness and quality of information gathered. However, In order to discover as much data as possible in relation to the main research problem, it was decided, in addition to conduct semi structured face to face interview interviews with a number of key figures that have a direct connection with the overall subject. However, the breakdown of students with respect to each specialty and gender is not a matter of interest in this study as the purpose of this study was to find the students acceptance and use of ICT as a whole and not with respect to each gender or specialty.

As shown in table (4.10) below and figure (4.4) the participants were a total of 60 male interviewees as follow :

44 graduate students in the Masters level at UoT.

10 academic staff, and

6 Higher Education Officials. All of them were provided with different ICT.

Graduate Students	Six students from each of the faculties of Law, and Art Eight students of each the faculties of Engineering Economics , Science ,and Information Technology	44
Academic Staff	One Head of University, One Library Director, Tow department heads, and the Six Dean of Faculties	10
Higher Education Officials	Six Heads of department at Ministry of Higher Education	6
Total		60

Table 4.10 Candidates for Interviews

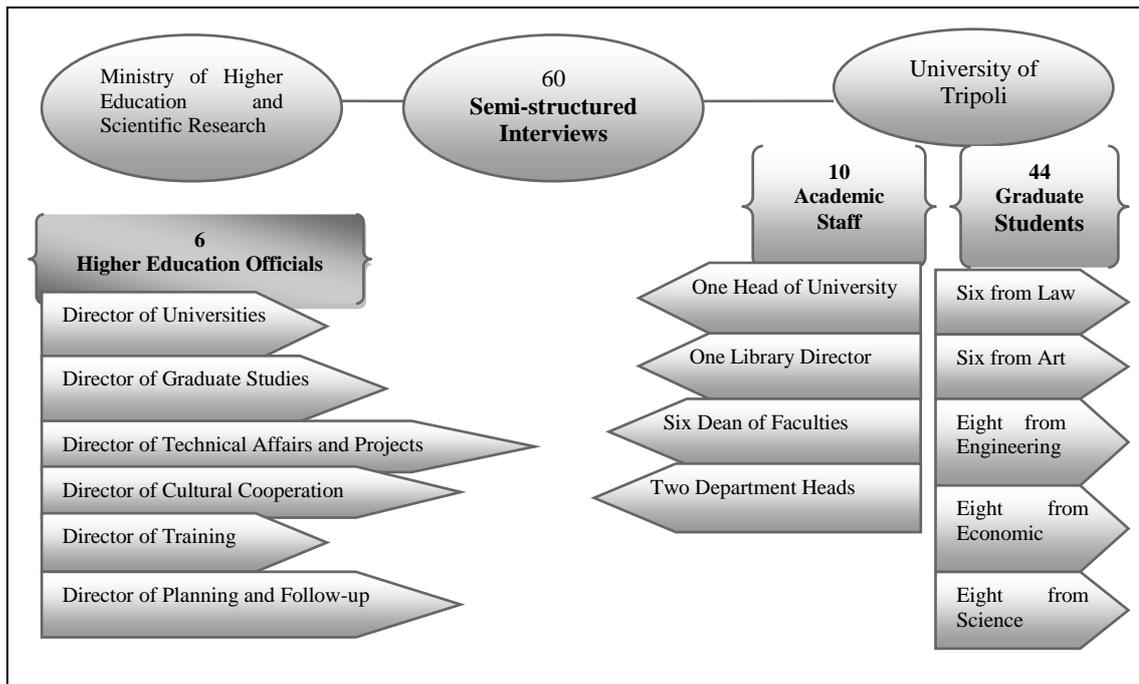


Figure 4.4 Candidates for Interviews

In this study, there were one hundred respondents agreed to participate. Fifteen were graduate students, and thirty five Academic staff from UoT, and other fifteen higher education officials. However, the number who turned up on the days of the interviews was only sixty from those who were invited. Table (4.11) gives more details of the interviewee percentage.

Respondents	Interested to participate	Actual interviewees in attendance
Graduate Students	50	44
Academic Staff	35	10
Higher Education Officials	15	6
Total	100	60

Table (4.11) Number of interested to participates and actual interviewees

As previously mentioned, and as shown in table (4.9) and figure a total of 60 respondents were interviewed separately and were divided into three groups.

The biggest group is composed of forty four graduate students. The next greatest number of respondents was ten academic staff, and the third groups represented in the sample include six Higher Education Officials. However, the differences in the number of three groups of interviewees are due to the large variation in the number of the graduate students.

Despite the small sample size (N=60), one can see many trends related to the different knowledge with participants in using ICT. Moreover and they expressed different views about the issues related with ICT usage.

All 60 interviews were coded with respondents being assigned different codes for confidentiality. A code in qualitative analysis is most often a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data (Saldana, 2012). The researcher in this case has used codes to refer the various members of the UoT, and MoHESR. The following codes in table (4.12) were used

University of Tripoli UoT	Ministry of Higher Education and Scientific Research MoHESR	
Graduate Students	Academic Staff	Higher Education Official
GS 1- GS 44	AS 1- AS10	HEO 1 - HEO 6

Table 4.12 : Codes and symbols given to the respondents

The assigned code consisted of letters followed by a number. The letters indicated the respondents' status as follow : (1) Graduate students,(2) Academic staff, (3) and (4) Higher Education Officials. Within each group, each respondent was assigned a number. The 44 Graduate students and the 10 Academic staff were selected from six

faculties that had varying levels of ICT (Science, Engineering, Economics And political Science, Arts, Law, and Information Technology) . The six Higher Education Officials were selected from six departments at MoHESR.

4.7 QUALITATIVE INTERVIEWS

The use of the interview method enables the researcher to obtain information that would probably not have been provided if questionnaires or other methods had been used. Thus, interviews are seen as appropriate for this study. According to Gubrium and Holstein (2002) interviews area unit among the foremost widely-used strategies of information generation within the social sciences. In the same vein, Saunders et al (2006) stated that the utilization of qualitative research interviews ought to enable the gathering of wealthy, detailed information, though it is necessary to develop enough level of competence to conduct these and to be able to gain access to the sort of information data related to their use. In this line Collies and Hussey (2003) noted that interviewing is “A technique of assembling information data within which designated participants are asked as to search out what they are doing, assume or feel “. Interviews make it simple to compare answers and may be face-to-face or screen-to-screen; conducted with people or a group of individuals. Those which are significant which help us to address this research questions and aim. Interviews are particularly conducive to producing data which deals with topics in depth or in detail.

Interviews are a good method for producing data based on informants' priorities, opinions and ideas. Thus, the purpose for conducting the interviews was to obtain clearer and deeper understanding of what was really going on, and how globalisation and HEP affect the adoption and use of ICT within respect of Libyan graduate student staff academic and Higher Education Officials.

The interview data also contributed to a greater understanding of the survey findings in this study survey. The data from the interviews could also help in redesigning more suitable surveys for future studies in the area of technology integration into the teacher education curricula (Glesne, 1998).

Semi structured interviews are intensive interviews usually involving a small number of respondents. They are particularly useful when exploring experiences, interests and beliefs, and whilst focused, they allow the respondent space to explore issues at length, thus providing rich data which may form the basis of a deductive (thematic) or inductive used to identify emergent themes and concepts. The interviews used in this study were in-semi structured interviews. The following section define the rationales for using interviews.

4.7.1 RATIONALES FOR USING SEMI-STRUCTURED INTERVIEWS

Interview research is one such type of qualitative methods aiming at generating rich data about a phenomenon. The reason for piloting qualitative interviews is to understand how persons make the reality of their situation formed from the complex personal framework of opinions, which they have established over their actions in their world. The semi-structured interview type has been chosen as the main method of data collection for the current study, because interviews as flexibility allows for the researcher to secure the type of data required. Moreover, the semi-structured interview was used with the participants since the guided questions allowed to give a fresh commentary and significant insights. Also, interviews are useful to access individuals attitudes, which cannot be observed in a formal questionnaire and open-ended, flexible questions, are likely to have a better response than closed questions.

4.7.2 SEMI-STRUCTURED INTERVIEWS PROCEDURE

The interview consisted of a set of questions that were carefully designed in terms of wording and sequence with the purpose of asking. As stated previously, there are several ways in which an interview may be conducted. These include face-to-face, by telephone and online. Stringer (2004) points out that when formulating questions for a semi-structured interview, the researcher must be at pains to ensure that the questions are unambiguous and to avoid leading questions in order to permit the respondents to express themselves freely. As the semi-structured interview was chosen for this study, the researcher has attempted to follow Stringer's advice and attempted to formulate the questions in such a way as to ensure that their meaning is unequivocal and also that they are appropriate to the objective of the research purpose.

Consequently this section discusses the main points and themes raised in, and across these chapters in response to the following four research questions:

1. How has globalisation impacted the adoption and use of ICT in LPUs?
2. How has the awareness of implementation of HEPR impacted the adoption and use of ICT in LPUs?
3. What are the perceived benefits and barriers of using ICT in LPUs?
4. What types of ICTs are commonly used in LPUs? And how is it used?

To answer four research questions, the researcher conducted semi-structured face to face interviews and the responses were recorded. First part, introductory questions are asked at the beginning of each interview including respondent personal information.

Bailey (2007) recommended beginning the interview with an overview to help put participants at ease. The second part, of the interview questions focuses on the globalisation of Higher Education and its drivers to adoption and use ICT in university education. The third part, discuss the impact of awareness of HEP on adoption and use of ICT. The fourth part of the interviews is concerned with ICT adoption and use in university education. See appendixes (4.A)

The semi-structured interview questions comprise of three themes.

1. Impact of globalisation in ICT adoption. Questions one, two, three, and question four aim to examine the term globalisation and its impact on ICT adoption and use in Libyan higher education from the perspectives of the participants
2. Impact of awareness of implementation of HEPR in ICT adoption . Questions five, six and question seven aim to establish the level of awareness of HEP and its impact on ICT adoption and use in Libyan public universities.
3. Actual ICT adoption and use question nine aim to establish the benefits of ICT adoption and use in Libyan public universities.
4. Perceived barriers and benefits of ICT adoption . Questions ten eleven, twelve and question thirteen aim to establish the barriers that prevent using and adopting ICT in Libyan public universities.

All semi-structured interviews conducted between the researcher and the participant face to-face. They therefore conducted on a one to-one basis with a single participant, and the choice of time of the interview day has left to the respondents. All interviews conducted between May and July 2010 in Tripoli in Libya. All interviews was carried out by the researcher himself were held on neutral territory who visited the

respondents at their places of study or work, grounds to make the participants feel comfortable, as suggested by Easterby-Smith et al. (2008 P:151).

In Libya, these types of studies need to obtain the necessary approval from the concerned authorities. Accordingly, it was necessary to make contact with the official to facilitate the process of completing the interviews.

An official letters from the supervisor was issued, the letter requesting to co-operate with the researcher and supply the information required for the study. It also contained general information about the researcher, and about the purpose and scientific nature of the research. See appendixes. (3A).

After two weeks, the researcher received confirmation from the secretary of president of the UoT and from the MoHESR that the research tool had been approved . The interviews took between 30 to 45 minutes on average, to answer all the questions, by the respondents depending on the length of the answers questions.

All interviews were recorded and audio taped with prior permission of the respondents. In case a tape recording would be misplaced, lost or damaged, recording each interview on a separate document, and questions of each interview are divided into four parts. The written questions are exactly what be asked orally. In addition, the respondents, the written questions are exactly what are asked orally, and the researcher took notes during each interview.

4.8 QUALITATIVE CONTENT ANALYSIS METHOD

There are many ways to analyse data in the quantitative approach, but fewer in the qualitative approach, which are also less well formulated. However, the analysis of qualitative data is particularly different from statistical study, as the data does not be in a quantitative form analysis of research data in a qualitative study is an ongoing

process, and the nature of data required is rich and deep one that occurs throughout the data collection period.

Powell and Connaway (2004) describe qualitative data analysis as a cyclical process in which the collection of data affects the analysis of data. However, due to the main qualitative data in this study were semi structured interviews, the researcher selected content analysis as a method for analysing the data gathered, which involves coding and categorising the data.

Content analysis is considered to be among the most significant research techniques in the field of social sciences. It is most frequently employed in the analysis of interview transcripts with the aim of discovering opinions related to information. According to Mayring (2000) content analysis is “an approach of empirical, methodological controlled analysis of texts within their context of communication, following content analytic rules and step by step models, without rash quantification” (p.2). Patton (2002) indicated that content analysis is “any qualitative data reduction and sense-making effort that takes a volume of qualitative material and attempts to identify core consistencies and meanings” (p.453).

Schilling (2006) mentioned that qualitative content analysis is most often used to analyse interview transcripts or any written responses in order to reveal or model people’s information related behaviours, thoughts or knowledge (p.35). Schamber (2000) added that content analysis is an observational tool for identifying variables in text and an analytical tool for categorisation (p.739) . In the same vein, Busch et al. (2005) define the content analysis as a tool that is use to identify the presence of certain words within texts or set of texts. It is one of the main technique that is widely used when applying qualitative analysis, and considered to be among the most

significant research techniques in the field of social sciences, psychology, sociology, political science, history, communications, and so on.

Cohen et al (2007) suggest that content analysis involves not only coding and creating meaningful categories ,but also comparing and making links between data ,and drawing theoretical conclusion from the text” . Even though, there are various qualitative data analysis techniques in the academic area. However, as mentioned in methodology chapter data analysis for this research study was undertaken to interpret raw data in the study using content analysis method. Hsieh and Shannon (2005) Hsieh added that qualitative content analysis is “a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns” (p.1278). They discussed three approaches to qualitative content analysis, based on the degree of involvement of inductive reasoning.

The first approach : is conventional qualitative content analysis, in which coding categories are derived directly and inductively from the raw data. This is the approach used for grounded theory development.

The second approach : is directed content analysis, in which initial coding starts with a theory or relevant research findings. Then, during data analysis, the researchers immerse themselves in the data and allow themes to emerge from the data.

The third approach: is summative content analysis, which starts with the counting of words or manifest content, and then extends the analysis to include latent meanings and themes. This approach seems quantitative in the early stages, but its goal is to explore the usage of the words/indicators in an inductive manner.

In this study, the researcher started the data analysis by reading all the answers and listening to all the recordings and transcribing the accounts into text form. In order to obtain a general sense of the data. The data and related materials were reviewed and reorganised for the preliminary coding. At this stage, the researcher went through interviews versions and written answers, clustered related data together, and labelled each cluster according to its characteristics. After primary categories were developed, the researcher looked for similar or closely related categories which could be clustered together under a broader label. At this time it was found that some specific extracts could be linked to the already formed broader categories and some new categories emerged. However some answers and interview extracts about issues such as lack of English language were not yet assigned to any of the existing categories.

Dornyei (2007) suggests that the revision of the code can be done by going back to the original transcripts and recoding according to the new categories. If the majority of the extracts fit the new system this can be seen as a sign of the validity of the code . therefore, the researcher looked into the categories and regrouped them as well as creating new categories.

The next step of the analysis was arranging the coded data into themes for analysis The themes were analysed ,segmented into smaller parts and sported by a review of the relevant literature . Chapter five in section 5.1 offer a comprehensive description of the content analysis approach and the way in which it is used in this research.

validity and reliability as concepts central to the credibility of this study with examples how these are derived is explained in the following

4.9 VALIDITY AND RELIABILITY

The credibility of any study is additionally established from the literature review, the careful selection of participants, and the credentials of the researcher (Creswell, 2003). It is important to evaluate the quality of data interpretation by examining the reliability and validity of the research findings. Whatever research methodology is adopted for a research, reliability and validity issues have to be considered as they are tests of the trustworthiness of the measurement instruments used in research (Golafshani, 2003). Saunders et al. (2009), indicated that in order to reduce the possibility of getting wrong answers, the researcher should pay attention to reliability and validity. However, validity in positivist research is very low while, in phenomenological research, it is considered to be higher. The purpose of the latter is predominantly to capture the essence of the phenomena and extract data that is rich in content (Collis & Hussey, 2003). McMillan and Schumacher (2006) reported that validity refers to the degree of congruence between the explanations of the phenomena and the realities of the world (p.90) . Saunders et al. (2009) also states that the quality of qualitative research is measured by the validity of the findings. Validity can be classified into two parts: external and internal. External validity raises to the ability of the researcher to draw correct implications from the sample to others alternative, other settings and past or future things, whereas internal validity is the ability of the researcher to draw sound inferences from the information data collected in associate experiment (Creswell, 2003). In the respect of this study , the researcher found it very difficult to test the validity in the semi-structured questions. However, broad consideration was given to the issues of internal and external validity. The researcher kept in mind the importance of maximizing the validity at every phase of the study process and was aware that by

building sufficient controls into the research design, the likelihood of drawing valid conclusions would be enhanced. The validity of the study findings of this study may be considered as being of an acceptably high level. This study attempts to present the “trustworthiness” of the research data collection tools, and therefore its findings, by respecting and applying the issues of validity in qualitative research. Davies (2007) stated: Because qualitative researchers do not normally employ any form of measurement, the concept of reliability is related to the rigour with which the researcher has approached the tasks of data collection and analysis and the care with which the report describes in detail the methods that have been employed –including, especially, some discussion of how critical decisions were made. Often, the term ‘reliability’ in this sense is equated with methodological ‘accuracy’ . (P:241)A research study is reliable if consistent results are obtained by different researchers undertaking the study under the same conditions. Triangulation that is defined by Yin, (2009) as the use of multiple theories or perspectives, methods, data sources and investigators to eliminate the weaknesses built in each method, source, or investigator. However, in this study, the researcher utilized data source triangulation (graduate students , academic staff, and Higher Education Officials);Since the goal of reliability is to reduce the errors and biases in a study. Taking into account the strengths and weaknesses of the semi-structured interview, the researcher tried his best to make each interviewee relax before beginning the interview. The researchers have tried to ensure reliability by following best practices in qualitative research, such as reflexivity to clarify his position as a researcher. Yin (2009) suggests that a chain of evidence should be established to increase the research reliability, the researcher developed a chain of evidence through (1) Keeping correspondents’ contacts, interview records,

transcripts, research design and procedures in a safe and accessible place. This permits others to inspect any of this material, and (2) Keeping collected data in well organised forms and records. These records are available for others to access and the data can be easily retrieved for checking or reanalysis. The academic purpose for this research was emphasised at every interview, one reason for doing so was to remove the interviewee's concerns about the political aspects of the study and make the responses more valid. In this research study, in order to overcome bias as much as possible, the researcher formulated all the research questions with great care.

The researcher made a great effort to design each question with a clear meaning and explicit research purpose. The same group of interviewees were asked the same number of questions in the same way; by doing so, bias was reduced. Furthermore, during the process of the interviews, the researcher kept an objective attitude towards the interviewees. Most of time the researcher was listening carefully to what the interviewee was saying in response to the interview questions without any interruption. Only when an interviewee appeared to have misunderstood a question, did the researcher stop the interviewee and explain the question again.

The researcher found all interview situations quite distinct. With some participants the situation felt very conversation like and with some others they were more question-answer chains, depending on the questions, of course. However, at the same time the researcher felt in all sixty occasions the interview situation was relaxed and the atmosphere developed open and trusting, he sensed no reluctance to talk about any topic. Reliability was also strengthened in this research through taping and transcribing the interviews fully detail, along with interview memos, is extremely

necessary given a number of the considerations mentioned earlier concerning the validity of interviews as a data collecting method.

4.10 ETHICAL CONSIDERATIONS

Wellington (2003) defines ethics as ‘the moral principles, guiding conducts, which are held by a group or even a profession’ (p: 54). Ethical considerations therefore were to the fore throughout the research procedure in order to uphold the rights of the research participants. Saunders et al. (2007) refer to ethics in the context of a research as the appropriateness of the researcher’s behaviour in relation to the rights of those who become the subject of the study, or are affected by it. However, the freedom to participate must be an aspect of ethics consideration in research. According to Adekeye (2011) “The principle of voluntary participation which requires that people should not be coerced into participating in research.” (P: 34). In this respect, an attempt was made to encourage an increase in the response rate for the interviews. However, to address all the ethics, the researcher would make the aim of this study clear to the participants and give respect to their ideas, views and attitudes, and if ever the participants were not interested in the research, they were given chance to opt out. The main research tool of this study is semi structured interview questions. Before beginning, permission was sought from the six faculties at the UoT and six departments at MoHESR. The next step taken was to contact the heads of the six faculties selected at the UoT, and some departments at MoHESR in order to get approval for conducting research. This initial phase required meeting the heads of departments and the staff members working in the departments and faculties where the study took place. These contacts gave easy access to the information about the timetable and facilitate the task. There were meetings with a number of participants before

initiating data collection procedures in order to explain and clarify whatever they may ask about. Before collecting data the researcher have explained research ethical issues such as the aims of the research, the issues explored and who is sponsoring the research. Moreover the researcher gave all the interviewees the relevant research information. This information comprised the identity of the researcher was, the purpose of the research, and the nature of the information the interviewee was expected to provide. In addition, the interviewees were assured that no interview questions would touch on sensitive political or personal matters, and they were also assured of confidentiality and anonymity and that any information they gave was to be used exclusively for academic purposes. In addition, it emphasized that the information given would be used only for the purpose of the scientific research. Moreover, the researcher ensured that the names of participants were coded so that no one could identify any of them. The letter indicated to each participant all the above information, making sure that the information provided would be strictly confidential.

4.11 SUMMARY OF CHAPTER FOUR

In this chapter the process of methodology was discussed in detail, it describes and justifies the philosophies and methodology adopted and used in conducting this research study. Based on the aim, objectives and research questions, the phenomenological philosophy was chosen as the most appropriate research approach. The approach is inductive in nature with no predetermined hypothesis. The data was collected by using face-to-face semi-structured interviews as a main source of evidence, to allow in-depth investigation. The researcher chose the qualitative approach to help understanding factors that impact adoption and use of ICT in LPUs.

Chapter 5: RESEARCH FINDINGS ANALYSES AND DISCUSSION

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5.0 INTRODUCTION

The previous chapter gives details of the methodology used for this part of the thesis. However, this chapter should provide a bridge for the reader to chapter six which offers the conclusions and recommendations of this study. The aim of this chapter therefore is to present the findings of the empirical investigation carried out within the UoT , and MoHESR in Libya. The main source of evidence was provided by the face-to-face semi-structured interviews, undertaken by the researcher to address the research aim and objectives.

This chapter presents analyses and discusses the research findings from the survey interviews; this consideration will draw on relevant literature and will be based upon the methodological steps presented in chapter four as well as from data gathered from the fieldwork.

5.8 CONTENT ANALYSIS METHOD

There are many ways to analyse data in the quantitative approach, but fewer in the qualitative approach, which are also less well formulated. However, the analysis of qualitative data is particularly different from statistical study, as the data does not be in a quantitative form analysis of research data in a qualitative study is an ongoing process, and the nature of data required is rich and deep one that occurs throughout the data collection period. Powell and Connaway (2004) describe qualitative data analysis as a cyclical process in which the collection of data affects the analysis of data. However ,due to the main qualitative data in this study were semi structured interviews, the researcher selected content analysis as a method for analysing the data gathered, which involves coding and categorising the data. Content analysis is

considered to be among the most significant research techniques in the field of social sciences. It is most frequently employed in the analysis of interview transcripts with the aim of discovering opinions related to information. According to Mayring (2000) content analysis is “an approach of empirical, methodological controlled analysis of texts within their context of communication, following content analytic rules and step by step models, without rash quantification” (p.2). Patton (2002) indicated that content analysis is “any qualitative data reduction and sense-making effort that takes a volume of qualitative material and attempts to identify core consistencies and meanings” Schilling (2006) mentioned that qualitative content analysis is most often used to analyse interview transcripts or any written responses in order to reveal or model people’s information related behaviours, thoughts or knowledge (p.35).

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Cohen et al (2007) suggest that content analysis involves not only coding and creating meaningful categories ,but also comparing and making links between data ,and drawing theoretical conclusion from the text” . Even though, there are various qualitative data analysis techniques in the academic area. However, as mentioned in methodology chapter data analysis for this research study was undertaken to interpret raw data in the study using content analysis method.

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The first approach : is conventional qualitative content analysis, in which coding categories are derived directly and inductively from the raw data. This is the approach used for grounded theory development.

The second approach : is directed content analysis, in which initial coding starts with a theory or relevant research findings. Then, during data analysis, the researchers immerse themselves in the data and allow themes to emerge from the data. The purpose of this approach usually is to validate or extend a conceptual framework or theory.

The third approach: is summative content analysis, which starts with the counting of words or manifest content, and then extends the analysis to include latent meanings and themes. This approach seems quantitative in the early stages, but its goal is to explore the usage of the words/indicators in an inductive manner.

In this study, the researcher started the data analysis by reading all the answers and listening to all the recordings and transcribing the accounts into text form. In order to obtain a general sense of the data. The data and related materials were reviewed and reorganised for the preliminary coding. At this stage, the researcher went through interviews versions and written answers, clustered related data together, and labelled each cluster according to its characteristics. After primary categories were developed, the researcher looked for similar or closely related categories which could be clustered

together under a broader label. At this time it was found that some specific extracts could be linked to the already formed broader categories and some new categories emerged. However some answers and interview extracts about issues such as lack of English language were not yet assigned to any of the existing categories.

Dornyei (2007) suggests that the revision of the code can be done by going back to the original transcripts and recoding according to the new categories. If the majority of the extracts fit the new system this can be seen as a sign of the validity of the code . therefore, the researcher looked into the categories and regrouped them as well as creating new categories. The next step of the analysis was arranging the coded data into themes for analysis the themes were analysed, segmented into smaller parts and sported by a review of the relevant literature. The following sections offer a comprehensive description of the content analysis approach and the way in which it is used in this research.

5.2 INDUCTIVE CONTENT ANALYSIS PROCESS

Data analysis is “a process of making sense out of the data, finding out how the pieces fit together” (Creswell and Plano Clark, 2010) Although, the previous literature (Johnson and Christensen, 2004 ; Cohen et al, 2007) shows that there is no one framework of analysis of qualitative data, numerous frameworks and propositions have been developed. Nevertheless, all agreed that analysing qualitative data must be conducted in a systematic manner by adopting a well-defined framework. Therefore, as mentioned previous that in view of the investigative and inductive nature of this research, and in order to achieve the research aim, qualitative content analysis was

used to produce and gather collect rich data. In the sections an explanation will be given as to how data is analysed in this study.

5.2.1 DATA SOURCES

In order to achieve the main aim of this research, four objectives were designed together with four research questions, and the methods used to answer each research question. The researcher started developing questions directly related to the themes and questions that had emerged during the literature study, and based on the research purpose problem. The relation between interview themes and research questions, questions and research problem are illustrated in figure (5.1)

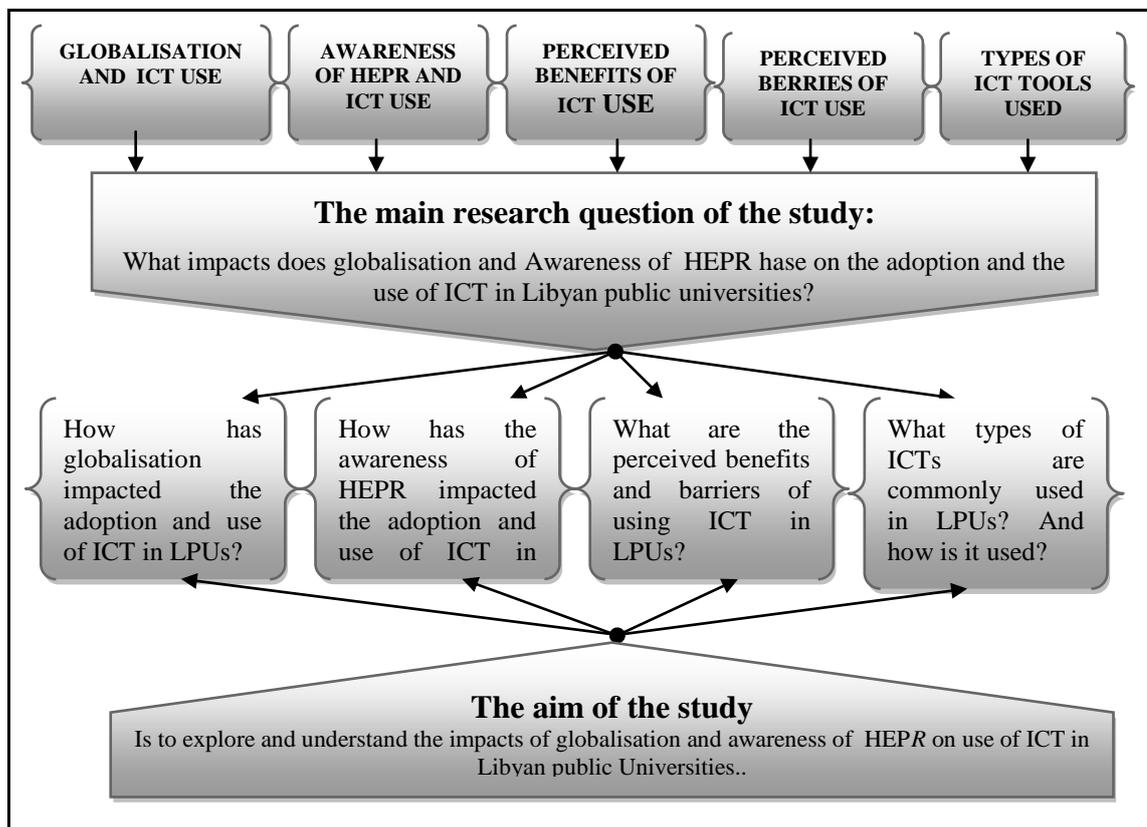


Figure 5.1: Connections between Interview Setting and Research Problem

The questions were asked to each interviewee allowed the researcher to develop a rich and in-depth understanding of the practices, perceptions and experiences of

interviewees on the adoption and use of ICT services and applications, in LPUs. In addition, these interviews had strengthened the bonds of trust between the researcher and interviewees, as these interviews give the freedom to talk about their experiences, beliefs and practices and perceptions associated with the phenomenon, and thus avoid bias in their responses. As well as each interview started with ask an initial question at the beginning of each interview, and at the end of the interviews all the participants were asked if they would like to add any additional information relating to any of the issues contained in the questions. The interviewees' data seems to be comparatively broad on this subject. Most participants spoke confidently and appeared not to have any objection to being recorded. However, there were some instances when they felt that what they said might have implications and could possibly affect them at some future point if it was know that they had said it and so they asked the researcher to make sure that their anonymity was protected.

A number of the interviewees knew the researcher, as the researcher used to work as a journalist. On this point, as the interviewer, the reviewer ensured that objectivity was maintained and did not allow the relationship to affect the interview data. Moreover, several interviewees, whom the researcher was meeting for the first time, were also open and willing to talk about their routines, roles and opinions without reluctance. This reflected the approachable nature of the participants and their willingness to express opinions. They were a useful source of inside information and, in terms of quality, their interviews are one of the main strengths of this thesis. Most of the participants agreed to be acknowledged by name or position in the study, although some did not

Accordingly, the semi structured interviews with 44 graduate students and 10 academic staff 12 in the UoT, who are believed to have an active role when planning for and designing ICT services and applications. These interviews with them helped the researcher to explore the reality of implementation and current use of ICT, especially in the UoT. They also helped the researcher to discover the factors that affect the successful implementation and use of ICT, on the one hand, and the discovery of the difficulties that hinder its implementation and use of ICT in LPUs on the other hand.

Six interviews were conducted with Higher Education Officials from the MoHESR, who have information about the ICT program in LPUs, and also have a direct relationship with the development of plans and policies for the program in LPUs. Therefore, these six interviews were also semi structured interviews to exploring issues relating to the adoption, implementation and use of ICT services and applications in the specific context. More details will be provided in subsequent sections of this chapter.

As mentioned previously, all interviews were contacted by the researcher himself , he was keen to meet with the right people and test their knowledge of the phenomenon. Although the selection was based on recommendations to some experts in the field, some of the experiences of these experts were not sufficient to meet the expectations of the researcher. However, the researcher was very keen on the diverse selection of experts in ICT.

Questions were asked to each interviewee, as appropriate, to gain further insight, also some other specific questions were more relevant to some interviewees that

formulated for each group than others. The participants were asked to answer the interview questions to the best of their knowledge. If the questions related to situations in which some of the respondents had no personal experience the participants were asked to give their perception of the overall situation at the UoT. For instance, if a question about using a particular ICT application in the university could not be answered for a specific learning or teaching context by the participant then the participants gave their views in relation to the whole university context. For example, ‘‘ HEPR ‘‘ related question were typically more relevant to Higher Education Officials, while the issues related adopting and use of new ICT question were more relevant to graduate students and academic staff.

Also, the researcher was keen to review and analyse the documents issued by the Jordanian ministries, especially MoHESR through the National Committee of Universities (NCU), General Authority for Information and Telecommunication GAITs and National Planning Council the executive arm of the MoHESR policies and plans, about current projects and future of ICT in Libya. In addition, review and analysis of periodic reports issued by The Organization for Development of Administrative Centers (ODAC) which represent the (NHEPR2008-2013). Therefore, the researcher was keen to choose reports and periodicals issued by the governmental ministries and departments, as well as any other organisation that have a direct responsibility in the implementation and evaluation of ICT services and applications in developing countries in general and Libya in particular. However, these documents was different in terms of importance from one phase to another. Among these documents highlight the ICT sector in LPUs, ICT vision in Libya, and the New Higher Education Policy Reform NHEPR 2008-2013.

After the data set had been collected and organised by the researcher himself, the results were coded to answer the research questions. This is described in the next subsection.

5.2.2 DEVELOPING THE CODE MANUAL

King (2004) defined code as "a label attached to a section of text to index it as relating to a theme or issue in the data which the researcher has identified as important his or her interpretation (p: 257). A code template for the analysis was constructed that would aid in guiding, organising and interpreting segments of similar or related text whilst enhancing the credibility of the research by providing a trail of evidence.

Based on the some previous literature those interested in data collection and analysis three techniques can be used for coding: manual coding; computer coding and; a combination of these. According to Kelle, (1996) computer-aided methods can enhance the validity of research findings from qualitative studies and can be more easily be viewed and compared. This increases the trustworthiness of qualitative findings considerably, because these facilities can confirm that the research questions are actually stranded in the data and not based on lone and extremely untypical events.

In this study, a combination was used basic productivity software (Word, Excel) to facilitate the coding, and sorting, of the research data. In this vein and in an attempt to avoid bias and data invalidity this study and once all interviews had been conducted. The next stage was coding the words, paragraphs, items, themes, and concepts were coded in the data. The researcher began the coding procedure while reviewing the transcript from one interview, and decided to use coding for the data analysis as he

wished to reveal the points of view of participants, and made notes, comments, the margins of the transcript while reading it.

Charmaz (2006) argues that openness in the initial coding helps researchers to explore and allow new ideas to emerge. During this however, the interviews were analysed and coded using the segments word by word and line by line. According to Charmaz (2006). After additional codes had been extracted from the raw data, the researcher searched for links between codes in order to begin creating new categories or to discover whether they were appropriate to existing categories. A listing of codes had been brought along within the sort of a guide, within the method of which subcategories as well as some new classes appeared. This process was repeated with the transcript from the second interview. Once the list of categories from this transcript was created, the researcher compared the two lists and merged them together. The process continued until all the associations in all the interviews had been analysed and the final list of categories and subcategories emerged

5.2.3 IDENTIFY ITEMS, THEMES, AND CATEGORIES

The analysis of the data was carried out by using thematic content analysis. According to Joffe and Yardley (2010), content analysis offers a model for systematic qualitative analysis, the analysis of data involved the use of thematic analysis. This section outlines how analysis of the data from sixty semi structured interview transcripts progressed toward the identification of overarching themes. The researcher has taken into account some of these stages which are suggested by Creswell (2009). Based on Creswell's six-step, the researcher prepared the information and deleted any irrelevancies, matched pieces together, and arranged data in chronological order or

according to subject. A considerable amount of unedited raw data was gathered from the interviews, which were transcribed, arranged before writing the final analysis. See table (5.1)

	Step	Description
1	Preparing data for analysis	<ul style="list-style-type: none"> • Transcribing interviews and translating them into English. • Prepared tables according to the pre-coded set of factors
2	Reading through all the data	The researcher went through the whole data and wrote general ideas about its information and the part incipits thoughts
3	Coding process	Using the prepared tables and fitting the findings into the predefined codes. Newly identified topics and findings were given new codes
4	Identifying themes/factors	Narrating a story around the new findings through connecting the different themes and factors.
5	Interrelating themes/factors	Performing an analytical discussion about the factors and their Interrelation, the multiple perspectives and themes.
6	Interpreting the meanings	The author gave meaning to the data, through comparison with the literature and the author's own understanding and interpretation

Table 5.1: A frameworks for the analysis of the interview
Source Creswell (2009)

Thematic analysis, as described by Braun and Clarke (2006), is an approach that is theoretically flexible and used for analysing qualitative data. It provides rich descriptions of experiences that are often neglected by the positivist, scientific method (Halland, 2007)

This section combines the data obtained from the sixty participants' perceptions during fieldwork into themes. The purpose of this section therefore is to provide

transparency of how the researcher developed the overarching items, themes, and categories from the interview data. However, it needs to be noted that whilst the stages described appear to be a linear, the research analysis was more of an iterative and reflexive process. In this study, all audio-taped data was transcribed into word format after completing all interviews. In order to identify items, themes, and categories the researcher were taken several steps. Various were directly obvious and others were revealed upon further analysis. Focusing upon how globalisation and awareness of implementation of HEPR has impact use of ICT, analysed data revealed three main items that were identifiable.

A list of three main items with a set of themes and categories are linked to the aim and objectives of the study, depending on the level at which the interviewee is located. These items, themes and categories emerged from the responses of the sixty participants .Therefore, a technique of pattern matching was applied (Yin, 2009); according to Yin pattern matching strengthens the internal validity (2009). Further, the analysis allowed more themes to emerge from the data and hence new categories were identified and the initial framework revised. Another advantage which justifies the selection of content analysis is the possibility to go back to the original raw data and check for missing themes or wrong. Yin (2009) argues that in case study research much of the analysis depends upon the researcher's own style of rigorous thinking. This makes the analysis process prone to researcher bias; therefore, the researcher took measures to overcome this issue. The feedback from the interviewees was placed under three main items with sets of themes and categories as follow :

GLOBALISATION AND ICT USE: This item includes two themes (1) Definition of globalisation (*Difficulty in precise definition of globalisation, economic globalisation,*

political globalisation, cultural globalisation, technological globalisation, and links between globalisation and ICT) and (2) Impact of globalisation on ICT use

AWARENESS OF IMPLEMENTATION OF HEPR AND ICT USE: This item includes two themes (1) Definition of policy, and (2) Impact of Awareness of implementation of HEPR on ICT

ACTUAL USE OF ICT This item includes three themes (1) perceived benefits of ICT use , (2) Perceived berries of ICT use , (*lack of ICT training and lack of ICT infrastructure,*) and (3) Use of ICT tools(*Propose of using ICT use and types and frequency of ICT used*) . Figure (5.2) describe items, themes, and categories, were relevant in the current study.

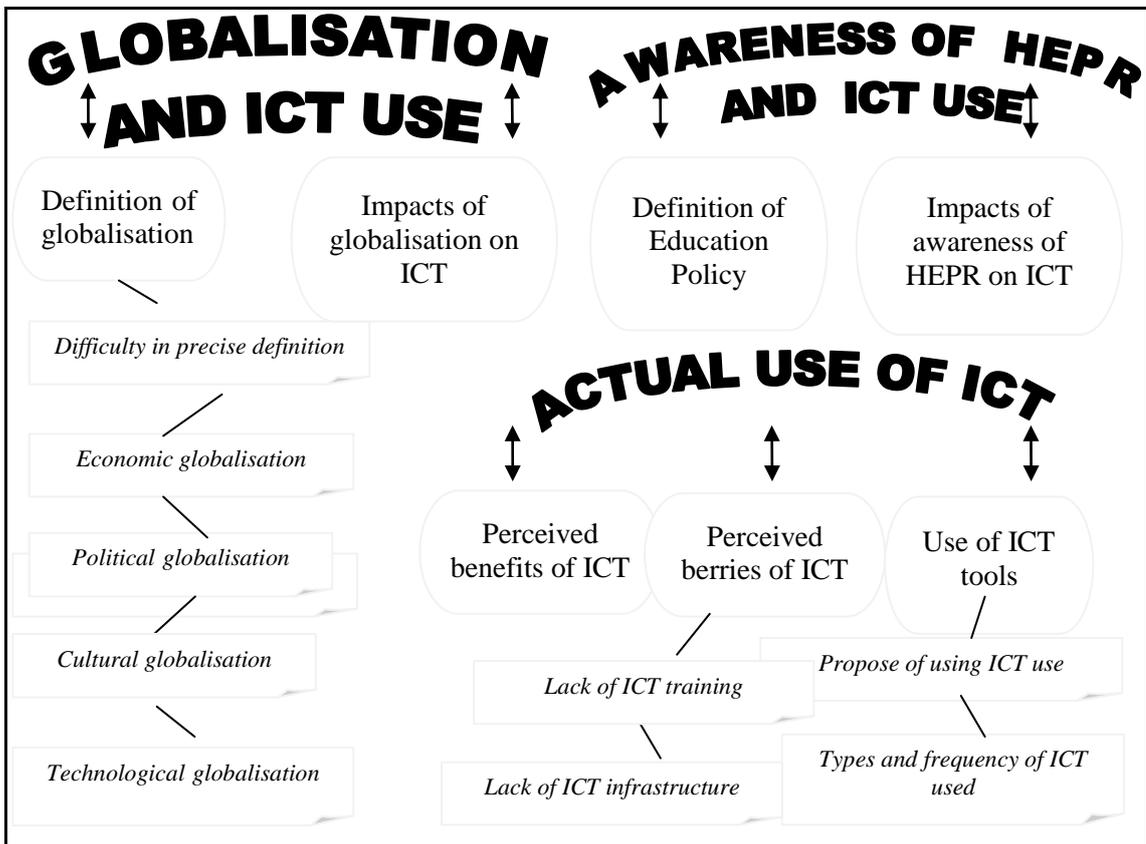


Figure 5.2: Item .themes, and categories

However, the connection between those themes is that each theme builds upon the other via the following logic by asking a set of questions.

5.3 INTERVIEWEES BACKGROUND INFORMATION

Identifying the characteristics of the respondents was not part of the specific objectives of the study. However, it is necessary to present this data for the reader to understand the background of the respondents. The researcher argues that the characteristics of the respondents will provide a full picture of the suitability of the respondents for this study. Moreover, an understanding of the background of the respondents sheds some light on the factors that influence the use of ICT by the respondents. This information is significant to the research because it aids the person who reads it to understand specific relevant subjects that may have an impact on the analysis, for example how the background information is relative to the assessment process. Results indicated that all participants were male, and all of them directly involved in the Libyan university education sector. As shown in figure (5.3) the “graduate students” category took the largest portion of the interviewees, with over 44 while the academic staff categories took the least portion of 10 people .and only six Higher Education Officials.

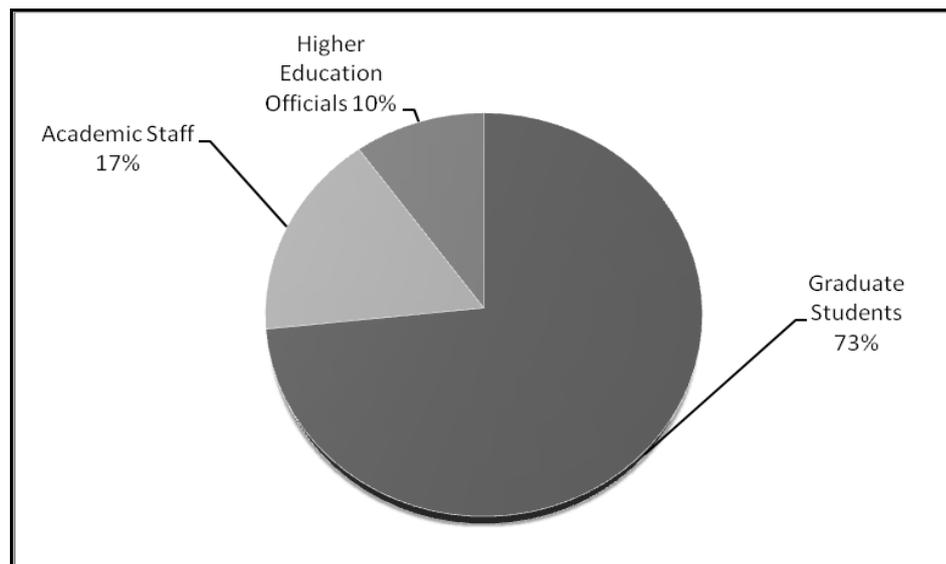


Figure 5.3: The percentages of participants

5.3.1 EDUCATIONAL QUALIFICATIONS

All of the graduate students (N = 44) held a graduate higher diploma. They consisted of six students from the faculties of Law and Art, and eight students from each of the faculties of Engineering, Economics, Science and Information Technology.

Data shows that a large majority of the academic staff (N = 7) hold a PhD degree; two of them hold Master's degrees whilst only one of them holds just a Bachelor's degree (BAC). Table (5.2) shows that the large majority of the Higher Education Officials (N = 5) hold a PhD degree and only one of them holds a Master's degree. Two had specialised in science, two in economics and two in the management sector.

Table (5.2) presents background information on the participants in terms of educational qualifications.

Educational qualifications				
	Graduate Students	Academic Staff	Higher Education Official	Total
PhD	-	7	5	12
MSc	-	2	1	3
Graduated Higher Diploma	44	-	-	44
Bachelor's Degree	-	1	-	1
Total	44	10	6	60
Experience in using ICT				
	Graduate Students	Academic Staff	Higher Education Official	Total
Less than one year	-	-	4	5
One year	1	2	1	4
Two years	2	2	-	2
Three years	13	3	-	16
Four years	15	2	1	18
Five years	10	1	-	11
More than five years	3	-	-	3
Total	44	10	6	16

Table 5.2: The Interviewees background

5.3.2 EXPERIENCE IN USING ICT

The study shows that all the graduate students have a good experience in using ICT tools . They used ICT for more than one year, and all of them could provide important information about the adoption and use of ICT within the Libyan Higher Education Participants were asked to indicate their ICT experience. All they had been using ICT from one to six years, only one academic staff had less than one year, experience and other graduate student had more than six years. These frequencies indicate that the most majority of participants are not new to ICT context.

The most majority of graduate students (N=41) have more than three years of experience in using ICT use. Table (5.2) shows that there is no significant differences were found between academic staff and Higher Education Officials while there is only one of the Higher Education Officials had one year experience while two of them had two years of experience, and also two of them had three years of experience.

5.4 GLOBALISATION AND ICT USE

This is the first item. It has two themes (*Definition of globalisation, and impacts of globalisation on ICT use*) that emerged from data analysis. It explore the meanings of globalisation, and its impacts on ICT use at the LPUs which was based on the research objectives of this study and as mentioned previously in the literature review. This item focuses on the findings of the study in relation to the first part of the first research question: how has globalisation impacted the adoption and use of ICT in LPUs?

5.4.1 THEME 1: DEFINITION OF GLOBALISATION

In this theme ,the researcher tried to categorise a range of meanings of the concept, bearing in mind that these categories overlap and are causally dependent, and some

participants' perceptions were difficult to categorise as each participant's response stems from his personal experience. The researcher believes that firstly recognising and understanding any issue is the main key to how to deal with it. The researcher suggests that the understanding of how participants perceive globalisation will shed light on their reaction to it, thus question number one was what does the term "globalisation" mean to you?. This question asked to the respondents (graduate students, academic staff and Higher Education Officials) to explore their personal understanding of globalisation.

The aim of this question was to determine whether their definitions would be different from those described in the literature review. As well through this question, the researcher sought to elicit the different understandings of globalisation from the point of view of each participant and to determine their perceptions towards this concept.

This question therefore is the investigation of how the participants perceive globalisation. However, there are conflicting definitions and conceptions of the phenomenon of globalisation.

This theme therefore is the investigation of how the participants perceive globalisation. The responses gleaned by this theme were quite varied and reflected the position of each respondent. However, based on the responses of the participants, five categories constituting different definitions of globalisation, emerged from the data within this theme, these categories are: (a) *difficulty in precise definition*, (b) *economic phenomenon*, (c) *political phenomenon*, (d) *cultural phenomenon*, and (d) *technological phenomenon*. These are explained in the following subsections

5.4.1.1 DIFFICULTY IN PRECISE DEFINITION OF GLOBALISATION

The first category that emerged within the first theme was difficulty in precise definition of globalisation. This category emerged from the beliefs of the participants that there is no one definition of this phenomenon. In line with widely held views and the literature, as for example an academic s mentioned that:

“Globalisation is a highly complex term; it is a controversial concept. Definitions of globalisation vary considerably according to standpoints” (AS6)

All of the sixty participants stated firmly that it is difficult to agree on a definition of globalisation. As one participant noted:

“ Globalisation, from my point of view, has many meanings depending on the context. It is a term that is too broad and too ambiguous and it is sometimes difficult to determine one precise definition of globalisation” (GS6).

They all agreed that globalisation has multiple meanings and that it is difficult to define it precisely.

“In my opinion no one can define globalisation by one definition due to its multifaceted each one define globalisation according to his or her’s interest” (HEO1)

As they agreed that globalisation has multiple meanings and it is difficult to define precisely.

As shown in table in table 5.4 all participants are agreed that the term globalisation is difficult to precisely define. This was consistent with much of the academic literature on globalisation which is very general, highly controversial and shows a multitude of diverse, often contradictory, views reflecting a rather heterogeneous group of subjects

in the areas of economics, culture, politics and technology amongst others. Giddens (1996) also argued that “globalisation has come from nowhere to be everywhere”.

5.4.1.2 GLOBALISATION AS ECONOMIC PHENOMENON

The second category, globalisation as economic phenomenon, has consistently been found in various views of participants who see globalisation as an economic phenomenon.

“For me globalisation means that Libyan economy is part of the world economy.”(AS:2)

However, most of the believed that globalisation has brings people together in a world without borders.

" Globalisation for me is an inevitable phenomenon that deserves to be studied across various disciplines". I look at globalisation is 'no boundaries'. All people are one they are linked together economically and socially by ways"(GS:32)

On the other hand, some participants pointed to the speed of change and observed that this too impacts on economic issues:

“The current globalisation is powerful. An example is the strong economic current. Before globalisation, Libyan people worked in order to have enough for living but now and due to the power of globalisation the economic system has become more complicated. The social current has also arrived very fast and has become more complex” (GS: 19).

They frequently defined globalisation in terms of the economy and free trade as two academic staff define globalisation as follow:

“I can see globalisation as influx of foreign goods, services, and capital foreign goods, and service”(AS:5)

This definition is supported by Soros (2004) who viewed globalisation as an economic phenomenon “ the development of worldwide monetary market, the expansion of international firms, and their increasing domination over domestic economies “.

A majority in this category noted the interdependence of countries depending on each other for resources as well as to benefit the economy. A participant described it in terms of interconnectedness of the world and commented that:

“Globalisation can also be seen as increasing international trade across boundaries” (AS:7)

This definition is in agreement Peta (2002), when he defined globalisation as a rapid growth in international occupation through the area and extension of external direct investment throughout the recent two decades that has controlled the making of a new global economy.

5.4.1.3 GLOBALISATION AS POLITICAL PHENOMENON

The third category of definitions on globalisation focuses on political aspects significant majority believe that globalisation means a political term. One of participants claimed that :

“Globalisation may mean government is playing less and less role in the economy” (GS:9)

Some participants understanding of globalisation and its effects over the nation states.

One of them argues that:

“I think globalisation has brought along total rethinking of political structures especially with developing countries” (HEO:5)

The previous definition was reinforced by Friedman (1999) who argued that ‘globalisation is a process by which individuals as well as companies become

empowered’’. As mentioned in literature review chapter , this is because many of organisations such as (UNESCO; WB ; OECD; and GATT) are well funded and supported and this can put pressure on the leaders of nations who rely on their help. The multinational organisations have political impact in that they often create new positions in the global political hierarchy.

Also other academic staff considers globalisation as a political forces .He said :

“I see globalisation as a political pressures of more powerful states and invasion of new ideas” (AS:8).

Another academic staff add:

“Globalisation is that external forces which impact the local authority including its public policy or education policy of underdeveloped countries” (AS:7)

While a graduate student said :

“Globalisation for me is that its growing power and forces, I mean the world has witnessed un-equal distribution of wealth between all countries over the world , increased poverty in underdeveloped countries, moves to be more attractive to capital than to be more socially beneficial for its population” (GS:16)

These previous point of views is in keeping with the Weiss (1999) who asserted that ‘globalisation has largely become synonymous with the erosion of state power. And also with Carnoy (2001) who conclude that the nation-state may be on the way to extinction and that the stage is set for a new “global democracy”.

5.4.1.4 GLOBALISATION AS CULTURAL PHENOMENON

Globalisation has affected Libyan society in many ways. In terms of cultural or Educational technology, Libyan students have been introduced to technological in the

form of the Internet and other many deferent tools of ICT and Libyan people in general have been culturally influenced by foreign countries, which are sometimes not appropriate to the Libyan context .However ,participants frequently referred to the worldwide community with easier accessibility to other cultures and countries, and living together in a global society, These results indicates that the globalisation is considered as a cultural phenomenon, as one participant said :

“ I can explain globalisation by saying it is that thing which leads to the promotion of the free exchange of cultures, materials and ideas between states on earth ” (AS6)

This finding was consistent with what has been mentioned in the literature review chapter with Strange (1995), who think that globalisation may be a term employed by thinkers who are referring to trends in style, in tastes for food and drink, clothes, music, sports and diversion within the provision of economic services and therefore scientific research, either in causes or in consequences. However, the knowledge of what’s going on across the world in real time, due to the media, makes the world much smaller, and the mobility of students around the globe and the diverse job opportunities in the global market has required broader training opportunities. This is supported by an academic staff’s view .He claim that:

“ Globalisation has changed Libyan society. In the past, we thought that computers were not necessary to our life; we did not have to use English language because we are Arab and we have the Arabic language as our national language. But arrival of globalisation has awakened the Libyan society. Universities have become alert to teaching students with the Internet to offer the great chances for Libyan students use English to communicate with other foreigner’s students around the world ”(AS6)

And with another views of one graduate student who said :

“In my view globalisation means, all people are one. They are linked together socially by ways ”(GS:11)

The previous definitions concurs and these point of views can also be linked with Giddens (1996) who defined globalisation as the increase in the development of social relationships in the whole world which link countries in such a way that local happenings are formed through events which may occur in very remote areas and vice versa. He also views globalisation as

“globalisation mean the mixing of different cultures. it is basically where all the countries over the world just spread of ideas and a little bit of their culture”(GS:25)

The transfer of social local activities through establishing a huge network of relationships whose scope is worldwide”. On the other hand, one of academic staff believed that cultural globalisation has benefit in term of learning new language he said :

‘For me, the main opportunity provided by globalisation for Libyan university education is the foreign language teaching. This is one of the most important elements of the curricula in Libyan Higher Education Institutions ‘ (AS1)

5.4.1.5 GLOBALISATION AS TECHNOLOGICAL PHENOMENON

The majority believe that globalisation means the growing technology and ICT application in Universities and our lives. Many participants defined globalisation in the context of increasing technology and ICT. These participants realised the importance of technology and ICT in the global society. Some of them define globalisation as technological phenomenon. As one academic staff said:

‘Globalisation is the huge influx of new knowledge and ICT due to new ways of acceleration of communication and the influx of foreign goods, services, and capital ‘ (AS6)

This is supported by the view of one graduate student he said :

Globalisation in my view means that things or process which led to offers a great opportunities to developing countries to get more and more benefits from the developed countries particularly in term of advanced technology and knowledge also the developed countries can benefit the developing countries through invest their natural resources”(GS:39)

Whereas globalisation perhaps mean coexistence with others, as one interviewee said:

“Globalisation is something positive ,it is the phenomena of being able to communicate effectively learn and work together without regard to religion, culture or location”(AS:10)

However, as seen in the literature review, globalisation has numerous aspects and is typically described in economic, political, social, cultural and technological terms.

This was endorsed by one of the interviewees who stated that:

"Globalisation means the diminishing importance of political, economic geographic and cultural limits through rapid advances in Information and Communication Technology (ICT) which is constantly changing so fast and has played a very significant role in reducing these geographical boundaries”(GS18)

Table (5.3) shown categories of the meaning of globalisation as perceived by participants

	Graduate Students	Academic Staff	Higher Education Officials	Total
Difficulty in precise definition	44	10	6	60
Globalisation as economic phenomenon	28	6	4	38
Globalisation as political phenomenon	18	8	2	28
Globalisation as cultural Phenomenon	15	3	1	19
Globalisation as technological phenomenon	32	7	3	42

Table 5.3 Respondents' opinions regarding meaning of globalisation

Table 5-3 sums up from this analysis on the meaning of globalisation according to the respondents. As presented above, it is clear that all of the respondents have some different ideas on what globalisation means, In line with widely held views and many of the views presented in the literature, over one-half of respondents (N=42) believed that globalisation signifies growing technology. Surprisingly, of the ten academic staff, seven were did not view globalisation as signifying growing technology. This supports Farazmand's (1999b) claim that "innovations and adoption in ICT, and the Internet have contributed significantly to the globalisation phenomenon".

Some of respondents (N=38) claimed that globalisation is an economic phenomenon. This reaffirms the views of scholars such as Castells (2005), Porter (2001), Burbles and Torres (2000), Gray (1995) and Stromquist and Monkman (2000). This view was supported by Soros (2004) who viewed globalisation as "the development of the global financial market, the growth of transnational companies, above general economies" and Scholte (2000) who also described it as the growth in international exchange and interdependence. Others such as Featherstone (1995), Weiss (1999), Friedman (1999, 2006), Carnoy (2001), Tabb (1999), Castells (2005) and Scholte (2000) defined globalisation as including political aspects. In addition, globalisation was labelled by most of the respondents (N=19) as a cultural phenomenon. However, only one member of Higher Education Officials viewed globalisation as a cultural term.

5.4.2 THEME 2: IMPACTS OF GLOBALISATION ON USING ICT

The theme the link between globalisation and the adoption and use of ICT, emerged in the explore participants 'opinion, about how globalisation had impact adoption and use of ICT.

All the participants had positive views about the role of globalisation on ICT adoption and introduction to universities. This point of view is in agreement widely reported in the literature (e.g., Burbules and Torres 2000a; Schultz and Kitchen, 2000; Farazmand, 1999b and Carnoy, 2001). While, most of the participants, believed that globalisation decrease the time and geographical space between different parts of the world which lead to increasing the opportunities to adoption ICT. This convergence encourage the transfer of technology as well as adoption the new ICT such views came through in some of the interviews, for example one head of faculty declared:

‘In my view one of the most important opportunities offered by globalisation in Libyan Higher Education is facilitating ICT adoption and easy usage of the new technologies and having access to the most recent tools of ICT and finding the information one needs easily and quickly (AS 9).

This is agreed with an Higher Education Official who confirmed that:

‘Libyan universities have to depend on good policies in order to take greater advantage of the opportunities offered by globalisation; this is one of the most important responsibilities of Libyan policy-makers’

Other academic staff claimed that:

‘Libyan universities have taken advantage of the many promising opportunities offered by globalisation and take advantage of expanded opportunities presented by global integration by contract agreements with other universities in developed countries which, in turn, lead to effectively utilizing and adopting ICT within our universities’ (AS6)

The majority of participants believes that in promoting the use of technology globalisation has presented new methods of learning and teaching including use of the Internet, which allows students and teachers to access new information, ideas and knowledge rather than relying only on text books, According to participants globalisation, further, impacts not only on using ICT in HE but also affects them

visions and perspectives. The effects of globalisation have had the most influence on graduate students at this stage; but this will change and all teachers, even the resistant, will respond and deal with those effects. Of course, from an educational perspective, there is always a need to ensure appropriate quality control when introducing new technologies into the universities, as a graduate student said:

'In my view, globalisation contributes significantly to the expanding of the adoption of new and modern technologies and ICT tools in Higher Education Institutions including in universities in the country and in making Higher Education more accessible through the adoption and use of information technology in a number of Higher education institutions ' (GS15)

This opinion was reinforced by a comment made by another interviewee when he stated:

'Globalisation has contributed to the growth of ICT, applications principally in Higher Education field which led o increase to use modern educational technology like electronic medium teaching and learning'' (AS3)

Almost all respondents agreed that globalisation can be seen as a significant tool with regard to the adoption of ICT in the Higher Education Sector. They believed that globalisation encourages technology by increasing competition and by speeding up the diffusion of technology through foreign direct investment, as is illustrated in this participant's response:

'In my view it is indeed a golden opportunity for Libya in general and for its Higher Education System in particular to take advantage of a window of opportunity created by foreign direct investment which opens up new horizons for the introduction and adoption of modern ICT in Libyan Higher Education Institutions'' (GS26)

The growth and significant increase in foreign direct investment (FDI) as a consequence of globalisation brings with it new foreign technology which might

therefore increase the chances of the adoption, acceptance and use of new ICT in order to be able to take full advantage of the opportunities offered by globalisation, as well as facing the challenges and opportunities of globalisation. This also was supported by the participant who noted that:

‘International trade is one of the greatest vital aspects of economic globalisation and can directly contribute to increasing foreign direct investment which leads to widespread adoption, use and application of ICT in our universities’ (GS38)

On the other hand Some participants also stated that the existing political instability due to power of globalisation in the Arab region constitutes an obstacle to implementation or adoption of technology , including ICT services and applications:

‘However, political instability in the region affects foreign investments, particularly investments in information communication technology’ (HEO:1).

‘Therefore we can say that many wars or proplems in our region have contributed greatly to the decline in many industries, including ICT industry’ (AS:9).

The speedy impact of globalisation enhances and assists in the rise of the adoption of ICT. Most participants agree that there is a reciprocal relationship between the forces of globalisation and ICT adoption.

‘Globalisation is a major driving force for ICT adoption. At the same time ICT is considered as one of the pillars of globalisation’(AS3)

The growth of globalisation and the development of the Internet and many other ICT tools has transformed learning and teaching occurs instantly and everywhere. One interviewee outlined his views on the opportunities provided by globalisation for Libyan university education as follows:

‘In my view one of the most important opportunities offered by globalisation in Libyan Higher Education is facilitating

scientific collaboration and easy data, and having access to the most recent scientific research and finding the information one needs easily and quickly. (HEO 6)

Globalisation can also appear to be fundamentally changing the relationship between universities and the outside world, and making their boundaries more porous, as another academic staff confirmed that:

The internationalisation of Higher Education is one of the manifestations of globalisation. It is also one of the factors influencing new Libyan HEPR through international cooperation agreements with a number of foreign universities. We benefit from the experiences and resources of the most developed countries and send our top students to study overseas. (AS 5)

The globalisation process has been considered as the reason for ICT adoption. Through globalisation the Libyan Higher Education environment will be advanced by increased technology and ICT adoption and use. As one participant said:

'Globalisation is the huge influx of new knowledge and information communication technology owing to new ways of acceleration of the communication and the influx of foreign goods, services, and capital'(GS 4)

These flows of knowledge according to him have been made possible by technological change, especially the growth of electronic forms of communication. However global flows of information and data currently most affect Libyan university education. As one interviewee outlines his views on opportunities of globalisation for Libyan university education as follows:

'In my view one of the most important opportunities offered by globalisation in Libyan higher education is facilitate scientific collaboration and easy data. and have access to the most recent scientific research and find the information they needed easily and quickly. Libyan universities must have to depend on good policies in order to take more advantage of the opportunities offered by globalisation ,that is one of the most important responsibilities of Libyan policy-makers''(GS18)

This opinion was reinforced by a comment made by another interviewee when he stated:

“Globalisation have contributed to the expansion of new information communication technologies, especially in research centres and universities. However, this expansion to use advanced educational technology such as electronic medium in distance learning Particularly for a country like Libya which has vast distances between its cities, distance and e-learning programs are of a great value”(HEO4)

In reflecting upon the impact of globalisation on higher education in general, many discussed increased access and communications using technology through the internet and the worldwide web. One of the participants stated that:

“There are new ways to access information and to learn. It is a global market where a product can be sold to anyone in the world, anyplace at anytime.”(AS: 8)

This opinion was reinforced by a comment made by another interviewee when he stated:

“Rapid advance in technology and communications mediums can be seen as a threat or as an opportunity but has become a way of doing business. In most cases it has required a huge learning curve with ongoing maintenance and costly upgrades.”(GS:34)

However, While globalisation in the form of technology influences Libyan public universities in providing new ways of learning, or teaching the Libyan higher education system as a whole has a responsibility to recognise that not everything that comes from the new technologies is of benefit . As one Higher Education Officials said:

“New ways of learning and teaching from globalisation are needed in the Libyan higher education system, but these have to be implemented with care and everything needs to be considered with an understanding of its advantages and disadvantages.”(HEO: 4)

Globalisation, in the forms that we have described above, may have significant consequences for the morale and cohesiveness of the university. It impacts most significantly on universities by extending the territorial bases of knowledge. Knowledge is more publicly available than before, and is no longer confined to elites. A key characteristic of knowledge, globalisation, which has directly influenced teaching and learning, is found in the huge and rapid application of ICTs in higher education system to enhance effectiveness in learning. Overall, there has been an increase in skills needed in the workplace as a result of information technologies. In firms adopting these techniques skills sets shift from manual and craft skills to higher level cognitive skills. The development of satellite television and information technology are two major factors in the development of a new society. Overall, the participants were optimistic about the role of globalisation in ICT adoption and use in Higher Education.

In sum the drivers of globalisation may directly affect the actual ICT use. Even though, there was no agreement by all participants on what is meant exactly by the globalisation. However, they agreed that globalisation is manifested in different aspects, such as technological, economic, political and cultural aspects, and that each of these aspects have an impact on the adoption and use of ICT within universities. These results are consistent with the findings in the studies of Jeon et al. (2006). They found that globalisation had influences on e-adoption knowledge of IT/e-business in South Korea. Most of the participants believed that globalisation decreases the time and geographical space between different parts of the world which leads to increasing the opportunities for the adoption of ICT. This convergence encourages the transfer of technology as well as the adoption of the new ICT. This finding is in line with

Farazmand (1999b), Giddens (1996), Castells (2005), Porter (2001), Burbles and Torres (2000), Gray (1995) and Stromquist and Monkman (2000).

Language, on the other hand, plays a key role in the globalisation of culture and the results of the present study found that the English language can be considered as one aspect of cultural globalisation and it can also be considered as a barrier to the adoption and use of ICT. This result is in line with Altbach (2004) who reported on "The facility of English for communication as an element of globalisation, and Higher Education worldwide should contend with the role of English". According to Altbach this role of English "can give English-speaking authors an advantage to control the international academic marketplace". Teaching of the English language in Libyan educational institutions begins at quite a late stage in intermediate and secondary school and this could be one of the major factors affecting the students' ICT adoption and use.

According to the participants, software is frequently provided in English first and then in other languages, impacting on effectiveness when the software becomes further available to diverse language speakers. This result also is in line with Altbach (2004) who argued that "English is the language of scientific communication and advancements in ICT in Higher Education" and with Crystal (2003) who reported that English is the global medium of communication of the world's scientific knowledge, especially in areas such as science and technology and ICT. Abdalhaq and Yasin (2008) found that English language skills are considered as the main factor that has a positive impact on teachers' attitude towards IT uses in Palestinian schools. However, it is vital for universities to develop strong relationships with communities and this should be the joint responsibility of governments and civil society.

This relationship between the impact of globalisation and ICT adoption and its use in university education are described in Figure (5.4)

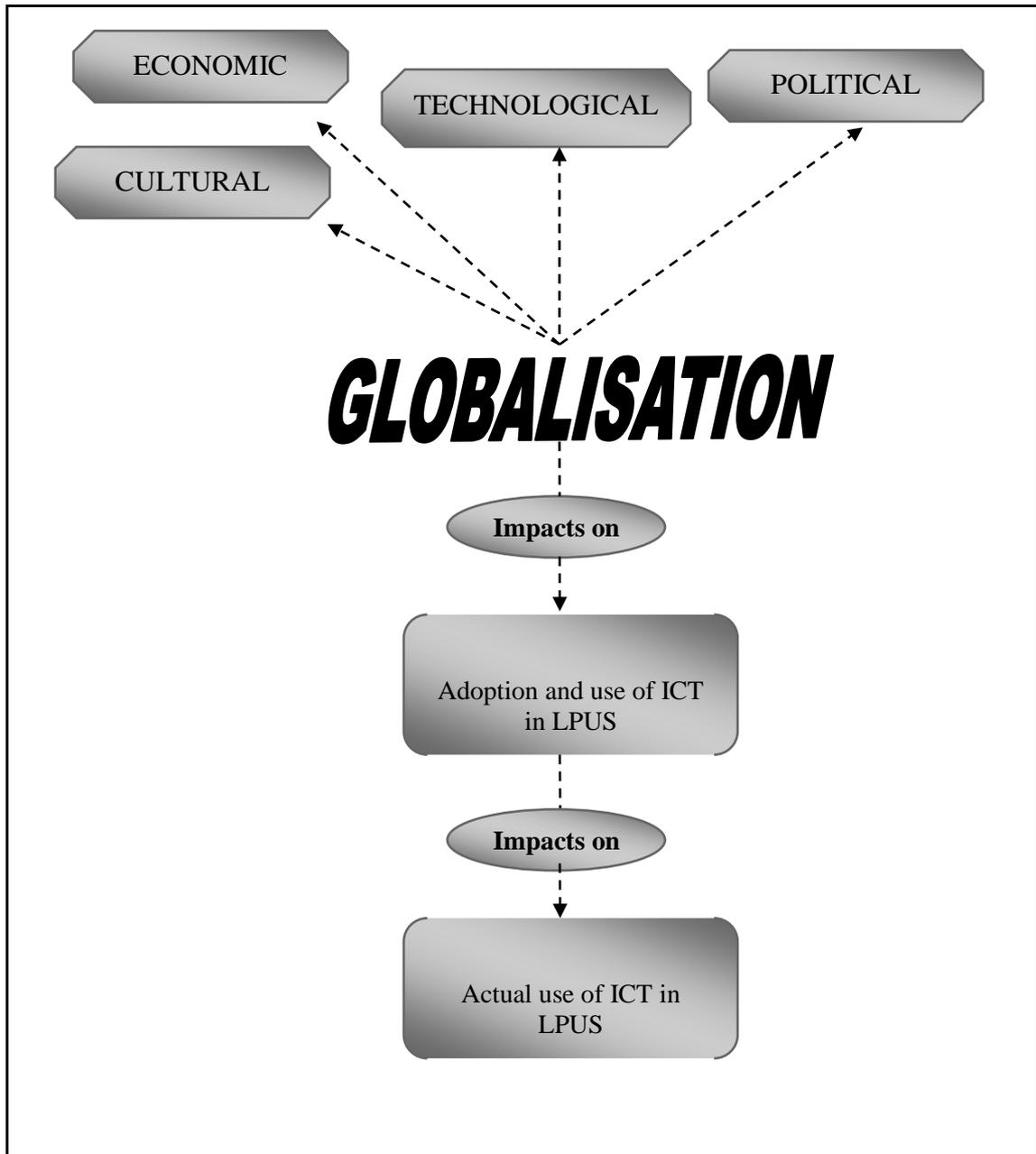


Figure 5.4: Globalisation category has an impact on the adoption and use of ICT services

The following section explores the link between the awareness of HEP implementation and the adopting and actual use of ICT according to the views of participants.

5.5 AWARENESS OF IMPLEMENTATION OF HEPR AND ICT USE

The second item investigated during the field study was awareness of implementation of HEPR. This item provides an in-depth content analysis of the interviews and deals with what the participants said about ICT in Libyan Higher Education Policy and their interpretations or understandings of this. This item deals with the analysis based on the second research objective of this study which was clearly stated in section 1.5. It includes two main themes (*Definition of Education Policy, and Impacts of awareness of implementation of HEPR on ICT use*) such as the respondents' perception of the definition of policy and education policy and their impact on ICT adoption. Each theme will be discussed below

5.5.1 THEME 1: DEFINITIONS OF EDUCATION POLICY

This section presents and discusses the explanations given during the interview when participants answered this question 'what does education policy mean to you?'. The most majority of the respondents provided a response to this question, only four graduate student respondents this response was to say they did not understand the question. While all Higher Education Officials interviewed had a good understanding of what education policy is and their interpretations reflected typical phrases like action ,frame work goals .

However ,as already mentioned in the literature review in section 3.2.1, the term 'policy' in general is an elusive concept. The majority of the participants argued that there is no single definition of policy. But most of them agreed with Dye's (1995) simple definition of policy as "whatever governments choose to do or not to do". Some participants viewed policy with regard to education. For example, one Head of department in the MoHESR defined policy as follows:

“Policy in my view is a set of laws and a set of rules through which is determined the general shape and levels of education objectives and the methods undertaken for each of these stages as well as all activities relating to education” (HEO5).

This definition is in agreement with Mengash’s definition (2007) when he defined education policy as the “Articles of the Constitution concerning education, which show the general principles underlying the planning for the establishment of institutions, and the identification of the objectives of the educational process to the supervisors of educational institutions“.

Another participant realised policy as a framework of education and defined education policy as:

’A framework for education which oversees the administrative and the technical work in all educational institutions (AS 9)

One Higher Education Official who had a lot of experience in the education system stated:

“Educational policy that has been followed since the seventies was based on the widespread expansion in the construction of universities and opening the way for students to access higher education. In addition to relying on individuals in society to working in various sectors thus, universities and other higher education institutes were established to providing laboratory and equipment and higher educational means.”(HEO6)

While another participant defined policy as:

‘A certain set of goals, principles and directions that are set by the government and will contribute to development of the educational systems’ (GS 1)

The last definition is in agreement with the official definition adopted by UNESCO (2005) which defined the term policy as “a statement of intent to achieve certain goals by a local, regional or national government of a country”. The researcher concluded that most of the participants did not have a clear picture about what exactly policy means. However, most of them linked the term policy with the laws and legislation

designed to regulate education. The following sub-section explores awareness of HEPR implementation as a factor that impacts on the adoption and the actual use of ICT services .

5.5.2 THEME 2: IMPACTS OF AWARENESS HEPR ON USING ICT

As stated elsewhere, since 2008 the Libyan government has started implementing a new policy in HEIs including in Libyan public universities. These NHEPR lists ICT in university education as one of the areas within this policy that will be developed for implementation. As already explained, this study has chosen to explore the impact of awareness of implementation of HEPR on ICT adoption and use within LPUs through the perspectives of those who teach, learn and administrative in the UoT. It has already been established that the integration of ICT in teaching, learning and administration at the UoT came about when this University became part of NHEPR 2008-2012. However, NHEPR 2008-2012 itself is part of the NHEPR to fulfil the policy of ‘ICTs for every Libyan public university’. However, an awareness of the ICT policy and the services offered by the HEPR is an important step in ensuring that ICT services are used effectively and make a difference to respondents’ learning, teaching or administration. In this vein, graduate students, academic staff and Higher Education Officials who awareness and acknowledge the HEP in the university might prepare themselves by trying to use ICT equipment to search for information for their research. Whereas others, who have not acknowledged this plan, may concentrate only on teaching or learning and not pay any attention to research. All participants, therefore, were asked whether they were aware of the NHEPR on ICT in Higher Education.

The respondents were also asked to describe what they knew about ICT policy in HEP. The results in table (5.4) show that the majority of the participants were not aware of the ICT policy in NHEPR.

Respondents	Do you have awareness of new Higher Education Policy?			
	Highly aware	Fairly aware	Not aware	Total
Graduate Students	10	14	20	44
Academic Staff	5	3	2	10
Higher Education Official	6	0	0	6
Total	21	17	22	60

Table 5.4: Respondents' opinions regarding awareness of implementation of HEPR

As shown in table (5.4) awareness was highest in the Higher Education Officials (where all of them (N = 6) had heard and knew about the NHEPR 2008- 2012, and the lowest in the graduate students (N = 20) where many (N=14) have poor levels of awareness of the policy and only 10 have high level of awareness. Many of academic staff (N=3) mentioned that they have poor or fairly of awareness. While 5 have a highly level, and only 2 completely ignorant of Higher Education Policy. So Most of the respondents (N=38) knew what the HEPR said about ICT at university education level. The respondents were also asked to describe what they knew about the ICT policy in the Higher Education Policy. The respondents provided a variety of understandings and interpretations regarding the HEP and what it says about ICT. Some of them said that the HEP says that ICT should be suffused across all the stages of the Libyan education system in particular at university education level.

One graduate student claimed that:

'I know that the Higher Education Policy recommended the incorporation of ICT tools and all advanced technology into primary, secondary and Higher Education levels. It also states that 'ICT in education should be in place from the Ministry of Education to the local level' (GS :37)

An academic staff member pointed out that:

'' Some local media covered this subject. I have seen a programme on Libyan TV which had coverage of this new policy and they were talking about introducing technology and the use of modern ICT into Libyan universities'' (AS:2)

His view was also confirmed by another academic staff member who stated that;

'' I read in one of the local newspapers that the Libyan government has set out a new programme that aimed to put computer labs in every Libyan public university to make it easier for teachers and for students. I think that was the main goal'' (AS.7)

Another academic staff pointed out that:

'What I've heard is that it is to help the students. Particularly graduate students and academic staff of this University to have access to the computers, to improve students' access, and to develop their ability to apply ICT tools'' (AS: 2)

Also, an academic staff commented on the aware of HEP :

''For me higher educational policy, is which followed by the Libyan state since the beginning of the 1970s in light of economic growth, has been focused on the widespread expansion and opening the way for all people Especially, the country was in need of various disciplines and this has been done in free instruction with the achievement of good outputs until the beginning of the 1980s.'' (AS: 9)

This finding was consistent with what has been mentioned in the literature review chapter.

Hamdy's (2007) point that education in Libya gives everyone the chance to access education from elementary school right up to university and post-graduate study.

However, some participants did not remember what the HEP says about ICT in Higher Education and were not prepared to give their own interpretations.

'I haven't any clear and detailed information. The only clearthing that I know was that this programme was to help the students not just in this faculty, but for all the students in the Libyan public universities to help them learn how to use the internet and computers and for improving their education. (AS:10)

These different but related interpretations of the HEP demonstrates that the respondents were aware of the HEP and had unclear ideas of what the policy actually involved in practical terms.” However, there were those who understood the policy differently. It turned out that most research participants were not aware of any government policy regarding either the introduction or the adoption of ICT in Libyan universities.

Their awareness of such a policy was limited to an awareness of the new HEP that was carried out in the 6 faculties in the UoT. However, only some graduate students and some academic staff involved in the research knew of government intentions from watching the television or from reading newspaper articles regarding ICT in universities.

In terms of the impact of implementing new HEP on ICT adoption and use, many of the graduate students and the academic staff felt that there were big challenges that are closely related to the adoption and use of computer technology and other ICT tools , and this involved the introduction of both successful and unsuccessful Higher Education Policies, Others pointed out that the people who have knowledge of the benefits of technology , especially ICT are the ones most likely to adopt and use ICT services and applications as one participants said:

“Awareness of education policy has an impact on ICT because policy guides the university’s use and adopt the new ICT tools ,through supervise or give orders to ensure the result of the policy in term of using ICT . However sometimes the policy has to face disruption because of changes in the government.” (AS:10)

Most of the participating academic staff and all the Higher Education Officials involved in the survey raised a number of points regarding the implementation of the HEP focusing on ICT adoption and use in university education. The researcher identified these points as "generic" since they apply to almost any situation. The researcher summarises these points in this section and does not discuss them any further. This section concentrates on factors that are unique to Libyan public universities, and particularly on those which are unique to the UoT.

An ICT minded university with campus-wide ICT within the learning, teaching and managerial sectors. A majority of participants suggested that a successful implementation of HEP would help increase the adoption of ICT. Also data from the interviews strongly suggested that HEP assurance of the adoption of ICT at the UoT was being driven by the need to keep pace with the evolution of the new global world. However ,it was shown that, particularly in higher education sector , the implementation of the national ICT policy and the development projects in different domains still lagged behind. As one participants stated

“I think Libyan government policies for change are not enough to implement , adoption and use of ICT in LPUs”(GS:33)

This is in keeping with the Sanders and Premus (2002) summed up four broad mechanisms which a government policy can affect the rate of the technology adoption process (1) the direct funding or performance of research and adoption process

activities,(2) the economic inducements,(3)the Information diffusion, and (4) Infrastructure support .

Moreover, the problems often occur in the implementation process: there are many programs and decisions issued by the MoHESR which are not implemented due to several reasons.

For example, one academic staff mentioned to change of officials as negative factor on the higher educational process.

“At present, higher educational policy follows a scientific approach in the implementation of scientific programs, but the constant change of officials in the higher education sector has resulted in administrative instability, which is impacting of implementation of policies that must be carried out sometimes.” (AS: 2)

This situation related to the same issue show by the following quotation:

“In my view implementation of higher educational policy faces some of the difficulties arising from the cancellation of some decisions by the new officials, as well as the change of the officials from time to time.” (GS: 22)

Another participants claimed that :

“Policymakers have not been dependent on academic staff and university administrations when planning for the development of higher educational policies and issuing some of the decisions taken in addition to the various possibilities of universities and other higher education institutions with regard to the implementation of these policies.”(AS:5)

In describing the instability in Libya’s administrative system in various sectors over three decades ago, the higher education sector suffered from continuing changes whether for officials at the level of the university education or other departments, and

this was due not only to the change of officials but also to changes to some policies and programs which were developed by Higher Education Officials. However, one Higher Education Official attributed the lack of implementation of HEPR to economic and political circumstances: He supposed that:

“In spite of this, contracts had been agreed with some foreign companies such as putting together a plan, consulting, and routes on how to study and implementation the New Educational Structure Plan. Examples were with the German Cole institute in professional area, and with Britain in the medical field and engineering. However, due to economic and political conditions, most objectives of educational policy in this framework have not been implemented.” (HEO:2)

Consequently, the NHEPR2008-2012 was not fully implemented because it cost large sums of money and synchronized with the economic stagnation and decline in oil prices. However, in the absence of full application of the educational structure, only a fraction of its objectives have been implemented such as the creation of some universities . These have been in the context of the NHEPR 2008-2012 which aimed to focus on the quality and effectiveness of higher education in order to serve the development goals at university level. However, according to the analysis the majority of the respondents about the efforts have been made so far towards the awareness of new HEP with regard to the adoption and use of ICT in universities and what support has so far been given. All respondents who specifically answered this question, agreed that Libyan Universities need the right climate for awareness of new HEP in ICT field to grow, and this climate must created by the decision makers and policy makers. The following quotation refers to some issues which follow for the government, contributing to the integrate ICT in higher education :

“The current higher education policy of the State for about five years is to try to focus on quality through introduce ICT in universities and application of the approach adopted in Singapore and the examination system depends on understanding and analysis. On the other hand, it contributes also greatly to the eradication of fraud that was common among students in these stages.” (HEO3)

One interviewee also reported that:

A time will come when the University of Tripoli, as well as all Libyan public universities, will see the face of real improvement. The management is doing a good job by allocating a greater part of the proceeds to developing the infrastructure and equipment of the universities. Apart from the buildings you see on our campuses, NHEPR 2008-2012 is providing billions of L.D for the purchase of office equipment such as computers, printers and photocopiers. NHEPR 2008-2012 is also providing funds to improve library facilities. For instance, an investment in the encyclopaedia project and restocking the libraries is something we need to commend to the administrator and board of trustees. These universities do not have modern textbooks but the NHEPR 2008-2012 will support such initiatives. (HEO6)

Another of the Higher Education Officials was asked during the interview to report on his experience of the HEP implementation and the adoption of ICT. He stated:

“I was aware that the successful implementation of this new higher education policy, including the adoption of ICT in Libyan public universities, requires drive and motivating academic staff and students to adapted to their new modern ICT equipment. Therefore, the ministry always encourages all students and academic staff to adopt and use ICT. We always have had good relationships with students and academic staff. This makes them interested, motivated and more active.”. (HEO1)

The respondents stated that ICT tools are used throughout the university. However, the results of this study show that a lack of a policy or poor government HEP on ICT and on a legislation framework has been a barrier to the adoption of ICT in Libyan public universities.

All the participants stated that, although the Libyan government had undertaken a new policy for ICT in university education, the implementation was lacking. For example, one academic staff complained of the contradictions in the ICT policy that were adopted in Libyan Higher Education. He stated that:

We {Academic staff} found the policy says something, and while the implementation on the ground is absolutely something else especially with respect to the expansion of ICT use in public universities in Libya' .(AS4)

This contradiction may lead to a failure in educational reform as Fullan (1991) confirmed that many educational reforms fail because of a lack of clarity about purpose when the intention behind the change has not been stated clearly enough. This lack of understanding of the purpose of development can cause major problems. The successful implementation of HEPR is dependent on the students and academic staff who must enact it. It must be noted that the manner in which information and communication technology was introduced in LPUs was initially piecemeal, uncoordinated and, in most cases, haphazard.

All the academic staff in UoT who participants in this study claimed that the University had very little financial support and that there existed very few budgets for the development and management of information and communication technology in the faculties and departments over the UoT. This fact points to a lack of recognition by the MoHESR of the importance of the adoption of ICT in their organisations. In the same vein the ICT should be backed by new HEP that can help in adopted and use of ICT among LPUs .Even though, the findings and analysis show that the approved NHEPR 2008-2012 has clearly prompted the introduction and adoption of ICT applications , in most departments and faculties in the LPUs. It was found that all

faculties and departments in UoT used the NHEPR 2008-2012 as the foundation upon which to formulate their specific ICT policies .

This has ensured harmonisation between different faculties and Universities . The strong data emphasises that the ICT policy was key for Libyan government to be able to enter into a new information era and digital age. The ICT policy as a part of the NHEPR 2008-2012 in Libya addressed many issues, including: vision, main mission, objectives and adopted values. However, the results indicated that there is significant relationship between participants awareness of implementation of NHEPR and their use ICT.

In sum , According to findings with the participants and the literature previously explored the awareness of the implementation of HEPR is a factor that impacts on the adoption and the actual effective use of ICT services in Libyan universities. However, there was a lack agreement amongst the participants on what policy in Higher Education means. But most of them linked the term policy with laws and legislation designed to regulate education. The majority of the participants suggested that a successful implementation of HEP would help increase the use of ICT. Awareness in this study mean participant's knowledge of ICT services it offered by HEPR . This is an important step in ensuring that ICT services are used effectively and make a difference to respondents' learning, teaching, or administration. Many of respondents mentioned that the HEPR discusses ICT awareness`s and change of attitudes. Most of them knew that the HEPR requires them to use ICT in public universities .Some of the participants were not aware of any government policy regarding either the introduction or the adoption of information and communication technologies in LPU. These findings are in agreement with the literature review and other findings such as those by

Forman et al. (2005) who found that ICT adoption, in general, and internet adoption, in particular, is increasing in site size because of the awareness of information organisations in modern cities. The participants awareness of such a policy was limited to their awareness of the new HEP. These results are also consistent with Friedman's view (2000) that those countries which do not adequately train their people for the new ICT and the new knowledge economy will be left behind and will not be able to compete effectively in the current global economy. The following section explores the actual ICT use as a third item in this study.

5.6 ACTUAL USE OF ICT

This item includes three main themes (*Perceived benefits of using ICT, perceived barriers of using ICT, and use of ICT tools*). Through these themes, the researcher attempted to identify the forms of ICT that are adopted and used by graduate students and academic staff at the UoT and by higher education officials at the MoHESR. This was achieved by determining their information needs and the extent to which ICTs were used in seeking information. It is widely accepted that this invention has become more important now than ever before because of its countless contributions in advancing the quality of all walks of life including the education field.

5.6.1 THEME 1: BENEFITS OF USING ICT

Perceived benefits is the main motivation behind ICT adoption and use amongst participants, their concepts of perceived usefulness will focus upon their learning, teaching and administrative. The most majority of the participants in this study clearly understood that they could benefit from using and adopting ICT in learning, teaching and administrative. They were clear on the benefits of ICT in higher education, and

had positive views about the importance of ICT introduction, and considered that ICT and computers had benefits that could not be overlooked. One participant confirmed that :

" Of course ,the use of IT in government has several benefits that cannot be denied" (GS:11)

Participants provided detailed answers to the question: what do you believe are the main benefits of adopting and using ICT? They gave some examples from their teaching, learning, and administrative experiences that supported their positive view. All participants provided detailed answers to the question, which indicated they were trying to convince the researcher of ICT advantages. None of the comments was limited to participants views on ICT in universities , they extended to cover advantages of ICT, therefore, there was a strong link between participants views on ICT in universities and the advantages they believed it offers the teaching, administrative and learning process.

All academic staff displayed a positive attitude to the use of ICT in their teaching and learning practice .Participating teachers seemingly realised the value of ICT as tool to re-invigorate their teaching practice ,and acknowledged that ICT could open new opportunities to enhance learning .

These academic staff also appeared to recognise that the use of ICT as a tool needs to be executed responsibly in the University environment. Above all These academic staff do not want to be coerced by policy to use ICT ,they want to use it on their own terms and in their own pedagogical way . One academic staff reflected on the manner in which ICT could be used to stay abreast of current technology which learners are familiar with. He seemed to suggest that it is imperative for academic staff to meet

challenges that technology brings to the classroom ,particularly since learners seem be engaging uninhibited with technology. The same academic staff reflected on his attitude as a professional user of ICT and felt that it should be used as a tool for curriculum integration that supports teaching and learning with relevant information and not merely as a novelty tool .

Participants academic staff in this study appeared to desire some form of motivation to teach .They all seemed to suggest that the traditional approach to teaching had lost its lustre .However, with the introduction of ICT into teaching –learning situation there is an opportunity to redeem their rightful place in the classroom . Participants academic staff in this study appeared to reflect sound professional attitudes towards the manner in which ICT could be used to enhance teaching .They reflected on his understanding that the use of ICT brings forth a need for professional commitment and thorough preparedness for curriculum delivery .This academic staff also seemed to suggest that ICT use could effectively address the need for different learning styles this what support by UNESCO Institute for Statistics (2009) is believed that” The use of ICT in education can increase access to learning opportunities. It can help to enhance the quality of education with advanced teaching methods, improve learning outcomes and enable reform or better management of education systems” (p: 8).

All of 44 graduate students interviewed agreed that ICT use makes learning , teaching and administrative more interesting.

With ICT tools , everything can be accomplished easily and quickly, it takes one no more than a few seconds to do many tasks that used to take a long time to complete”(GS:9)

The pedagogical reasons for using ICT Were voiced by many participants. For example Pedagogical reasons is illustrated by one academic staff who said :

“ Presentation software enabled me to keep the students actively working to discuss any difficulties “(AS:2)

From an educational perspective, most of the participants seemed content that ICT can be used by participants to self-educate themselves learn and teach by graduate students , or by academic staff to add “some flavour” to the traditional ways of teaching.

I consider that technology supported teaching as well as makes learning more operative and more effective. (AS: 4)

all of them had a relative advantage over other technologies, while interviewees who had access to ICT considered that ICT had a relative advantage over other technologies and felt that its adoption and use was helping them to improve their performance in learning, teaching and administrative. Therefore, participants believe that using ICT will enhance their learning, teaching and administrative .Some respondents mentioned that using ICT are useful to their daily living in terms of obtaining information, communicating and using e-services conveniently. As one HEO said that:

‘ ‘Contribute greatly in the students' motivation for learning and develop their experiences ,as well as improving the quality of learning process and educational institutions management this may will leading therefore to improve learning outcomes for in higher education institutions’ ’(HEO:1)

Other graduate students said:

“The Internet is useful when I need information. I can acquire much of the information that I want and I can learn whatever I want to. For example, I can access some websites about my subject area I ‘am interested in.” (GS:I4)

On the other hand a majority of academic staff feel that using ICT enables them to spend more time assisting student who need extra attention, and it enables them to do their work more efficiently, as an academic staff said that

“Learning computers is useful as I can communicate with my students through the Internet if I have to work abroad.” (AS:5)

This was confirmed by a member of Higher Education Officials .He supposed

“Through the Internet I can renew books borrowed from the public library. It is also possible for me to check the bill of my mobile.” (HEO:2)

The other one confirmed that:

“ICT can help create and improving the national and regional strategies, policies and plans of the government including higher Education Policies so as to meet the socio-economic, cultural and political needs of the country and cope with the all future challenges” (HEO:6)

Therefore, graduate students would like to obtain more skills and knowledge. ICT also seems to be a powerful tool to help them obtain information on further learning:

“The Internet is useful when I need information. I can acquire as much information as I want and I can learn whatever I want to learn” (GS:14)

However, adoption and use of the ICT generally helps to reduce cost and time of communication, as a participant said:

“In general there are a number of citizens are using ICT on my personal and professional level some ICT applications are helping me to connect and transact with my college ,students and with various levels of government more quickly and efficiently than ever before” (GS:3)

ICT can help to improve libraries and provision of library and information resources as one participant confirmed:

“ICT plays important role in development of research and information and helped higher education libraries improve the provision of information to users and demands their meet quickly and conveniently “ (AS:8)

ICT was perceived by many respondents in the role of improving service delivery to constituents and as a decision making tool for administrators. For example, this was endorsed by one of the interviews with academic staff he stated that:

‘ICT can help create and improving the national and regional strategies, policies and plans of the government including higher education policies so as to meet the socio-economic, cultural and political needs of the country and cope with the all future challenges’’(AS:10)

All the Higher Education Officials confirmed that the use of these ICT tools actually helps them prosper in their job, as one of them said :

‘ Using ICT allows me to be more effective in my job’’ (HEO:3)

While an academic staff state that:

“For me ,using ICT makes me more productive as a teach, and support my teach r’’ (AS:5)

Also ICT is very useful to graduate students as one of them he stated:

“The use of computer and any ICT tools can help create a generation of learned students who can contribute to the advance of our nation’’ (GS:15)

Use of ICT makes knowledge sharing easier and much more productive(GS:5)

Consequently, perceived benefits is a crucial factor for ICT use amongst graduate students and academic staff at the UoT

. This link is illustrated in the following quote by a graduate student:

“Introducing ICT to universities is considered to be a positive step for us as graduate students because through it we can understand concepts and that is very important. Things that you cannot embody in reality you can understand using ICT tools.” (GS:44)

Some of academic staff felt that its adoption was mandatory for proper functioning in scientific research, be it publishing or searching for information, as this quote from academic staff indicates:

“ We as academic staff can’t complain about the relative advantage. It has all the relative advantage “ (AS 10).

Also, some participants felt that use of ICT helped them to become independent learners. One graduate student indicated that:

“ With the Internet I’ am able to communicate through email, and even to search and share for information from anywhere, Use of computers and ICT has increased me interest in the subject of my research and helped me to learn and find some things on my own without teacher’s assistance” (GS:11)

Other participants explained ICT had brought efficiency and effectiveness to the research process by providing fast and convenient access to information to both researchers and clients. He said:

“Researchers could now easily access varied current information papers, abstracts and reports from anywhere in the world “simply by goggling unlike before where researchers had to travel long distances to look for information from libraries at the headquarters” (GS13)

The previous results concurs and this point of view can also be linked with Zahra (2009) who found that the perceived ease of use has a positive influence on the perceived usefulness of the internet as a student’s reference. In the same context, there was a strong link between academic staff views on ICT in universities and the advantages they believed it offers the teaching and learning process. Besides helping students to become independent learners, academic staff thought that computers helped to make their work easier because one is able to manage his work much better.

This was clearly depicted when one academic staff explained:

“The main advantage in teaching using computers is that dealing with my work now changing and became more easy since there is no such thing as a lot of repetition , and by so doing I ’m able to save a lot of time .”(AS:3)

The majority of participants acknowledged the importance of using ICT in their own teaching learning and administrative . The Most of them of them also reported a lack

of confidence in applying ICT in their teaching. All participants maintained an increased enthusiasm to apply and use ICT in their learning and teaching in every circumstance.

In sum, and as can be seen in the results perceived benefits is as one of factors that has an impact on ICT adoption and use the findings of this study which points out that the academic staff, Higher Education officials and graduate students who participated in this study adopt and use ICT to the extent they believe it helps them improve their learning or teaching as well as their work performance.

Passed on the participants when they believe that a new ICT system is useful for tasks and for enhancing their performance, they will use it because the system provides benefits for them. As mentioned in the literature review and in the findings of this study perceived benefits is the primary determinant, positively affecting users who actually use the system. This finding concurs with the study of Bourgonjon et al. (2010) who found that a student's preference for using a computer is affected directly by usefulness, ease of use, learning opportunities and personal experience.

According to Al-Ansari (2006) academic staff in Kuwait University use the computer and the internet and other ICT tools because it helped them save time, and keep up with the knowledge of colleagues. Al-Dubayan (2005) examined the potential benefits of access to information using the internet by researchers in Saudi universities. The study found that 97 percent of respondents had a strong internet connection and they could easily connect to the internet. 81.6% percent of the respondents used the internet for academic research purposes and to provide sources containing useful information related to their studies, while 78% of the respondents said they used the internet to keep pace with the rapid developments in their field of academic specialization and to

keep up with technology. 36% of those surveyed said that teaching is the primary purpose of using the internet, while 23.6% of participants using the internet to disseminate their academic research.

In the context of this study many participants argued that there has been considerable progress in terms of ICT in higher education. Many of these projects were coordinated with the UNESCO and other international organisations. Therefore ,after reviewing the main benefits for using ICT, and as a starting point of understanding the barriers to the successful integration of ICT in teaching and learning in respect of participants it should take a look at the current state of the ICT system in Libya and in its public universities which reviews in the following section.

5.6.2 THE CURRENT STATE OF ICT IN LIBYAN PUBLIC UNIVERSITIES LPUS

Libya has not, so far, succeeded in effectively utilizing ICT for socio-economic development. Additionally, ICT services are not yet a reality in most institutions in developing countries. The Libyan government is currently implementing a radical process of reform in the higher education sector in an attempt to address the rapid changes in the demands of society. This reform changed the public universities, colleges, department and institutions of Libyan higher education and principal goal of this process is to establish a knowledge-based society in Libya and encourage the science-based development of industry. For example, the Libyan government has signed an agreement with regard to the implementation of a national project for the use of ICT in the Libyan Higher Education sector.

The main aim of this agreement was to assist Libyan Higher Education in establishing a national ICT capacity-building project in the country. It also includes the establishment, and the improvement of the infrastructure for applications in all ICT

areas. The agreement aims to provide the HEIs with computer laboratories and classrooms for education and training,

in addition to the creation of digital libraries and also the establishment of a local information network linking the universities with each other. This project shown in table (5.5) consists of 450 workshops and laboratories comprising more than 600 computers, as well as the creation of rooms for digital presentation in each university consisting of computers along with display screens.

	Phases of the project	Years				
		2008	2009	2010	2011	2012
						?
1	Libyan national network among universities	*	*	*		
2	The local networks in each university	*	*	*		
3	Computer Networks		*	*	*	
4	Computer Labs			*	*	*
5	E- learning Classrooms	*	*	*		
6	Infrastructure Applications		*	*	*	
7	Online Educational Content	*	*	*		
8	Digital Libraries				*	*
9	Multimedia Educational	*	*	*		

Table 5.5: The national project for the use of ICT in Higher Education Sector
Source: Libyan General Authority for Information (2007)

The project costs 72 million US dollars and needs five years to be implemented. The main components and the timetable for the completion of the project are starting in early 1990 computer science was taught at Libyan specialized secondary schools but was confined to teaching about how computers work, the history of computers and the use of some of the applications, such as creating standard tables, word processing, and

Photoshop. However, since 2005, Libya has implemented a series of measures aimed at ensuring the optimum use of ICTs. It has been prioritizing the use of ICT in its Higher Education sector in order to achieve its critical strategic developmental objectives. For example, the government has allocated several million dinars to build infrastructures to integrate ICTs into the Higher Education System. On 3 July 2007, the Director-General of UNESCO and the Secretary of the GPCHE signed an agreement on the establishment of Trust Fund self-financing, worth US \$72 million for the agreed programme. By this agreement UNESCO will help the Libyan government to reform the Higher Education Systems in Libya by developing the adoption and use of ICT in its universities. More specially, this includes the construction of a national area network connecting all Libyan university campuses and the establishment of local area networks, modern data centres, computer labs, digital libraries and electronic classrooms, and the developing of infrastructure in schools and universities through increased attention to online educational content. In 2004 the Libyan government decided to teach computer skills at fifth and sixth grade for primary school students and the use of computer hardware and software as an educational tool at all different educational stages in Libya began on 2008.

In 2005 the Microsoft Company opened its representative office in Libya. Microsoft seeks to help transform education and to support the Libyan government with its goal of modernizing its education system. This includes the establishment of e-learning centres, teacher training, curriculum development and WiMax connectivity for all LPUs.

ICT in New Higher Education Policy Reform NHEPR 2008-2012

The New Higher Education Policy Reform (NHEPR 2008-2012) was presented as a response to globalisation and a rapidly changing society within a global economy that focuses on knowledge as its main commodity . The National Planning Council (NPC) reported that higher education in Libya became eligible to compete due to international demands and standards. This caused succeeding Libyan government to establish this plan NHEPR 2008-2012 in an attempt to increase the quality of higher education and its handling of scientific, economic, technological and social challenges. For example it was launched in an attempt to provide for the increasing numbers of students (an estimated 459,000 students in 2011-2012) and to equip them with modern technology. It is also aims to enhance the level and quality of education, expand graduate programs in Libya, take advantage of scholarship abroad and increase interest in libraries, and other sources of information, as well as promoting encourage the translation of many educational resources.

In addition, NHEPR 2008-2012 will attempt develop new specialties to address the challenges arising from globalisation , through means such as software development, distance education, methods of evaluation and measurement and the establishment of a national system to guarantee the quality of higher education. The reforms of the Libyan government in the higher education sector can be summed up by the following: the issuance of the new Universities Act; the establishment of new campuses; reforming the methods of student training; reforming English teaching and; changing curricula. It is also intending to carry out university mergers that will decrease the number of public universities from 14 to 10. This is being done as part of a drive to improve the efficiency and effectiveness of universities. At the moment of writing,

there are more than 20 new university complex under construction by Libyan government. See appendix (1).

According to the MoHESR and General Board of Infrastructure and Urban Development, (2010) when these projects has there will be the necessary infrastructure for LPUs to achieve a high-quality output in order to compete in the international labor market, and these universities will contribute to society by engaging in valuable scientific research.

The present NHEPR 2008-2012 emphasises the role that technology and the modern ICT equipments could and should play in transforming learning by making it more accessible to individuals everywhere through online tutoring and individualised programmes appropriate to each students needs. This priority given to technology in mediating the reform of the content of higher education and in changing the types of interactions between teachers and students and students and students in public universities. For example The Libyan government has signed an agreement for the establishment of a self-benefiting Funds-in-Trust of US\$72 million on ICT for capacity-building in Higher Education in Libya.

The main aim of this agreement is to assist the Libyan Higher Education in establishing a national ICT capacity-building project in the country. It also includes building a nationwide area network connecting all Libyan university campuses and the establishment of local area networks, data centres, computer labs, e-classrooms, infrastructure applications, video on demand, specific application systems, online educational content, digital libraries, and multimedia production facilities for each university.

The Libyan government has also established a National Authority for Scientific Research (NASR) and a Center for Quality Assurance and Accreditation (CQAA). The latter aims to formulate and implement policies related to science, directing and supporting research and preparing educational programs in specific scientific fields. To help increase scientific capacity, the authority studies analyses the country's requirements and advises government on ways to create and maintain the necessary number of qualified scientists and the facilities needed to carry out research and teaching. It is also developing scientific standards to measure quality and innovation in scientific research, as well as providing independent advice on matters ranging from ethics to the environment. The quality assurance center is concerned mainly with assessing the academic performance of the education system according to international performance standards. The purpose of this is to strengthen quality and continuously improve the Libyan university system.

The national policy for ICT in education was launched in 2008 as a part of the NHEPR2008-2012 . Accordingly, ICT was introduced into University education following the goals declared by the MoHESR. There are plans to incorporate ICT at all levels by the year 2013. The aim of the new higher education policy was to integrate ICT into higher education higher training and at all levels by facilitating ICT training programmes in order to satisfy educational and employment needs. The MoHESR produced a clear vision for its ICT initiative, which included:

- Accessing information and contributing to building the knowledge-based society
- Delivering MoHESR services electronically as one of the ICT projects

- Contributing to bridging the digital divide, and Providing scientific, technological and informatics awareness to facilitate access to the information age . with infrastructure which will fulfil the needs of organisations

As shown in table (5.6) there are some projects being initiated in the country dealing

Programme	Description	Funding
Capacity-building and teacher training	Training of academic staff on ICT for education	Libyan Telecom and Technology (LTT)
National ICT project for capacity-building	Establishment of Local Area Networks within 149 faculties belonging to many universities The development of ICT enhanced learning solutions. An significant module of the project is the training of basic ICT skills and offer an advanced teacher and staff training on using ICTs in teaching staff, and administrators	UNESCO and the Libyan government
Introduction of Computers	Installing thee thousands and four hundred computer laboratories at levels at schools at the estimated cost of 121 million Libyan dinars1.250 (one Libyan dinar =one £)	Ministry of Education
Development of inexpensive educational laptop support	Providing Laptop to all Libyan school children by June 2008. And provide one server per school, with advisors to help set up the system, satellite Internet service.	The government and OLPC
Development of inexpensive educational laptop support	Providing laptops to all Libyan school children by June 2008. Also provide one server per school, with advisers to help set up the system, including satellite Internet service.	Libyan government and OLPC
The Open University	Proposals distance education courses Tripoli is the main centre, with sixteen branches located around Libyan state. Curricula and teaching programmes are conveyed via written and audio visual learning packages.	Libyan government
Model schools	Offer last potential modern courses as well as with the latest ICT tools and other technologies and learning, teaching facilities.	Libyan government

Table 5.6 Summary of the recent ICT projects in Libya
Source: <http://www.observatoiretic.org/countries/institutions/20>

However, each University has its own vision according to its unique needs and requirements. Nonetheless, the ICT infrastructure, limited numbers of skilled staff and weak preparation delayed the progress of many initiatives. A Higher Education Officials claimed:

“There must be good preparation, a thoroughly designed plan that addresses all requirements before the start of any initiative, or it will be more costly to repair the damage one example is the large amount of money spent preparing computer laboratories for some faculties “(HEO:2)

Another interviewee gave further examples:

“Some faculties or universities requested preparation for sizeable computer labs to satisfy the high number of students the faculties was not able to start using their labs because they had no trained staff”.(AS:10)

Based on previous literature and the findings of this study, there are several barriers that confront graduate students and academic staff when adopting and using ICT in their universities, these barriers to ICT adoption and use mentioned by the participants are very much in line with the barriers discussed in the literature review chapter, and are provided in the following sections

5.6.3 THEME 2: BARRIERS OF USING ICT

As mentioned in section (3.3.3) a barrier can be defined as anything that inhibits progress or the achievement of an objective or aim. However, some studies have been conducted regarding ICT competence among HEIs in Libya, and several Libyan researchers (e.g. Al-Badri, 2007; Al-Dhaif et al., 2001; Attir, 2006; El -Hawat, 2003) claim that a lack of ICT infrastructure in the workplace and lack of training is a significant barrier to ICT use.

The researchers also argued that most Libyan people are not able to effectively use ICT because they lack necessary skills. For this reason the Libyan government demands confidence and efficiency in ICT use in all areas, at both the academic and industry levels, in order to succeed in education and work as well as in everyday life.

However, the following section explore the barriers to the successful adoption and use of ICT in teaching and learning in respect of participants

5.6.3.1 BARRIERS WITH LACK OF ICT TRAINING

Training can be considered as a major factor that can change, and impact on, the level use of the different applications of technology and ICT. Training has been defined by the Ministry of Education in Libya (2007) as a planned activity aimed at bringing about changes in individuals and groups in terms of information, experience, skills, rates of performance, and methods of work, behaviour and trends. It enables individuals to do their work efficiently and productively. In the light of this definition by examining and analysing ‘training’ as a factor that has influenced the adoption and use of ICT in Libyan universities, it would suggest that the training or retraining has a major impact on successful new ICT adoption and use.

However, one of the major areas of concern in the NHEPR 2008-2012 and national ICT policy is human capacity development. This is important for ICT adoption and use and will prove to be very useful. However, this will require a sizeable training programme for all the LPUs. A member of the Higher Education Officials commented:

“We are very aware of the fact that ICT skills and training are key factors for ICT adoption and use”. (HEO: 1)

Another member from the academic staff also mentioned:

“Providing training at all levels from basic ICT skills up to advanced and professional training are all top priorities for the University of Tripoli” (AS:7)

A number of reports show that there are several useful projects underway, including: “A computer for every student“ “a lab for every faculty”; and “a laptop for every academic staff lecturer”. (NHEPR 2008-2012). These projects proved to be very valuable and provided opportunities for training and the learning of basic ICT skills. More than 100,000 computers were distributed during these projects. However, According to NHEPR (2008-2012) the most important project related to ICT in the LPUs, was “ Eradicating Computer Illiteracy for State Employees ,and the project adopted different methods and considered the different ages, levels of education and specialities of participants “.

A large leap in ICT literacy was witnessed in a short period of time. The aim of the project was to promote a culture of ICT usage amongst LPUs students and academic staff , eradicate their computer illiteracy and help them to get rid of their fear of using computers and new ICT . The MoHESR is the main body responsible for training all LPUs students and academic staff; so far, according to participants the majority of them have not been trained. The other organisations in deferent ministries also launched training centres in other higher education institutions and by the end of 2011 there was a total of 45centres, The member of the Higher Education Officials announced:

“ As mentioned on our plan (NHEPR 2008-2012) we (MoHESR) are aware that this number is relatively low, but in order to satisfy the rising demand for skilled and well trained students and academic staff we(MoHESR) will continue training them until we (MoHESR)achieve our ultimate goal” (HEO:1).

Although the training now seems to be more systematic, there are still some challenges facing many faculties to provide training. Interviewees showed awareness and expressed their concerns about the many obstacles facing the training programs and projects. A major challenge is the huge digital divide between LPUs and other universities in devolved countries in terms of computer literacy and access to the Internet. Despite the multiple programs and initiatives introduced to provide ICT training at different levels, the number of skilled, trained staff competent with the requisite ICT remains very limited. A member of the Higher Education Officials remarked:

“ We will provide reasonable levels of training for students and academic staff in the different LPUs and other HEIs to gain advanced ICT skills “(HEO:6).

In the context of the role of training in the adoption and use of new ICT, The participants of this study confirmed that a lack of ICT training is one of factors that impact on adoption and actual use, and results of the interviews revealed that the majority of the respondents strongly believed that the lack of good training is a negative factor and that increasing providing good training would be a positive factor in increasing use of knowledge of computers and ICT tools. For example, one of participants stated that:

’In my personal view the lack of good training opportunities is one of the most important reasons that might have a positive influence on the use of computers and ICT ’ (GS:9)

However, this point was covered by Mumtaz (2000) when he recommended that, with good and planned training, lecturers might become aware of the extensive uses and benefits in using ICT in training and education. This result is also supported by Elzawi (2012) who investigated the factors that affect internet use by staff members in

Libyan universities and how the internet affects research and teaching. The study also examined the main goals for using internet tools. Elzawi's study found that a lack of training was one of several barriers which are most likely to prevent academic staff in Libyan universities from using the internet. There are also the findings of Santos and Pedro (2012) who found out that training has a positive effect on ICT use in teachers' teaching practices. Some participants had received little or no training while holding in UoT or in MoHESR ,and some participants had been trained in outside of their organisation. The researcher asked participants whether the participants were trained during their study or work . one of them responded :

“Yes, I had some elementary training some years back ,2006 but it was not intensive . I really wanted to do Excel and PowerPoint but unfortunately it was just limited to Microsoft word and document writing and stuff. I would really like to be trained....it was just Microsoft Word, on how to open and create folders. I really wanted to be trained in PowerPoint. These days when you go tp a conference and you are asked to present one and uses PowerPoint ()

Table (5.7) shows the number of the participants who had received training about the ICT and the number of those who had not received any formal computer or ICT training.

Respondents	Get a formal Training			
	Not get any Formal Training	Government-funded	Self-financed	Total
Graduate Students	33	0	11	44
Academic Staff	7	0	3	10
Higher Education Official	0	6	0	6
Total	40	6	14	60

Table 5.7: Training Opportunities

As shown in table (5.7) the majority of the academic staff (N=7) did not receive any training about ICT ,and only three academic staff had received self-funded training.

The results also shown that only 11 of 44 graduate students had undertaken ICT training, and all of them funded training were not from government sources. While all higher education official (N=6) had received their training from the ministry of higher education program. According to them training takes place during holidays. However, when participants were asked to indicate the level of ICT training that they have had in the past years and how they had received this training.

The majority of them indicated they had just basic computer literacy training (for example, Microsoft Windows operations) or no training at all, said they had training on computer applications such Microsoft productivity tools (for example, Word, PowerPoint and spread sheets), while some of them said they had training in computer-based technology for teaching and learning. This finding implies that, though some of participants might have had basic computer literacy or training in computer applications, training in ICT use for teaching and learning purposes was on the low side. Most of them have they ever been involved in any training courses for the university or in other places .

Evan though, It is clear that the large majority of the participants need guidance and support in developing ICT skills. Vast majority of graduate students indicated that they need more training and most of them believed that they needed more skills' training. as one of them mentioned that

“I lacked necessary skills and I intended to do a many courses in future “(GS17)

Many of the participants in the study believed that there are a relationship between the effectiveness of training and the use of ICT. An example of this came from a statement from one of the academic staff (but this point of view was not only limited to him).

He said:

Effective training, from my point view, has an important part to play in encouraging teachers and students to effectively use ICT tools, so expanding training opportunities by the state will lead to increasing public awareness of the use of ICT in universities (AS:5)

All participants maintained an increased enthusiasm to apply and use ICT in their learning and teaching in every circumstance. As well as almost all of them wanted to improve their internet usage skills through formal training. Participants approved the importance of the training course and they maintained that succeeded will giving them enhanced skills in pedagogical and technical use of the ICT-based learning, program components and will increased their motivation for using ICT. This situation regarding a lack of knowledge is confirmed by Friedman (2000).

In his view those countries which do not adequately train their people in the new ICT and new knowledge economy, thus enhancing their knowledge will be left behind and will not be able to compete effectively in the current global economy. His view was in line with the findings of the Santos and Pedro study (2012) which found that training has a positive effect on ICT use in teachers' teaching practices. However, as ICT usage by the participants in this study becomes more user-friendly, learning to use it becomes much easier than in the past when users were required to remember dozens of commands.

Davis (1989) reported that, "while perceived ease of use was found to be significantly correlated with usage, when the effects of ease of use on usage were non-important".

In the light of the response of participants training may have an effect on the ease of ICT use in people's practice or perceptions. The participants of this study confirmed that a lack of ICT training is one of variables that impact on adoption and actual use. This result is supported by Elzawi (2012) who investigated the factors that affect internet use by staff members in Libyan universities and how the internet affects research and teaching. The study also examined the main goals for using internet tools. Elzawi's study found that a lack of training was one of several barriers which are most likely to prevent academic staff in Libyan universities from using the internet. There are also the findings of Santos and Pedro (2012) who found that training has a positive effect on ICT use in teachers' teaching practices.

5.6.3.2 BARRIERS WITH LACK OF ICT INFRASTRUCTURE

The most of focus in this category was directed towards building a modern digitalised national telecommunications network in LPUs. ICT professionals claim that this was the most important and challenging component for a developing country like Libya. However, the ICT infrastructure is a key element in the actual use of ICT. It includes the many components of hardware, software, connectivity and database management systems. It is also a grave instrument to encourage, and support future economic development that success powerfully depends on the founding of ICT infrastructure and its use.

As long as developed countries continue to spend huge amounts of public money on new information technologies. For example in United Kingdom, the government

spending on educational ICT in 2008–09 in the UK was £2.5bn while , in United States, the expenditure on K-12 schools and higher education institutions was \$6 billion and \$4.7 billion respectively in 2009 (Nut, 2010). According to Afsshari et al. (2009) hardware, software and network infrastructure must be available to integrate ICT in education. It is evident, as many other authors such as Romero (2002) have highlighted, that ensuring technical support, and encouraging successfully implemented habits and good practice in the use of ICT in teaching and learning processes should become main objectives when trying to elicit from teachers and students a positive attitude towards the use of ICT.

As a result of the huge effort in this element, the telecommunications sector in Libya became the fastest growing fixed telephony market and the fastest growing telecommunication sector internationally, with an annual growth of 30%. There has also been a major increase in the number of mobile subscribers. It is reported that telephone density rose to 45% in 2010, meaning an increase of more than 283 times from early 1990. An Higher Education Official explained:

“I think every student at the University education level is able to use some of the ICT equipments you do not have to be educated skills ... in fact large number of illiterate people are using the ICT to conduct their own studies ... because they only need to learn very basic and simple skills.”(HEO:5)

Another interviewee said :

“ The new revolution witnessed in the telecommunication in Libya including universities has truly improved the life of students and teachers and it is strongly helping in bridging the digital divide and building the information society in our universities ”(GS:43)

As mentioned previous, in Libya the state-owned Public Company for Mail and Communication is responsible the development of the telecommunication and information infrastructure and to provide telecommunication and postal services . In 2008, Libya had 1.033m landlines with a penetration rate of 16.41 lines for every 100 inhabitants; the seventh highest of the Arab states, and the top in North Africa. However, this level is considered as low compared to other low population, oil-rich Arab States such as the United Arab Emirates, Qatar and Bahrain which have of 30.16, 25.22 and 26.69 respectively (ITU, 2008). The establishment of two private companies, Al-Madar and Libyana, has given the mobile services a significant boost in recent years with a number of subscribers equivalent to 100% of he population by the end of March 2009 (ITU, 2009).

Libya Telecom and Technology Company commenced the provision of internet services in 1999. However, the penetration rate is weak. At the start of 2009 there were 323,000 users at a rate of 5.13 per 100 people. There are also 82,500 internet subscribers at a rate of 1.36 per 100 people. In addition, there are 9,600 broadband subscribers at a rate of 0.16 per 100 people. Libya was only the fifteenth ranked Arab state and fourth in the North Africa region (ITU, 2009). As a result of the possible gains from technological advances, technical knowhow has become another dimension added to the definition of capital. In Libya, only 0.7% of GDP is allocated to support education and scientific research.

Universities and research centres in Libya are highly centralised bureaucratic organisations controlled by the public sector. Their functions also include the provision of scientific services to the public sector. As a result, their contribution to

the production of original research and patents is extremely limited. For example, in 2008, there were just four patents recorded, which placed Libya place at 135 globally (UNESCO, 2009). However , physical infrastructure includes basic services such as finance and, transportation, which is a fundamental requirement for carrying out economic activities by linking the sites where raw materials are found to production and consumption sites.

Consequently, given the importance of infrastructure to the process of economic development and to improving standard of living, infrastructural development has been the highest priority for the government, supported by the oil revenues from the 1970s. Despite this emphasis the infrastructure still needs upgrading to cope with increasing demand. This failure is attributable to many causes, the most important of which is rapid population growth, rapid urbanisation, and limited resources to develop these services. This was exacerbated in 1980s when oil revenues declined sharply.

According to NHEPR2008-2012 and official documents, Libya has made remarkable progress. However, in comparison to world international statistics, Libya is still below average. In terms of Internet connectivity and software components, Libya has very low speed Internet services with limited capacity, and also the software systems and applications are underdeveloped and not used in large-scale. According to NHEPR 2008-2012 report ICT services in Libya are still not yet used at appropriate capacity, the ICT infrastructure is poor and there is a lack of policies to deal with its implementation and a lack of capacity to manage and plan the ICT industry.

Currently, ICT use in Libya has not yet been studied comprehensively and the country appears to be unprepared to accept and use ICT due to a deficient infrastructure.

Business managers are reluctant to adopt ICT projects because of insufficient education and skills and their wariness of anything which is untested. The upcoming generation is enthusiastic about moving to new technology and it is clear that people's familiarity with technology is greater than it was a decade ago.

Table (5.8) provides some useful key indicators of ICT use in Libya, compared with some other Arab countries.

Country	Population	Mobile users	Internet users	Used PCs	Fixed telephone users	ICT Use Index
Egypt	81.348.421	83.430.000	21.671.400	5.878.810	8.714.200	1.47
Tunisia	10.732.470	12.387.656	3.432.988	1.272.643	1.217.781	1.71
Algeria	37.100.000	35.711.159	7.767.641	3.763.607	3.153.500	1.36
Oman	2.859.457	4.809.248	1.146.880	551.714	287.323	2.38
<u>Libya</u>	<u>6.000.000</u>	<u>10.000.000</u>	<u>1.355.796</u>	<u>892.601</u>	<u>1.012.100</u>	<u>2.21</u>
Iraq	33.564.325	24.413.656	5.510.556	2.545.761	1.945.00	1.03
Qatar	1.707.756	2.794.043	854.958	798.715	305.967	2.78
Sudan	41.919.368	25.107.343	6.959.517	2.068.436	483.617	0.83

Table 5.8: Key ICT Indicators (2011) In Libya and some Arab countries

Source <http://www.tech-wd.com/wd/2012/12/22/arab-ict-use-report-2012/>

Also and as shown in table (5.9) Internet in Libya is the first country which has slowest internet connection. It has 52% internet connection below of 256 kbps. This is the highest percentage of slow internet connections. (akamai 2011).

Country	Percent below 256	Location
Libya	52	250
Nepal	32	-46
Nigeria	31	-28
Iran	30	-25
India	27	-22
Bolivia	25	-57
Syria	19	-24
Indonesia	19	-28

Table 5.9 :The state of the internet 2011

Source: (akamai 2011) <http://www.kifahlibya.com/wp-content/uploads/2012/05/Screen-shot-2012-05-20-at-1.33.06-AM.png>

However, the researcher believes that due to the Libyan revolution on 17 February 2011, and accord to the recent change in the political regime in Libya, this situation may be altered and will change to become similar to developed. In the same vein and in terms of the number of LPU's websites which it has risen significantly from 2007 to 2012, All the ten of LPU's have established their websites. However, the websites have poor layout, poor design and the information is not regularly updated. More importantly, most of these websites have only static information and often only one-way communication. Although this seems to be affecting percentage usage, one member of Higher Education Official in the MoHESR explained:

“As far as the websites are concerned, they were weak due to the lack of the national standards; yet from the beginning we were concerned with establishing employee friendly apparatuses, then web-presence ... presently we are focusing on web-content” (HEO:6)

However, it is important to point out that many faculties' websites in UoT are much more advanced and well-designed than the MoHESR websites. An academic staff clarified:

“This is mainly because some faculties are more powerful than the whole University for instance the Science faculty , the faculty of Information Technology, the faculty Arts and Media, all these organisations have a very high profile”(AS:3)

Some also pointed to the need that :

The good design of universities websites may enhance the students and academic staff trust in the university and therefore, adopting and implementation of its ICT services ” (GS:42)

In term of the information and data available in LPU's the results indicated that the Libyan government is keen to publish such information to show itself to students and academic staff and other the stockholders . Although the government encourages this data to be distributed through websites, mobile phones and other ICT tools , it is also aware of the poor quality of available data. As one of participants claimed :

“I believe that knowledge stations are required to implement e-government services” (GS:22).

In a large country like Libya, it is easy to observe that there is a problem in capturing, storing, archiving, sharing and managing data. ICT professionals who understand that Libyan government in general and MoHESR in particular is about handling information believe that without standard classification of information and documentation, it is very hard to realise the benefits of ICT. A graduate student stated:

“In my personal view I appreciated that the MoHESR should or need to build strong and powerful database systems, refine public data and carefully manage information ... otherwise

ICT will be meaningless and the public universities will have poor levels of effectiveness”.(GS:9)

According to the participants , the quality of data in the UoT suffers from a variety of problems. The accuracy of data can be very low, or old and not regularly updated. Sometimes it simply does not exist. An academic staff stated concerns arising from the problems they had to face as a result of incorrect data. He claimed:

“We (academic staff) need data to be collected from the field to edit our databases. The data has to be collected according to well defined structures and definitions and follow specific standards”. (AS:6)

This was highlighted later by Higher Education Official member who said:

“We (Higher Education Officials) in the MoHESR are totally aware of the data problem in LPUs. Therefore, the MoHESR will prepare a standard forms for data collection. As a first trial 1000 copies of these forms were distributed across the different states and special training was provided for local staff. The training aim at understanding the new formats and procedures of filling and handling of data.”.(HEO:4)

The results indicate that a lack of ICT equipment is one of the major factors that hinder the adoption and use of ICT. Certainly this factor is one of the most significant factors that is often cited as a barrier to ICT use within the UoT. The vast majority of the respondents strongly agree that lack of ICT infrastructure has an effect on ICT adoption and use in Libyan public Universities. For example one participants said :

“ Poor ICT infrastructure makes me not excited for the idea of use ICT services in my teaching ” (AS:9).

Another Higher Education Official stated that:

“There is no doubt that the Lack of advanced ICT infrastructure hampers the ability of University to provide e-ICT services and applications”(HEO:4)

However, ICT embodies the usefulness of offering information and communicating with other people and also refers to the equipment used for handling data. All graduate students (N=44), and the most majority of academic staff (N=8) felt they would use ICT more if their university purchased more computers . As one graduate students said:

“Libya has a small population residing in a large land area but communications infrastructures are very few especially at higher education and university education sector. For example there is no postal network that will encourage students and staff to use available ICT services such website, or mobile phones.” (GS:2)

The findings point to the fact that the vast majority of respondents confirmed that there is a lack of internet and computer. In the same vein the findings clearly indicated that the Libyan government is failing to adequately Hardware and software, and the participants are still not prepared well to use ICT and availability of internet is very slow. With respect to this, an academic staff said:

“Internet access is not available in many faculties in University of Tripoli and that may be due to lack of infrastructure of ICT in this University, and in Libya as all “(AS:4)

These Findings from the interviews confirmed previous findings from the literature review. For example, Manternach (1999) observed that teachers were very frustrated by this lack of access to ICT resources and teachers said it was one of the main reason why they did not integrate ICT more into their teaching and learning. Also line with Afsshari et al (2009) confirmed that Hardware ,software and network infrastructure must be available to integrate ICT in education, (p:8) .

Line with Yusif (2006) who identified the barriers to ICT as infrastructure status between the Arabic and intercontinental world, with information illiteracy among the Arabs countries reaching 95% . This means that there is a need to increase, the awareness of and the use and access to electronic information resources in order to reduce illiteracy.

It is evident, also with Romero (2002) who have highlighted that the lack of technical support and a successfully implemented habit and good practice in the use of ICT into teaching and learning processes would one become of the main objectives when trying to elicit from teachers and students a positive attitude towards the use of ICT. Passed on the rustles even though, there is general lack of ICT infrastructure with respect to internet and computer.

The results of this study show that there is a correlation between ICT infrastructure and ICT adoption in Libyan public universities These results are consistent with previous studies such as (Mokaya 2012, Al-Ghaith et al. 2010, Yusif 2006 , Balanskat et al. 2007, Mokaya 2012) found that there is a strong statistical relationship between communication infrastructure and ICT adoption. Al-Ghaith et al. (2010) explored the factors that influence adoption and usage of online services in Saudi Arabia and concluded that the type of quality of the internet was one of the significant factors impacting on the adoption and usage of ICT in Saudi Arabia.

Another study by Yusif (2006) identified the barriers to ICT infrastructure between the Arabic and intercontinental world, with information illiteracy among the Arabs countries reaching 95%.Balanskat et al. (2007) explored the factors that impact on teachers who avoid using ICT in a sample of schools in Europe and found that one of

the most important of these factors was a lack of suitable educational software. However, it is clear that there was consensus on the importance of developing national ICT-related infrastructure in LPUs, which in turn will have an impact on the adoption and implementation of ICT. According to many of those interviewed the presence of ICT infrastructure affects the confidence of participants, and thus affects the attitudes towards the adoption and use of ICT services and applications.

5.6.4 RELATION BETWEEN PERCEIVED BENEFITS AND PERCEIVED BARRIERS

The literature has proved that the greater the benefits perceived by the LPUs the higher the possibility of ICT adoption and use . Perceived benefits should be considered as one of the factors that could affect ICT adoption and use in public universities in Libya. Meanwhile there are many perceive benefits that have been made available through adoption and use of ICT, there are still many universities not taking advantage of ICT. Therefore, perceived benefits are taken into consideration as one of the factor that affects ICT adoption and use in LPUs.

The reason perceived barriers is included in the current study is because it plays an important role for LPUs in determining adoption and use of ICT in LPUs. The LPUs will less likely to and use ICT when it's aware perceived benefits of the using ICT tools . It is very important for LPUs to determine its students or academic staff to knowledge of ICT benefits because those knowledge or previous experiences of potential benefits may impact LPUs decision in adopting and use ICT. However, the ability of graduate students or academic staff in ICT's benefits is definitely increasing the opportunity of ICT use amongst LPUs. Therefore both perceived benefits and perceived barriers was closely linked with the successful implementation of ICT

The perceived barriers to ICT use were found to influence ICT adoption significantly which reflects the importance of the role of ease of use on the adoption of ICT in Libyan public universities. This result concurs with the findings in the studies of Sriwidharmanely and Vina Syafrudin (2012) wherein the perceived ease of use had a positive significant impact on the perceived usefulness of the accounting software. This is in line with the study conducted by Wang et al, (2003) which reported that computer self-efficacy can be manipulated by practitioners through promotion and training approaches. This finding also concurs with the study of Lassar et al. (2005) who found that, the more customers have skills in using both computer and the Internet, the easier for them to accept the use of Internet banking .

The OECD (2009f) considers lack of skills, lack of competition and high prices as factors affecting ICT adoption and use. In addition, based on the literature review in this study, some studies have investigated perceived ease of use and suggest that it could have an impact on actual system usage and that it also has a direct effect on perceived usefulness (Davis, Gefen and Straub, 2000).

The results reveal that perceived barriers are significantly related to the adoption of actual and continual usage of ICT tools. However ,to identify these barriers , the researcher asked participants: : What do you see as the biggest barriers to adoption and use of ICT in Libyan public universities? However, based on the response to this question by the participants the low rate of ICT adoption and use in LPU is due barriers were identified and perceived by them during the analysis of the interview transcripts. lack of ICT training and, lack of ICT infrastructure .were considered the most important barriers in this survey.

In sum ,the perceived barriers to ICT use were found to influence ICT adoption and use significantly which reflects the importance of the role of ease of use on the adoption of ICT in Libyan public universities. This result concurs with the findings in the studies of Sriwidharmanely and Vina Syafrudin (2012) wherein the perceived ease of use had a positive significant impact on the perceived usefulness of the accounting software.

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5.6.5 THEME 3: USE OF ICT TOOLS

This is the third theme in third item , consist of two categories (*purpose of using ICT tools ,type and frequency of ICT use*) the following two sections explain this in details

5.6.5.1 PURPOSE OF USING ICT TOOLS

This category sought to understand the motivation behind the use of ICT by participants. The participants asked to indicate their computer and ICT use ICT. The majority of the participants reported that they used ICT to write documents and letters ,and search for information. Much of Computer use also was attributed to their won professional development , which indicates that they used them to type documents and present work required by the institution as well as for their private work.

All sixteen participants used ICT for a variety of purposes. It was often used to help them for teaching, learning and administrative.

The finding indicates that graduate students worked with the ICT tools to improve their understanding of their studies. Some academic staff used computers for internet-based research during studies as well for their research assignments. Moreover the graduate students and the academic staff used computers to practice their learning and teaching. In this context, usage of the internet and other ICTs were also identified as important areas.

While the Higher Education Officials at the MoHESR use the ICT equipments primarily for administration work, Academic staff also use the computers for administration such as typing out test papers, examination papers and assignments.

According to interviewees' responses the most vital reasons for using computers in the education and management of Higher Education are to create a highly skilled labour force that supports the demands for ICT to teach and educate all students and teachers about the technologies; to change the curriculum frequently by using compute; to support change in education, and to give access to the web and email.

5.6.5.2 TYPE AND FREQUENCY OF ICT USE

This category aimed to explore the type and frequency of use of new ICT equipments . Question nine and question twelve in the semi-structured interviews was designed to identify the specific forms of ICT and main ICT software and ICT hardware that are adopted and used by participants as well as the frequency of their use by them. ICT in Universities including a great range of rapidly evolving technologies such as Telephones and mobiles, desktop computers, notebook, and, printers and scanners; the

Internet and the World Wide Web also applications such as electronic mail, email. and social Email and word and excel power point.

Most of participants has mention that despite the Libyan government's efforts to introduce ICTs in education efforts to position and to implement ICT in all Libyan higher education institutions in general and in university education sector in particular despite different forms of information technology that have been used in university education, it has been relatively slow in the higher education compared to many other sectors. In the banking industry for example. However, higher education sector is lagging behind despite all the heralded benefits of ICT adoption.

A part from these basic ICT tools used by all participants However, data show that the adoption and use of more complex ICT and applications developed for more specific purposes is quite low in the some participants such as printers and scanners .

The participants were asked to indicate the average daily length of time that they spent on using ICT tools. The results clearly show that, a small number of participants did not use ICT every time, with the majority of them were always using a ICT tolls and graduate student's use more ICT tools than the academic staff and Higher Education Officials. All of interviewees' responses concurred that Word, power point and Excel processing for writing documents and designing presentations were the main software programmes they used. Each used ICT differently. However, phones and mobile phones also seem to be common and commonly used by all the participants.

The results reported that graduate students were more frequent use of software and hardwires ,while this might be related to the amount of content knowledge to be shared in the discipline, it might also be due to the conscious decision made as part of the curriculum transformation process to incorporate ICTs. As shown in table (5.10)

in next page all participants use computers and Laptops, telephone, and mobiles, Internet and email to a great extent.

Respondents	Computers and Laptops			Telephones and mobiles			Printers and Scanners		
	Always	Sometimes	Never	Always	Sometimes	Never	Always	Sometimes	Never
Graduate Students	44	0	0	44	0	0	0	29	15
Academic Staff	10	0	0	10	0	0	8	2	0
Higher Education Officials	6	0	0	6	0	0	5	1	0
Respondents	Internet connection			Email and Social network sites			Word and Excel		
	Always	Sometimes	Never	Always	Sometimes	Never	Always	Sometimes	Never
Graduate Students	40	4	0	36	8	0	43	0	0
Academic Staff	10	0	0	7	3	0	10	0	0
Higher Education Officials	6	0	0	4	1	1	6	0	0

Table 5.10: Type and frequency of Use of different ICT tools

From table (5.10) it is clearly evident that the use of computer laboratories laptop is the most frequently used hardware while the internet and word processors are the most frequently used software. This indicates that computer hardware, internet and word processors are greatly used in teaching, learning and administration in selected faculties in the UoT. All academic staff reported that they are frequent users of a variety of ICT computers and laptops, as well as telephones and mobiles, while a large number of them (N=8) use printers and scanners. However, Computers in the UoT are understood to comprise a basic computer system configuration with a systems' unit, a mouse, a keyboard and a monitor together with a generic operating system and application software. Some faculties in the UoT have gone beyond the

basic configuration and have added connectivity and additional peripheral devices such as multimedia speakers, compact discs (CDs), digital versatile discs (DVDs), scanners and data view projectors, etc. These have been used variously for teaching and learning by learners, lecturers and all staff in the university .

It can be observed from table (5.10) that the UoT make substantial use of combinations of ICT applications; this is indicated by the respondents who stated that the UoT wants to be an ICT university with campus-wide electronic learning, teaching and administrative processes as a support for all academic staff and students. However, observations that can be made based on Table relate to the use of ICT hardware and software and indicate that the use of computer and internet websites is often combined with the use of other applications, such as printers or email programmes. A closer look at Higher Education Officials reveals that they are less likely to use a computer and other ICT tools as part of their works .All of the six Higher Education Officials at the MoHESR has a one computer with a printer, and a scanner as well as Internet connection installed in their offices .While graduate students use ICT and internet resources more frequently than academic staff and Higher Education Officials. Our interpretation is that the use of ICT is closely associated with research activities, as well as learning process it would appear that as Higher Education Officials and academic staff are not required to undertake much research or learning, they use this ICT form less often. The finding also reported that ICT was being used by large number of graduate students ,academic staff and Higher Education Officials of all subjects and confirmed higher use of ICT by participants outside of the University .There were High usage of ICT outside University by graduate students this realised that thy have they use ICT in their personal live.

Some academic staff and Higher Education Officials are low users of ICT outside University or MoHESR. The result of this finding is consistent with the study undertaken by Harris (2003) who confirmed that teachers from high schools with computers and who had access to the internet at home implemented technology in their classrooms more frequently.

Academic staff at the UoT uses their own computers at home to do administrative work. This gives them the necessary skills and confidence to integrate computers into the curriculum. For some of them this only meant access to other spaces diverse from their home and in specific cases it meant the opportunity to cooperate with other persons.

All participants reported using internet access, some of them had access at home and others of them had access to the internet at work as well as elsewhere. "Elsewhere" included relatives' access to the internet or computers, those belonging to the friends or to the internet cafés. So ones that don't have computers at home had to rely heavily on the University for computer usage. The majority felt that if they at least they had the possibility of being connected in the university that was enough. They felt that if they were disconnected at home there were other possibilities to fulfil the internet activities they did at home. Linking to the web characterised for some of the participants the potential of making other realities. However, many of the participants had or have had internet connection at home.

The majority felt that if they at least they had the possibility of being connected in the university that was enough. Most of participants had a computer at home so they felt that if they were disconnected at home there were other possibilities to fulfil the

internet activities they did at home. This meant they did not need to rely substantially on the university computers. But some of those computers did not have internet connection. Results from table (5.11) indicate that, many of the participants are using ICT (computer/Internet) in more than one place.

Respondents	Computers and Laptops		
	Only at work or University	At home and at work or University	At elsewhere and at work or University
Graduate Students	12	9	23
Academic Staff	1	9	0
Higher Education Officials	0	6	0
Total	6	50	4
Respondents	Internet		
	Only at work or University	At home and at work or University	At elsewhere and at work or University
Graduate Students	12	9	23
Academic Staff	2	6	2
Higher Education Official	0	6	0
Total	35	19	20

Table5.11: Where participant usually using ICT

In other CPU labs used at the university there was internet connection but the students were only able to use the internet if they had to do research or complete their assignments. This is line with the findings of a study which investigated the views of some faculty members at Kuwait University about internet use (Al-Ansari 2006) which found that the majority of faculty members at Kuwait University had been using ICT, including the internet, because it helped them save time, find up-to-date information. The internet connections in the university were very important. In addition. access to computers at home and at university was considered to be a more

motivating factor for facilitating learning. This was confirmed by one academic staff members as he said:

“Students or academic staff who have access to a computer at home are more inclined to use the computer especially for research. These students and teachers are keen to develop the skills learned in university when they are at home.” (AS: 9)

This point of view is in keeping with the findings of British Educational Communications and Technology Agency, BECTA, (2009) which states that appropriate use of ICT in context is supportive of learners’ needs and, in turn, will initiate greater collaboration between learners. It is clear from the finding that much progress has been made in University since the implementation the new higher education policy reform which introduction of ICT tools in the late of 2008.

5.7 SUMMARY OF CHAPTER FIVE

This chapter present the findings of the empirical investigation carried out within the UoT , and MoHESR in Libya. The main source of evidence was provided by the face-to-face semi-structured interviews, undertaken by the researcher himself to address the research aim and research objectives.

This chapter offered analyses and discusses the research findings from the survey interviews; this consideration draws on relevant literature and based upon the methodological steps presented in chapter four as well as from data gathered from the fieldwork.

The chapter indicates that globalisation and awareness of the implementation of HEPR can be considered as two main variables that impact on the adoption and use of ICT in universities. The next chapter will provide conclusions and advocate a number of recommendations for this study.

Chapter 6: CONCLUSION AND RECOMMENDATIONS

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6.0 INTRODUCTION

After presenting the data retrieved from the interviews, and after discussing the results of this exploratory research connected to the literature review, this final chapter will put forward the conclusions that may be drawn from this research. This chapter of this study starting with provides the research study conclusion a review of the study, including the research questions, the literature and the methodology. Following this review, a summary of the main findings from the research results from the data will be provided.

These findings are presented in the ways that show how they meet the research objectives and the research questions that the researcher proposed at the beginning of the thesis. And finally, some ideas for proposals for further research and a brief conclusion will be put forward.

6.1 MEETING THE RESEARCH AIM AND OBJECTIVES

As shown in chapter one and chapter four this study was conducted at the UoT and also with staff from the MoHESR located in Tripoli in Libya. The sixty research participants were asked many different questions during the semi-structured interviews. This study focuses on globalisation and awareness HEPR as factors that impact on ICT adoption within Libyan public universities. The study has achieved its aim of exploring the Libyan approach towards university education reform in the context of globalisation and the adoption of ICT. And answered the main research question what impacts does globalisation and awareness of implementation of HEPR have on the adoption and use of ICT in Libyan public universities? The study found that both globalisation and awareness of implementation of HEPR seems gradually to

be changing the impact of, and to be driving the adoption and use of new ICT among Libyan public university education. This study considers these two factors as the main factors that drive and impact on ICT acceptance, usage and adoption within Libyan university education. They are changing the very fundamentals of learning, teaching and administration and they determine to what extent Libyan university education adopts the new ICT and its position in the new global world. The findings will be explained in relation to the research objectives as follows:

The first objective. of this research was to explore globalisation process and its impacts on use of ICT in LPUs. The researcher realised this objective in the first part of chapter three and achieved this objective by answering the first research question: How have globalisation impact the adoption and use of ICT in LPUs?

The study found that all the participants agreed that there is practically no single definition of globalisation. Most of them defined the term globalisation depending on their own point of view. In a nutshell, globalisation, according to most of the participants may incorporate various aspects such as political, economic, cultural or technological aspects. The study also found that ICT adoption is significantly affected by globalisation and found that the drivers of cultural, political, economic and technological globalisation have had a much stronger impact on the adoption and use of ICT in education in general and on Higher Education and University education in particular.

The study shows that keeping pace with the rapid pace of globalisation has a significant potential to motivate graduate students, academic staff and Higher

Education Officials and may lead to increased adoption and more effective use of ICTs in Libyan public universities.

The second objective of this research was to look at awareness of implementation of HEPR as a factor those impacts on ICT adoption and acceptance within Libyan public universities. This objective was accomplished by the answer to this research questions “How have awareness of implementation of HEPR impact the adoption and use of ICT within Libyan public universities? “.

Overall, the majority of the participants had an awareness of implementation of HEPR and knowledge .Although they did not all agree on one precise definition of what policy means, most of them agreed that policy is whatever governments select to do or not to do. Also with respect to policy and HEPR, an examination of the awareness of implementation of HEPR and its impact on ICT adoption and use is important. This objective of this thesis was shown in second part of chapter three and found that the HEP introduced ICT into the Libyan Higher Education system particularly into university education, partly in an attempt to try to expand the quantity and the quality of Higher Education at a lower cost through ICT.

It was also found that the new HEP is not implemented in all Libyan public universities; it is at the very beginning of being adopted and in using new ICT. However, its future use cannot be underestimated because of its ability to link Libyan students with the rest of the modern world. In addition, one of the key findings relating to this third objective was that a good awareness of implementation of HEPR and the correct application of ICT policy for the Higher Education Sector may lead to the creation of an enabling environment which will increase the successful use and adoption of ICT in Libyan public universities.

The third objective was to identify the benefits of, and barriers to use ICT in LPUs. and was presented in the third part of chapter three looking at the perceived benefits and barriers of ICT in LPUs. The study has achieved this objective by answering the this question: What are the perceived benefits and barriers of using ICT in LPUs?

All participants agreed that the adoption and use of ICT tools played an important part in their learning, teaching and administration. The responses from the semi-structured interview questions showed that each of the sixty participants found ICT important to learning on various levels. In the UoT ICT is now viewed as a necessary element. Information technologies have changed the modes of learning, teaching and administration; transforming the way of teaching and learning. Most of the respondents agreed that ICT is important and that it has an impact on their learning, teaching and administration in one way or another. However, the introduction of ICT into the UoT has brought with it many problems for users.

Respondents were asked to indicate what barriers that they think limit the effective utilisation and adoption of ICTs for learning, teaching and administration in the Libyan university education context. Different barriers were mentioned by the participants. These barriers made it difficult for them to overcome the problems they were facing in ICT use. Respondents were required to name the barriers that they faced with regard to the use of ICT provided by the university or by the MoHESR.

The finding of the present study confirms that the situation of ICT infrastructure in University of Tripoli is poor .According to the participants, the biggest barrier to competitive adoption and effective use of ICT in their learning, teaching and administration is a lack of training and a lack of adequate infrastructure. These barriers, according to them, leads to a poor awareness of implementation regarding

ICT and leads to failure to take full advantage of the benefits that that are expected from the adoption and use of ICT?

The fourth objective was to explore the extent of adoption and use of ICTs in LPUs. Through answer what types of ICTs are commonly used in LPUs? This question relate to the theme of the adoption and use of ICT in the UoT. All the participants who were interviewed had some basic knowledge of ICT tools and had each used some form of ICT. Each had a different approach but each was effective in its own way. Each participant stated that they felt that ICT can be a useful tool in the University. However, they felt that it should not replace some forms of traditional methods of teaching and learning such as face-to-face interactions, books and the blackboard.

The study found that all ten academic staff used ICT for a variety of purposes. It was often used to help them teach students to develop ideas quickly. While students worked with the tools to improve their understanding of their research topic. This study also found that most of the responses from the graduate students, the academic staff and the Higher Education Officials indicated that they had a strong preference for ICT, both personally and in their faculties. Also it is apparent that they are adept in using ICT tools and have utilized them greatly in the university and in their own personal lives and are most likely to complete (in the case of the graduate students) their own Master's study via ICT.

The results point out that the graduate students are clearly more comfortable with and used to ICT than the academic staff and the Higher Education Officials. The results found that the hardware and software that were more easily available to the user were

more repeatedly used. The study found that basic ICT technologies such as telephone, fax, e-mail and internet are already available in all six faculties in the UoT.

6.2 CONTRIBUTION OF THE STUDY

After presenting the findings of this study, this section moves on to the contribution of this study. The study is intended to contribute both (1) contribution to the theoretically and (2) contribution to the practitioners as follow :

Contribution to the theoretically. Theoretically, this research is the first of its kind in Libya, which aims to explore and understand the impacts of globalisation and awareness of implementation of HEPR on the use of ICT in Libyan public Universities. . To the best of the researcher's knowledge, this study is the first relating to the globalisation and awareness of implementation of HEPR as factors influencing affecting adoption and use of ICT in LPUs . The researcher feels that this study will contribute to the existing body of knowledge on state public procurement policy and its development, whilst emphasising inputs and transformational processes operating on the construction of public policy in Libya.. This research identifies the factors most important in the adoption and use of ICT in Libyan public universities, and how these factors are interrelated with each other in terms of evaluating the success of the adoption and use of ICT in LPUs

This study contributes to the increasing body of literature that seeks to improve educational outcome of Libyan graduate students. Furthermore, findings from the study contribute to strategies to progress the shared vision of a brighter future for Libyan peoples. It provides a contribution to the knowledge on the extent to which ICT usage helps improve the knowledge of graduate students, academic staff and Higher Education Officials.

As this is the first Libyan study , covering globalisation and awareness of HEP that impact the adoption and use of ICT in Libyan universities. A possible solution for this gap , by looking at what impacts globalisation and HEP have on the actual use of ICT tools in Libyan university education sector. This outcome is expected to be useful from an academic or scholarly standpoint and will enable other research studies in Libya and also in other cultures. It is also expected that should prove helpful as a base for future studies concerning ICT adoption research in that country. Moreover ,the academic contributions of this study include theoretical frames of reference on economic political culture, and technology globalisation, . In particular, the study outlines and explore these aspects of globalisation within Libya, which will contribute to the growing body of knowledge concerning globalisation and, HEP to a deeper understanding of its impact within university education in relation to the adoption and use of ICT.

Contribution to the practitioners The majority of previous research which addresses the issue of ICT adoption has used quantitative research and has used questionnaires for data collection. This study contributes to knowledge regarding ICT adoption by using qualitative data because in qualitative studies researchers do indeed dig deep to acquire a complete understanding of the phenomenon (Leedy and Ormrod 2005). Therefore, using qualitative research (interview data collection) for this study facilitates an in-depth examination and investigation of the factors affecting ICT adoption. Practical significance is expected to arise when the research is used to empirically evaluate the adoption of ICT by other stockholders in Higher education system . Furthermore, the findings will provide solid information on the contemporary situation of the ICT adoption and use rate among LPUs. Either the ICT adoption and use rate is high or

low, the findings will be useful for public and private universities who want to encourage the use of ICT and its relevant components in University education sector. Moreover, the findings of the study will enable relevant agencies to allocate resources more efficiently. The next section, 6.3, will reflect on the limitations and challenges of this study

6.3 LIMITATIONS OF THE STUDY

As with any research project, this study has certain number of limitations that should be mentioned for consideration by those using this study's findings or evaluating the results. According to Yin (2003) every research study is limited by the constraints placed upon the researcher, and this research is no exception.

The researcher has made every effort to overcome these limitations to ensure that this study could be conducted smoothly, but it was not possible to control all the factors that were likely to affect its quality. The limitations of this are:

- The events of 2011 in Libya disrupted the research somewhat but also possibly made this research more valid within the public discourse in the region.
- Generally, a generic challenge to all interpretive researchers is the need to triangulate. However, in this study the researcher had to rely solely on semi-structured interviews; there was no observation or policy document analysis and this feature made the study incur more limitations. Nevertheless, the researcher achieved what he set out to achieve in this case to achieve an understanding of the Libyan approach towards university education reform in the context of globalisation and using of ICT.
- Being research for a thesis with limited resources and time limitations, it was not possible to cover the research beyond interviews undertaken, with more students in

various stages at many public or private Libyan universities or to undertake an analysis of government and institutional documents relating to the new Libyan HEP.

- Ideally, a survey of all the stakeholders, including all the staff members and parents, should have been carried out in order to collate the views of all concerned. This was, however, not possible. Therefore, this study was limited to the three particular groups concerned, and it only focused on a public university located in Libya so the results might not be relevant to other education sectors or other countries..

- Must be mentioned in regard to this exploratory is that it was geographically limited to one University in the city of Tripoli city and was conducted with only postgraduate students who had limited time and resources compared to those that a full time researcher might enjoy.

- In this study data were collected using interviews. These were undertaken to get in-depth information to augment the current results. However, given the limited time allotted for data collection (alongside some financial difficulties) in addition to the extensive distances between Libyan universities, it was considered essential to select only one university instead of drawing a sample from Libyan universities in other cities and towns.

- Finally, a study of this nature may not capture the whole picture which is why its findings should be viewed as exploratory and preliminary.

The recommendations that are made in relation to the research's aim and objectives are offered in the following section.

6.4 GENERAL RECOMMENDATIONS

In view of the findings of this study, the following recommendations for HEP and practice can be made. These recommendations are related to ICT policy that could be implemented by policy-makers and all stakeholders to ensure the success of their ICT adoption and use by all stakeholders to obtain the best results from adopting and using ICT tools in Libyan universities as well as in all HEIs.

- 1.** It is significant that the Libyan Higher Education Ministry devises strategies and policies to implement ICT policy in all HEIs, particularly in public universities. These policies should consider societal values, norms, traditions and local culture and keep up with the latest developments in the developed world. This is the same argument for all levels of education. So, in order to ensure that the Ministry actively get involved in institutional matters, educational policy and ICT strategies should be more responsive towards these issues.
- 2.** Heads of universities and deans of faculties should play an integral role in ensuring that an ICT policy is applied correctly in their departments, faculties and universities. This successful implementation of ICT would introduce positive changes to the life of the institution as a whole. In terms of acceptance, adoption and use of ICT tools in an university efficient and active use of ICT should be encouraged in all HEIs.
- 3.** The Heads of universities and deans of faculties should consider training students and academic staff, not only to involve them in the adoption and use of ICT tools, but also in general university activities. University administration should improve communication with students and academic staff as well as working towards

bridging the distance between teachers and learners which has been caused by societal traditions.

4. LPUs can learn from other universities in the USA, UK and other developed nations to identify liberalized and regulatory strategies best suited to their local context.

5. The Libyan government should develop clear ICT policies and practices that would support students, lecturers and academic staff in their learning and teaching. In addition to this Libyan policy-makers need to become more aware of, and to understand the benefits and the role of ICT adoption and use within all levels of the Libyan education system. ICT then needs to be prioritised as a functional area.

6. Libyan government should assist in the provision of necessary infrastructural support, massive training and deployment of ICT skilled manpower into all universities

Once this is done the various Libyan educational institutions should build an ICT culture within the educational process by making the education process more reliant on ICT and less on manual processes, and by continually exploring all the different and modern ICT options (with their possible benefits to the education in general and university education in particular).

Based on the findings of this study, ICT tools should be made more accessible to both academic staff and students. In addition, the Libyan government needs to track ICT developments, to look at infrastructure and quality of service, as well as set effective training and retraining programmers on ICT for students, administrators and academic staff in LPUs.

Particular attention would need to be given to the integration of ICT within research studies where students are required to use ICT tools in order to attain particular learning outcomes. This would enable them to make optimal use of the skills that they already possess or they could learn and be taught effectively and very quickly. This would encourage them to obtain rapid adoption and to provide them with practical and functional knowledge of associated areas of ICT for improved effectiveness and efficiency.

6.5 SUGGESTIONS FOR FURTHER RESEARCH

There is no doubt that there is a number of objective areas which are not covered by this study. Therefore, more research is needed to identify more precisely the appropriate measures for the objectives of the universities in Libya in respect of the limitations of this study, and because the current study is the first of its kind in the context of Libyan university education. The present study investigated the link between the adoption of ICT and globalisation and HEP in LPUs. However, this study identified several issues which could develop additional studies which could build on the results of the present study and provide a greater wealth of knowledge in this interesting area. Thus, based on the analysis of the data and the findings presented, the following recommendations for further research are offered for consideration.

Firstly, it is recommended that future research should be conducted with larger samples across different levels of education in other Libyan HEIs or in other organisations and time periods. Also other external factors such as university computer access, or location could be looked at in future investigations.

Secondly, the suggested model is proposed as one of the ways of understanding the connection and relationship between ICTs adoption and use and the drivers for globalisation and an awareness of implementation of HEPR. However, this proposed model cannot demonstrate the relationship between ICT and many other external factors in a quantitative manner. Building on this qualitative model, further research may be conducted to establish quantifiable factors that may make the suggested model more robust than the present case.

Thirdly, the results have revealed that there are potential areas to be further researched. The same study could be expanded to include a larger sample either in the Libyan private colleges. In addition, this research could be repeated with other different stakeholders participating.

Fourthly, this information could give a more accurate picture of current HEP trends within universities. The study could be narrowed down to focus on just one type of ICT and its implementation within a university.

Fifthly, a number of researchers have explored ICT policy but they only focused on policy makers, therefore under-estimating other significant features of what constitutes ICT policy. It is crucial that more attention is given to other domains of ICT policy.

Sixthly, the Libyan government should set up an ICT policy for all sectors of Libyan society. This means a new policy of how to use technology in general and ICT in particular should be adopted and used to help society achieve its objectives and optimise its processes. This would include choosing the type of technology and modern ICT tools, and infrastructure that will best achieve all the goals and benefit

6.6 CONCLUDING SUMMARY

This study found that all of the study's findings draw some conclusions which have been provided in this section. In order to draw a comprehensive conclusion concerning the factors that impact on ICT adoption and use within Libyan university education generally the researcher suggests that, in the beginning of this new age of information and communication technologies, they have started to interweave in the Libyan state (particularly in the Higher Education Sector) in powerful ways to create alternatives to conventional communication and information options.

The study's findings managed to answer all the research questions and fulfill the aims and objectives of the research. There are two factors that influence the level and the effective adoption and use of ICTs in Libyan education in different stages especially within university education. Firstly is the factor of globalisation in terms of cultural, economic, political and technological aspects which are the main factors that drive ICT acceptance, usage and adoption within Libyan university education. Moreover, in the context of, and through these aspects of, globalisation ICT can improve the quality as well as the quantity of teaching, learning and management in Libyan public universities. Secondly ICT adoption and use can support by increasing which can lead to creating an enabling environment for the correct application, use and adoption of ICT in Libyan public universities.

It was in this context that this study originated with an intention to add insights to the understanding of the impact of globalisation and awareness of implementation of HEPR on ICT adoption and use especially in relation to university education and as to how the drivers of globalisation and an awareness of implementation of HEPR affects the use of ICT in the Libyan public universities. Taking into consideration the

awareness of implementation of HEPR and the power of globalisation in term of political, economic and technological aspects made easier the decision to choose context of this study (which was the UoT and the MoHESR).

All the data collection from the interviews was collected primarily in Arabic. Qualitative research methodology was used in order to be able to make the sixty voices heard in showing the different realities of ICT adoption and use. In conclusion, the study has found that ICT adoption and use has become more and more omnipresent than ever before in the institutions of Libyan HE in general and in LPUs in particular.

Globalisation and awareness of implementation of HEPR are the main factors that drive and impact on ICT acceptance, usage and adoption within Libyan universities. Although the benefits of ICT adoption and use for Higher Education cannot be clearly measured, the study found that, with the adoption and use of ICT tools in universities, ICT was expected to lead to more productive learning and a diversity of life skills as well as enhancing teaching, learning and administration. Adoption and use of ICT in Higher Education institutions may also expand learning opportunities; improve curricula and the quality of education achievements.

6.7 SUMMARY OF CHAPTER SIX

This is the last chapter of the thesis. In this final chapter, the conclusions are highlighted. The main aim and objectives and the research questions are revisited. The contribution to knowledge, general recommendations, and recommendations for further related research and limitations of the study are also provided. A summary of the main findings from the research results from the was also provided in this chapter. Finally, a brief conclusion is presented.

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Appendix1 : Samples of projects under construction sector in 2010

Source: The Organization for Development of Administrative Centers (ODAC)

<http://www.odac.ly/eng/Projects.aspx?ProjectType=3>

University Campus	Project Components
<p>Atahadi University Location Completion Rate 2% Project Duration 36 Months</p>	<p>Faculty of Science .Capacity (500) Faculty of Low. Capacity (1000) Faculty of Economic .Capacity (500) Faculty of Medicine Dentistry. Capacity (1500) Central Library. Capacity (3000)</p>
<p>Garyounis University Location <i>Benghazi</i> Completion Rate 2% Project Duration 36 Months</p>	<p>Faculty of Engineering. Capacity (1500) Faculty of Art & Media. Capacity (1000) Faculty of Information Technology. Capacity (1500) Central Library. Capacity (1600) Students" Dormitories .Capacity (600)</p>
<p>Al jafara University Location Al jafara Completion Rate 1% Project Duration 36 Months</p>	<p>Faculty of Information Technology .Capacity (1500) Faculty of Education .Capacity (2000) Faculty of Business Administration. Capacity (2000) Faculty of Arts & Media Capacity (600) Faculty of Natural Science & Resources. Capacity (1500) Faculty of Architecture. Capacity (1000) Faculty of Languages Capacity (1000) Central Library Capacity (4250) Students" Dormitories .Capacity (1600) Faculty of Tourism And Archaeology. Capacity (1000)</p>
<p>Misratah University Location Misratah Completion Rate 10% Project Duration 36 Months</p>	<p>Faculty of Information Technology. Capacity (1500) Faculty of Engineering Capacity (1500) Faculty of Nursing. Capacity (600) Faculty of Literature Capacity (3000) Faculty of Economic & Financial Accounting. Capacity (1000) Faculty of Low. Capacity (750) Faculty of Science Capacity (1000) Faculty of Medicine .Capacity (600) Central Library. Capacity (3800) Students" Dormitories .Capacity (1420)</p>
<p>Gharyan University Location Gharyan Completion Rate 2% Project Duration 36 Months</p>	<p>Faculty of Nursing. Capacity (500) Faculty of Engineering. Capacity (1000) Faculty of Medicine .Capacity (500) Faculty of Dentistry. Capacity (500) Central Library. Capacity (1440) Faculty of Technical Medicine .Capacity (750) Faculty of Language. Capacity (600) Students" Dormitories. Capacity (550)</p>

University Campus	Project Components
<p>Almarj University Location Almarj Completion Rate 2% Project Duration 24 Months</p>	<p>Faculty of Business & Management Capacity (1000) Faculty of Pharmaceutical Capacity (500) Faculty of Education Capacity (2000) Central Library. Capacity (1400) Students' Dormitories .Capacity (550)</p>
<p>Albyida University Location Albyida Completion Rate 2% Project Duration 36 Months</p>	<p>Faculty of Science Capacity (1000) Faculty of Engineering Capacity (1500) Faculty of Veterinary. Capacity (500) Central Library. Capacity (1400)</p>
<p>Murzuq University Location Murzuq Completion Rate 2% Project Duration 36 Months</p>	<p>Faculty of Economics & Financial Accounting .Capacity (1000) Faculty of Nursing Capacity (500) Faculty of Petroleum Capacity (600) Central Library. Capacity (840) Students' Dormitories. Capacity (315)</p>
<p>Al-Zintan University Location Al-Zintan Completion Rate 1% Project Duration 36 Months</p>	<p>Faculty of Veterinary. Capacity (500) Faculty of Education. Capacity (1000) Faculty of Information Technology. Capacity (500) Central Library. Capacity (800) Students' Dormitories. Capacity (300)</p>
<p>Subrata University Location Subrata Completion Rate 2% Project Duration 36 Months</p>	<p>Faculty of Engineering. Capacity (1500) Faculty of Tourism and Archaeology. Capacity (500) Faculty of Language. Capacity (750) Central Library. Capacity (1100) Students' Dormitories .Capacity (420)</p>
<p>Zawarah University Location Zawarah Completion Rate 2% Project Duration 36 Months</p>	<p>Faculty of Education Capacity (2000) Faculty of Information Technology. Capacity (500) Faculty of Business Administration. Capacity (1000) Central Library. Capacity (720) Students' Dormitories .Capacity (270)</p>
<p>Zleetin University Location Zleetin Completion Rate 1% Project Duration 36 Months</p>	<p>Faculty of Literature Capacity (2000) Faculty of Science Capacity (750) Faculty of Business Administration. Capacity (1000) Central Library. Capacity (1100) Students' Dormitories .Capacity (420)</p>
<p>Bani Waleed University Location Bani Waleed Completion Rate 1% Project Duration 24 Months</p>	<p>Faculty of Language. Capacity (500) Faculty of Technical Medicine .Capacity (500) Faculty of Education. Capacity (1500) Faculty of Business Administration. Capacity (500) Central Library. Capacity (1200) Students' Dormitories .Capacity (450)</p>

University Campus	Project Components
Darnah University Location Darnah Completion Rate 9% Project Duration 36 Months	Faculty Of Civil & Architecture .Capacity (750) Faculty Of Economics & Financial Accounting .Capacity (1500) Faculty of Law. Capacity (1000) Faculty of Language. Capacity (500) Central Library. Capacity (1500) Students" Dormitories .Capacity (600)
Tobruk University Location Tobruk Completion Rate 1% Project Duration 36 Months	Faculty of Education. Capacity (2000) Faculty of Information Technology. Capacity (1000) Faculty of Nursing Capacity (500) Central Library. Capacity (1400) Students" Dormitories .Capacity (525)
Naloot University Location Naloot Completion Rate 1% Project Duration 36 Months	Faculty of Literature Capacity (2000) Faculty of Science Capacity (1000) Faculty of Business Administration. Capacity (1000) Central Library. Capacity (1600) Students" Dormitories. Capacity (600)
Tarhouna University Location Tarhouna Completion Rate 2% Project Duration 36 Months	Faculty of Law. Capacity (500) Faculty of veterinary & Agriculture. Capacity (400) Students" Dormitories .Capacity (210) Faculty of Language. Capacity (500) Central Library. Capacity (560)
Al-Khums University Location Al-Khums Completion Rate 1% Project Duration 36 Months	Faculty of Engineering Capacity (1500) Faculty of Medicine. Capacity (500) Faculty of Education. Capacity (2500) Faculty of Nursing Capacity (500) Central Library. Capacity (2000) Students" Dormitories Capacity (750)
Surman University Location Surman Completion Rate 1% Project Duration 36 Months	Faculty of Economic & Financial Accounting .Capacity (1000) Faculty of Education & Science Capacity (3000) Faculty of Architecture .Capacity (500) Central Library. Capacity (1800) Students" Dormitories. Capacity (675)
Almarj University Location Almarj Completion Rate 2% Project Duration 24 Months	Faculty of Business & Management Capacity (1000) Faculty of Pharmaceutical Capacity (500) Faculty of Education Capacity (2000) Central Library. Capacity (1400) Students" Dormitories .Capacity (550)

Appendix2A: Supervisor's letter for data collection (English version)

30 April 2010

To Whom It May Concern:

This is to certify that Salem Melood Abodher registered full-time for the degree of PhD (Research) at Business School in university of Huddersfield in the United Kingdom.

Mr Salem is carrying out research on the impact of globalisation and Libyan higher education policy reform on adoption and use ICT within Libyan public universities

The aim of the research is to explore and understand the impacts of globalisation and Awareness of HEPR on use of ICT in Libyan public Universities..I would appreciate any assistance you are able to give Mr Salem during his visit to Libya regarding his studies.

Yours faithfully

Signed by

Professor :Glenn Hardaker

Director of Research

.....

Contact address:

Business School

Director of Research

Location: LA1/19

Tel:+44(0) 1484 472417

Fax:+44(0) 1484 47

g.hardaker@hud.ac.uk

Appendix2B: Supervisor's letter for data collection (Arabic version)

رسالة المشرف الاكاديمي (النسخة العربية)

إلى من يهمه الامر

هذا اقرار بأن سالم ميلود أبوظهير مسجل بدوام كامل للحصول على درجة الدكتوراة في كلية إدارة الاعمال في جامعة هدرزفيلد بالمملكة المتحدة .
وأنه يجري بحثه حول تاثير العولمة والوعي بسياسة اصلاح التعليم العالي على اعتماد واستخدام تقنية الاتصالات والمعلومات بالجامعات الليبية
والهدف العام من دراسته هو استكشاف تاثيرات العولمة والوعي بسياسة اصلاح التعليم العالي الليبي في اعتماد واستخدام تقنية الاتصالات والمعلومات بالجامعات الليبية.
أمل تقديم كافة المساعدات الممكنة للسيد سالم بشأن دراسته خلال زيارته الى ليبيا.

تفضلوا بقبول فائق الاحترام

**التوقيع
برفسور جلين هاردكر**

Appendix3A: Sample letter requesting interview (English version)

I am writing to you to invite you to participate in a research study. I am a graduate student in business school University of Huddersfield under the guidance of Professor Glenn Hardker. Presently I am writing my doctoral dissertation on the topic of adopt and use ICT on Libyan Higher Education. I am collecting information about the process of reform, but I am particularly interested in how globalisation and Libyan Higher education policy Reform impact the adoption and use of ICT on Libyan public Universities.

I would like to ask if you would be willing to be interviewed. You are an important contributor to my research study. I cannot complete this research without your help. Because you are a specialist in the field of higher education I would like to find out your views on some general questions.

If you would consent to participate in and assist with my study, I will be traveling to Libya this coming May to conduct the interviews I will be in Libya. from 26th May to 31st July . Could you please be so kind and send me an email my address is U0874346@hud.ac.uk. Or call me at 0925284139 or 0912136144 letting me know if we can arrange a time for an interview? I sincerely hope that you will accept my invitation. I certainly appreciate your valuable time and kind consideration in helping me with this study.

Respectfully yours.

Salem Melood Abodher

Doctoral Candidate, Education Management studies

Department of Strategy and Marketing,

University of Huddersfield Business School,

Queensgate,

Huddersfield,

HD1 3DH

Telephone:(0044) (148) 4 472024

Mobile number: (0044) 077 655 121219

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Appendix3B: Sample letter requesting interview (Arabic version)

نموذج طلب إجراء مقابلة شبه منظمة

النسخة العربية

أكتب اليكم هذه الرسالة , وأتشرف بتوجيه الدعوة إليكم للمشاركة في دراستي البحثية . أنا طالب دراسات عليا في كلية إدارة الاعمال بجامعة هدرزفيلد بالمملكة المتحدة .
حاليا انا أكتب أطروحة الدكتوراة بأشراف البروفيسر جلين هاردر حول موضوع العولمة والوعي بسياسة إصلاح التعليم العالي وتأثيرهما على اعتماد واستخدام تقنية المعلومات والاتصالات في الجامعات الليبية وأود أن أسأل عما إذا كنت على استعداد لإجراء مقابلة معكم تتمحور حول هذا الموضوع. وبذلك سوف تكون مساهما هاما في هذا البحث ، علما بأنني لا وأود معرفة .أستطيع إكمال هذا البحث دون مساعدتكم. لأنك متخصص في مجال التعليم العالي وجهات نظركم بشأن بعض المسائل الهامة المتعلقة بموضوع البحث ، سوف أسافر إلى ليبيا في شهر مايو وسوف تبدأ الدراسة الحقلية في الفتره من 26 مايو - 31 يوليو لهذا العام ، إذا كنت توافق على المشاركة والمساعدة في دراستي يمكنك ان ترسل لي رسالة إلكترونية على بريدي الالكتروني

U0874346@hud.ac.uk

أو الاتصال بي على الرقم 0925284139 أو 0912136144 لترتيب موعد للمقابلة

وأمل موافقتكم وقبول دعوتي والموافقه على المشاركة في هذا البحث. وأنا أقدر كثيرا وقتكم الثمين و مساعدتكم لي في هذا البحث...تفضلوا بقبول فائق التقدير والاحترام

سالم أبوظهير

طالب دراسات عليا

قسم إدارة الاستراتيجية والتسويق

جامعة هدرزفيلد كلية إدارة الأعمال

Appendix4A: Information to participants (English version)

You are invited to participate in a research project entitled “THE IMPACTS OF GLOBALISATION AND THE AWARENESS OF HIGHER EDUCATION POLICY IN ICT USE IN LIBYAN UNIVERSITIES ”.

This project is being conducted by a student researcher Mr. Salem Melood Abodher as part of a doctoral dissertation at University of Huddersfield under the supervision of Professor Glenn Hardaker

The aim of this research is to explore and understand the impacts of globalisation and awareness of implementation of HEPR on use of ICT in Libyan public Universities. This study will use the semi-structured interview method with a three sample groups to answer the research questions. The questions will relate to.

1. The impact of globalisation on ICT adoption and usage in Libyan public universities
2. The impact of Awareness of Higher education policy on ICT adoption and usage. Libyan public universities .
3. The current usage of ICT tools in Libyan public universities .

Estimate time to answer the questions of this interview will be 20 minutes..

Data for this study will be collected by conducting semi-structured interviews in Arabic. These will be recorded (with the interviewee’s permission) and transcribed. To provide reliable data, this research will use a Tape recorder with respondents.

The results will be handled in strictest confidence and all data recorded will be stored in securely place. Any individual interview results will not be released and all data will be analysed only by the researcher, and the raw data from related documents and interviews will remain private and confidential and in the hand of the researcher. Only the researcher will use the collective data results from the analysis.

Salem Abodher

Appendix4A: Information to participants (Arabic version)

معلومات للمشاركين في البحث

(النسخة العربية)

ادعوكم انا سالم أبوظهير الباحث بجامعة هدرزفيلد للمشاركة في هذه الدراسة الاستكشافية كجزء من أطروحة الدكتوراه حول "آثار العولمة والوعي بسياسة التعليم العالي في اعتماد واستخدام تقنية المعلومات والاتصالات بالجامعات الليبية

هو فهم هذه الدراسة تحت إشراف البرفيسور جلين هاردركر والهدف من هذا البحث استكشاف تاثيرات العولمة والوعي بسياسة اصلاح التعليم العالي الليبي في اعتماد واستخدام تقنية الاتصالات والمعلومات بالجامعات الليبية. وفي هذه الدراسة سوف يتم استخدام أسلوب المقابلة شبه المنظمة مع عينة من ثلاث مجموعات وذلك لغرض الإجابة على أسئلة البحث. وهذه الأسئلة تتعلق بالمحاور التالية:

(1) أثر العولمة على اعتماد تكنولوجيا المعلومات والاتصالات واستخدامها في الجامعات الحكومية الليبية

(2) أثر الوعي بسياسة التعليم العالي على اعتماد تكنولوجيا المعلومات والاتصالات واستخدامها. الجامعات الليبية العامة

(3) الاستخدام الحالي لادوات تقنيةالاتصالات و المعلومات في الجامعات الحكومية الليبية وسيتم جمع البيانات لهذه الدراسة من خلال إجراء مقابلات شبه منظمة باللغة العربية لتوفير بيانات موثوقة وصادقة وسوف تستغرق المقابلة حوالي ثلاثون دقيقة كما سيتم تسجيل هذه المقابلة باستخدام جهاز تسجيل (ويأذن من تجري معه المقابلة).

وسوف يتم التعامل مع النتائج المتحصل عليها من هذه المقابلة بكامل الموضوعية والثقة و سوف تبقى خاصة وسرية وفي يد الباحث والمشرف الاكاديمي فقط. كما سيتم تخزين جميع البيانات المسجلة في مكان آمن. وجميع البيانات سيتم تحليلها فقط من قبل الباحث

سالم أبوظهير

Appendix5A: Semi-structured interview questions (English version)

PROFILE OF INTERVIEWEE

Name of interviewee:

Name of institution / organisation:

Years of experience of using ICT:

QUESTIONS ABOUT GLOBALISATION

- Q1.** What does the term “globalisation” mean to you?
- Q2.** In your opinion, has globalisation had an impact on ICT adoption and usage within Libyan public universities? If yes, in what ways?
- Q3.** Have you observed changes on ICT adoption and usage as a consequence of changes due to globalisation forces?

QUESTIONS ABOUT HIGHER EDUCATION POLICY REFORM

- Q4.** What does the education policy mean to you?
- Q5.** Are there clear ICT policies in Libyan Public Universities? If so what are the main objectives of this policy?
- Q6.** Do you have awareness of new Higher Education policy in Higher Education? If so tell me what reforms have occurred regarding adoption of a ICT in Libyan Public Universities?
- Q7.** Can you describe to me what efforts have been made so far towards the increase awareness implementation of New Higher education policy regard to adoption and use of ICT in universities?

QUESTIONS ABOUT ICT USAGE AND ADOPTION

- Q8.** What do you believe are the main benefits to adopt and using ICT in universities?
- Q9.** What do you see as the biggest barriers to adoption and use of ICT ?
- Q10.** Have you undertaken any training for use ICT equipments ? If so where and how do you receive ICT raining
- Q11.** What ICT infrastructure is now available on University of Tripoli? And to what extent do you think that it is sufficient to meet the needs of academic staff and graduate students?
- Q12.** What are the main types of ICT do you use, and in what ways do you use?
- Q13.** How frequently do you use ICT?
- Q14.** Would you like to add anything else?

Appendix5B : Semi-structured interview questions (Arabic version)

أسئلة المقابلات شبه المنظمة (النسخة العربية)

معلومات عامة

- الاسم
- إسم جهة العمل او الدراسة
- سنوات الخبرة في استخدام تقنية المعلومات والاتصالات

أسئلة تتعلق بالعولمة

1. ماذا يعني مصطلح العولمة بالنسبة لك؟
2. من وجهة نظرك هل اترث العولمة على اعتماد واستخدام تقنية المعلومات والاتصالات في الجامعات الليبية العامة إن كانت الاحابة بنعم فالرجاء التوضيح كيف كان هذا التأثير؟
3. هل لاحظت تغيرات في استخدام و اعتماد تكنولوجيا المعلومات والاتصالات في الجامعات الليبية العامة نتيجة العولمة؟

أسئلة تتعلق بسياسة إصلاح التعليم العالي

4. ماذا تعني السياسة التعليميه لك؟
5. هل هناك سياسة واضحة لتكنولوجيا المعلومات والاتصالات في الجامعات الليبية العامة ؟ إذا كان الأمر كذلك ما هي الأهداف الرئيسية لهذه السياسة؟
6. هل لديك علم ووعي بالسياسة التعليمية الجديدة التي تطبق في قطاع التعليم العالي ؟ إن كانت الاجابة بنعم هل لك ان تحدثني عن الإصلاحات التي حدثت بشأن اعتماد تكنولوجيا المعلومات و الاتصالات في في الجامعات الليبية العامة
7. هل لك أن تصف لي الجهود التي تبذل حاليا في سبيل التعريف باعتماد واستخدام تكنولوجيا المعلومات والاتصالات، في ضوء دسياسة إصلاح التعليم العالي الجديدة التي تطبقها الحكومة؟

أسئلة تتعلق بإستخدام واعتماد تقنية الاتصالات والمعلومات

8. ماهي حسب رايك اهم الفوائد من استخدام ادوات تقنية المعلومات والاتصالات في الجامعات؟
9. ماهي في نظرك اهم المشاكل الرئيسية والتحديات التي تعيق استخدام تقنية الاتصالات؟
- 10 هل سبق لك ان تحصلت على اي نوع من التدريب لاستخدام اي نوع من هذه الادوات ؟ ان كان ذلك فكيف ؟ وأين؟
- 11 ما البنية التحتية الموجودة في جامعة ومامدي ملائمتها لحاجات الطلاب وأعضاء هيئة التدريس؟
12. ما نوع ادوات تقنية الاتصالات التي تستخدمها حاليا ؟ ولماذا تستخدمها؟
13. ما مدى استخدامك تقنية لخدمات المعلومات والاتصالات؟ وأين تستخدمها ؟
14. هل لديك أي سؤال أو معلومه تريد إضافتها بخصوص موضوع البحث؟

Appendix6A : Sample of transcript of interview (Graduate student1)

Profile of interviewee

Name of interviewer: THE RESEARCHER
Name of interviewee: GS16
Profession of interviewee: GRADUATE STUDENT
Place of the interview: UNIVERSITY OF TRIPOLI
Experience of using ICT: 2 years

Q1	<i>Item (1) Globalisation and ICT</i> What does the term “globalisation” mean to you?	THEME 1 DEFINITIONS OF GLOBALISATION
A1	Globalisation has many meanings . It too broad . However, in my view, globalisation means the cooperation among different people and cultures over the world	Difficulty in precise definition Cultural globalisation
Q2	In your opinion, has globalisation had an impact on ICT adoption and usage within Libyan public universities? If yes, in what ways?	THEME 2 IMPACTS OF GLOBALISATION ON USING ICT
A2	Yes it has , globalisation contributes significantly to the expanding of usage of modern and new ICT tools in Higher Education institutions and in making more accessible through the use ICT	THEME 2 IMPACTS OF GLOBALISATION ON USING ICT
Q3	Have you observed changes on ICT adoption and usage as a consequence of changes due to globalisation forces?	THEME 2 IMPACTS OF GLOBALISATION ON USING ICT
A3	I'm not sure but I think globalisation creates a lot changes on the development of ICT and its use in our country in general and in universities in particular for example satellites and submarine fiber-optic cables allow high-speed data transfer vital to support industry global education , and trade.	THEME 2 IMPACTS OF GLOBALISATION ON USING ICT
Q4	<i>Item (2) Awareness Of implementation of HEPR and ICT</i> What does the education policy mean to you?	THEME 1 DEFINITIONS OF EDUCATION POLICY
A4	I do not know exactly what does it me, but it should be something like plan	THEME 2 IMPACTS OF AWARENESS OF HEPR ON USING ICT
Q5	Is there a clear ICT policy in Libyan Public Universities? If so what are the main objectives of this policy?	THEME 2 IMPACTS OF AWARENESS OF HEPR ON USING ICT
A5	I know that the Libyan government intend to implement new policy but I don't know indeed what this policy said about ICT at university education level.	THEME 2 IMPACTS OF AWARENESS OF HEPR ON USING ICT

Q6	Do you have awareness of new Higher Education policy implementation in Higher Education sector? If so tell me what reforms have occurred regarding adoption of a new ICT in Libyan public universities?	THEME 2 IMPACTS OF AWARENESS OF HEPR ON USING ICT
A6	As I answer the last question <i>I don't know</i> a lot about this policy	
Q7	Can you describe to me what efforts have been made so far towards the increase awareness implementation of New Higher education policy regard to adoption and use of ICT in universities?	THEME 2 IMPACTS OF AWARENESS OF HEPR ON USING ICT
A7	I believe awareness of ICT in higher Education Policy <i>increases the demand for ICT</i> in education system , especially university education, and this increases <i>pressure on</i> the whole system for <i>higher quality</i> of learning producing new consequences, particularly from the using and adopting ICT so the policy government can carefully reduce the negative impacts and promote positive impact	
Q8	<i>Item (3) Actual use of ICT</i> What do you believe are the main benefits to adopt and using ICT in universities?	THEME 1 BENEFITS OF USING ICT
A8	ICT has a <i>positive Influence</i> in my academic studies, and on my personal live. I think that introduction ICT in education have <i>changed the way of learning</i> , and all aspects of our live	
Q9	What do you see as the biggest barriers to adoption and use of ICT in Libyan public universities?	THEME 2 BARRIERS OF USING ICT
A9	I think what the University of Tripoli have now is <i>very basic</i> ; I should <i>acquire more ICT tools</i> . If the University can afford to buy more ICT tools, I would like to see them buy <i>more computers</i> for students to use to improve their studies . At the moment, the University has some ICT <i>tools but it is not enough</i> for all of graduate students only some universities has access to it not all of universities.	
Q10	Have you undertaken any training for use ICT equipments? If so where and how do you receive ICT raining?	Lack of Infrastructure
A10	No I haven't undertaken any training to use ICT	
		Lack of training

Q11	What ICT infrastructure is now available on University of Tripoli? and to what extent do you think that it is sufficient to meet the needs of academic staff and graduate students?	
A11	There is really much weakness in this University especially in <i>sufficient infrastructure</i> . For example some halls and classrooms in University of Tripoli <i>have no adequate lighting and ventilation</i> , which preventing students and teachers using ICT effectively in their learning and teaching	Lack of Infrastructure
Q12	What are the main types of ICT do you use, and in what ways do you use?	THEME 3: USE OF ICT TOOLS
A12	Firstly as everyone would <i>I always</i> use <i>my mobile phone</i> And my <i>Laptop</i> , .When I in the faculty I <i>always</i> use <i>computer laboratory</i> as well as the <i>internet</i> . The <i>soft wares</i> I <i>always</i> use are <i>Microsoft word</i> to type my thesis and <i>Microsoft excel to help make my tables</i> and <i>grids</i> and <i>figures</i> .As well as that, I use <i>social network</i> sites	TYPE AND FREQUENCY OF ICT USE PURPOSE OF USING ICT TOOLS
Q13	How frequently do you use ICT? And where do you use ICT?	THEME 3: USE OF ICT TOOLS
A13	I have <i>Internet</i> in my home, so I <i>mostly</i> use my <i>Laptop</i> and <i>internet</i> as well as I can <i>check my email every time</i> Through <i>my mobile phone</i>	
Q14	Would you like to add anything else?	TYPE AND FREQUENCY OF ICT USE
A14	Nope, at all	

Apendix6B : Sample of transcript of interview (Graduate student2)

Profile of interviewee

Name of interviewer: THE RESEARCHER
Name of interviewee: GS22
Profession of interviewee: GRADUATE STUDENT
Place of the interview: UNIVERSITY OF TRIPOLI
Experience of using ICT: 3YEARS

Q1	<i>Item (1) Globalisation and ICT</i> What does the term “globalisation” mean to you?	THEME 1 DEFINITIONS OF GLOBALISATION
A1	As you know globalisation is a very complex term which used with different means but I think globalisation is not just the movement of goods and capital but it is, adoption of parts of one culture by another	<div style="background-color: yellow; padding: 5px; border: 1px solid black; margin-bottom: 5px;">Difficulty in precise definition</div> <div style="background-color: #d9ead3; padding: 5px; border: 1px solid black; margin-bottom: 5px;">Economic globalisation</div> <div style="background-color: #d9ead3; padding: 5px; border: 1px solid black;">Cultural globalisation</div>
Q2	In your opinion, has globalisation had an impact on ICT adoption and usage within Libyan public universities? If yes, in what ways?	THEME 2 IMPACTS OF GLOBALISATION ON USING ICT
A2	Yes , globalisation has an overall positive affect , on adoption and use of ICT because globalisation gives very good support in terms of affective and a successful implementation of the ICT policy. I mean globalisation is a major driving force for ICT adoption. At the same time ICT is considered as one of the pillars of globalisation	
Q3	Have you observed changes on ICT adoption and usage as a consequence of changes due to globalisation forces?	THEME 2 IMPACTS OF GLOBALISATIO N ON USING ICT
A3	Yes , there is a positive relation between globalisation and ICT use through reduced trade barriers as one aspects of globalisation facilitated information transfer and led to a rapid rise in investment in ICT computers and the internet all these inventions have not only affected education but all aspects of our lives	

Q4	Item (2) Awareness of implementation of HEPR and ICT What does the education policy mean to you?	<p>THEME 1 DEFINITIONS OF EDUCATION POLICY</p> <p>THEME 2 IMPACTS OF AWARENESS OF HEPR ON USING ICT</p> <p>THEME 2 IMPACTS OF AWARENESS OF HEPR ON USING ICT</p> <p>THEME 2 IMPACTS OF AWARENESS OF HEPR ON USING ICT</p>
A4	Education policy to me is any document issued from Ministry of higher education which gives instruction to Universities and any other Institution on what is going to be done or what must be done	
Q5	Is there a clear ICT policy in Libyan Public Universities? If so what are the main objectives of this policy?	
A5	I don't know, but I think that the Libyan government will face a big challenge in the implementation of ICT in universities	
Q6	Do you have awareness of new Higher Education policy implementation in Higher Education sector? If so tell me what reforms have occurred regarding adoption of a new ICT in Libyan public universities?	
A6	I have no idea what is happening in higher education.	
Q7	Can you describe to me what efforts have been made so far towards the increase awareness implementation of New Higher education policy regard to adoption and use of ICT in universities?	
A7	No, as I told you I'm not interested in policy at all	
Q8	Item (3) Actual use of ICT What do you believe are the main benefits to adopt and using ICT in universities?	<p>THEME 1 BENEFITS OF USING ICT</p>
A8	ICT is very important in study, it helps graduate students to achieve their degree very quickly and it is easy to revise their researchers it is an online environment so they can communicate with their supervisors	
Q9	What do you see as the biggest barriers to adoption and use of ICT in Libyan public universities?	<p>THEME 2 BARRIERS OF USING ICT</p>
A9	There are not enough computers for all the teachers. sometimes I have to wait a very long time before. I can access the few computers the school has. Students normally get frustrated about it.	<p>Lack of infrastructure</p>

Q10	Have you undertaken any training for use ICT equipments? If so where and how do you receive ICT raining	Lack of training
A10	No, for me I do not receive any formal training using ICT tools To the best of my knowledge there is no definite plan or formal program for ICT use in my faculty	
Q11	What ICT infrastructure is now available on University of Tripoli? and to what extent do you think that it is sufficient to meet the needs of academic staff and graduate students?	Lack of infrastructure
A11	The master I am undertaken is heavily oriented towards Knowledge Management System and the IT Technology .In this manner practically and theoretically my ICT skills have been improved. In terms of general infrastructure, this was possible by providing an adequate number of labs ,requiring students to use these applications either for for software development applications.	
Q12	What are the main types of ICT do you use, and in what ways do you use?	THEME 3: USE OF ICT TOOLS
A12	I use ICT in Computer laboratories in particular the Internet web totally as an information source, neglecting other suitable Forms of information gathering, and reading .and create my work on a word processor at home and I use the email to chat with my friends, and to receive feedback for my supervisor.	TYPE AND FREQUENCY OF ICT USE PURPOSE OF USING ICT TOOLS
Q13	How frequently do you use ICT? And where do you use ICT?	THEME 3: USE OF ICT TOOLS
A13	I use ICT some times and I use it in the library and university I use Internet web frequently The Internet now enables me to access Bibliographic databases, full texts of journals and any books online	TYPE AND FREQUENCY OF ICT USE
Q14	Would you like to add anything else?	
A14	NO	

Appendix7A : Sample of transcript of interview (Academic staff1)

Profile of interviewee

Name of interviewer: THE RESEARCHER

Name of interviewee: AS 2

Profession of interviewee: ACADEMIC STAFF

Place of the interview: UNIVERSITY OF TRIPOLI

Q1	<i>Item (1) Globalisation and ICT</i> What does the term “globalisation” mean to you?	THEME 1 DEFINITIONS OF GLOBALISATION
A1	There are many different definitions of this term due its complex and confusing for many people .But for me globalisation means that Libyan economy is part of the world economy . This means that the ways of operating in Libyan organisation and doing business is become in more and more similar	Difficulty in precise definition Economic globalisation
Q2	In your opinion, has globalisation had an impact on ICT adoption and usage within Libyan public universities? If yes, in what ways?	THEME 2 IMPACTS OF GLOBALISATION ON USING ICT
A2	Yes , it can be seen that there is a great deal of Evidence that globalisation has had a great effect on the advanced ICT in terms of the rise, increasingly and rapidly , in all over the world since the twentieth century	THEME 2 IMPACTS OF GLOBALISATION ON USING ICT
Q3	Have you observed changes on ICT adoption and usage as a consequence of changes due to globalisation forces?	THEME 2 IMPACTS OF GLOBALISATION ON USING ICT
A3	Yes, it is clear that the technological revolution in teaching and learning has occurred in the vast majority of usage ICT.I think the radical changes in technological and ICT forces in the area of transport revolution and ICTs revolution is one of results of power of globalisation	THEME 2 IMPACTS OF GLOBALISATION ON USING ICT
Q4	<i>Item (2) Awareness Of implementation of HEPR and ICT</i> What does the education policy mean to you?	THEME 1 DEFINITIONS OF EDUCATION POLICY
A4	Education policy is a set of laws and legislation .The general shape and levels of education objectives and methods . of each of these stages thoroughly as well as all activities related to education	THEME 1 DEFINITIONS OF EDUCATION POLICY

Q5	Is there a clear ICT policy in Libyan Public Universities? If so what are the main objectives of this policy?	THEME 2 IMPACTS OF AWARENESS OF HEPR ON USING ICT
A5	<i>I think yes, yes</i> I've heard that that there is a that that there is a new policy but I never realize what the objectives of this policy is.	
Q6	Do you have awareness of new Higher Education policy implementation in Higher Education sector? If so tell me what reforms have occurred regarding adoption of a new ICT in Libyan public universities?	THEME 2 IMPACTS OF AWARENESS OF HEPR ON USING ICT
A6	No I don't know	
Q7	Can you describe to me what efforts have been made so far towards the increase awareness implementation of New Higher education policy regard to adoption and use of ICT in universities?	
A7	NO, I can't describe it, because I don't know lot about policy	
Q8	<i>Item (3) Actual use of ICT</i> What do you believe are the main benefits to adopt and using ICT in universities?	THEME 1 BENEFITS OF USING ICT
A8	Generally, ICT has <i>brought more good things</i> than bad things. I think in universities we can use <i>ICT to prepare curriculum notes, diagrams, discussion</i> . I mean ICT in general and computers in particular has had a vital and greater influence in teaching and learning tasks or activities	
Q9	What do you see as the biggest barriers to adoption and use of ICT in Libyan public universities?	THEME 2 BARRIERS OF USING ICT
Q9	Libyan universities now <i>facing more challenges</i> than Ever before I think <i>the problems</i> when integrate ICT in Universities in Libya still <i>lack infrastructure</i> in my view the interruption internet service from time to time is the <i>main problems</i>	
Q10	Have you undertaken any training for use ICT equipments? If so where and how do you receive ICT raining	
A10	No I have not <i>received any training</i> at all	Lack of infrastructure
		Lack of training

Q11	What ICT infrastructure is now available on University of Tripoli? and to what extent do you think that it is sufficient to meet the needs of academic staff and graduate students?	Lack of infrastructure
A11	I had the opportunity to use web ICT facilities, courseware and Internet.	
Q12	What are the main types of ICT do you use , and in what ways do you use?	THEME 3: USE OF ICT TOOLS
A12	I am very comfortable with using ICT for teaching purposes . I use the Computers and internet , as well as some packages of softwares and hardwears . For me I use ICT as a tool to help my graduate students to understand any difficult issues .	TYPE AND FREQUENCY OF ICT USE PURPOSE OF USING ICT TOOLS
Q13	How frequently do you use ICT? And where do you use ICT?	THEME 3: USE OF ICT TOOLS
A13	Quite a lot and I use it in the library for research and to find some information related to my teaching	
Q14	Would you like to add anything else?	TYPE AND FREQUENCY OF ICT USE
A14	I felt the urgent need for the students an academic staff to be trained	

Appendix7B : Sample of transcript of interview (Academic staff2)

Profile of interviewee

Name of interviewer: THE RESEARCHER
Name of interviewee: AS 7
Place of the interview: UNIVERSITY OF TRIPOLI
Experience of using ICT: THREE YEARS

Q1	<i>Item (1) Globalisation and ICT</i> What does the term “globalisation” mean to you?	THEME 1 DEFINITIONS OF GLOBALISATION
A1	For me, it is <i>difficult to establish only one clear Definition</i> of globalisation I also think that globalisation is an <i>inevitable phenomenon</i> that deserves to be studied across various disciplines. However, for me I look at globalisation as no <i>political boundaries</i> .	Difficulty in precise definition Political globalisation
Q2	In your opinion, has globalisation had an impact on ICT adoption and usage within Libyan public universities? If yes, in what ways?	
A2	<i>Yes</i> , of course .In my opinion one of the most Important <i>opportunities offered by globalisation</i> in Libyan Higher Education is opening <i>doors for a highly mobile</i> , highly Skilled international elite which led to <i>facilitating ICT adoption</i> and <i>Easy usage</i> of the new technologies	THEME 2 IMPACTS OF GLOBALISATION ON USING ICT
Q3	Have you observed changes on ICT adoption and usage as a consequence of changes due to globalisation forces?	
	<i>Technological change in general</i> and Developments in ICT in particular often based on power of Globalisation. What I mean is that there is a relationship between Globalisation And development of ICT field ICT <i>have a major vital in pushing globalisation</i> . On the other hand the <i>power of economic globalisation</i> for example <i>allow the big companies to produce new goods and reduce production costs</i> through the reduction of <i>economic barriers and customs</i> this in turn and increase the <i>opportunities to use and adoption the ICT</i> in education	THEME 2 IMPACTS OF GLOBALISATION ON USING ICT

Q4	Item (2) Awareness of implementation of HEPR and ICT What does the education policy mean to you?	THEME 1 DEFINITIONS OF EDUCATION POLICY
A4	Policy in general and education policy may mean as an approach, which changes the university position un to the best situations	
Q5	Is there a clear ICT policy in Libyan Public Universities? If so what are the main objectives of this policy?	THEME 2 IMPACTS OF AWARENESS OF HEPR ON USING ICT
A5	Yes , there is a new policy that Libyan government started to implemented in most of the public universities and the main objectives of the ICT policy in universities : is to enabling students , and teachers to use ICT , in their universities	
Q6	Do you have awareness of new Higher Education policy implementation in Higher Education sector? If so tell me what reforms have occurred regarding adoption of a new ICT in Libyan public universities?	
A6	I don't have enough information related to the new higher education policy that take place in university since the last two years , everything I know is that lots of technology will be available in university of Tripoli to use by for students	THEME 2 IMPACTS OF AWARENESS OF HEPR ON USING ICT
Q7	Can you describe to me what efforts have been made so far towards the increase awareness implementation of New Higher education policy regard to adoption and use of ICT in universities?	
A7	For me, I expect radical changes through the present higher education system. Due to the effort of Libyan policy makers in the ministry of higher education and all Universities particularly with regard awareness implementation of New Higher education policy by students, academic staff and other stockholders in the field of higher education system which led to improve the quality assurance of our adopted as well as use the applications and deferent services of ICT	THEME 2 IMPACTS OF AWARENESS OF HEPR ON USING ICT
Q8	Item (3) Actual use of ICT What do you believe are the main benefits to adopt and using ICT in universities?	THEME 1 BENEFITS OF USING ICT
A8	ICT is a very good for the future of Universities I think ICT systems can increases the productivity through help students and teacher in their studies and teach . I believe that through ICT they can obtain benefits with a lot tools of ICT with internet ICT help to improve teaching, and learning.	

Q9	What do you see as the biggest barriers to adoption and use of ICT in Libyan public universities?	THEME 2 BARRIERS OF USING ICT
A9	I think that undertaken any training inadequate ICT facilities and lack of funding as,well as are that a major challenges to ICT usage among academic staff and students in Libyan public universities,	
Q10	Have you undertaken any training for use ICT equipments? If so where and how do you receive ICT raining?	
A10	No I did not receive any formal or informal training formal or informal training However my friend sometimes helps me deal with some of ICT tools	Lack of Training
Q11	What ICT infrastructure is now available on University of Tripoli? and to what extent do you think that it is sufficient to meet the needs of academic staff and graduate students?	Lack of Infrastructure
A11	During my teaching in this University ,I had the opportunity to improve my information searching skills by using databases and web search engines like Google ,and I think this is not sufficient	
Q12	What are the main types of ICT do you use, and in what ways do you use?	THEME 3: USE OF ICT TOOLS
A12	I think I'm comfortable enough with navigation of many types of features of ICT , as well as advanced features of a web browser at the same time my students are comfortable with ICT use .They get excited, and keep up when they utilise ICT in the learning process Examples of these types of ICT that I have frequently use is my laptop, Internet web Email, to communicate with my friends	TYPE AND FREQUENCY OF ICT USE
Q13	How frequently do you use ICT? And where do you use ICT?	PURPOSE OF USING ICT TOOLS
A13	Sometimes I used ICT in my office and Sometimes in my home	TYPE AND FREQUENCY OF ICT USE
Q14	Would you like to add anything else?	
A14	Nope, I think that about covers it.	

Appendix8A :Sample of transcript of interview (Higher Education Official1)

Profile of interviewee

Name of interviewer: THE RESEARCHER

Name of interviewee: HEO 4

Profession of interviewee: HIGHER EDUCATION OFFICIAL

Place of the interview: MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC RESEARCH

Experience of using ICT: LESS THAN ONE YEAR

Q1	<p align="center">Item (1) Globalisation and ICT</p> <p>What does the term "globalisation" mean to you?</p>	<p align="center">THEME 1 DEFINITIONS OF GLOBALISATION</p>
A1	<p>I can see globalisation as increasing and <i>advances in Information and Communication Technology</i>. I need to add that there is no doubt that globalisation can be defined in <i>various ways</i> because it include <i>all aspects of our lives</i>.</p>	<p align="center">Technological globalisation</p> <p align="center">Difficulty in precise definition</p>
Q2	<p>In your opinion, has globalisation had an impact on ICT adoption and usage within Libyan public universities? If yes, in what ways?</p>	<p align="center">THEME 2 IMPACTS OF GLOBALISATION ON USING ICT</p>
A2	<p><i>Certainly yes</i>, globalisation has a <i>strong impact</i> on using of ICT services globalisation, contribute the expansion of ICT, especially in research centres and universities. However, this expansion use advanced educational technology such as an electronic medium in <i>distance learning</i>, particularly for Libya is very urgent requirement</p>	
Q3	<p>Have you observed changes on ICT adoption and usage as a consequence of changes due to globalisation forces?</p>	<p align="center">THEME 2 IMPACTS OF GLOBALISATION ON USING ICT</p>
A3	<p><i>Yes</i>, because many of important technological and ICT advances <i>could be a result of the many power of</i> globalisation. This has led governments to deal with possible change occurs globalisation and encourage their citizens to adoption and use of ICT. Globalisation, <i>have contributed to the expansion of new ICT</i> especially in research centres and universities. However, <i>this expansion to use advanced educational technology</i></p>	

Q4	<p>Item (2) Awareness of implementation of HEPR and ICT</p> <p>What does the education policy mean to you?</p>	
A4	<p>Education policy is a set of documents issued by government to implementation of specific projects</p>	
Q5	<p>Is there a clear ICT policy in Libyan Public Universities? If so what are the main objectives of this policy?</p>	
A5	<p>The ministry is doing its best to make ICT available in all public universities and we have to be realistic about what can be done and what cannot within only five years</p>	<p>THEME 2 IMPACTS OF AWARENESS OF HEPR ON USING ICT</p>
Q6	<p>Do you have awareness of new Higher Education policy implementation in Higher Education sector? If so tell me what reforms have occurred regarding adoption of a new ICT in Libyan public universities?</p>	
A6	<p>I know some issues related with higher education policy let me to say in very clearly that the current reform of higher education carries the seeds of failure due to the government's plans for reforms to higher education which linked with redefinition of the role of the state in higher education especially those related to the funding universities</p>	<p>THEME 2 IMPACTS OF AWARENESS OF HEPR ON USING ICT</p>
Q7	<p>Can you describe to me what efforts have been made so far towards the increase awareness implementation of New Higher education policy regard to adoption and use of ICT in universities?</p>	
A7	<p>I believe that when students and academic staff, increase their awareness about the implementation of Higher education policy in general and awareness with the part of ICT in particular there will be able to deal with the recent innovations in the field of ICT which in my view led to get a significant changes take place, similar changes will occur in the education system and thus ICT may be seen as a primary tool for change in our University and in Libyan society in evolution.</p>	<p>THEME 2 IMPACTS OF AWARENESS OF HEPR ON USING ICT</p>
Q8	<p>Item (3) Actual use of ICT</p> <p>What do you believe are the main benefits to adopt and using ICT in universities?</p>	
A8	<p>In my opinion, ICT services has affected most aspects of our daily life .It is a revolutionary tool for education and for both learners and teachers. However there is no doubt that ICT is a major part of the reform higher education for Universities now days. I can say that the benefits to use ICT is that ICT made users access to information anytime, anywhere possible</p>	<p>THEME 1 BENEFITS OF USING ICT</p>

Q9	What do you see as the biggest barriers to adoption and use of ICT in Libyan public universities?	THEME 2 BARRIERS OF USING ICT	
A9	In general , universities in Libya face many challenges posed by globalisation, or by ICT and policy-makers, have play a central role in responding and addressed these challenges with these problems.the lack of training in order to encourage use and adopt of ICT		
Q10	Have you undertaken any training for use ICT equipments? If so where and how do you receive ICT raining?		
A10	There are courses run by ministry free and I have attended a lot before but not too useful because no notes, just a certificate,cannot cater the needs of us particularly elder ones		Lack of Training
Q11	What ICT infrastructure is now available on University of Tripoli? and to what extent do you think that it is sufficient to meet the needs of academic staff and graduate students?		Lack of Infrastructure
A11	I think the number of tuition halls, libraries labs, is not available associated for students		THEME 3: USE OF ICT TOOLS
Q12	What are the main types of ICT do you use, and in what ways do you use?		PURPOSE OF USING ICT TOOLS
A12	I frequently using productivity tools, like, computer Internet and e-mail or other tools to improve the quality; of teaching and research		TYPE AND FREQUENCY OF ICT USE
Q13	How frequently do you use ICT? And where do you use ICT?		THEME 3: USE OF ICT TOOLS
A13	Even though it is simple for me to use the existing ICT technology I don't use ICT a lot as I don't have a computer at home but I do use it in the library if necessary or in University		
Q14	Would you like to add anything else?		
A14	NO		

Appendix8B : Sample of transcript of interview (Higher Education Official2)

Profile of interviewee

Name of interviewer: THE RESEARCHER

Name of interviewee: HEO 6

Profession of interviewee: HIGHER EDUCATION OFFICIAL

Place of the interview: MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC RESEARCH

Experience of using ICT: ONE YEAR

<i>Item (1) Globalisation and ICT</i>		
Q1	What does the term "globalisation" mean to you?	THEME 1 DEFINITIONS OF GLOBALISATION
A1	I can explain globalisation as the huge <i>influx of new knowledge and information communication technology</i> owing to new ways of acceleration of the communication and <i>the influx of foreign goods, services, and capital economy</i> . However globalisation has <i>many different definitions</i>	Technological globalisation Economic globalisation
Q2	In your opinion, has globalisation had an impact on ICT adoption and usage within Libyan public universities? If yes, in what ways?	
A2	I dont exactly know how globalisation impact the use of ICT but I think that both globalisation and ICT are <i>two sides of the same coin</i> . Both are in <i>collinear movement</i> . For example due to rapid expansion of globalisation in all aspects may <i>led to the exponential</i> development of ICT	THEME 2 IMPACTS OF GLOBALISATION ON USING ICT
Q3	Have you observed changes on ICT adoption and usage as a consequence of changes due to globalisation forces?	
A3	I think that the relation between globalisation and ICT is <i>somewhat overlap</i> . The globalisation now <i>became or support</i> of ICT. The access to information through any type of communication tools in the era of globalisation is not limited by what is available in local collection as well as all people now struggling to <i>deal with the electronic revolution and ICT</i> , and <i>Keeping up with the rapid</i> that occur in each country	THEME 2 IMPACTS OF GLOBALISATION ON USING ICT

Q4	<p>Item (2) Awareness of implementation of HEPR and ICT</p> <p>What does the education policy mean to you?</p>	
A4	<p>Educational policy that has been followed since the seventies <i>was based on the widespread expansion</i> in the construction of universities and <i>opening the way for students</i> to access higher education In addition to relying on individuals in society to working in various sectors thus, universities another higher education institutes were established to <i>providing laboratory</i> and <i>equipment</i> and <i>higher educational means</i></p>	<p>THEME 1 DEFINITIONS OF EDUCATION POLICY</p> <p>THEME 2 IMPACTS OF AWARENESS OF HEPR ON USING ICT</p>
Q5	<p>Is there a clear ICT policy in Libyan Public Universities? If so what are the main objectives of this policy?</p>	
A5	<p><i>Yes, there is an important new policy</i>, which interest to <i>improve the quality, and the quantity of higher education</i>. And to best of my knowledge the main Objective of this new policy is that to <i>introduce new ICT in Libyan Universities</i></p>	<p>THEME 2 IMPACTS OF AWARENESS OF HEPR ON USING ICT</p>
Q6	<p>Do you have awareness of new Higher Education policy implementation in Higher Education sector? If so tell me what reforms have occurred regarding adoption of a new ICT in Libyan public universities?</p>	
A6	<p>I have released that there are <i>positive changes</i> that have occurred over the last years as a result of the trend toward reform. One of <i>these positive changes</i>, was that study abroad became <i>more open</i> and <i>more organized</i> than they've ever been before. Also the state's attention to <i>provide all forms of support</i> to Libyan universities</p>	<p>THEME 2 IMPACTS OF AWARENESS OF HEPR ON USING ICT</p>
Q7	<p>Can you describe to me what efforts have been made so far towards the increase awareness implementation of New Higher education policy regard to adoption and use of ICT in universities?</p>	
A7	<p>Awareness of the ICT policy <i>is an important</i> step in ensuring that ICT services are used effectively by universities</p>	
Q8	<p>Item (3) Actual use of ICT</p> <p>What do you believe are the main benefits to adopt and using ICT in universities?</p>	
A8	<p>I believe that technology in general , and ICT services in specifically is <i>beneficial to students</i> in university education In my opinion modern ICT <i>makes our life easier and quicker.</i></p>	<p>THEME 1 BENEFITS OF USING ICT</p>

Q9	What do you see as the biggest barriers to adoption and use of ICT in Libyan public universities?	THEME 2 BARRIERS OF USING ICT
A9	The fact that there are a lot of students and some Universities might not be able to afford that big amount of ICT tools However , I think the most difficult obstacle is that concern with the poor state of infrastructure across the nation	
Q10	Have you undertaken any training for use ICT equipments? If so where and how do you receive ICT raining?	Lack of infrastructure
A10	I have attended a ministry course, 30 persons in a class. Since there was a person who was very the lecturer weak in ICT and keep asking the lecturer questions and is very annoyed and was changed at the end. The course was very tight , it taught flash and everything in 6 lessons during only two weeks	Lack of Training
Q11	What ICT infrastructure is now available on University of Tripoli? and to what extent do you think that it is sufficient to meet the needs of academic staff and graduate students?	Lack of Infrastructure
A11	I think University of Tripoli has an increase in the number of graduate students and academic using computers, and telephones, email, and the Internet to communicate, to share information, to entertain and to work.	THEME 3: USE OF ICT TOOLS
Q12	What are the main types of ICT do you use , and in what ways do you use?	TYPE AND FREQUENCY OF ICT USE
A12	I had some background computer knowledge so I use of many basic operations of a ICT enough which I can do them with little to no assistance such as Pc , Internet web Printers Scanners , and I use it for a number of reasons: For Example creating copying and saving files; copying printing	PURPOSE OF USING ICT TOOLS
Q13	How frequently do you use ICT? And where do you use ICT?	THEME 3: USE OF ICT TOOLS
A13	As I have internet and most ICT services at my home I always use all of them almost time at my home. I always use Microsoft word/excel and social networking sites, however sometimes I use printers .	
Q14	Would you like to add anything else?	
A14	I hope that Libyan government provide more and more ICT services in universities.	